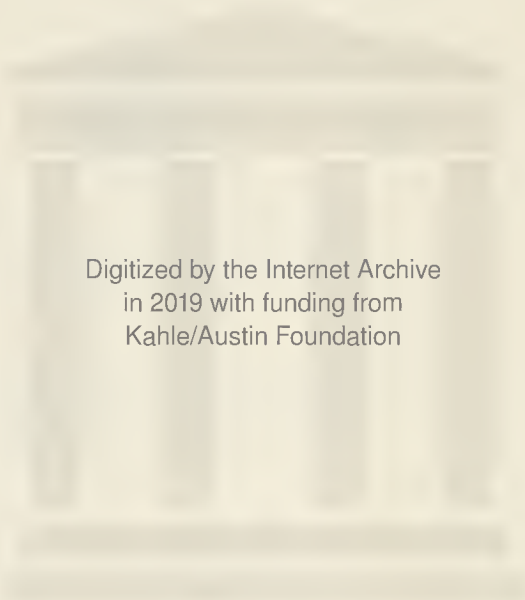

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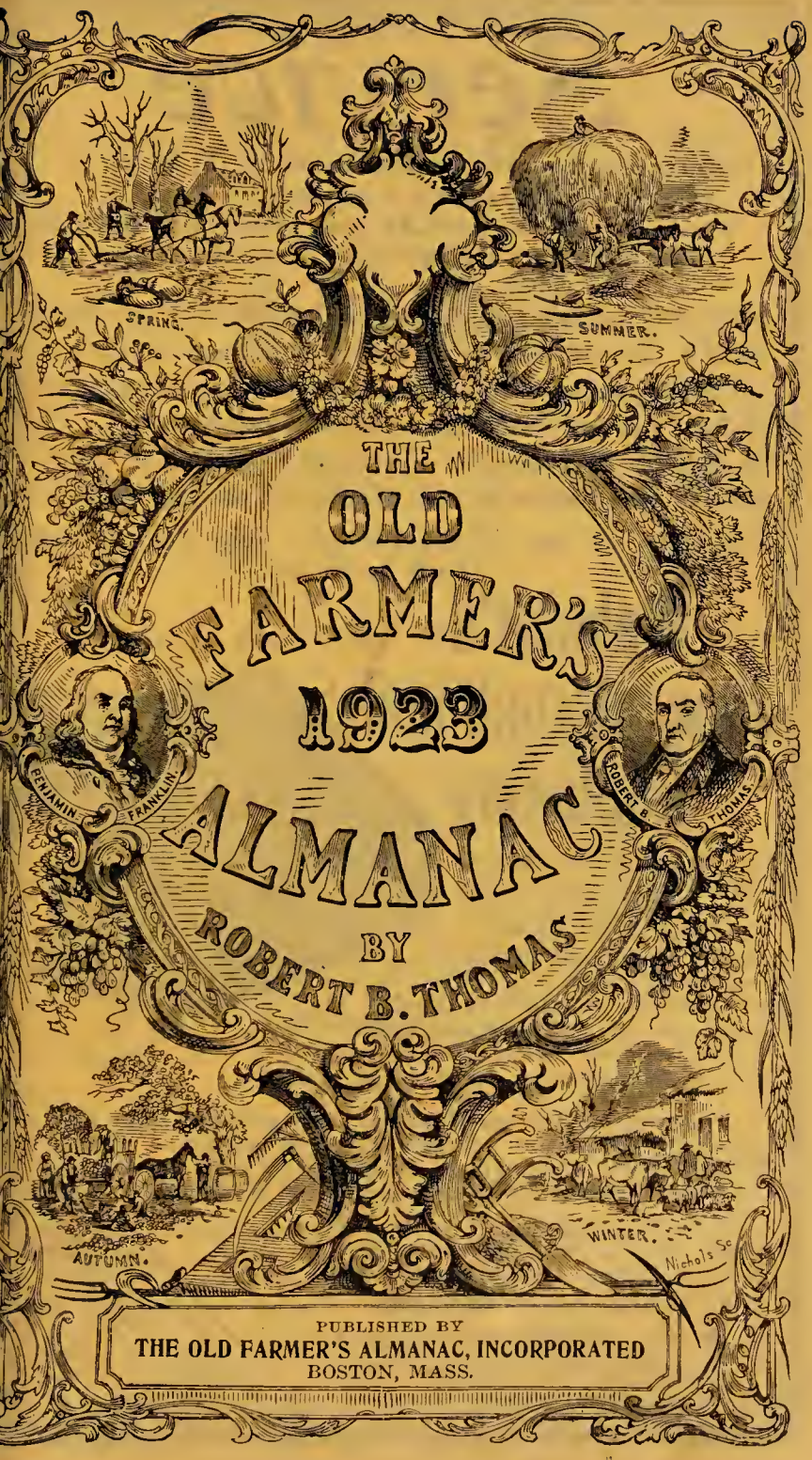

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I had six honest, serving men;
(They taught me all I knew):
Their names are WHAT and WHY and WHEN,
and HOW and WHERE and WHO." (KIPLING)

WHAT was the Declaration of London? WHAT are consols?
WHY does the date for Easter vary from year to year?
WHEN and by whom was the great pyramid of Cheops built?
HOW can you distinguish a malarial mosquito?
WHERE is Canberra? Zeebrugge? Delhi?
WHO was Mother Bunch? Millboy of the Slashes?

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FOR THE YEAR OF OUR LORD

1923

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And yet this happiness below,
(Which all would gain, but few know how)
Is not to time or place confin'd,
'Tis seated only in the mind:
Let seasons vary as they will,
Contentment leaves us happy, still,
Makes life's vain dream pass smooth away,
And Life itself a NEW YEAR'S DAY.

PHILIP FRENEAU.

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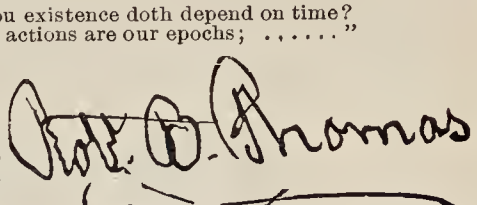
"Think'st thou existence doth depend on time?
It doth; but actions are our epochs; ....."

So again we say,

"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.	3 "	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 1923 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.
● ☽ ☾ ☾ The Moon.
☿ Mercury.
♀ Venus.
⊕ The Earth.
♂ Mars.
♃ Jupiter.
♄ Saturn.
♅ or ♁ Uranus.
♆ Neptune.
⚶ Vesta.
⚵ Juno.
⚴ Pallas.
⚳ Ceres.

Names and Characters of the Aspects.

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

Names and Characters of the Signs of the Zodiac.

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

Chronological Cycles for 1923.

Golden Number . . 5	Solar Cycle 28	Roman Indiction . . . 6
Epact 13	Dominical Letter . . G	Year of Julian **Period**, 6636

Movable Feasts and Fasts for 1923.

Septuagesima Sun.,	Jan. 28	Good Friday,	Mar. 30	Whit-Sunday,	**May 20**
Shrove Sunday,	Feb. 11	Easter Sunday,	April 1	Trinity Sunday,	" 27
Ash Wednesday,	" 14	Low Sunday,	" 8	Corpus Christi,	" 31
1st Sunday in Lent,	" 18	Rogation Sunday,	May 6	1st Sunday in Advent,	**Dec. 2**
Palm Sunday,	Mar. 25	Ascension Day,	" 10		

ECLIPSES FOR THE YEAR 1923.

In the year 1923 there will be four Eclipses, two of the Sun and two of the Moon.

I. A Partial Eclipse of the Moon, March 2, visible in New England. Moon enters penumbra, 8h. 13m. P.M.; Moon enters shadow, 9h. 28m. P.M.; middle of the Eclipse, 10h. 32m. P.M.; Moon leaves shadow, 11h. 36m. P.M.; Moon leaves penumbra, March 3, 0h. 51m. A.M. At the middle of the Eclipse three-eighths of the Moon's diameter will be obscured.

The beginning of the Eclipse will be visible generally in Western Asia, Europe, Africa, the Atlantic Ocean, South America. North America except in the extreme northwestern part, and the eastern part of the Pacific Ocean; the ending visible generally in Europe, Africa, except the eastern part, the Atlantic Ocean, North America, South America and the Eastern part of the Pacific Ocean.

II. An Annular Eclipse of the Sun, March 16, invisible in New England.

The Eclipse begins in South America, in longitude 56° 43′ west from Greenwich, and latitude 38° 5′ south, and ends in Africa in longitude 37° 31′ east from Greenwich, and latitude 2° 39′ south. It will be visible generally as a Partial Eclipse in the southern part of South America, the South Atlantic Ocean, the southern part of Africa, and the western part of the South Pacific.

The central line of Annulus begins near the coast of Chili, in longitude 76° 13′ west from Greenwich and latitude 50° 49′ south, runs easterly across Patagonia, over the Falkland Islands, northeasterly across the South Atlantic Ocean and southern Africa, and easterly across Madagascar to longitude 56° 40′ east from Greenwich, and latitude 15° 25′ south, in the Pacific Ocean, where it ends.

III. A Partial Eclipse of the Moon, August 26, partly visible in New England. Moon enters penumbra 3h. 13m. A.M.; Moon enters shadow 4h. 52m. A.M.; middle of the Eclipse 5h. 40m. A.M.; Moon leaves shadow, 6h. 27m. A.M.; Moon leaves penumbra 8h. 6m. A.M. At the middle of the Eclipse one-sixth of the Moon's diameter will be obscured. As the Moon sets at 5h. 7m. A.M. at Boston, but little of the Eclipse will be visible.

The beginning of the Eclipse will be visible generally in North America, except the extreme northeastern part, the western part of South America, the Pacific Ocean, Australia, except the extreme southwestern part, and the extreme northeastern part of Asia; the ending visible generally in North America except the northeastern part, the extreme northwestern part of South America, the Pacific Ocean, Australia, and the eastern part of Asia.

IV. A Total Eclipse of the Sun, September 10, visible in New England as a Partial Eclipse. At Boston the Eclipse begins at 3h. 44m. P.M.; greatest Eclipse at 4h. 36m. P.M. (0.42 of the Sun's diameter obscured); Eclipse ends at 5h. 25m. P.M.

The Eclipse will be visible generally as a Partial Eclipse over the North Pacific Ocean, extreme northeastern part of Asia, North America, Greenland, northern part of South America, and the western part of the Atlantic Ocean, beginning in longitude 171° 51′ east from Greenwich, and latitude 36° 51′ north, and ending in longitude 80° 31′ west from Greenwich, and latitude 2° 15′ north. The path of Totality begins near the Kamchatka Peninsula in longitude 154° 18′ east from Greenwich, and latitude 48° 16′ north, runs easterly and southeasterly across the Pacific Ocean to the Californian coast, passing over the islands of Santa Rosa, Santa Cruz, Santa Barbara, San Nicholas, Santa Catalina, and San Clemente and over San Diego, runs southeasterly across southern California, Mexico, passing over Tampico, across Yucatan, easterly across the Caribbean Sea, and ends in longitude 63° 51′ west from Greenwich and latitude 13° 43′ north.

THE SEASONS, 1923.

Winter	begins	1922,	December	22,	9h.	57m.	A.M.	— Sun enters	Capricornus,	♑
Spring	"	1923,	March	21,	10h.	29m.	A.M.	" "	Aries,	♈
Summer	"	"	June	22,	6h.	3m.	A.M.	" "	Cancer,	♋
Autumn	"	"	September	23,	9h.	4m.	A.M.	" "	Libra,	♎
Winter	"	"	December	22,	3h.	54m.	P.M.	" "	Capricornus,	♑
Spring	"	1924,	March	20,	4h.	20m.	P.M.	" "	Aries,	♈

Length	of	Winter,	1922–1923,	89	days,	0	hours,	32 minutes.
"	"	Spring,	1923,	92	"	19	"	34 "
"	"	Summer,	"	93	"	15	"	1 "
"	"	Autumn,	"	89	"	18	"	50 "
"	"	Winter,	1923-1924,	89	"	0	"	26 "

VENUS, MARS, JUPITER AND SATURN, 1923.

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	rises	3 54 A.M.	sets	9 51 P.M.	rises	2 41 A.M.	rises	0 36 A.M.
"	10th	"	3 46 A.M.	"	9 50 P.M.	"	2 13 A.M.	rises 0.3a.m.	11.59 p.m.
"	20th	"	3 46 A.M.	"	9 48 P.M.	"	1 40 A.M.	rises	11 21 P.M.
FEB'ARY	1st	rises	3 52 A.M.	sets	9 46 P.M.	rises	1 0 A.M.	rises	10 34 P.M.
"	10th	"	3 58 A.M.	"	9 44 P.M.	"	0 28 A.M.	"	9 58 P.M.
"	20th	"	4 4 A.M.	"	9 42 P.M.	"	11 48 P.M.	"	9 17 P.M.
MARCH	1st	rises	4 8 A.M.	sets	9 40 P.M.	rises	11 14 P.M.	rises	8 39 P.M.
"	10th	"	4 8 A.M.	"	9 38 P.M.	"	10 38 P.M.	"	8 1 P.M.
"	20th	"	4 6 A.M.	"	9 36 P.M.	"	9 57 P.M.	"	7 18 P.M.
APRIL	1st	rises	3 59 A.M.	sets	9 32 P.M.	rises	9 6 P.M.	rises	6 27 A.M.
"	10th	"	3 52 A.M.	"	9 29 P.M.	"	8 26 P.M.	sets	5 28 A.M.
"	20th	"	3 41 A.M.	"	9 25 P.M.	"	7 41 P.M.	"	4 47 A.M.
MAY	1st	rises	3 28 A.M.	sets	9 20 P.M.	rises	6 51 P.M.	sets	4 2 A.M.
"	10th	"	3 18 A.M.	"	9 14 P.M.	sets	4 30 A.M.	"	3 25 A.M.
"	20th	"	3 7 A.M.	"	9 6 P.M.	"	3 48 A.M.	"	2 45 A.M.
JUNE	1st	rises	2 56 A.M.	sets	8 55 P.M.	sets	2 57 A.M.	sets	1 56 A.M.
"	10th	"	2 50 A.M.	"	8 44 P.M.	"	2 19 A.M.	"	1 20 A.M.
"	20th	"	2 48 A.M.	"	8 31 P.M.	"	1 38 A.M.	"	0 41 A.M.
JULY	1st	rises	2 52 A.M.	sets	8 15 P.M.	sets	0 53 A.M.	sets	11 54 P.M.
"	10th	"	3 0 A.M.	"	7 59 P.M.	"	0 17 A.M.	"	11 19 P.M.
"	20th	"	3 14 A.M.	"	7 40 P.M.	"	11 35 P.M.	"	10 41 P.M.
AUGUST	1st	rises	3 38 A.M.	sets	7 16 P.M.	sets	10 49 P.M.	sets	9 55 P.M.
"	10th	"	3 59 A.M.	rises	4 41 A.M.	"	10 16 P.M.	"	9 21 P.M.
"	20th	"	4 24 A.M.	"	4 34 A.M.	"	9 39 P.M.	"	8 43 P.M.
SEPTEM'R	1st	rises	4 54 A.M.	rises	4 27 A.M.	sets	8 56 P.M.	sets	7 59 P.M.
"	10th	"	5 16 A.M.	"	4 21 A.M.	"	8 24 P.M.	"	7 25 P.M.
"	20th	sets	5 59 A.M.	"	4 15 A.M.	"	7 50 P.M.	"	6 49 P.M.
OCTOBER	1st	sets	5 45 P.M.	rises	4 8 A.M.	sets	7 12 P.M.	sets	6 9 P.M.
"	10th	"	5 35 P.M.	"	4 2 A.M.	"	6 42 P.M.	"	5 36 P.M.
"	20th	"	5 25 P.M.	"	3 55 A.M.	"	6 8 P.M.	rises	5 45 A.M.
NOVEM'R	1st	sets	5 17 P.M.	rises	3 47 A.M.	sets	5 29 P.M.	rises	5 5 A.M.
"	10th	"	5 15 P.M.	"	3 41 A.M.	"	4 59 P.M.	"	4 35 A.M.
"	20th	"	5 18 P.M.	"	3 34 A.M.	"	4 24 P.M.	"	4 2 A.M.
DECEM'R	1st	sets	5 30 P.M.	rises	3 27 A.M.	rises	6 18 A.M.	rises	3 24 A.M.
"	10th	"	5 44 P.M.	"	3 22 A.M.	"	5 52 A.M.	"	2 54 A.M.
"	20th	"	6 5 P.M.	"	3 15 A.M.	"	5 24 A.M.	"	2 19 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 86	+ 8.6
Edgartown, Mass.	+ 0 39	— 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
New Bedford, Mass.	— 3 31	— 5.6
Newburyport, Mass.	+ 0 11	— 1.8
New Haven, Conn.	— 0 12	— 8.6
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 8
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	— 2.8
Stonington, Conn.	— 2 25	— 6.9
Viney'd Haven, Mass.	+ 0 18	— 7.9
West Falmouth	— 3 39	— 5.5
Wood 'sHole, 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. 3	7	22 26	13	21 34	19	20 27	25	19 5
	2	22 58	8	22 19	14	21 24	20	20 14	26	18 51
	3	22 53	9	22 11	15	21 13	21	20 1	27	18 35
	4	22 47	10	22 2	16	21 2	22	19 48	28	18 20
	5	22 40	11	21 53	17	20 51	23	19 34	29	18 4
	6	22 34	12	21 44	18	20 39	24	19 20	30	17 48

○ Full Moon, 2d day, 9h. 33m., evening, E.
☾ Last Quarter, 9th day, 7h. 55m., evening, E.
● New Moon, 16th day, 9h. 41m., evening, W.
☽ First Quarter, 24th day, 10h. 59m., 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	☽ Sets. h. m.	☽ Souths. h. m.
1	1	M.	7 13	4 22	9 9	0 3	12	14	10	10½	arm	5 28	10 57
2	2	Tu.	7 13	4 23	9 10	0 4	12	○	10¾	11¼	br.	rises	11 52
3	3	W.	7 13	4 24	9 11	0 5	11	16	11½	—	br.	5 26	morn
4	4	Th.	7 13	4 25	9 12	0 6	11	17	0	0	h'rt	6 30	0 47
5	5	Fr.	7 13	4 26	9 13	0 7	10	18	0¾	0¾	h'rt	7 38	1 42
6	6	Sa.	7 13	4 27	9 14	0 8	10	19	1½	1¾	bel.	8 47	2 36
7	7	♋	7 13	4 28	9 15	0 9	10	20	2¼	2½	bel.	9 56	3 29
8	8	M.	7 13	4 29	9 16	0 10	9	21	3	3½	bel.	11 6	4 21
9	9	Tu.	7 13	4 30	9 17	0 11	9	22	4	4¼	rei.	morn	5 12
10	10	W.	7 13	4 31	9 18	0 12	8	23	5	5¼	rei.	0 15	6 4
11	11	Th.	7 12	4 32	9 20	0 14	8	24	6	6¼	sec.	1 24	6 57
12	12	Fr.	7 12	4 33	9 21	0 15	8	25	7	7½	sec.	2 31	7 51
13	13	Sa.	7 12	4 34	9 22	0 16	7	26	8	8½	thi.	3 37	8 45
14	14	♋	7 11	4 36	9 25	0 19	7	27	9	9½	thi.	4 39	9 41
15	15	M.	7 11	4 37	9 26	0 20	6	28	9¾	10¼	kn.	5 36	10 36
16	16	Tu.	7 10	4 38	9 28	0 22	6	●	10¾	11¼	kn.	sets	11 29
17	17	W.	7 10	4 39	9 29	0 23	6	1	11½	—	legs	5 34	0 21
18	18	Th.	7 9	4 40	9 31	0 25	5	2	0	0¼	legs	6 34	1 10
19	19	Fr.	7 9	4 41	9 32	0 26	5	3	0¾	1	legs	7 34	1 57
20	20	Sa.	7 8	4 43	9 35	0 29	5	4	1½	1¾	feet	8 33	2 42
21	21	♋	7 8	4 44	9 36	0 30	4	5	2	2¼	feet	9 30	3 25
22	22	M.	7 7	4 45	9 38	0 32	4	6	2¾	3	h'd	10 28	4 8
23	23	Tu.	7 6	4 46	9 40	0 34	4	7	3½	3¾	h'd	11 24	4 50
24	24	W.	7 6	4 48	9 42	0 36	4	8	4¼	4¾	h'd	morn	5 33
25	25	Th.	7 5	4 49	9 44	0 38	3	9	5¼	5½	n'k	0 21	6 18
26	26	Fr.	7 4	4 50	9 46	0 40	3	10	6	6½	n'k	1 19	7 4
27	27	Sa.	7 3	4 51	9 48	0 42	3	11	6¾	7¼	arm	2 16	7 53
28	28	♋	7 2	4 53	9 51	0 45	3	12	7¾	8¼	arm	3 13	8 44
29	29	M.	7 1	4 54	9 53	0 47	3	13	8½	9	br.	4 9	9 37
30	30	Tu.	7 0	4 55	9 55	0 49	2	14	9½	10	br.	5 3	10 33
31	31	W.	6 59	4 57	9 58	0 52	2	15	10¼	10¾	br.	5 53	11 29

JANUARY hath 31 days. [1923

So, in those winters of the soul,
By bitter blasts and drear
O'erswept from Memory's frozen pole,
Will sunny days appear.

JOHN GREENLEAF WHITTIER.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.
1	M.	Circumcision. ☾ runs high Tides 9.8 8.7
2	Tu.	⊕ in Peri. Tides 10.1 8.9
3	W.	Battle of Princeton, 1777. Tides 10.4 —
4	Th.	Tides 9.2 10.6
5	Fr.	☌ ♆ ☾. Tides 9.4 10.6
6	Sa.	Epiphany. ☿ in Peri. Tides 9.6 10.5
7	G	1st Sun. after Epiph. 9.7 10.3
8	M.	☾ in Peri. ☾ on Eq. 9.8 9.9
9	Tu.	☌ ♄ ☾. Tides 9.8 9.6 *Snow*
10	W.	□ ♄ ☉. Tides 9.8 9.2 *followed*
11	Th.	☌ ♃ ☾. Tides 9.9 8.9 *by*
12	Fr.	Tides 10.0 8.8 *colder.*
13	Sa.	☿ Gr. El. E. ☌ ☿ ☾. Tides 10.2 8.8
14	G	2d S. af. Epiph. ☾ runs low. 10.4 9.0
15	M.	☿ in ♌. Tides 10.5 9.1
16	Tu.	Tides 10.6 9.2 *Northwest winds.*
17	W.	Benjamin Franklin born, 1706. Tides 10.5 —
18	Th.	☌ ☿ ☾. Tides 9.3 10.3
19	Fr.	☿ Stat. Tides 9.2 10.1
20	Sa.	☿ in Peri. ☌ ♅ ☾. Tides 9.1 9.7
21	G	3d Sun. after Epiphany. 9.0 9.3
22	M.	☌ ☌ ☾. ☾ on Eq. 8.9 8.9 *Continued*
23	Tu.	☾ in Apo. Tides 8.7 8.5
24	W.	Tides 8.6 8.2 *cold.*
25	Th.	Conversion of St. Paul. Tides 8.5 8.0
26	Fr.	Tides 8.5 7.8 *Changeable*
27	Sa.	28th. ☿ Gr. Hel. Lat. N. Tides 8.7 7.8 *and*
28	G	Septuagesima Sun. Tides 8.9 8.0
29	M.	☾ runs high 9.3 8.3 28th. ☌ ☿ ☉ inf.
30	Tu.	☿ Gr. Hel. Lat. N. ♄ stat. 9.7 8.7 *milder.*
31	W.	Tides 10.2 9.1

Farmer's Calendar.

Whether we keep our good New Year's resolutions or not, this month is seasonable to review the past and plan for the future.

There are three main reasons why every farm boy should go to college. The first is that the boy gets a special training for his life work. This is a day of specialization, when to be successful one must know how to do at least *one thing well.* Competition is very keen today in all lines of industry, and the farmer who is making the most success is the one who has had the best training and who knows how to put brains into his work.

The second reason is because a college training will broaden him out. It will enable him to get a proper perspective of ideas and situations — to see things around the corner as it were — just as our soldiers in the trenches saw their enemies by means of a periscope. While a young man may be successful without a college training, who knows how much more successful he might have been with it?

The third reason is that it pays financially. In other words, a college training increases one's earning capacity and is a good investment. A recent investigation conducted by the U.S. Department of Agriculture shows that the labor income of farmers having a college education is $495 per year greater than that of farmers having only a common school education.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	17s. 15	7	15 28	13	13 32	19	11 28	25	9 17
	2	16 58	8	15 9	14	13 12	20	11 6	26	8 55
	3	16 40	9	14 50	15	12 51	21	10 45	27	8 32
	4	16 23	10	14 31	16	12 31	22	10 23	28	8 10
	5	16 5	11	14 12	17	12 10	23	10 1		
	6	15 47	12	13 52	18	11 49	24	9 39		

○ Full Moon, 1st day, 10h. 53m., morning, W.
☾ Last Quarter, 8th day, 4h., 16m., morning, E.
● New Moon, 15th day, 2h. 7m., evening, W.
☽ First Quarter, 23d day, 7h. 6m., 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 Past. m.	Moon's Age.	Full Sea, Boston, Morn h.	Full Sea, Boston, Even h.	☽'s Place	☽ Rises. h. m.	☽ Souths. h. m.
32	1	Th.	6 58	4 58	10 0	0 54	2	○	11	11½	h'rt	rises	morn
33	2	Fr.	6 57	4 59	10 2	0 56	2	17	11¾	—	h'rt	6 30	0 24
34	3	Sa.	6 56	5 1	10 5	0 59	2	18	0¼	0½	bel.	7 41	1 20
35	4	S.	6 55	5 2	10 7	1 1	2	19	1	1¼	bel.	8 53	2 14
36	5	M.	6 54	5 3	10 9	1 3	2	20	1¾	2¼	rei.	10 4	3 7
37	6	Tu.	6 53	5 4	10 11	1 5	2	21	2¾	3	rei.	11 15	4 0
38	7	W.	6 52	5 6	10 14	1 8	1	22	3½	4	sec.	morn	4 54
39	8	Th.	6 51	5 7	10 16	1 10	1	23	4½	5	sec	0 24	5 47
40	9	Fr.	6 49	5 8	10 19	1 13	1	24	5½	6	thi.	1 29	6 41
41	10	Sa.	6 48	5 10	10 22	1 16	1	25	6½	7¼	thi.	2 32	7 36
42	11	S.	6 47	5 11	10 24	1 18	1	26	7½	8¼	kn.	3 30	8 30
43	12	M.	6 46	5 12	10 26	1 20	1	27	8½	9¼	kn.	4 22	9 23
44	13	Tu.	6 44	5 14	10 30	1 24	1	28	9½	10	kn.	5 8	10 14
45	14	W.	6 43	5 15	10 32	1 26	1	29	10½	11	legs	5 49	11 4
46	15	Th.	6 42	5 16	10 34	1 28	1	●	11¼	11½	legs	sets	11 51
47	16	Fr.	6 40	5 17	10 37	1 31	1	1	11¾	—	feet	6 21	0 37
48	17	Sa.	6 39	5 19	10 40	1 34	2	2	0¼	0½	feet	7 20	1 21
49	18	S.	6 37	5 20	10 43	1 37	2	3	1	1¼	h'd	8 17	2 4
50	19	M.	6 36	5 21	10 45	1 39	2	4	1½	1¾	h'd	9 14	2 46
51	20	Tu.	6 35	5 23	10 48	1 42	2	5	2¼	2½	h'd	10 10	3 29
52	21	W.	6 33	5 24	10 51	1 45	2	6	3	3¼	n'k	11 7	4 12
53	22	Th.	6 32	5 25	10 53	1 47	2	7	3¾	4	n'k	morn	4 57
54	23	Fr.	6 30	5 26	10 56	1 50	2	8	4½	5	arm	0 4	5 44
55	24	Sa.	6 29	5 28	10 59	1 53	2	9	5¼	5¾	arm	1 0	6 33
56	25	S.	6 27	5 29	11 2	1 56	2	10	6¼	6¾	arm	1 55	7 24
57	26	M.	6 25	5 30	11 5	1 59	3	11	7	7¾	br.	2 49	8 17
58	27	Tu.	6 24	5 31	11 7	2 1	3	12	8	8½	br.	3 39	9 12
59	28	W.	6 22	5 32	11 10	2 4	3	13	8¾	9½	h'rt	4 27	10 7

FEBRUARY hath 28 days. [1923

Thou hast thy beauties: sterner ones, I own,
Than those of thy precursors; yet to thee
Belong the charms of solemn majesty
And naked grandeur. Awful is the tone
Of thy tempestuous nights, when clouds are blown
By hurrying winds across the troubled sky.

BERNARD BARTON.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Th.	♂ ☿ ☾. Tides {10.6 / 9.6	In this month usually occur days when fruit trees may be pruned without discomfort. The work accomplished early will relieve the later more crowded months. It is most important in pruning to cut close and smoothly. A stub prevents healing, and decay will begin sooner or later where one is left. Have you one of the modern pruning saws with narrow blade which may be turned to cut at various angles independently of the handle? These permit close work in many places where such work would be impossible with the ordinary type of saw. You should not forget to paint all the larger cut surfaces.
2	Fr.	Pur. of V. Mary. Candlemas. Tides {10.9 / —	
3	Sa.	4th. ☾ on Eq. Tides {10.0 / 11.0	
4	☩	Sexa. Sun. ☿ Gr. el. W. ☾ in Peri. {10.3 / 10.9	
5	M.	Tides {10.4 / 10.6 *Unsettled,*	
6	Tu.	♂ ♄ ☾. ♂ ☿ ☉. {10.4 / 10.2 *perhaps*	
7	W.	□ ♃ ☉. Tides {10.3 / 9.6 *rain.*	
8	Th.	♂ ♃ ☾. Tides {10.1 / 9.1	
9	Fr.	☿ stat. U. S. Weather Bureau established, 1870. {9.9 / 9.8	
10	Sa.	Tides {9.8 / 8.5	
11	☩	Quinq. Su. ♂ ♀ ☾. ☾ runs low {9.8 / 8.5	
12	M.	Lincoln Day. Tides {9.8 / 8.6	
13	Tu.	Shrove Tue. ♂ in ♌ ♂ ☿ ☾ {9.9 / 8.8	
14	W.	Ash Wednesday. St. Valentine. {10.0 / 9.0	
15	Th.	Battleship Maine blown up, 1898. Tides {10.0 / 9.1 *Cold,*	
16	Fr.	♂ ♅ ☾. Tides {9.9 / —	
17	Sa.	Tides {9.2 / 9.8 *raw winds.*	
18	☩	1st Sunday in Lent. ☾ on Eq. {9.2 / 9.5	
19	M.	Tides {9.2 / 9.3 *Grows warmer,*	
20	Tu.	♂ ♂ ☾ ☾ in Apo. Tides {9.1 / 9.0	
21	W.	Tides {8.9 / 8.6 *snow or rain.*	
22	Th.	WASHINGTON born, 1732. Tides {8.8 / 8.3	
23	Fr.	☿ Gr. elong. West ☿ in ♒. {8.6 / 8.0 *A few*	
24	Sa.	St. Matthias. Tides {8.6 / 7.8 *mild days.*	
25	☩	2d S. in Lent. ☾ runs high. Tides {8.7 / 7.8	
26	M.	Napoleon escapes from Elba, 1815. Tides {8.9 / 8.0	
27	Tu.	Henry W. Longfellow born, 1807. Tides {9.8 / 8.4	
28	W.	Tides {9.7 / 8.9	

In planning for next season be guided by the results of the last. You doubtless had some failures. If you are not certain as to the causes, you should consult the specialists of your Agricultural College.

1923] MARCH, THIRD MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
	1	7s.	47	7	5	29	13	3	8	19	0	46	25	1	36
	2	7	24	8	5	5	14	2	44	20	0s.	22	26	2	0
	3	7	1	9	4	42	15	2	21	21	0N.	1	27	2	23
	4	6	38	10	4	19	16	1	57	22	0	25	28	2	47
	5	6	15	11	3	55	17	1	33	23	0	49	29	3	10
	6	5	52	12	3	32	18	1	10	24	1	13	30	3	33

○ Full Moon, 2d day, 10h. 24m., evening, E.

☾ Last Quarter, 9th day, 1h. 31m., evening, W.

● New Moon, 17th day, 7h. 51m., morning, E.

☽ First Quarter, 25th day, 11h. 42m., 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.	Even h.	☽'s Place	☽ Sets. h	m.	☽ Souths. h.	m.
60	1	Th.	6	21	5	34	11	13	2	7	3	14	9¾	10¼	h'rt	5	11	11	3
61	2	Fr.	6	19	5	35	11	16	2	10	3	○	10½	11	bel.	rises		11	59
62	3	Sa.	6	18	5	36	11	18	2	12	4	16	11½	11¾	bel.	6	31	morn	
63	4	S.	6	16	5	37	11	21	2	15	4	17	—	0¼	rei.	7	45	0	54
64	5	M.	6	14	5	38	11	24	2	18	4	18	0¾	1	rei.	8	59	1	50
65	6	Tu.	6	13	5	40	11	27	2	21	4	19	1½	2	sec.	10	11	2	45
66	7	W.	6	11	5	41	11	30	2	24	4	20	2¼	2¾	sec.	11	20	3	40
67	8	Th.	6	9	5	42	11	33	2	27	5	21	3¼	3¾	thi.	morn		4	36
68	9	Fr.	6	8	5	43	11	35	2	29	5	22	4½	4¾	thi.	0	25	5	31
69	10	Sa.	6	6	5	44	11	38	2	32	5	23	5¼	5¾	kn.	1	25	6	26
70	11	S.	6	4	5	46	11	42	2	36	5	24	6¼	6¾	kn.	2	19	7	20
71	12	M.	6	3	5	47	11	44	2	38	6	25	7¼	8	kn.	3	7	8	11
72	13	Tu.	6	1	5	48	11	47	2	41	6	26	8¼	9	legs	3	49	9	1
73	14	W.	5	59	5	49	11	50	2	44	6	27	9¼	9¾	legs	4	26	9	48
74	15	Th.	5	57	5	50	11	53	2	47	7	28	10	10½	feet	5	0	10	34
75	16	Fr.	5	56	5	51	11	55	2	49	7	29	10¾	11¼	feet	5	31	11	18
76	17	Sa.	5	54	5	53	11	59	2	53	7	●	11½	11¾	feet	sets		0	1
77	18	S.	5	52	5	54	12	2	2	56	7	1	—	0	h'd	7	6	0	43
78	19	M.	5	51	5	55	12	4	2	58	8	2	0½	0¾	h'd	8	3	1	26
79	20	Tu.	5	49	5	56	12	7	3	1	8	3	1	1½	n'k	8	59	2	9
80	21	W.	5	47	5	57	12	10	3	4	8	4	1¾	2	n'k	9	56	2	53
81	22	Th.	5	45	5	58	12	13	3	7	9	5	2¼	2¾	n'k	10	52	3	39
82	23	Fr.	5	44	5	59	12	15	3	9	9	6	3	3½	arm	11	46	4	26
83	24	Sa.	5	42	6	1	12	19	3	13	9	7	3¾	4¼	arm	morn		5	15
84	25	S.	5	40	6	2	12	22	3	16	9	8	4¾	5¼	br.	0	39	6	6
85	26	M.	5	38	6	3	12	25	3	19	10	9	5½	6¼	br.	1	30	6	58
86	27	Tu.	5	37	6	4	12	27	3	21	10	10	6½	7	h'rt	2	18	7	52
87	28	W.	5	35	6	5	12	30	3	24	10	11	7½	8	h'rt	3	2	8	46
88	29	Th.	5	33	6	6	12	33	3	27	11	12	8½	9	h'rt	3	43	9	41
89	30	Fr.	5	31	6	7	12	36	3	30	11	13	9¼	9¾	bel.	4	22	10	36
90	31	Sa.	5	30	6	9	12	39	3	33	11	14	10¼	10½	bel.	5	0	11	32

MARCH hath 31 days. [1923

Year in, year out, the fire of spring
Burns through its ashen covering,
Bursts up in flower and scent and song,
And drives the laggard March along.

PHILIP HENRY SAVAGE.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.
1	Th.	St. David. ♂ ☿ ☾. Tides {10.2 / 9.6
2	Fr.	☾ Par. ecl. vis. Tides {10.7 / 10.2
3	Sa.	Tides {11.0 / 10.7 *Blustering winds.*
4	C	3d S. Lent. ♂ ♅ ☾. ☾ in Peri. {— / 11.2
5	M.	☿ in Aph. ♂ ♄ ☾. ♌ stat. {11.0 / 11.1
6	Tu.	4th. ☾ on Eq. Tides {11.1 / 10.8 *A*
7	W.	♂ ♌ ☾. Tides {11.0 / 10.8 *bright sun,*
8	Th.	Tides {10.7 / 9.7 *but cold.*
9	Fr.	Battle of Merrimac and Monitor, 1862. Tides {10.3 / 9.1
10	Sa.	☾ runs low. Tides {9.9 / 8.7
11	C	4th Sun. in Lent. Tides {9.6 / 8.5
12	M.	Tides {9.4 / 8.5 Philippine Islands discovered, 1521.
13	Tu.	♂ ☿ ☾. Tides {9.4 / 8.6
14	W.	Tides {9.5 / 8.8
15	Th.	♅ Gr. Hel. Lat. S. ♂ ☿ ☾. Tides {9.5 / 9.0
16	Fr.	♂ ♅ ☾. Tides {9.6 / 9.2
17	Sa.	St. Patrick. ☉ Ann. Ecl. invis. ☾ on Eq. {9.6 / 9.4
18	C	5th Sunday in Lent. Tides {— / 9.5
19	M.	☾ in Apo. Tides {9.4 / 9.4 *Warmer*
20	Tu.	21st. ☉ ent. ♈. Spring begins. Tides {9.4 / 9.2
21	W.	St. Benedict. ♂ ☌ ☾. ♂ ☿ ♅. {9.3 / 9.0 *with*
22	Th.	Massasoit visits Plymouth Colony, 1621. Tides {9.2 / 8.7
23	Fr.	Tides {9.1 / 8.4 *snow or rain.*
24	Sa.	Queen Elizabeth died, 1603. Tides {8.9 / 8.1
25	C	Palm Su. Annun. or Lady Day. {8.8 / 8.0
26	M.	25th. ♀ in ♉. ☿ Gr. Hel. Lat. S. ☾ runs high. {8.8 / 8.0
27	Tu.	Tides {9.0 / 8.3 *A cold*
28	W.	♂ ☿ ☾. Tides {9.3 / 8.8 *storm*
29	Th.	Tides {9.8 / 9.5 *indicated.*
30	Fr.	Good Friday. Tides {10.2 / 10.2
31	Sa.	☾ on Eq. Tides {10.7 / 10.8

Farmer's Calendar.

Early this month, if not done before, all seeds needed on farm or in garden should be purchased. In selecting, remember that the very best seed obtainable is cheap at almost any price, while poor seed will cost you dear even if given to you—not indeed in original outlay, but in disappointment and loss in crop, which are much more serious.

Too frequently farmers and gardeners plant more largely than usual of crops that have sold for high prices the immediately preceding season. This almost always proves to have been a mistake, for so many are influenced by the same considerations that supply exceeds demand at good prices. The result is loss. The old farmer who said his success, which had been extraordinary, had been due principally to his practice of planting rather more largely than usual of crops which had been low the season before, exhibited great shrewdness. The better practice as a rule is to make a close study of soil, local climate and accessible markets, learn to understand the crops suited to these, and then after planning a good rotation including these to follow a fairly regular system. There are too many uncertainties in seasonal climates and crop results in this great country of ours to make chasing the market much more than a gamble.

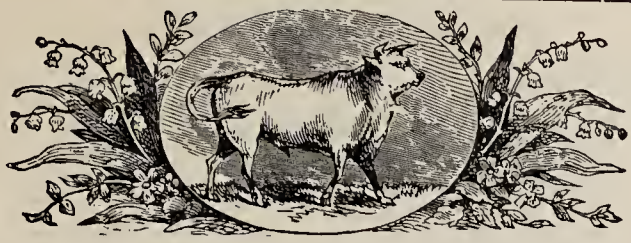
ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	4N. 20	7	6 37	13	8 51	19	10 59	25	13 1
	2	4 43	8	7 0	14	9 13	20	11 20	26	13 20
	3	5 6	9	7 22	15	9 34	21	11 40	27	13 40
	4	5 29	10	7 45	16	9 56	22	12 1	28	13 59
	5	5 52	11	8 7	17	10 17	23	12 21	29	14 18
	6	6 15	12	8 29	18	10 38	24	12 41	30	14 36

○ Full Moon, 1st day, 8h. 10m., morning, W.
☾ Last Quarter, 8th day, 0h. 23m., morning, E.
● New Moon, 16th day, 1h. 28m., morning, E.
☽ First Quarter, 24th day, 0h. 20m., morning, W.
○ Full Moon, 30th day, 4h. 30m., 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.
91	1	S.	5 28	6 10	12 42	3 36	12	○	11	11½	rei.	rises	morn
92	2	M.	5 26	6 11	12 45	3 39	12	16	—	0	rei.	7 48	0 28
93	3	Tu.	5 24	6 12	12 48	3 42	12	17	0¼	0¾	sec.	9 1	1 25
94	4	W.	5 23	6 13	12 50	3 44	13	18	1	1¾	sec.	10 11	2 23
95	5	Th.	5 21	6 14	12 53	3 47	13	19	2	2½	thi.	11 16	3 21
96	6	Fr.	5 19	6 15	12 56	3 50	13	20	3	3¼	thi.	morn	4 18
97	7	Sa.	5 18	6 16	12 58	3 52	13	21	3¾	4½	kn.	0 14	5 14
98	8	S.	5 16	6 17	13 1	3 55	14	22	4¾	5½	kn.	1 4	6 7
99	9	M.	5 14	6 19	13 5	3 59	14	23	5¾	6½	legs	1 49	6 58
100	10	Tu.	5 13	6 20	13 7	4 1	14	24	6¾	7½	legs	2 28	7 46
101	11	W.	5 11	6 21	13 10	4 4	14	25	8	8½	feet	3 2	8 32
102	12	Th.	5 9	6 22	13 13	4 7	15	26	8¾	9¼	feet	3 34	9 17
103	13	Fr.	5 8	6 23	13 15	4 9	15	27	9½	10	feet	4 3	10 0
104	14	Sa.	5 6	6 24	13 18	4 12	15	28	10¼	10¾	h'd	4 32	10 42
105	15	S.	5 4	6 25	13 21	4 15	16	29	11	11¼	h'd	5 0	11 24
106	16	M.	5 3	6 27	13 24	4 18	16	●	11¾	—	n'k	sets	0 7
107	17	Tu.	5 1	6 28	13 27	4 21	16	1	0	0¼	n'k	7 50	0 51
108	18	W.	5 0	6 29	13 29	4 23	16	2	0½	1	n'k	8 46	1 36
109	19	Th.	4 58	6 30	13 32	4 26	16	3	1¼	1¾	arm	9 41	2 23
110	20	Fr.	4 56	6 31	13 35	4 29	17	4	1¾	2¼	arm	10 35	3 11
111	21	Sa.	4 55	6 32	13 37	4 31	17	5	2½	3	br.	11 26	4 1
112	22	S.	4 53	6 33	13 40	4 34	17	6	3¼	3¾	br.	morn	4 52
113	23	M.	4 52	6 34	13 42	4 36	17	7	4	4¾	br.	0 14	5 43
114	24	Tu.	4 50	6 35	13 45	4 39	18	8	5	5½	h'rt	0 58	6 35
115	25	W.	4 49	6 37	13 48	4 42	18	9	6	6½	h'rt	1 38	7 28
116	26	Th.	4 47	6 38	13 51	4 45	18	10	7	7½	bel.	2 17	8 21
117	27	Fr.	4 46	6 39	13 53	4 47	18	11	8	8½	bel.	2 54	9 15
118	28	Sa.	4 44	6 40	13 56	4 50	18	12	9	9¼	rei.	3 30	10 10
119	29	S.	4 43	6 41	13 58	4 52	18	13	9¾	10¼	rei.	4 7	11 6
120	30	M.	4 42	6 42	14 0	4 54	18	○	10¾	11	sec.	rises	morn

APRIL hath 30 days. [1923



Dreams of that day when from the south
Comes April, as at first she came,
To hold the bare twig to her mouth
And blow it into fragrant flame.

FRANK DEMPSTER SHERMAN.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, Etc.
1	G	Easter Sun. ☌ ♄ ☾. Tides 11.1 11.4
2	M.	1st. ☾ in Peri. Tides — 11.2 *Changeable*
3	Tu.	☌ ♅ ☾. Tides 11.6 11.1
4	W.	Tides 11.6 10.8 *with*
5	Th.	Mayflower leaves Plymouth, 1621 Tides 11.4 10.3
6	Fr.	☾ runs low. U.S. declared war *vs.* Germany, 1917. Tides 11.0 9.7
7	Sa.	☌ ♄ ☉. Tides 10.5 9.2 *rain.*
8	G	Low Sunday. ☌ ☿ ☉ Sup 9.9 8.8
9	M.	Surrender at Appomattox. 1865. Tides 9.5 8.6
10	Tu.	Tides 9.2 8.6
11	W.	Edward Everett born, 1794. Tides 9.1 8.8
12	Th.	☌ ♀ ☾. ☌ ♅ ☾. Tides 9.1 9.0
13	Fr.	☿ in ♌. Tides 9.2 9.2 *Colder,*
14	Sa.	☌ ♀ ♅. ☾ on Eq. 9.3 9.4 *northwest*
15	G	2d Su. af. Easter. ☾ in Apo. 9.8 9.6
16	M.	☌ ☿ ☾. Tides 9.3 — *winds.*
17	Tu.	Benj. Franklin died, 1790. Tides 9.7 9.3
18	W.	☿ in Peri. Tides 9.7 9.1
19	Th.	☌ ♂ ☾. PATRIOTS' DAY. Tides 9.6 9.0
20	Fr.	Tides 9.5 8.7
21	Sa.	☾ runs high. Tides 9.4 8.5 *Some snow*
22	G	3d. Sun. af. Easter. Tides 9.3 8.2
23	M.	St. George. Tides 9.2 8.8 *flurries.*
24	Tu.	Tides 9.1 8.5
25	W.	St. Mark. ☌ ♆ ☾. Tides 9.2 8.8
26	Th.	♆ stat. Tides 9.4 9.4 *A change*
27	Fr.	U. S. Grant born, 1822. Tides 9.8 10.0 *to warmer.*
28	Sa.	♀ in Aph. ☿ Gr. Hel. Lat. N. ☾ on Eq. 10.2 10.7
29	G	4th S. af. Easter. ☌ ♄ ☾. 10.5 11.3
30	M.	☌ ♅ ☾. ☾ in Peri. Tides 10.8 11.8

Farmer's Calendar.

Potatoes should be planted this month for an early crop, whether for garden or on the larger scale of the farm. Do not forget to disinfect the seed before it begins to sprout in storage. Corrosive sublimate—two ounces to fifteen gallons of water, and soaking an hour and a half to two hours—gives most satisfactory results. Remember this is a *poison* and allow no carelessness, but exact directions from your county agent or Agricultural College.

After soaking, spread seed in single layer or at most two deep in light room where they will be safe from freezing. Here they should remain some three or four weeks during which they turn green and start broad, tough green sprouts. Potatoes so treated are to be planted as early as the ground can be prepared and will come up in a surprisingly short time. Besides insuring much earlier maturity than if not green sprouted, this treatment reduces the labor of culture as the weeds do not get so much start before the crop shades the ground.

Labor needs should be carefully planned for and a fully adequate supply provided. This makes it possible to drive the work and not be driven by it. Timely culture reduces the cost of caring for crops and insures better ones.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	14N. 55	7	16 40	13	18 15	19	19 39	25	20 51
	2	15 13	8	16 56	14	18 30	20	19 52	26	21 2
	3	15 31	9	17 13	15	18 44	21	20 4	27	21 12
	4	15 48	10	17 29	16	18 58	22	20 17	28	21 22
	5	16 6	11	17 44	17	19 12	23	20 28	29	21 32
	6	16 23	12	18 0	18	19 26	24	20 40	30	21 41

☾ Last Quarter, 7th day, 1h. 18m., evening, W.
● New Moon, 15th day, 5h. 38m., evening, W.
☽ First Quarter, 23d day, 9h. 25m., morning, E.
○ Full Moon, 30th day, 0h. 7m., 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.
121	1	Tu.	4 40	6 43	14 3	4 57	19	15	11½	—	sec.	7 48	0 4
122	2	W.	4 39	6 44	14 5	4 59	19	16	0	0½	thi.	8 57	1 3
123	3	Th.	4 37	6 45	14 8	5 2	19	17	0¾	1¼	thi.	10 1	2 3
124	4	Fr.	4 36	6 47	14 11	5 5	19	18	1¾	2¼	kn.	10 57	3 1
125	5	Sa.	4 35	6 48	14 13	5 7	19	19	2½	3	kn.	11 46	3 58
126	6	S.	4 34	6 49	14 15	5 9	19	20	3½	4	legs	morn	4 52
127	7	M.	4 32	6 50	14 18	5 12	19	21	4½	5	legs	0 28	5 42
128	8	Tu.	4 31	6 51	14 20	5 14	19	22	5¼	6	legs	1 5	6 30
129	9	W.	4 30	6 52	14 22	5 16	19	23	6¼	7	feet	1 37	7 15
130	10	Th.	4 29	6 53	14 24	5 18	19	24	7¼	7¾	feet	2 7	7 58
131	11	Fr.	4 27	6 54	14 27	5 21	19	25	8¼	8¾	h'd	2 35	8 41
132	12	Sa.	4 26	6 55	14 29	5 23	19	26	9	9½	h'd	3 3	9 23
133	13	S.	4 25	6 56	14 31	5 25	20	27	9¾	10	h'd	3 31	10 6
134	14	M.	4 24	6 57	14 33	5 27	20	28	10½	10¾	n'k	4 1	10 49
135	15	Tu.	4 23	6 58	14 35	5 29	20	●	11¼	11½	n'k	sets	11 34
136	16	W.	4 22	7 0	14 38	5 32	20	1	11¾	—	arm	7 37	0 20
137	17	Th.	4 21	7 1	14 40	5 34	20	2	0	0½	arm	8 32	1 8
138	18	Fr.	4 20	7 2	14 42	5 36	19	3	0¾	1¼	arm	9 24	1 58
139	19	Sa.	4 19	7 3	14 44	5 38	19	4	1½	2	br.	10 12	2 49
140	20	S.	4 18	7 4	14 46	5 40	19	5	2	2¾	br.	10 57	3 40
141	21	M.	4 17	7 5	14 48	5 42	19	6	2¾	3½	h'rt	11 39	4 31
142	22	Tu.	4 17	7 6	14 49	5 43	19	7	3¾	4¼	h'rt	morn	5 22
143	23	W.	4 16	7 6	14 50	5 44	19	8	4½	5¼	bel.	0 17	6 14
144	24	Th.	4 15	7 7	14 52	5 46	19	9	5½	6	bel.	0 53	7 5
145	25	Fr.	4 14	7 8	14 54	5 48	19	10	6½	7	rei.	1 28	7 57
146	26	Sa.	4 13	7 9	14 56	5 50	19	11	7½	8	rei.	2 3	8 51
147	27	S.	4 13	7 10	14 57	5 51	19	12	8½	9	sec.	2 38	9 47
148	28	M.	4 12	7 11	14 59	5 53	19	13	9½	9¾	sec.	3 18	10 45
149	29	Tu.	4 11	7 12	15 1	5 55	19	14	10¼	10¾	thi.	4 1	11 44
150	30	W.	4 11	7 13	15 2	5 56	18	○	11¼	11½	thi.	rises	morn
151	31	Th.	4 10	7 14	15 4	5 58	18	16	—	0¼	thi.	8 43	0 44

MAY hath 31 days. [1923

O, then I might lay all my sorrows at rest,
And be calm as the first whispered zephyr of spring,
When it comes on its pinions of down from the west,
And shakes the soft fragrance of May from its wing.

JAMES GATES PERCIVAL.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Tu.	St. Philip & St. James. Tides 10.9 —	This month the live stock goes to pasture, and if not already seen to, fences should be put in order. Remember it is better, both for stock and for the pasture, provided overstocking is avoided, to turn animals into them before the grass has made too much growth. Top-dressing pastures is less common than it should be. A dressing with chemical fertilizers which help to bring in white clover will often prove profitable. Among them slag meal, potash salts and acid phosphate have given good results. Seek advice of your Agricultural College for instructions as to materials and quantities.
2	W.	Tides 11.9 10.8 *Occasional*	
3	Th.	Gov. Endicott died, 1665. Tides 11.8 10.5	
4	Fr.	☾ runs low. Tides 11.5 10.1	
5	Sa.	☌☿☉. ☿ Gr.Elong.E. 11.0 9.8	
6	☩	Rogation Sun. □♆☉. 10 4 9.3	
7	M.	Tides 9.8 9.0 *showers.*	
8	Tu.	Tides 9.4 8.8	
9	W.	Government moved to Washington, 1800. Tides 9.0 8.8	
10	Th.	Ascension Day. ♂☿☾. 8.8 8.9	
11	Fr.	☾ on Eq. ARBOR DAY in R. I. 8.8 9.1	
12	Sa.	♂♀☾. ☾in Apo. Tides 8.9 9.3	
13	☩	Sunday after Ascension. 9.0 9.6	
14	M.	Tides 9.0 9.7 *Cooler,*	
15	Tu.	Tides 9.1 9.9 *may be frosts.*	
16	W.	Tides 9.1 —	
17	Th.	♂☿☾. ☿ stat. ♂♂☾. 9.9 9.0	
18	Fr.	☾runs high. Tides 9.9 8.9	
19	Sa.	Tides 9.9 8.8	
20	☩	Whit Sunday. Tides 9.8 8.7	
21	M.	♀ Gr. Hel. Lat. S. Tides 9.6 8.7	
22	Tu.	☿ in ♉. ♂♆☾. Tides 9.5 8.8	
23	W.	Tides 9.4 9.0 *Warm southerly*	
24	Th.	Tides 9.4 9.4 *winds.*	
25	Fr.	☾ on Eq. Tides 9.5 9.9	
26	Sa.	♂♄☾. Tides 9.7 10.5	
27	☩	Trinity Sunday. Tides 9.9 11.0	
28	M.	♂☌☾. ♂☿☉ inf. ☾in Peri. 10.2 11.6	
29	Tu.	Tides 10.4 11.8 *Changeable*	
30	W.	MEMORIAL DAY. Tides 10.5 11.8 *weather.*	
31	Th.	Corpus Christi. ☾runs low. 10.4 —	Examine grape vines when well started and pinch or break off shoots which are neither fruiting nor so situated as to make canes which will carry buds for the next year's crop. Rose bugs, besides doing serious damage to roses, peonies and some other flowers, often feed on grape blossoms. For prevention spray thoroughly with poison just before bloom. For the small grower, one of the dry powdered combined Bordeaux and arsenate of lead used in accordance with directions furnished by the manufacturer will help. This insect, however, is more nearly immune to poisons than most, and in extreme cases it may be necessary to shake bugs into kerosene pans in the cool of the morning.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d.	m	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
	1	21	N.59	7	22	42	13	23	11	19	23	25	25	23	25
	2	22	7	8	22	48	14	23	14	20	23	26	26	23	23
	3	22	15	9	22	53	15	23	17	21	23	27	27	23	21
	4	22	22	10	22	58	16	23	20	22	23	27	28	23	19
	5	22	29	11	23	3	17	23	22	23	23	26	29	23	16
	6	22	36	12	23	7	18	23	24	24	23	26	30	23	13

☾ Last Quarter, 6th day, 4h. 19m., morning, E.
● New Moon, 14th day, 7h. 42m., morning, E.
☽ First Quarter, 21st day, 3h. 46m., evening, E.
○ Full Moon, 28th day, 8h. 4m., 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 Past. m.	Moon's Age.	Full Sea. Boston. Morn h.	Even h.	☽'s Place	☽ Rises. h.	m.	☽ Souths. h.	m.
152	1	Fr.	4	10	7	14	15	4	5	58	18	17	0½	1	kn.	9	37	1	43
153	2	Sa.	4	9	7	15	15	6	6	0	18	18	1¼	2	kn.	10	23	2	39
154	3	♋	4	9	7	16	15	7	6	1	18	19	2¼	2¾	legs	11	3	3	33
155	4	M.	4	8	7	17	15	9	6	3	18	20	3	3¾	legs	11	38	4	23
156	5	Tu.	4	8	7	17	15	9	6	3	18	21	4	4½	feet	morn		5	10
157	6	W.	4	8	7	18	15	10	6	4	17	22	4¾	5½	feet	0	10	5	55
158	7	Th.	4	7	7	19	15	12	6	6	17	23	5¾	6¼	h'd	0	39	6	38
159	8	Fr.	4	7	7	19	15	12	6	6	17	24	6¾	7¼	h'd	1	7	7	21
160	9	Sa.	4	7	7	20	15	13	6	7	17	25	7½	8	h'd	1	35	8	3
161	10	♋	4	6	7	20	15	14	6	8	17	26	8½	8¾	n'k.	2	4	8	46
162	11	M.	4	6	7	21	15	15	6	9	16	27	9¼	9½	n'k	2	35	9	30
163	12	Tu.	4	6	7	22	15	16	6	10	16	28	10	10¼	n'k	3	9	10	16
164	13	W.	4	6	7	22	15	16	6	10	16	29	10¾	11	arm	3	47	11	4
165	14	Th.	4	6	7	23	15	17	6	11	16	●	11½	11½	arm	sets		11	54
166	15	Fr.	4	6	7	23	15	17	6	11	16	1	—	0	br.	8	10	0	45
167	16	Sa.	4	6	7	23	15	17	6	11	15	2	0¼	0¾	br.	8	58	1	37
168	17	♋	4	6	7	24	15	18	6	12	15	3	1	1½	h'rt	9	40	2	28
169	18	M.	4	6	7	24	15	18	6	12	15	4	1¾	2¼	h'rt	10	20	3	20
170	19	Tu.	4	6	7	24	15	18	6	12	15	5	2½	3	h'rt	10	56	4	11
171	20	W.	4	6	7	25	15	19	6	13	15	6	3¼	4	bel.	11	31	5	2
172	21	Th.	4	6	7	25	15	19	Dec.		14	7	4¼	4¾	bel.	morn		5	53
173	22	Fr.	4	6	7	25	15	19	0	0	14	8	5¼	5¾	rei.	0	4	6	44
174	23	Sa.	4	7	7	25	15	18	0	1	14	9	6	6¾	rei.	0	39	7	37
175	24	♋	4	7	7	25	15	18	0	1	14	10	7¼	7½	sec.	1	15	8	32
176	25	M.	4	7	7	25	15	18	0	1	13	11	8¼	8½	sec.	1	55	9	29
177	26	Tu.	4	8	7	26	15	18	0	1	13	12	9¼	9½	thi.	2	40	10	27
178	27	W.	4	8	7	26	15	18	0	1	13	13	10	10½	thi.	3	30	11	26
179	28	Th.	4	8	7	26	15	18	0	1	13	○	11	11¼	kn.	rises		morn	
180	29	Fr.	4	9	7	26	15	17	0	2	13	15	11¾	—	kn.	8	15	0	24
181	30	Sa.	4	9	7	26	15	17	0	2	12	16	0¼	0¾	legs	8	58	1	20

JUNE hath 30 days. [1923

The birds come back to their last year's nest,
And the wild-rose nods in the lane;
And gold in the east, and red in the west,
The sun bestirs him again.

And all the pomp of the June is here —
The mirth and passion and song;
And young is the summer, and life is dear,
And the day is never too long. LOUISE CHANDLER MOULTON.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.
1	Fr.	Nicomede. ☿ in Aph. Tides {11.7 / 10.2
2	Sa.	Tides {11.3 / 9.9
3	☪	1st Su. after Trin. Tides {10.8 / 9.6
4	M.	Mexico declares war against U.S., 1845. Tides {10.2 / 9.3
5	Tu.	Tides {9.7 / 9.1
6	W.	♂ ☿ ☾. Tides {9.2 / 8.9
7	Th.	☾ on Equator. {8.8 / 8.9
8	Fr.	Tides {8.6 / 9.0
9	Sa.	□ ☿ ☉. ☾ in Apo. Tides {8.5 / 9.2
10	☪	2d Su. af. Trin. ☿ stat. {8.8 / 9.4
11	M.	St. Barnabas. Tides {8.8 / 9.8
12	Tu.	♂ ♀ ☾. ♂ ☿ ☾. {8.7 / 9.8
13	W.	Tides {8.9 / 10.1
14	Th.	National Flag adopted, 1777. Tides {8.9 / 10.1
15	Fr.	♂ ♂ ☾. ☾ runs high. {— / 9.0
16	Sa.	Tides {10.2 / 9.0 17th. Battle of Bunker Hill, 1775.
17	☪	3d Su. af. Trin. ♄ stat. {10.2 / 9.0
18	M.	♂ Ψ ☾. Tides {10.1 / 9.1
19	Tu.	Kearsarge sinks Alabama, 1864. Tides {10.0 / 9.2
20	W.	21st. ☾ on Eq. {9.8 / 9.4
21	Th.	♂ ☿ ♀. ☿ Gr. Hel. Lat. S. {9.6 / 9.6
22	Fr.	☉ ent. ♋. SUMMER BEGINS. ♂ ♄ ☾. {9.5 / 9.9
23	Sa.	☿ Gr. elong. W. ☿ stat. {9.4 / 10.2
24	☪	4th S. af. Trin. ♂ ♃ ☾. {9.4 / 10.6
25	M.	☾ in Perl. 24th. St. John, Baptist. {9.5 / 10.9
26	Tu.	Death of Gen. Custer, 1876. Tides {9.7 / 11.2
27	W.	Tides {9.8 / 11.4
28	Th.	☾ runs low. Tides {9.9 / 11.4
29	Fr.	St. Peter & St. Paul. {10.0 / —
30	Sa.	Tides {11.3 / 9.9

Farmer's Calendar.

One of the chief inconveniences of farm life, as well as one of the principal menaces to health, is the lack of proper sewage disposal, and with the approach of the hotter months this need becomes greater. The common privy and ordinary cesspool are old fashioned, offensive and dangerous; the dry-earth and chemical closets are better, but not very satisfactory. The best means yet devised for disposing of farm sewage is the septic tank.

This is simply a cesspool made air and water tight in which the fecal matter is converted into liquids and gasses by bacterial action. The usual size of tank for an ordinary family is one 6 feet long, 3 feet wide and 4 feet deep. The tanks may best be made of concrete. The wooden forms should be of 1½ inch or 2 inch plank. The bottom of the tank should be 4 inches thick and the walls 6 inches. The top may be made of two layers of plank with sheet iron between, or, better still, of reinforced concrete 5 inches thick, made in slabs 18 inches wide. The inlet should be of 4-inch pipe and 1½ feet below the top. The outlet should be of 3-inch pipe placed one foot from the top with an "L" cemented on to keep it submerged. The cover should be air-tight and provide a 12-inch gas space above the outlet.

A few hot days. Easterly winds and rain. Seasonable weather. Mild and clear.

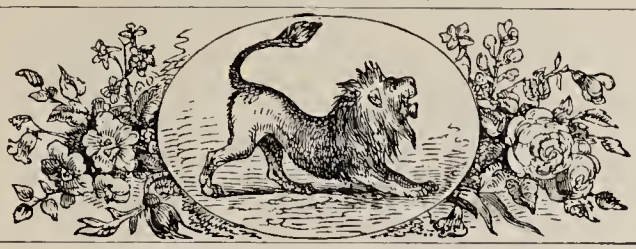
ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
	1	23N.	9	7	22	39	13	21	55	19	20	57	25	19	47
	2	23	5	8	22	33	14	21	46	20	20	47	26	19	34
	3	23	1	9	22	36	15	21	37	21	20	35	27	19	21
	4	22	56	10	22	19	16	21	28	22	20	24	28	19	7
	5	22	51	11	22	11	17	21	18	23	20	12	29	18	54
	6	22	45	12	22	3	18	21	8	24	20	0	30	18	39

☾ Last Quarter, 5th day, 8h. 56m., evening, E.
● New Moon, 13th day, 7h. 45m., evening, W.
☽ First Quarter, 20th day, 8h. 32m., evening, W.
○ Full Moon, 27th day, 5h. 33m., 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 Decr. h.	m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Even h.	☽'s Place	☽ Rises. h.	m.	☽ Souths. h.	m.
182	1	S.	4	10	7	26	15	16	0	3	12	17	1	1½	legs	9	36	2	13
183	2	M.	4	10	7	25	15	15	0	4	12	18	1¾	2¼	feet	10	10	3	2
184	3	Tu.	4	11	7	25	15	14	0	5	12	19	2½	3¼	feet	10	41	3	49
185	4	W.	4	11	7	25	15	14	0	5	12	20	3½	4	feet	11	10	4	34
186	5	Th.	4	12	7	25	15	13	0	6	12	21	4¼	4¾	h'd	11	37	5	17
187	6	Fr.	4	13	7	25	15	12	0	7	11	22	5	5½	h'd	morn		5	59
188	7	Sa.	4	13	7	24	15	11	0	8	11	23	6	6½	n'k	0	6	6	42
189	8	S.	4	14	7	24	15	10	0	9	11	24	6¾	7¼	n'k	0	36	7	26
190	9	M.	4	15	7	23	15	8	0	11	11	25	7⅝	8	n'k	1	8	8	11
191	10	Tu.	4	15	7	23	15	8	0	11	11	26	8½	8¾	a'm	1	45	8	58
192	11	W.	4	16	7	23	15	7	0	12	11	27	9¼	9¾	a'm	2	26	9	47
193	12	Th.	4	17	7	22	15	5	0	14	10	28	10¼	10½	br.	3	12	10	38
194	13	Fr.	4	18	7	22	15	4	0	15	10	●	11	11	br.	sets		11	30
195	14	Sa.	4	18	7	21	15	3	0	16	10	1	11¾	11¾	br.	7	39	0	23
196	15	S.	4	19	7	20	15	1	0	18	10	2	—	0¼	h'rt	8	20	1	15
197	16	M.	4	20	7	20	15	0	0	19	10	3	0½	1	h'rt	8	58	2	8
198	17	Tu.	4	21	7	19	14	58	0	21	10	4	1¼	1¾	bel.	9	34	2	59
199	18	W.	4	22	7	18	14	56	0	23	10	5	2	2¾	bel.	10	8	3	50
200	19	Th.	4	22	7	18	14	56	0	23	10	6	3	3½	rei.	10	42	4	42
201	20	Fr.	4	23	7	17	14	54	0	25	10	7	3¾	4½	rei.	11	17	5	33
202	21	Sa.	4	24	7	16	14	52	0	27	10	8	4¾	5¼	sec.	11	55	6	26
203	22	S.	4	25	7	15	14	50	0	29	10	9	5¾	6¼	sec.	morn		7	21
204	23	M.	4	26	7	14	14	48	0	31	9	10	6¾	7¼	thi.	0	36	8	17
205	24	Tu.	4	27	7	14	14	47	0	32	9	11	8	8¼	thi.	1	23	9	14
206	25	W.	4	28	7	13	14	45	0	34	9	12	8¾	9¼	kn.	2	14	10	11
207	26	Th.	4	29	7	12	14	43	0	36	9	13	9¾	10¼	kn.	3	11	11	7
208	27	Fr.	4	30	7	11	14	41	0	38	9	○	10¾	11	legs	rises		morn	
209	28	Sa.	4	31	7	10	14	39	0	40	9	15	11½	11¾	legs	7	33	0	1
210	29	S.	4	32	7	9	14	37	0	42	9	16	—	0¼	legs	8	8	0	52
211	30	M.	4	33	7	8	14	35	0	44	9	17	0½	1	feet	8	40	1	41
212	31	Tu.	4	34	7	6	14	32	0	47	10	18	1¼	1¾	feet	9	16	2	27

JULY hath 31 days. [1923



I love midsummer uplands, free
To the bold raids of breeze and bee,
Where, nested warm in yellowing grass,
I hear the swift-winged partridge pass,
With whir and boom of gusty flight,
Across the broad heath's treeless height.

PAUL HAMILTON HAYNE.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	☾	5th Sunday after Trin. {10.9 9.7	Fruit trees, particularly apples, very often set more fruit than they can possibly mature. Removing a portion of the crop while still green is called "thinning." The principal objects of thinning are to prevent the breaking of limbs, to secure fruit of better size, color and quality, to maintain the vigor of the trees, and to lessen disease and insect injury.
2	M.	Tides {10.5 9.5	*Grows*
3	Tu.	♂ ☿ ☾. Tides {10.0 9.3	*warmer.*
4	W.	INDEPENDENCE DAY. ♂ ☿ ♀. {9.5 9.1	
5	Th.	⊕ in Aph. ☾ on Eq. Tides {9.0 8.9	
6	Fr.	□ ♄ ☉. Tides {8.7 8.9	
7	Sa.	♌ stat. ☾ in Apo. {8.4 8.9	*A hot*
8	☾	6th Su. af. Trinity. {8.3 9.0	*spell*
9	M.	Tides {8.3 9.2	
10	Tu.	☿ in ♋. Tides {8.3 9.5	*followed*
11	W.	Tides {8.5 9.7	*by*
12	Th.	♂ ♀ ☾. ♂ ☿ ☾. ☾ runs high. {8.7 10.0	
13	Fr.	Tides {8.3 10.2	*warmer.*
14	Sa.	♂ ♂ ☾. {9.0 10.4 15th. St. Swithin.	
15	☾	7th Sunday af. Trinity. {— 9.8	
16	M.	♀ in ♋ 15th. ☿ in Peri. ♂ Ψ ☾. {10.5 9.5	
17	Tu.	Tides {10.5 9.6	*Good*
18	W.	John Paul Jones died, 1792. {10.2 9.8	*growing*
19	Th.	♂ ♄ ☾. ☾ on Eq. {10.1 9.9	*weather.*
20	Fr.	St. Margaret. Tides {9.8 10.0	
21	Sa.	♂ ♌ ☾. ☾ in Peri. Tides {9.5 10.2	
22	☾	8th S. af. Tri. St. Mary Magd. {9.3 10.2	
23	M.	Tides {9.1 10.4 22d. ♂ ☿ ☉ Sup.	
24	Tu.	25th. ☿ Gr. Hel. Lat. N. ♂ ☿ ♂. {9.1 10.6	
25	W.	St. James. ☾ runs low. DOG DAYS BEGIN. {9.3 10.8	
26	Th.	St. Anne. Tides {9.4 10.9	
27	Fr.	Atlantic Cable laid, 1866. Tides {9.5 10.9	
28	Sa.	Tides {9.6 10.7	*Cooler,*
29	☾	9th Sun. af. Trin. {— 9.7	*with*
30	M.	Tides {10.5 9.6	*rain.*
31	Tu.	♂ ☿ ☾. ♂ ☿ Ψ. Tides {10.1 9.4	

The proper time to thin is about the first of July or soon after the "June drop." The best method of thinning is to remove the apples by hand, being careful not to take off whole clusters. The apples should not be pulled off, but rather broken, or better yet cut with small shears made for the purpose. As much of the work as possible should be done from step ladders, care being taken not to throw heavy ladders into the trees.

Since some trees can carry more fruit than others, and as varieties also vary, no definite rule can be laid down as to how much to thin. Not more than one or two apples, however, should remain in a cluster, and these should average eight or ten inches apart on the limb.

The cost of thinning is not great; usually three or four hours' time is sufficient for an average size apple tree. Increased returns of from $1.00 to $7.00 per tree can be expected from the operation.

1923] AUGUST. Eighth Month.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
	1	18N.	10	7	16	35	13	14	51	19	12	58	25	10	58
	2	17	55	8	16	19	14	14	33	20	12	38	26	10	37
	3	17	40	9	16	2	15	14	14	21	12	19	27	10	16
	4	17	24	10	15	44	16	13	55	22	11	59	28	9	55
	5	17	8	11	15	27	17	13	37	23	11	39	29	9	34
	6	16	52	12	15	9	18	13	17	24	11	18	30	9	13

☾ Last Quarter, 4th day, 2h. 22m., evening, W.

● New Moon, 12th day, 6h. 17m.. morning, E.

☽ First Quarter, 19th day, 1h. 7m., morning, W.

○ Full Moon, 26th day, 5h. 29m., 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 Decr. h.	m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Even h.	☽'s Place	☽ Rises. h.	m.	☽ Souths. h.	m.
213	1	W.	4	35	7	5	14	30	0	49	10	19	2	2½	h'd	9	39	3	11
214	2	Th.	4	36	7	4	14	28	0	51	10	20	2¾	3¼	h'd	10	8	3	54
215	3	Fr.	4	37	7	3	14	26	0	53	10	21	3¾	4	h'd	10	37	4	37
216	4	Sa.	4	38	7	2	14	24	0	55	10	22	4½	5	n'k	11	8	5	20
217	5	S.	4	39	7	1	14	22	0	57	10	23	5¼	5¾	n'k	11	42	6	5
218	6	M.	4	40	6	59	14	19	1	0	10	24	6¼	6½	arm	morn		6	50
219	7	Tu.	4	41	6	58	14	17	1	2	10	25	7	7½	arm	0	21	7	38
220	8	W.	4	42	6	57	14	15	1	4	10	26	8	8¼	arm	1	4	8	28
221	9	Th.	4	43	6	56	14	13	1	6	10	27	8¾	9	br.	1	53	9	19
222	10	Fr.	4	44	6	54	14	10	1	9	10	28	9½	9¾	br.	2	48	10	12
223	11	Sa.	4	45	6	53	14	8	1	11	11	29	10¼	10¾	h'rt	3	49	11	6
224	12	S.	4	46	6	51	14	5	1	14	11	●	11¼	11½	h'rt	sets		11	59
225	13	M.	4	47	6	50	14	3	1	16	11	1	—	0	bel.	7	33	0	52
226	14	Tu.	4	48	6	49	14	1	1	18	11	2	0¼	0¾	bel.	8	9	1	45
227	15	W.	4	50	6	47	13	57	1	22	11	3	1	1½	rei.	8	44	2	37
228	16	Th.	4	51	6	46	13	55	1	24	11	4	1¾	2¼	rei.	9	19	3	30
229	17	Fr.	4	52	6	44	13	52	1	27	12	5	2¾	3	sec.	9	56	4	23
230	18	Sa.	4	53	6	43	13	50	1	29	12	6	3½	4	sec.	10	37	5	17
231	19	S.	4	54	6	41	13	47	1	32	12	7	4½	5	thi.	11	21	6	12
232	20	M.	4	55	6	40	13	45	1	34	12	8	5½	6	thi.	morn		7	8
233	21	Tu.	4	56	6	38	13	42	1	37	13	9	6½	7	thi.	0	10	8	4
234	22	W.	4	57	6	37	13	40	1	39	13	10	7¾	8	kn.	1	4	9	0
235	23	Th.	4	58	6	35	13	37	1	42	13	11	8¾	9	kn.	2	2	9	53
236	24	Fr.	4	59	6	34	13	35	1	44	13	12	9½	10	legs	3	3	10	45
237	25	Sa.	5	0	6	32	13	32	1	47	14	13	10½	10¾	legs	4	5	11	34
238	26	S.	5	1	6	30	13	29	1	50	14	○	11¼	11½	feet	rises		morn	
239	27	M.	5	2	6	28	13	26	1	53	14	15	—	0	feet	7	11	0	20
240	28	Tu	5	3	6	27	13	24	1	55	14	16	0¼	0½	h'd	7	40	1	5
241	29	W.	5	4	6	25	13	21	1	58	15	17	1	1¼	h'd	8	8	1	49
242	30	Th.	5	5	6	24	13	19	2	0	15	18	1½	2	h'd	8	38	2	32
243	31	Fr.	5	7	6	22	13	15	2	4	15	19	2¼	2¾	n'k	9	8	3	15

AUGUST hath 31 days. [1923

The linden, maple, and birch-tree bless,
With cooling shades, the banks I press
In the midsummer sultriness;
And under the thickest shade of all
Singeth a musical waterfall.

JOHN TOWNSEND TROWBRIDGE.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	W.	Lammas Day. ☾ on Eq. Tides 9.7 / 9.3	Dog Days and hydrophobia, "mad" dog, are sometimes associated, but they are not actually related. Canine madness is caused by what the scientist terms an ultramicroscopic virus. This virus is present in the saliva of a "mad" dog, and when a rabid dog bites a person or another animal, the saliva enters the wound, and the virus causes it to become infected. After the virus becomes absorbed, it primarily affects the nervous system.
2	Th.	Tides 9.3 / 9.1 *Variable,*	
3	Fr.	□ ☿ ☉. Tides 8.9 / 8.9	
4	Sa.	☾ in Apo. 8.5 / 8.8 *signs of rain.*	
5	☪	10th Sun. after Trinity. 8.2 / 8.8	
6	M.	Transfiguration. Tides 8.1 / 8.9	
7	Tu.	Tides 8.0 / 9.0	
8	W.	♂ ☌ ☉. ☾ runs high. Tides 8.1 / 9.3	
9	Th.	Tides 8.3 / 9.7	
10	Fr.	St. Lawrence. Tides 8.7 / 10.0	
11	Sa.	♂ ☿ ☉. ♂ ♀ ☾. 12th. ♂ ☌ ☾. 9.0 / 10.4	
12	☪	11th S. af. Trin. ♂ ☌ ☿. ♂ ☿ ☾. 9.4 / 10.6	
13	M.	♂ ☿ ☾. Tides —/9.8 *Warm and*	
14	Tu.	Tides 10.8 / 10.2 15th. ☾ on Eq.	
15	W.	Assum. of V. Mary. 10.8 / 10.4 *sultry.*	
16	Th.	♂ ♄ ☾. ☾ in Peri. Battle of Bennington, 1777. 10.6 / 10.5	
17	Fr.	☌ Gr. Hel. Lat. N. ♂ ♀ ☿. Tides 10.2 / 10.5	
18	Sa.	♂ ♃ ☾. ☿ in ♍. ♀ in Peri. 9.9 / 10.3	
19	☪	12th Sun. after Trinity. 9.5 / 10.2	
20	M.	Tides 9.1 / 10.1 *Continued*	
21	Tu.	☾ runs low. Tides 8.9 / 10.1 *warm,*	
22	W.	Yacht America wins at Cowes, 1851. Tides 8.9 / 10.2 *but*	
23	Th.	♂ ♀ ☌. 9.0 / 10.3 *cooler nights.*	
24	Fr.	St. Bartholomew. Tides 9.2 / 10.3	
25	Sa.	☾ Partial eclipse, visible. Tides 9.4 / 10.2	
26	☪	13th S. af. Trin. 9.5 / 10.2 *Look*	
27	M.	♂ ☿ ☾. Tides —/9.6 *for*	
28	Tu.	St. Augustine. ☿ in Aph. ☾ on Eq. 10.1 / 9.6	
29	W.	Beheading of St. John, Baptist. 9.8 / 9.5	
30	Th.	Tides 9.5 / 9.8 *a cold rain.*	
31	Fr.	☾ in Apo. Tides 9.2 / 9.2	

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
	1	8N.	30	7	6	17	13	4	1	19	1	42	25	0	38
	2	8	8	8	5	55	14	3	38	20	1	19	26	1	1
	3	7	46	9	5	32	15	3	15	21	0	56	27	1	25
	4	7	24	10	5	9	16	2	52	22	0	32	28	1	48
	5	7	2	11	4	47	17	2	29	23	0N.	9	29	2	11
	6	6	39	12	4	24	18	2	5	24	0S.	15	30	2	35

☾ Last Quarter, 3d day, 7h. 47m., morning, W.

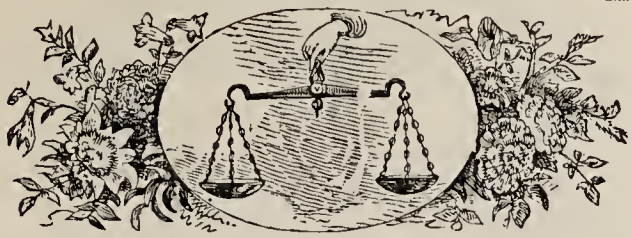
● New Moon, 10th day, 3h. 53m., evening, W.

☽ First Quarter, 17th day, 7h. 4m., morning, E.

○ Full Moon, 24th day, 8h. 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 Decr. h.	m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Even h.	☽'s Place	☽ Rises. h.	m.	☽ Souths. h.	m.
244	1	Sa.	5	8	6	20	13	12	2	7	16	20	3	3½	n'k	9	40	3	59
245	2	S.	5	9	6	19	13	10	2	9	16	21	3¾	4¼	arm	10	16	4	44
246	3	M.	5	10	6	17	13	7	2	12	16	22	4¾	5	arm	10	57	5	30
247	4	Tu.	5	11	6	15	13	4	2	15	17	23	5½	6	arm	11	43	6	18
248	5	W.	5	12	6	14	13	2	2	17	17	24	6½	6¾	br.	morn		7	8
249	6	Th.	5	13	6	12	12	59	2	20	17	25	7¼	7¾	br.	0	34	7	59
250	7	Fr.	5	14	6	10	12	56	2	23	18	26	8¼	8½	h'rt	1	32	8	52
251	8	Sa.	5	15	6	8	12	53	2	26	18	27	9	9¼	h'rt	2	35	9	45
252	9	S.	5	16	6	7	12	51	2	28	18	28	9¾	10¼	bel.	3	42	10	39
253	10	M.	5	17	6	5	12	48	2	31	19	●	10¾	11	bel.	sets		11	33
254	11	Tu.	5	18	6	3	12	45	2	34	19	1	11½	11¾	bel.	6	41	0	27
255	12	W.	5	19	6	1	12	42	2	37	19	2	—	0¼	rei.	7	17	1	21
256	13	Th.	5	20	6	0	12	40	2	39	20	3	0½	1	rei.	7	55	2	16
257	14	Fr.	5	21	5	58	12	37	2	42	20	4	1½	1¾	sec.	8	35	3	11
258	15	Sa.	5	22	5	56	12	34	2	45	20	5	2¼	2¾	sec.	9	19	4	7
259	16	S.	5	23	5	54	12	31	2	48	21	6	3¼	3¾	thi.	10	7	5	4
260	17	M.	5	25	5	53	12	28	2	51	21	7	4¼	4¾	thi.	11	0	6	0
261	18	Tu.	5	26	5	51	12	25	2	54	21	8	5¼	5¾	kn.	11	56	6	56
262	19	W.	5	27	5	49	12	22	2	57	22	9	6¼	6¾	kn.	morn		7	49
263	20	Th.	5	28	5	47	12	19	3	0	22	10	7½	7¾	legs	0	56	8	40
264	21	Fr.	5	29	5	46	12	17	3	2	22	11	8½	8¾	legs	1	56	9	29
265	22	Sa.	5	30	5	44	12	14	3	5	23	12	9¼	9¾	feet	2	57	10	16
266	23	S.	5	31	5	42	12	11	3	8	23	13	10	10½	feet	3	58	11	1
267	24	M.	5	32	5	40	12	8	3	11	23	○	10¾	11¼	feet	rises		11	45
268	25	Tu.	5	33	5	38	12	5	3	14	24	15	11½	11¾	h'd	6	10	morn	
269	26	W.	5	34	5	37	12	3	3	16	24	16	—	0	h'd	6	38	0	28
270	27	Th.	5	35	5	35	12	0	3	19	25	17	0½	0¾	n'k	7	8	1	11
271	28	Fr.	5	36	5	33	11	57	3	22	25	18	1¼	1½	n'k	7	40	1	55
272	29	Sa.	5	37	5	31	11	54	3	25	25	19	1¾	2	n'k	8	14	2	39
273	30	S.	5	39	5	30	11	51	3	28	26	20	2½	2¾	arm	8	53	3	25

SEPTEMBER hath 30 days. [1923



In brisk wind of September
The heavy-headed fruits
Shake upon their bending boughs
And drop from the shoots;
Some glow golden in the sun,
Some show green and streaked
Some set forth a purple bloom,
Some blush rosy-cheeked. CHRISTINA G. ROSSETTI.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Sa.	2nd. ☿ Gr. Elong. E. Tides {8.8 9.0 *Clear*	School is about to begin. What is your attitude? Do you think it is a privilege or an unpleasant task for one to attend school? If the latter, you may be placing upon some one's shoulder a burden which will impede progress. It is the duty of both parents and teachers to implant and nourish in the fertile minds of children a thorough appreciation of our public schools.
2	☪	14th S. af. Trinity. {8.5 8.8 *and*	
3	M.	LABOR DAY. Tides {8.2 8.7 *cooler.*	
4	Tu.	Tides {8.0 8.7	
5	W.	DOG DAYS END. ☾ runs high. Tides {7.8 8.9	
6	Th.	Lafayette born, 1757. Tides {8.1 9.2	
7	Fr.	Tides {8.4 9.6	
8	Sa.	Nativity of Virgin Mary. ♂ ☌ ☾. {8.9 10.0	
9	☪	15th S. af. Trin. ☽ ☌ ☉. {9.5 10.5	
10	M.	♂ ♀ ☉. Sup. 9th, ♀ Gr. Hel. Lat. N. ♂ ♂ ☾. {10.0 10.8	
11	Tu.	☾ on Eq. 10th. ☉ Tot. Ecl. par. vis. ♂ ♀ ☾. {10.5 11.0	
12	W.	♂ ☿ ☾. ♂ ♄ ☾. {— 10.9 *Grows*	
13	Th.	Tides {11.0 11.1 12th. ☾ in Peri.	
14	Fr.	♂ ☄ ☾. Tides {10.8 11.1 *warm*	
15	Sa.	☿ stat. Tides {10.4 10.9	
16	☪	16th S. af. Trin. {9.9 10.6 *again.*	
17	M.	☿ Gr. Hel. Lat. S. Tides {9.4 10.2	
18	Tu.	☾ runs low. Tides {9.0 9.9	
19	W.	Washington's "Farewell Address," 1796. Tides {8.8 9.8	
20	Th.	Tides {8.8 9.7 *High winds*	
21	Fr.	St. Matthew. Tides {9.0 9.8 22nd. Tides {9.2 9.8	
22	Sa.	♂ in Aph. 23d. ☉ enters ♎. AUTUMN BEGINS.	
23	☪	17th S. af. Trin. ♂ ☌ ☾. {9.4 9.8	
24	M.	Tides {9.6 9.8 *with rain.*	
25	Tu.	☾ on Eq. Tides {9.7 9.7	
26	W.	♂ ☿ ♀ Tides {— 9.7	
27	Th.	Tides {9.5 9.6 *Colder, with*	
28	Fr.	♂ ☿ ☉ Inf. ☾ in Apo. {9.3 9.5 *frosts in*	
29	Sa.	St. Michael and All Angels. {9.0 9.3 *low*	
30	☪	18th S. a. T. St. Jerome. {8.7 9.1 *places.*	

"So many useless things are taught in our schools," is a remark too frequently made before children. The wisdom of men, who have devoted long and useful lives to education, should not be questioned in a manner which may undermine the confidence and inspiration of children. The advisability of permitting college students to arrange their courses of study has been a subject of great difference of opinion.

Many children "detest English and composition writing," and many college teachers severely criticise the manner in which the majority of college students speak and write English, the language of our country. Are these facts related to each other? Parents and teachers, teach correct English. Children, make every possible effort to speak and to write correct English. Abraham Lincoln did not have such privileges as you have, but his usage of English is regarded as a model.

1923] OCTOBER, TENTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.

Days.	d.	m.	Days	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
1	2s.	58	7	5	17	13	7	34	19	9	47	25	11	55
2	3	21	8	5	40	14	7	56	20	10	9	26	12	16
3	3	45	9	6	3	15	8	19	21	10	30	27	12	36
4	4	8	10	6	26	16	8	41	22	10	52	28	12	56
5	4	31	11	6	49	17	9	3	23	11	13	29	13	16
6	4	54	12	7	11	18	9	25	24	11	34	30	13	36

☾ Last Quarter, 3d day, 0h. 29m., morning, E.
● New Moon, 10th day, 1h. 6m., morning, E.
☽ First Quarter, 16th day, 3h. 54m., evening, E.
○ Full Moon, 24th day, 1h. 26m., 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 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.
274	1	M.	5 40	5 28	11 48	3 31	26	21	3¼	3½	arm	9 36	4 11
275	2	Tu.	5 41	5 26	11 45	3 34	26	22	4	4¼	br.	10 24	5 0
276	3	W.	5 42	5 24	11 42	3 37	27	23	5	5¼	br.	11 17	5 49
277	4	Th.	5 43	5 23	11 40	3 39	27	24	5¾	6¼	br.	morn	6 40
278	5	Fr.	5 44	5 21	11 37	3 42	27	25	6¾	7	h'rt	0 16	7 32
279	6	Sa.	5 45	5 19	11 34	3 45	27	26	7¾	8	h'rt	1 19	8 24
280	7	S.	5 46	5 18	11 32	3 47	28	27	8½	9	bel.	2 27	9 17
281	8	M.	5 47	5 16	11 29	3 50	28	28	9¼	9¾	bel.	3 37	10 11
282	9	Tu.	5 49	5 14	11 25	3 54	28	29	10¼	10½	rei.	4 50	11 5
283	10	W.	5 50	5 13	11 23	3 56	29	●	11	11½	rei.	sets	0 1
284	11	Th.	5 51	5 11	11 20	3 59	29	1	11¾	—	sec.	6 29	0 58
285	12	Fr.	5 52	5 9	11 17	4 2	29	2	0¼	0¾	sec.	7 12	1 56
286	13	Sa.	5 53	5 8	11 15	4 4	29	3	1¼	1½	thi.	8 0	2 54
287	14	S.	5 54	5 6	11 12	4 7	30	4	2	2½	thi.	8 53	3 53
288	15	M.	5 55	5 4	11 9	4 10	30	5	3	3¼	kn.	9 49	4 50
289	16	Tu.	5 57	5 3	11 6	4 13	30	6	4	4¼	kn.	10 49	5 45
290	17	W.	5 58	5 1	11 3	4 16	30	7	5	5¼	legs	11 50	6 38
291	18	Th.	5 59	5 0	11 1	4 18	30	8	6	6½	legs	morn	7 27
292	19	Fr.	6 0	4 58	10 58	4 21	31	9	7	7½	legs	0 51	8 15
293	20	Sa.	6 1	4 57	10 56	4 23	31	10	8	8½	feet	1 51	9 0
294	21	S.	6 2	4 55	10 53	4 26	31	11	9	9¼	feet	2 51	9 44
295	22	M.	6 4	4 53	10 49	4 30	31	12	9¾	10	h'd	3 50	10 26
296	23	Tu.	6 5	4 52	10 47	4 32	31	13	10¼	10¾	h'd	4 48	11 9
297	24	W.	6 6	4 51	10 45	4 34	31	○	11	11½	h'd	rises	11 52
298	25	Th.	6 7	4 49	10 42	4 37	32	15	11½	—	n'k	5 41	morn
299	26	Fr.	6 8	4 48	10 40	4 39	32	16	0	0¼	n'k	6 14	0 36
300	27	Sa.	6 10	4 46	10 36	4 43	32	17	0¾	1	arm	6 51	1 21
301	28	S.	6 11	4 45	10 34	4 45	32	18	1¼	1½	arm	7 32	2 8
302	29	M.	6 12	4 43	10 31	4 48	32	19	2	2¼	arm	8 18	2 45
303	30	Tu.	6 13	4 42	10 29	4 50	32	20	2¾	3	br.	9 8	3 44
304	31	W.	6 15	4 41	10 26	4 53	32	21	3½	3¾	br.	10 4	4 33

OCTOBER hath 31 days. [1923

And the maples flame out in splendor,
While the beech and the birch trees show
A tinting all clear and tender
As the light filters through below,
And woodbine and sumach are gleaming
In a wondrous cardinal glow.

MARION FLOWER HICKS HARMON.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	M.	Tides 8.4 / 8.9	"Yes, those are fine black walnut trees. We think more of them than you realize. With every tree we associate either family or friendly ties. That magnificent tree, three feet in diameter and thirty feet to its first limb, was planted by my father. Every walnut tree on this farm is descended from it.
2	Tu.	☾ runs high. Tides 8.1 / 8.8	
3	W.	Miles Standish died, 1656. Tides 8.0 / 8.7 *Generally*	
4	Th.	Tides 8.0 / 8.8	
5	Fr.	Tides 8.3 / 9.1 *clear*	
6	Sa.	♂ ☍ ☾. ☿ in ♌. 8.7 / 9.5 *weather*	
7	G	19th S. aft. Trin. ☿ stat. 9.3 / 10.0	"In October, each member of our family places three walnuts in tins, covers them with ground and with wire to protect from squirrels. In spring, the seedlings are carefully transplanted. Yes, the women folks do their own planting.
8	M.	♂ ☌ ☾. ♂ ☿ ☾. Tides 10.0 / 10.4	
9	Tu.	St. Denis. ♂ ♀ ♄. ☾ on Eq. 10.7 / 10.8	
10	W.	♂ ♄ ☾ ♂ ♀ ☾. 11.2 / 11.0 *Southwest*	
11	Th.	☿ in Peri. 10th. ☾ in Peri. 11.6 / — *winds*	
12	Fr.	♂ ☊ ☾. Columbus Day. 11.0 / 11.7 *and rain.*	
13	Sa.	Tides 10.3 / 11.6	
14	G	20th S. af. Tr. ☿ Gr. elong. W. 10.4 / 11.2	"No, not all of the walnuts sprout. We usually have one or more for every one on the farm when our family observes Arbor Day. The name and the date of planting are recorded on our chart. That irregular tree was planted by the parson, but it is no reflection upon that good man.
15	M.	♄ Gr. Hel. Lat. N. ☾ runs low. Tides 9.9 / 10.7	
16	Tu.	Tides 9.5 / 10.2	
17	W.	♂ ♄ ☉. Tides 9.1 / 9.7 *Mild*	
18	Th.	St. Luke. Tides 8.9 / 9.4 *for the*	
19	Fr.	Tides 8.9 / 9.3 *season.*	
20	Sa.	♂ ♅ ☾. Tides 9.0 / 9.3	
21	G	21st S. af. Tr. ☿ Gr. Hel. Lat. N. 9.2 / 9.3	"We have not decided what will become of the trees. Yes, mother's tree was injured by a storm and the boards were used for tables patterned after my mother's table. I allow not one of those tables is for sale. No, stranger, you cannot cut any of our walnut trees. We wish we had many more of them, and some day we probably shall. Yes, we eat and sell the nuts, but in October we'll be glad to give you enough to grow your own trees."
22	M.	☾ on Eq. Tides 9.5 / 9.3	
23	Tu.	Tides 9.6 / 9.4 *Rain,*	
24	W.	Daniel Webster died, 1852. 9.7 / 9.3 *followed*	
25	Th.	St. Crispin. ☾ in Apo. 9.3 / — *by cooler.*	
26	Fr.	Tides 9.2 / 9.8	
27	Sa.	Tides 9.1 / 9.7	
28	G	22d S. a. T. St. Simon & St. Jude. 8.9 / 9.5	
29	M.	♂ ☿ ♄. Tides 8.7 / 9.3	
30	Tu.	☾ runs high. Tides 8.4 / 9.1	
31	W.	All Hallows Eve. Tides 8.2 / 8.9	

ASTRONOMICAL CALCULATIONS.

☉'s Declination.

Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
1	14s.	16	7	16	7	13	17	50	19	19	20	25	20	39
2	14	35	8	16	25	14	18	6	20	19	34	26	20	51
3	14	54	9	16	43	15	18	21	21	19	48	27	21	2
4	15	13	10	17	0	16	18	36	22	20	1	28	21	13
5	15	31	11	17	17	17	18	51	23	20	14	29	21	24
6	15	49	12	17	33	18	19	6	24	20	27	30	21	34

☾ Last Quarter, 1st day, 3h. 49m., evening, W.

● New Moon. 8th day, 10h. 27m., morning, E.

☽ First Quarter 15th day, 4h. 41m., morning, W.

○ Full Moon, 23d day, 7h. 58m., 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 Decr. h.	m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Even h.	☽'s Place	☽ Rises. h.	m.	☽ Souths. h.	m.
305	1	Th.	6	16	4	39	10	23	4	56	32	22	4½	4¾	h'rt	11	3	5	23
306	2	Fr.	6	17	4	38	10	21	4	58	32	23	5¼	5½	h'rt	morn		6	14
307	3	Sa.	6	18	4	37	10	19	5	0	32	24	6¼	6½	bel.	0	7	7	4
308	4	S.	6	20	4	36	10	16	5	3	32	25	7	7½	bel.	1	14	7	56
309	5	M.	6	21	4	34	10	13	5	6	32	26	8	8½	rei.	2	24	8	48
310	6	Tu.	6	22	4	33	10	11	5	8	32	27	9	9¼	rei.	3	36	9	41
311	7	W.	6	23	4	32	10	9	5	10	32	28	9¾	10¼	sec.	4	51	10	38
312	8	Th.	6	25	4	31	10	6	5	13	32	●	10½	11	sec.	sets		11	36
313	9	Fr.	6	26	4	30	10	4	5	15	32	1	11½	—	thi.	5	46	0	36
314	10	Sa.	6	27	4	29	10	2	5	17	32	2	0	0¼	thi.	6	38	1	37
315	11	S.	6	28	4	28	10	0	5	19	32	3	0¾	1¼	kn.	7	36	2	37
316	12	M.	6	30	4	27	9	57	5	22	32	4	1¾	2	kn.	8	37	3	36
317	13	Tu.	6	31	4	26	9	55	5	24	31	5	2¾	3	kn.	9	39	4	31
318	14	W.	6	32	4	25	9	53	5	26	31	6	3½	4	legs	10	42	5	23
319	15	Th.	6	33	4	24	9	51	5	28	31	7	4½	5	legs	11	44	6	12
320	16	Fr.	6	35	4	23	9	48	5	31	31	8	5½	6	feet	morn		6	58
321	17	Sa.	6	36	4	22	9	46	5	33	31	9	6½	7	feet	0	44	7	43
322	18	S.	6	37	4	21	9	44	5	35	31	10	7½	8	h'd	1	44	8	26
323	19	M.	6	38	4	20	9	42	5	37	30	11	8¼	8¾	h'd	2	41	9	8
324	20	Tu.	6	40	4	20	9	40	5	39	30	12	9¼	9½	h'd	3	39	9	51
325	21	W.	6	41	4	19	9	38	5	41	30	13	9¾	10¼	n'k	4	36	10	34
326	22	Th.	6	42	4	18	9	36	5	43	30	14	10½	11	n'k	5	33	11	19
327	23	Fr.	6	43	4	18	9	35	5	44	29	○	11¼	11½	arm	rises		morn	
328	24	Sa.	6	44	4	17	9	33	5	46	29	16	11¾	—	arm	5	30	0	5
329	25	S.	6	46	4	16	9	30	5	49	29	17	0¼	0½	arm	6	14	0	52
330	26	M.	6	47	4	16	9	29	5	50	29	18	1	1	br.	7	3	1	41
331	27	Tu.	6	48	4	15	9	27	5	52	28	19	1½	1¾	br.	7	57	2	30
332	28	W.	6	49	4	15	9	26	5	53	28	20	2¼	2½	h'rt	8	54	3	20
333	29	Th.	6	50	4	14	9	24	5	55	28	21	3	3¼	h'rt	9	56	4	9
334	30	Fr.	6	51	4	14	9	23	5	56	27	22	4	4¼	h'rt	11	0	4	59

NOVEMBER hath 30 days. [1923

The woodland foliage now
Is gathered by the wild November blast;
Even the thick leaves upon the oaken bough,
Are fallen, to the last.

JOHN HOWARD BRYANT.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Th.	All Saints Day. Tides 8.2 / 8.8	The poultry raiser should now begin to descry some rewards for his season's labors, either in returns for his broilers or in the promise of eggs from his cherished pullets. How much greater would have been his profits if he had been able to raise a larger percentage of those that hatched. Perhaps many of them died between five and twelve days of age from white diarrhea. This disease has been and still is the source of tremendous losses to poultrymen. The symptoms are a whitish or brownish discharge, the chicks are listless with drooping wings, are "big bellied," eat but little and have a tendency to stay under cover or near the source of heat.
2	Fr.	☌ ♆ ☾. Tides 8.3 / 8.9 *Dull and*	
3	Sa.	4th. ☿ in ♉. Tides 8.6 / 9.1	
4	☾	23d ☽ af. ♄. ☌ ☿ ♐. Tides 9.1 / 9.4	
5	M.	☾ on Eq. Tides 9.7 / 9.8 *threatening.*	
6	Tu.	☌ ☌ ☾. Tides 10.4 / 10.2	
7	W.	☌ ♄ ☾. ☌ ☿ ☾. Tides 11.1 / 10.5	
8	Th.	☾ in Peri. Tides 11.6 / 10.8	
9	Fr.	☌ ♐ ☾. ☌ ☿ ☾. Tides 11.9 / —	
10	Sa.	11th. Armistice Day. Tides 10.8 / 12.0	
11	☾	24th ☽ af. ♄. St. Martin. 10.6 / 11.8	
12	M.	11th. ☾ runs low. Tides 10.3 / 11.3	
13	Tu.	□ ♆ ☉. Tides 9.9 / 10.7 *Cooler with*	
14	W.	☿ in ♉. Tides 9.5 / 10.1	
15	Th.	☌ ☿ ☉ Sup. 9.1 / 9.5 *brisk winds.*	
16	Fr.	☌ ♅ ☾. Tides 9.0 / 9.1	
17	Sa.	Tides 8.9 / 8.3	
18	☾	25th ☽ af. ♄. ☾ on Eq. 9.0 / 8.7	
19	M.	Lincoln's Gettysburg address, 1863. Tides 9.2 / 8.8	
20	Tu.	☌ ☿ ♐. 9.4 / 8.8 *Northeasterly*	
21	W.	☾ in Apo. Tides 9.5 / 8.9 *winds*	
22	Th.	St. Cecilia. ☌ ♐ ☉. Tides 9.7 / 8.9	
23	Fr.	♆ stat. Tides 9.8 / 8.9 *and rain.*	
24	Sa.	♅ stat. ☿ in Aph. Tides 9.8 / —	
25	☾	26th ☽ af. ♄. St. Catharine. 8.9 / 9.8	
26	M.	☾ runs high. Tides 8.8 / 9.7	
27	Tu.	Hoosac Tunnel completed, 1873. Tides 8.6 / 9.6 *Colder,*	
28	W.	Tides 8.5 / 9.4 *perhaps*	
29	Th.	☌ ♆ ☾. THANKSGIVING DAY. 8.5 / 9.2 *snow.*	
30	Fr.	St. Andrew. Tides 8.5 / 9.0	

The cause of the disease is a bacterium which is transmitted from chick to chick, or from the infected hen to the yolk of her egg, or from one hen to another. Young chicks afflicted with the disease nearly always die, and if they do live they become carriers and transmit the disease to their offspring.

The disease in mature fowls can be readily diagnosed by a bacteriological examination of blood samples. These examinations and tests are now being made by the various state experiment stations and are proving exceedingly accurate and trustworthy.

1923] DECEMBER, Twelfth Month.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	21s. 44	7	22 33	13	23 7	19	23 24	25	23 25
	2	21 53	8	22 40	14	23 11	20	23 26	26	23 23
	3	22 2	9	22 46	15	23 15	21	23 26	27	23 21
	4	22 10	10	22 52	16	23 18	22	23 27	28	23 19
	5	22 18	11	22 58	17	23 21	23	23 27	29	23 16
	6	22 26	12	23 3	18	23 23	24	23 26	30	23 12

☾ Last Quarter, 1st day, 5h. 9m., morning, E.
● New Moon, 7th day, 8h. 30m., evening, W.
☽ First Quarter, 14th day, 9h. 38m., evening, W.
○ Full Moon, 23d day, 2h. 33m., morning, W.
☾ Last Quarter, 30th day, 4h. 7m., 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.
335	1	Sa.	6 52	4 14	9 22	5 57	27	23	4¾	5	bel.	morn	5 48
336	2	S.	6 53	4 13	9 20	5 59	26	24	5¾	6	bel.	0 6	6 38
337	3	M.	6 54	4 13	9 19	6 0	26	25	6½	7	rei.	1 14	7 29
338	4	Tu.	6 55	4 13	9 18	6 1	26	26	7½	8	rei.	2 25	8 22
339	5	W.	6 56	4 13	9 17	6 2	25	27	8½	9	sec.	3 38	9 17
340	6	Th.	6 57	4 13	9 16	6 3	25	28	9¼	10	sec.	4 52	10 15
341	7	Fr.	6 58	4 12	9 14	6 5	24	●	10¼	10¾	thi.	sets	11 15
342	8	Sa.	6 59	4 12	9 13	6 6	24	1	11¼	11¾	thi.	5 16	0 16
343	9	S.	7 0	4 12	9 12	6 7	24	2	—	0	kn.	6 16	1 18
344	10	M.	7 1	4 12	9 11	6 8	23	3	0½	0¾	kn.	7 21	2 17
345	11	Tu.	7 2	4 12	9 10	6 9	23	4	1½	1¾	legs	8 26	3 13
346	12	W.	7 3	4 12	9 9	6 10	22	5	2¼	2½	legs	9 30	4 5
347	13	Th.	7 4	4 13	9 9	6 10	22	6	3¼	3½	feet	10 33	4 54
348	14	Fr.	7 5	4 13	9 8	6 11	21	7	4	4½	feet	11 34	5 39
349	15	Sa.	7 5	4 13	9 8	6 11	21	8	5	5¼	feet	morn	6 23
350	16	S.	7 6	4 13	9 7	6 12	20	9	6	6¼	h'd	0 33	7 6
351	17	M.	7 7	4 14	9 7	6 12	20	10	6¾	7¼	h'd	1 31	7 49
352	18	Tu.	7 7	4 14	9 7	6 12	19	11	7¾	8¼	n'k	2 29	8 32
353	19	W.	7 8	4 14	9 6	6 13	19	12	8½	9	n'k	3 25	9 16
354	20	Th.	7 9	4 15	9 6	6 13	18	13	9¼	9¾	n'k	4 22	10 1
355	21	Fr.	7 9	4 15	9 6	6 13	18	14	10	10½	arm	5 18	10 49
356	22	Sa.	7 10	4 16	9 6	Inc.	17	15	10¾	11¼	arm	6 13	11 37
357	23	S.	7 10	4 16	9 6	0 0	17	○	11¼	11¾	br.	rises	morn
358	24	M.	7 11	4 17	9 6	0 0	16	17	—	0	br.	5 52	0 26
359	25	Tu.	7 11	4 17	9 6	0 0	16	18	0½	0¾	h'rt	6 48	1 17
360	26	W.	7 12	4 18	9 6	0 0	15	19	1¼	1¼	h'rt	7 49	2 7
361	27	Th.	7 12	4 18	9 6	0 0	15	20	2	2	h'rt	8 52	2 57
362	28	Fr.	7 12	4 19	9 7	0 1	14	21	2¾	2¾	bel.	9 56	3 46
363	29	Sa.	7 12	4 20	9 8	0 2	14	22	3½	3¾	bel.	11 2	4 35
364	30	S.	7 13	4 21	9 8	0 2	13	23	4¼	4½	rei.	morn	5 24
365	31	M.	7 13	4 21	9 8	0 2	13	24	5¼	5½	rei.	0 10	6 14

DECEMBER hath 31 days. [1923

Now winter comes, the drifting snow
Shifts through the elms and sinks below
Upon the paths, whose vesture white
Now marks, now hides, with covering light,
The trace of passers to and fro.

GEORGE PIERCE BAKER.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.
1	Sa.	2d. ☌ ☌ ♄. Tides {3.7 / 9.0
2	G	1st S. in Ad. {9.0 / 9.0 *Increasing*
3	M.	☾ on Eq. Tides {9.4 / 9.2 *cold.*
4	Tu.	☌ ♄ ☾. ☌ ☌ ☾. Tides {10.0 / 9.4
5	W.	6th. ☾ in Peri. Tides {10 6 / 9.8
6	Th.	St. Nicholas. □ ♅☉. ☌☿☾. {11.2 / 10.1
7	Fr.	Tides {11.6 / 10.3
8	Sa.	☌ ☿ ☾. Tides {11.9 / 10.4
9	G	2d Sunday in Advent. {— / 11.8
10	M.	{10.3 / 11.6 9th. ♀ in Aph. ☌ ♀ ☾. ☾ runs low.
11	Tu.	Tides {10.1 / 11.1 *Signs*
12	W.	Gen. Sherman reaches the sea, 1864. Tides {9.8 / 10.5
13	Th.	Tides {9.5 / 9.9 *of*
14	Fr.	☌ ♅ ☾. ☿ Gr. Hel. Lat. S. {9.2 / 9.8 *snow.*
15	Sa.	Tides {8.9 / 8.7
16	G	3d S. in Advent. ☾ on Eq. {8.8 / 8.4
17	M.	J. G. Whittier born, 1807. Tides {8.8 / 8.2
18	Tu.	Tides {8.9 / 8.2 *Look for*
19	W.	☾ in Apo. Tides {9.1 / 8.3
20	Th.	Tides {9.8 / 8.4 21st. FOREFATHERS' DAY.
21	Fr.	St. Thomas. Tides {9.5 / 8.5 *a storm.*
22	Sa.	☉ enters ♑. WINTER BEGINS. Tides {9.7 / 8.7
23	G	4th S. in Adv. ☾ runs high. {9.8 / 8.7
24	M.	Tides {— / 9.9
25	Tu.	Christmas. Tides {8.8 / 9.9 26th. {8.8 / 9.8
26	W.	St. Stephen. 27th. ☌ ♆ ☾. ☿ Gr. elong. E.
27	Th.	St. John the Evangelist. Tides {8.8 / 9.7
28	Fr.	Holy Innocents. Tides {8.9 / 9.5 *Clear*
29	Sa.	Tides {9.0 / 9.2 30th. ☾ on Eq. *but*
30	G	Sun. af. Christmas. {9.1 / 9.0 *cold.*
31	M.	♀ Gr. Hel. Lat. S. Tides {9.4 / 8.9

Farmer's Calendar.

With the beginning of the colder winter months the farmer who keeps stock should consider how he may best preserve the manure that may accumulate.

A ton of stable manure contains on the average 10 lbs. nitrogen, 5 lbs. phosphoric acid, and 10 lbs. potash. At present prices a ton of manure has a fertilizing value of $2.80.

It is a conservative estimate that one-third of the value of the manure produced on the farms of this country is wasted by improper care and handling. Numerous experiments have shown where manure piles are exposed to the weather for periods of three to six months that one-half the fertilizing value of the manure is lost.

The three chief sources of loss in manure are (1) loss of urine through the lack of bedding; (2) fermentation and heating, and (3) leaching. The first of these losses may be prevented by using plenty of dry bedding, the rule being that the bedding should contain one-fourth as much dry matter as did the feed consumed. The second loss may be largely prevented by keeping the manure pile moist and compact. The heating of manure and the odor of ammonia coming from it is a sure sign of fermentation and the loss of nitrogen. The third loss may be prevented by having a shed or manure pit with a roof and a cement bottom.

RECENT COMETS.

Between July 1, 1921, and June 30, 1922, the following comets were discovered or re-detected upon their return to the vicinity of the Earth's orbit:

1. Encke's periodic comet, detected by Skjellerup and Reid at Cape Town, South Africa, 1921, July 27. Perihelion passage, 1921, July 13; perihelion distance, 0.34 astronomical units (32,000,000 miles) from the Sun; inclination of orbit to the ecliptic, 12°. This comet moves around the Sun in a period of 3 1/3 years, the shortest period of any known comet.

2. Comet *c* 1921. This designation is given to a bright, star-like object that was discovered only 3° east of the Sun by Rickenbacker, the aviator, 1921, August 7, while a guest at the Lick Observatory, Mount Hamilton, California. It was seen immediately afterward at the Lick Observatory by the astronomers Campbell and Russell, and was later reported as having been seen on the same date at several other places, so that there is no doubt of its reality; but the observations are too rough to enable the orbit to be found. It is probable, however, that the object was a bright comet which was moving in a narrow parabolic orbit with very small perihelion distance and with the main portion of the orbit turned away from the Earth. Under such special circumstances, the comet could not be seen except near its perihelion.

3. Comet *a* 1922, discovered by Reid at Cape Town, 1922, January 20. Orbit parabolic. Perihelion passage, 1921, October 16; perihelion distance, 1.8 astronomical units (167,000,000 miles) from the Sun; inclination of orbit to the ecliptic, 35°.

4. Comet *b* 1922, discovered by Skjellerup at Cape Town, 1922, May 17. Orbit elliptic, period 5½ years. Perihelion passage, 1922, May 15; perihelion distance, 0.9 astronomical units (84,000,000 miles) from the Sun; inclination of orbit to the ecliptic, 17°. The orbit resembles that of a comet discovered by Grigg in 1902, but it is not certain that it is the same comet.

With the exception of the second, none of these objects was visible to the unaided eye.

MORNING AND EVENING STARS, 1923.

Mercury will be most favorably situated for being seen about February 23, June 23, and October 14, in the East, just before Sunrise, as Morning Star; and January 13, May 5, September 2, and December 27, in the West, just after Sunset, as Evening Star.

Venus will be Morning Star until September 10, then Evening Star the rest of the year.

Mars will be Evening Star until August 8, then Morning Star the rest of the year.

Jupiter will be Morning Star until May 5, then Evening Star until November 22, then Morning Star the rest of the year.

Saturn will be Morning Star until April 7, then Evening Star until October 17, then Morning Star the rest of the year.

EARTH IN PERIHELION AND APHELION, 1923.

January 2, 1923, 6h. P.M., Earth in Perihelion; distant from the Sun about 91,339,000 miles. July 5, 7h. P.M., Earth in Aphelion; distant from the Sun about 94,451,000 miles.

THE STARS AS SUNS.

Investigations of recent years have yielded much new information in regard to the nature of the stars, and have shown a great range among them in such characteristics as size, brightness, temperature, etc. as compared with the Sun. The following Table gives characteristics of six stars, chosen as representative of their classes. In the cases of *a* Centauri, Sirius and Krüger 60, which are double stars, the data refer to the brighter star of the pair.

Star	Betelgeuse	Arcturus	*a* Centauri	Sirius	Rigel	Krüger 60
Distance	181	34	4.4	8.7	466	12.5
Luminosity	1200	80	1.1	26	13,000	0.0024
Color	Red	Orange	Yellow	White	Blue-white	Red
Temp.	3000°	3700°	6000°	8000°	10,000°	2800°
Diameter	280	31	1.4	1.7	30	0.41
Surface brightness	0.015	.008	0.70	9.0	14.7	0.012
Mass	30	10	1.08	2.5	30	0.3
Density	0.0000014	0.000033	0.38	0.50	0.001	4.28

Distance.—The unit of distance used in the Table is the light year, or the distance which light travels in one year. As the velocity of light is 186,000 miles a second, the number of miles in a light year may be found by multiplying this number by 31,558,150, the number of seconds in a year. The distances of the nearer stars are found from their parallaxes, or apparent displacements in the sky due to the Earth's motion around the Sun. This method gives fairly reliable results for distances up to about 300 light years, but the parallaxes of more distant stars are so small that their distances can be found only by indirect methods. The nearest known star is *a* Centauri which, as seen in the Table, is so far away that its light requires 4.4 years to reach us. The great majority of visible stars are distant by more than 500 light years.

Luminosity.—By luminosity is meant the brightness that the star would have as compared with the Sun if the Sun were removed to the star's distance. When the distance of the star is known, it is a simple matter to calculate its luminosity from its observed apparent brightness as compared with the Sun. The enormous range of luminosity among the stars is shown by Krüger 60, of only about 1/400 the Sun's brightness, and Rigel, with a luminosity of 13,000; it would require about 5,000,000 stars like Krüger 60 to furnish the light of Rigel. A statistical study of stellar luminosities has shown that the red stars separate into two groups —the "giants," which are many times more luminous than the Sun, and the "dwarfs," of only a fraction of the Sun's luminosity. Yellow stars are mostly of about the Sun's brightness or brighter, while blue and white stars are all giants in luminosity. The Sun itself ranks as a rather bright dwarf. Betelgeuse and Rigel are among the brightest giants, and Krüger 60 is a good example of the dwarfs.

Color.—The color differences of stars, though inconspicuous to the unaided eye because of the star's faintness, are evident enough when the light is intensified by the telescope. Star colors range from a deep red through the various shades of yellow to blue, and depend upon the temperature and chemical constitution of the star. The Sun, if removed to the distance of the nearer stars, would appear of a yellow color like that of *a* Centauri and Capella.

Temperature.—The Table gives this in Centrigrade degrees measured from the absolute zero. The temperature varies with the color, blue stars being the hottest and red stars the coolest. The temperature of the Sun is about 6,000°, like that of *a* Centauri and other yellow stars.

Diameter.—The stars are at such vast distances that they appear as mere points of light without sensible diameter, even in the largest telescopes, so that their diameters cannot be measured with the micro-

meter as can the diameters of the planets. However, from theoretical considerations based upon their luminosities and colors, their diameters have been inferred and these inferences have been well verified in the cases of a few stars by recent measures with the interferometer (see the Almanac for 1922). Of the diameters given in the Table, those of Betelgeuse and Arcturus were thus measured, while the others are inferred. The Sun's diameter is taken as the unit. All but one of these six stars is larger than the Sun, and Betelgeuse is so big that, if the Sun were placed at its center, the planets Mercury, Venus and the Earth would have plenty of room to revolve in their present orbits inside the star. Even Krüger 60, though a small dwarf in light-giving power is estimated to have nearly half the diameter of the Sun.

SURFACE BRIGHTNESS.—The area of a star's surface can be calculated at once when its diameter is known, and the surface brightness or light given off by each unit of surface, is simply the ratio of luminosity to area. By the Table, which gives the surface brightness in terms of that of the Sun, it is seen that the white or blue-white stars Sirius and Rigel shine with an intensity several times greater than that of the Sun, while the red stars glow with a duller light. As might be expected, the surface brightness of a hot star is greater than that of a cool one.

MASS.—By the mass of a body is meant the quantity of matter in it. It is measured by the gravitational pull exerted on the body by another body. Thus, to measure the mass of ordinary things about us, we determine their weight, or the gravitational pull of the Earth upon them. To measure the mass of a star, it is necessary to determine the attraction between it and another star that is near enough to make the effect of the pull perceptible. It is for this reason impossible to measure the mass of a solitary star, but there are many double stars whose mass has been measured. Although there is an enormous range in other characteristics of stars, their range in mass seems to be rather small, from about a quarter to thirty times the mass of the Sun. Of the masses given in the Table, those of the double stars *a* Centauri, Sirius and Krüger 60 have been actually measured, while those of Betelgeuse, Arcturus and Rigel are inferred from the masses of other stars of similar color and luminosity.

DENSITY.—The density of a body means the ratio of its mass to its volume, and is easily calculated when the diameter and mass are known. The numbers in the Table, which represent the densities of the six stars in terms of that of the Sun, show as great a range as do the numbers representing the luminosities. The density of the Sun is 1.4 times that of water, or about 1000 times that of air at sea level; and so the density of Betelgeuse, being only one-millionth that of the Sun, is only one-thousandth that of air, while that of Krüger 60 is about six times that of water. Betelgeuse is a sphere of highly rarefied gas and Krüger 60 is a ball of matter about as compact as the Earth.

VARYING HEIGHTS OF THE TIDES.

The Spring Tides, or tides having the greatest range, occur near the times of New Moon and Full Moon. The Neap Tides, or tides having the least range, occur near the times of First and Last Quarters of the Moon. The highest of the Spring Tides are from one to two days after New or Full Moon; at this time, also, the low waters will be lower than usual. When the Moon is in Perigee (or nearer to us) the high waters will be higher, and the low waters lower, than otherwise.

The heights of the two daily tides at high water are not generally equal. The greatest difference between the heights of the two daily high waters will be soon after the Moon is farthest north, when the Moon "runs high," and farthest south, when the Moon "runs low." Such tides are called Tropic Tides. The heights of the two daily high waters will be most nearly equal when the Moon is near the Equator; similarly with the heights of the two daily low waters.

Conditions are favorable for exceptionally high tides when the Moon is New or Full, is in Perigee, and "runs high" or "runs low," all at about the same time.

CARE AND REPAIR OF FARM MACHINERY.

Statistics taken from our census reports and farm surveys show that there is a rather close relation between the annual income of the farm workers and the value of the machinery and implements used on the farm. The following table taken from Cir. 21, Bureau of Plant Industry, shows the influence of farm machinery on the worker's income.

State	Average annual income per worker	Value of machinery per farm	State	Average annual income per worker	Value of machinery per farm
Florida	$119.72	$30.43	Iowa	$611.11	$196.55
Alabama	143.98	23.40	No. Dakota	755.62	238.84

It is a generally recognized fact that the efficiency of modern farm operations depends primarily upon the judicious use of improved farm machinery. In no country has the use of improved farm machinery become so general and extensive as in the United States. Our last census showed that the American farmer was buying annually $150,000,000 worth of farm machinery. This was equal to 3.3% of the value of the crops which he was raising. Just what proportion of the farmer's profits is represented by his expenditures for machinery is difficult to estimate, but it is probably between 20 and 30 per cent. Any feature of our farm business which absorbs from 20 to 30 per cent of the profits is certainly entitled to serious consideration.

Various estimates have been made as to the average life and depreciation of farm tools and machinery. In Minnesota (Bulletin 117), it was found that the average depreciation of farm machines was 7.3% annually. This would mean that their average life was about 14 years. It makes little difference just what the average life of a machine may be since there is little doubt in the mind of any person who makes only a casual investigation that the average life of most farm machines is much less than it ought to be.

The care of farm machinery may be treated under three heads: *repairing*, *housing*, and *painting*. Of these the repair item is the most important. Many a machine is taken from storage in the spring, or whenever it is to be used, and the owner finds that he has forgotten to order certain repair parts which he remembers were needed when the machine was put away. Repairs for many of the older machines are not carried in stock except at the factory and it frequently takes a month or more to get them. It is a good thing to have a definite system in regard to repair work. As each machine is put away for the season it should be tagged with a record of what repairs are needed. During the fall or early winter all the machinery should be gone over and the needed parts ordered. Then in the early spring before the farm work becomes pressing the old and broken parts may be renewed or repaired and the machines made ready for use when they are needed. Systematic repairing is an important farm ecomomy.

In the matter of housing it may be said if a machine is worth buying it is worth taking care of. Rust is more destructive than wear, and this is particularly true of machines like the corn planter, grain drill, fertilizer sower, and mowing machine. Wooden parts are affected more by exposure to weather than are metal parts, but both may be materially injured. This results not only in a reduction in the life of the machine but in its efficiency and quality of work. Money expended for the construction of an implement shed, if no other place is available, will pay good dividends in protecting and prolonging the life of farm tools and machinery. The housing of tools out under the apple tree or behind the wood-pile is a sure sign of a shiftless and thoughtless farmer.

Painting is in one respect providing each implement with a house of its own. Paint keeps moisture from penetrating wooden parts and thus prevents decay and warping. It protects metal parts from the action of air and moisture in producing rust and gradually weakening the metal. There is perhaps no better paint for implements than a mixture of red lead and linseed oil. This paint adheres well to clean surfaces of both wood and metal and is less affected by the weather than most any other mixture. Besides lasting better, a well painted machine always looks better and will command more money if offered for sale.

HUMUS IN FARM AND GARDEN SOILS.

It has long been known that the presence of at least a moderate amount of humus in soils has very important relations to its productive capacity and value for farm or garden. The discussion of this subject might, therefore, seem uncalled for. The fact is, however, that the results both of recent investigation and of the progress of invention have been such that its renewed consideration will be useful.

It is in general understood that the decay of organic materials (chiefly vegetable) with limited access of air is the source of humus. In virgin soils humus is usually abundant, coming from the accumulated remains of vegetation. When soils are brought under the plow and thus more fully exposed to the air, the supply usually steadily decreases unless measures are taken to renew it. It is true, the roots, stubble or tops of crops in part make good the loss, and if in addition manure is freely used the supply is fully maintained. It is here that the progress of invention has an important relation to our subject, especially for the truck farmer or home gardener. Both formerly depended largely upon stable manure which could be purchased at reasonable prices near all cities and villages. Conditions are now radically changed. First the trolley car, and later the gas engine, has almost driven the horse from the road, while yet later the tractor competes with him in the work on the larger farms. The price of stable manure is high and the supply at any price is insufficient to meet the need.

It is well understood that in so far as the mineral elements of plant food are concerned, such for example as nitrogen, phosphorus, potash and lime, the fertilizer manufacturer can furnish them in his goods which supply nitrates, ammonia, phosphates, potash salts, etc., in acceptable forms. The increasing supply of good fertilizers at reasonable prices is a most fortunate development and one likely to continue.

Will it not, then, by larger use of fertilizers be possible to maintain productiveness? The answer must be a decisive negative, for fertilizers do not supply humus and this, in the light of the results of recent investigations, appears to be an absolute necessity to satisfactory plant growth. Humus appears to serve a hitherto unsuspected function.

Just as in animal nutrition protein (albuminoids), carbohydrates (starch, sugars, etc.) and fats were until recently supposed to supply adequate organic nutrients; so it has been believed that in the nutrition of plants the supply of suitable proportions of some ten mineral elements in acceptable compounds and sufficient amounts would meet every need. It is now a matter of general knowledge that besides the nutrients which have been named, animals and human beings to thrive must have a supply of a substance even yet imperfectly understood, which at first was spoken of as the "great unknown" and is now termed vitamine and which is found in numerous natural foods, especially in green vegetables.

Investigations in England appear to have shown that there exists in fertile soils a substance which in its relations to plant life serves a purpose analagous to that served by vitamines in animal life. The name proposed by the investigator for this substance is auximone. He believes he has proved that this substance exists in humus and that its absence or insufficiency in soils lacking humus or poor in that substance is among the most important of the reasons for their unproductiveness.

Humus serves other most important uses in the soil, in general so well understood that very brief mention and discussion will suffice. It has an important relation to good physical condition. In suitable proportions it makes the soil friable so that it may be brought into good tilth. All the finer soils especially tend to pack and crust if poor in organic matter. The presence of such matter lightens them and makes possible readier penetration of air and water. Good aeration is essential to perfect germination of seeds and to the healthy development of roots upon which vigorous growth depends. If water does not readily penetrate the soil, it is practically certain that it will wash and gully to an extent likely to be seriously injurious, more especially of course where the slopes are considerable.

Humus helps insure an even and satisfactory moisture content. It acts to some extent like a sponge in absorbing and holding water. This is especially important in the soils which are of a coarse sandy or gravelly texture, on which, therefore, crops are likely to suffer in protracted periods without rain.

Humus is rich in many of the ordinary elements of plant food, and these gradually become available as it is more fully acted upon by the air when the soil is tilled. Its presence in mixture with the mineral soil particles helps bring some of their elements into new compounds more readily taken up by the plant. Most soils are darkened in color by the presence of humus. Evidence of this is afforded by the darker hue of the surface soil (in which most humus is found) as compared with the part unturned by the plow. The darker color insures greater absorption of heat from the sun, an effect which may be of considerable importance especially in early spring. The decay of organic matter in the soil (really a process of slow combustion) also helps to warm it.

Earth worms are more numerous in soils containing much organic matter and humus than in those poor in these substances, and their burrowing and feeding habits help to improve them both in texture and in content of available food for plants.

The last point to which space will allow reference is one which comparatively recent investigations have revealed. There are in some soils certain micro-organisms which have the ability to assimilate free nitrogen present in practically unlimited quantities in the air. The ordinary plants of the field and garden cannot to this. Even the legumes (peas, beans, clovers, etc.) utilize it only when in partnership with bacteria in the nodules on their roots. These may function independently of humus, but develop only in the nodules. The micro-organisms under discussion live an independent life in the soil. They take nitrogen from the air, it becomes a part of their tissues and when their death and decay follow this nitrogen is brought within the reach of our cultivated plants. These micro-organisms flourish only in soils that contain humus for, not having green leaves, they cannot feed upon inorganic soil compounds such as those taken up by ordinary plants, but must be supplied with organic substances such as are found in decaying vegetable matter. If present the necessary expenditure for fertilizer containing nitrogen will be materially reduced. If not naturally present, it is believed it will be found possible to supply these organisms by inoculation. Practicable methods are yet to be perfected. When this is accomplished the "vest pocket fertilizer" will have arrived.

The facts presented make it entirely clear that successful crop production in soils deficient in humus must be attended with great disadvantages or quite impossible. What, then, can the truck farmer or home gardener, unable to obtain stable manure, do? As has been stated, fertilizers alone though very valuable are not sufficient to maintain productiveness. To maintain a satisfactory humus content vegetable matter must be incorporated with the soil. In some countries where labor is cheap wild grasses or herbaceous plants are brought in. Labor costs here render this method impracticable. Leaves which in any case must be raked in the home grounds will help the garden. They should be composted in alternate layers with loam and worked into the soil in early spring. The supply of these is usually quite inadequate even for the home garden, and of practically no importance in truck farming. Both in this and in the home garden much can be gained by sowing quick growing crops to be turned under. Among these buckwheat is one of the best when the land is unoccupied by a crop in summer. It is killed by frosts. Oats if they can be sown by the first of October are valuable, as they will often grow till about the end of November in Massachusetts. Rye may be sown even later and will live over winter. It starts very early the next spring and may be plowed under in season to plant such crops as sweet corn, squashes, melons and other truck crops. Clovers, too, are often valuable but require longer for growth. It is highly important to plow under any crop grown for soil improvement some little time before the ground is to be planted, to allow time for the soil to settle and for decay of the vegetable matter to have made some progress.

PASTURE IMPROVEMENT.

The most natural, the cheapest, and the best feed for the dairy cow during the summer is good pasture, and the dairyman who is fortunate enough to have a really "good" pasture has something which is to be coveted. Because of its palatability, its succulence, and its well-balanced content of digestible nutrients, pasture grass will replace all of the hay and silage and much of the grain feed of the ration.

While the pastures in New England are usually spoken of as "good," "medium," and "poor," unfortunately too many of them are in the last two classes, and still more unfortunate is the fact that so little is being done to improve them. In very few places in this country do grasses thrive better or is the climate more congenial for their growth than right here in New England.

Statistics concerning the exact acreage of pasture land in New England are not available. The census of 1920, however, gives the following figures:

Total land area of New England . .	39,665,000 acres
Total area in farms	16,991,000 acres
Total improved land in farms	6,115,000 acres
Total unimproved land in farms . .	10,876,000 acres

Assuming that one-half of the so-called "unimproved" land is in pasture and the other half in forest, we have in round numbers, 5,400,000 acres of pasture land. Both the per cent of land area in farms and the per cent of improved farm land has been steadily decreasing since 1850. Just what effect these changes have had upon the acreage of pasture cannot be definitely stated, but since it is well known that there has been a notable reversion of tillable land to pasture and of pasture land to forest, and in turn of forest land to pasture, it seems only fair to assume that our present acreage of pasture is at least as large, if not larger, than it was sixty or seventy years ago.

While the total number of cattle in New England has declined only from 1,475,000 to 1,320,000 since 1850, the number of sheep has decreased from 2,257,000 to 242,000. Assuming that the pasture for one head of cattle will support seven head of sheep, we find that our New England pastures were feeding the equivalent of 1,797,000 head of cattle in 1850 as against 1,355,000 head today, or approximately one head for each four acres.

Few people, it is thought, will dispute the assertion that our pastures are in a poorer condition and less productive now than formerly. In fact, few people realize just how small a quantity of grass many of our pastures actually furnish. Some recent tests at one of the New England Experiment Stations show that an old representative pasture as an average for five seasons (1909 to 1913) produced only 1311 lbs. of green grass per acre. Assuming that a cow will eat 75 lbs. of grass a day it would require nearly nine acres of such pasture to furnish enough grass for that one cow and she would have to work hard to get it.

The principal causes for this deterioration of our pastures are:

1. Too close grazing.
2. The growth of weeds and brush-wood.
3. Lack of reseeding and fertilization.

Present conditions make it appear that our ancestors were somewhat improvident in having overgrazed their pastures by keeping too much stock on them for too long a time. Some recent tests show that pastures can be very materially injured by too close cropping by sheep. While dry weather is frequently the cause of short pastures, yet much trouble can be avoided by careful management.

Livestock are frequently turned out to pasture as soon as the grass begins to show green. The writer saw one herd of cattle in a pasture on April 23 of last year. At this time the ground is usually soft and the tramping of the cattle and sheep will do much damage, both by injuring the roots of the plants and by puddling the soil. It is better to wait until the ground is well dried and the grass gets a good start. The amount of grass on a pasture in the early spring is never as great as appearances would indicate.

Too often, too, the farmers will leave their stock in the pastures as late in the fall as any grass can be found. This practice is not good

economy because a pasture just as well as a meadow needs some "shack" or aftermath as a protection during the winter.

Just how to improve these poor pastures, profitably, and economically is a question not easily answered. One of the first things to do is to set fire to the junipers which will kill them (preferably in the early spring) and then later to chop or pull them out. The alders, birches, choke cherries and other bushes may be cut, piled and burned either in the fall or spring. The main object to be attained is to get rid of the worthless stuff so that the sunshine can get in and give the grass a chance to grow. Good results have been obtained where the ground has been broken up with a plow, harrowed as well as could be and reseeded. One plot treated in this manner in the tests mentioned above gave an average yield of 3309 lbs. of green grass per acre for four seasons. Of course, with pastures which are so rough and stony as to prohibit cultivation, other methods of improvement must be used.

In many cases an application of lime — especially if the pastures are mossy, will prove beneficial, but since lime is not a plant food and is needed mostly to correct acidity, too much reliance should not be placed upon this material.

A judicious application of fertilizer will sometimes give good returns. Some recent experiments on the poor permanent pastures of Scotland showed that an application of 1000 lbs. of basic slag and 800 lbs. of Kainit per acre about doubled the yield of grass. Owing both to the difference in soil and climate, however, our pastures do not seem to respond to applications of phosphoric acid and potash, which elements slag and Kainit supply. In the opinion of the writer, nitrogen in some readily available form like Nitrate of Soda or Sulphate of Ammonia is the only top dressing material which will give a reasonable and economic return, and then only in connection with seasonable rains.

Frequent reseeding together with light annual top-dressing with some nitrogenous material is about the only treatment for our very rough, stony pastures. By scattering 10 to 15 lbs. per acre of a good mixture of pasture-grass seed over the ground the latter part of March, or just as the frost is coming out, and permitting the seeds to be covered by the spring rains and the alternate freezing and thawing of the surface soil, and then applying 100 to 150 pounds of Nitrate of Soda or Sulphate of Ammonia per acre about the first day of May, a decided improvement of the pasture will in most cases result.

The qualifications of a good pasture grass are:

1. Nutritious and palatable.
2. Long lived.
3. Reproduce itself without production of seeds.

The most common grasses possessing the above qualifications are Kentucky blue-grass, timothy, red-top, orchard grass, meadow fescue and white clover.

For reseeding old pastures or for seeding down new ones, the following mixtures are recommended:

For average loamy soils:	Timothy	80 lbs.
	Ky. blue grass	6 lbs.
	Red Top	3 lbs.
	Orchard grass	3 lbs.
	White Clover	4 lbs.
For heavy soils inclined to be wet:		
	Timothy	6 lbs.
	Ky. blue grass	6 lbs.
	Red Top	4 lbs.
	Meadow fescue	4 lbs.
	White clover	4 lbs.
For soils inclined to be light and dry:		
	Timothy	10 lbs.
	Ky. Blue grass	10 lbs.
	Red top	4 lbs.
	White clover	4 lbs.

Pastures may be plowed and seeded either in the spring or early fall (preferably August). If in the spring, about two bushels of oats or barley should be sown as a nurse crop to protect the young grass plants.

PRUNING THE APPLE TREE.

In pruning apple trees several factors must be kept in mind. First, the tree must be kept in a vigorous, growing condition. A tree that makes excessive growth will not make fruit buds, neither will a starved or slow growing tree. Secondly, the tree must be open so as to allow sunlight and air to enter. Thirdly, pruning one side of a tree or a large limb affects only the part pruned and not necessarily the whole tree.

In pruning a young tree the head should be shaped when the tree is set out. Select from three to five branches as scaffold branches and cut them back to four or six inches. The central leader should be left from four to six inches longer than any of the side branches. This will make what is known as a modified leader tree, a type of pruning which is advocated today in preference to the vase form, as it produces a stronger tree with less danger of limbs splitting off when the tree bears fruit and at the same time admits a maximum amount of sunlight to the center of the tree. The next few years, very little pruning should be done, as the tree needs all its leaf surface to manufacture starch and sugar for the growing limbs. Only such branches as clearly interfere with the future development of the tree should be removed.

On older trees the amount of cutting and the type of pruning depends very largely upon the condition of the tree itself as shown by the length of the fruit spurs. If the spurs make an annual growth of less than one-half inch, they usually fail to blossom. On the other hand, spurs that grow 1½ inches or more, are vegetative in their nature and will seldom fruit. Unusually the problem is with the under nourished tree which makes a very slow growth. Such trees should be fertilized with nitrate of soda, sulfate of ammonia, manure, or other fertilizers which carry a high percentage of readily available nitrogen. As a rule, the most economical fertilizer to use is nitrate of soda or sulfate of ammonia which should be applied at the rate of five to seven pounds per tree just before blossoming. The nitrate should be spread under the outer branches of the tree rather than close to the trunk as most of the feeding roots are at some distance from the tree trunk.

Fertilization or cultivation increases the growth of a tree, pruning decreases or dwarfs the growth. There may be some increase in growth near the cut, but it is never enough to make up for the part removed.

Cutting off limbs removes the starch and sugar which the tree had stored and causes an accumulation of nitrates from the roots at the point where the cut was made. As a consequence a growth of water sprouts usually results from cutting off a branch of any considerable size, and water sprouts seldom produce fruit because they contain too much nitrogen in proportion to their starch content. In pruning a normal tree, small limbs should be cut rather than large ones. However, all dead or diseased limbs must be removed, also interfering limbs and parallel limbs growing close together.

The renovation of the old neglected orchard is also a problem of fertilization and pruning. Usually such an orchard is so low in nitrogen that the trees make little or no growth and frequently have a large amount of dead wood. The first thing to do is to remove all the dead wood and cut the large limbs back to where they show signs of new growth. Nitrates should be applied just as the tree leaves out at a rate of four to five pounds per tree. The stimulation of growth produced by the fertilizer treatment and the pruning will result in the production of a considerable number of water sprouts. The second year all the water sprouts should be removed excepting those which are kept to replace the limbs that were removed in the first pruning.

All cuts made in removing limbs should be clean and smooth and close to the base. No stubs should be left. To prevent the splitting of large limbs, make a cut on the under side of the limb one third of the way through the limb, and three or four inches further from the trunk than the upper cut. Cuts over two inches in diameter should be covered with white lead to prevent fungus and rot injury.

The best time to prune trees is during March or April before the leaves appear. The tree can be shaped better when the leaves are off and usually the orchardist has more time in early spring. Water sprouts

may be removed during the growing season but this is optional with the orchardist as the benefits of removing them in July in preference to April are very slight.

Remember that all the fruit on apple trees is borne on the short stubby branches, known as fruit spurs, growing on the larger limbs. These spurs vary in age from two to twelve years and in lengths from one half inch to eight or ten inches. They should never be removed. Their age may be told by the rings left by the leaf scars of the bud. If these scars are close together the spur shows signs of starvation.

All the benefits of fertilization and pruning may be lost if the trees are not sprayed. Gypsy moths, browntails, or tent caterpillars will ruin a tree in a very short time. The leaves of the tree elaborate and digest the nitrogen and other minerals gathered by the roots and at the same time manufacture starch and sugar out of air and water. Fertilization, spraying and pruning are all three absolutely essential to the well being of the tree.

MAY YOU IGNORE TUBERCULOSIS OF ANIMALS?

The fact that you do not own animals does not permit you to answer this question in an affirmative manner. You are a consumer of animal products. Any factor which enters as seriously into the production of your necessities as does this particular disease must most certainly receive your attention. Statistics covering a period of twelve months, compiled by the Federal Meat Inspection Division, show that 220,000 cattle and 2,500,000 hogs were affected with tuberculosis. 40,000 beeves and 59,000 hogs were totally condemned and the diseased portions of the remainder were regarded as unfit for food. These statistics do not include about one third of the animals slaughtered without inspection. This is an appalling loss of beef and pork, and is more closely related to the price of meat than you suspect.

You may demand pure, wholesome milk because you have been told that milk from tuberculous cows is considered dangerous for children. Medical authorities estimate that twenty-five per cent of the deaths caused by tuberculosis of children under sixteen years of age are of milk origin. How many young people may be incapacitated and crippled for a similar reason we do not know. You are aware of the large sums of money which are spent annually in caring for people afflicted with tuberculosis. Equally large expenditures will have to be made in the future unless infection is prevented. The leading medical authorities believe that one method to stop the spread of infection is to check it in the children, and therefore they indorse the eradication of tuberculosis as a very important measure.

One most assuredly may not ignore tuberculosis of animals. It behooves us to become acquainted with facts so that we may become more interested and more active. It has been known for forty years that tuberculosis is caused by the tubercle bacillus, that it is communicable, and that an unsanitary environment tends to make both man and animals more susceptible to infection. For twenty years we have known that there are human and bovine forms of tubercle bacilli and that the latter form is responsible for the disease in hogs, and for no small amount of tuberculosis in children. It is a disease which cannot be recognized so easily as many others. Frequently animals appear to be perfectly healthy, even when they are extensively affected. The most practical method of detecting animals which have tuberculosis is by the use of tuberculin, prepared from cultures of tubercle bacilli, but it does not contain any of these organisms. Some people have been led to believe that tuberculin causes tuberculosis. This opinion is contrary to facts. Tuberculin produces no ill effects in healthy animals.

In view of this knowledge why has this disease been disseminated from coast to coast? Would it not have been easier to check and eradicate it ten or twenty years ago? At that time the owners of livestock did not deem it of sufficient economic importance, and perhaps their ranks are not entirely deserted today. Further, neither the owners nor the

public properly associated the occurrence of human and bovine tuberculosis. To what extent is this relation duly appreciated today? The rapid growth of animal industry, the expansion of the pure-bred division, involving the exposure of animals during shipment, and earlier insufficient regulations are related to the wide dissemination of tuberculosis. A comparison of the livestock traffic of the present day with that of fifty and even twenty-five years ago explains the general prevalence of such an infectious, communicable disease as tuberculosis, and particularly when no organized efforts are used to combat dissemination.

When, for economic reasons, your dairyman became convinced that it was necessary to remove tuberculous animals, had his herd tested, and raised the price of milk, were you willing to pay your share of the increased cost of production or were you satisfied with less expensive milk, from an untested herd? It appears that the loss in dollars has been more effective in bringing about eradication measures than the occassional sacrifice of human life. Be that as it may, a sufficient number of livestock owners and consumers have read the writing on the wall, have deserted the rocking chair brigade, and are making united efforts to control and eradicate this serious menace. In their efforts they are assisted by the United States Bureau of Animal Industry and by their respective State Bureaus. Following application to the proper authorities, and the owner's subscribed willingness to carry out instructions, a herd is tested with tuberculin, without expense to the owner. The tuberculous animals are removed, and the owner receives an indemnity.

It is this indemnity, to which every tax-paying citizen contributes, which arouses heated discussions. It is either "too small" or "too large," are the usual criticisms. A few persons do not favor any indemnity. Do we find fault with our State Government, when it maintains institutions for the care of its people who are afflicted with this disease? We contribute to similar national funds without remonstrance. Is it fitting that we should oppose expenditures which will eventually reduce the enormous waste of meat, the need of sanatoriums, and protect the lives of our children? Indemnity is a legitimate public expenditure for the protecion of the public health.

You may contend that the owner should assume part of the losses, because in some instances he may have been indifferent to whether he bought or sold tested or untested cattle, or in other instances, he favored the dissemination, knowingly or unknowingly, by means of unsanitary conditions on his premises. Under the present system of control and eradication, the Federal and State Government indemnify for two thirds of the appraised value, and the owner assumes one third of the appraised loss. Further, if those immediately concerned are unable to agree upon an appraised value, the owner and the government may appoint neutral appraisers for this purpose.

When splendid, high producing, purebred cows have to be sacrificed, the limit of indemnity (one hundred dollars per animal), at first thought appears to be inadequate. Let us assume the market value of such an animal to be three hundred dollars before testing. Knowing the animal to be tuberculous, what sum would you be willing to pay, if it were possible for you to purchase it? Further, would you be willing to place the animal into your herd and take the risk of spreading tuberculosis among your other animals? The answer is obvious.

The control and eradication of this serious menace should not be hindered by controversies about indemnity. The benefit to the livestock industry will be of inestimable value. No one, knowingly, will maintain tuberculous animals, because they are unprofitable; and most certainly no one, knowingly, will subject his children or the children of others to one of the worst plagues of mankind. The sacrifices which some herd owners make represent many years of toil. We, as non-owners, ought to feel amply repaid, if we can help to endow coming generations with reasonable assurance of health by our proportionately small contribution. It behooves all of us to give both moral encouragement and adequate financial assistance to those servants of public health who have undertaken this gigantic offensive against an enemy common to animals and mankind.

UNPROFITABLE POULTRY PRACTICES.

Yes, Mr. Poultryman, you are working with living things, with highly organized creatures, whose intricate life-sustaining mechanism is far more delicate in its operations than the machinery of your watch. When you disregard the care of your watch, you go to the jeweler. When you neglect your birds or make excessive demands of them and they become impaired, what then? You consult the neighbors, the Club Leader, the County Agent or the State Poultry Expert, if the latter are available. Your problem may be casually considered or carefully studied by means of the examination of living and dead birds and by a detailed survey of your methods. If negligence or inadvertence appear to have contributed to your misfortune, you doubt the advice and lift your chin! Whether you agree or disagree, in many instances, "hard luck" and certain common practices are closely related. May we call to your attention specific practices, which actually have been unprofitable, and matters of regret?

Mr. B. owned a flock of prizewinners. Three days after birds and ribbons had come home, two of the winners were "rattling in the throat," indicating *bronchitis*. Within two weeks *avian diptheria* (*roup*) appeared and spread through the flock. The sick birds were isolated. Daily, after the birds had gone to roost, all the houses were vaporized with a reliable antiseptic. As rapidly as possible, the houses were thoroughly cleaned and disinfected. About one fourth of the flock died or were killed. A second fourth recovered and were prepared for market. Mr. B. says, "That was an expensive lesson. The next birds I show will have a separate house and yard for a month after they come home. If any disease has been contracted they shall not set the whole flock afire."

When Mr. L. borrowed a handsome male bird, he called his neighbor's attention to several small scabs on the comb and was satisfied with the assurance that the bird had been fighting. When about three weeks later he found similar and larger scabs on the heads of his own birds he discovered that he had been presented with the use of the bird and *chicken pox* as well.

Mrs. F. ordered one hundred day-old chicks, to be delivered at a certain date. The hatchery was unable to fill her subsequent order for another hundred on the same date. She procured, at cheaper rates, fifty from one source, and fifty from another. Unfortunately the three groups were mixed in the brooders. In two days the chicks developed diarrhea and died rapidly. A laboratory diagnosis of *bacillary white diarrhea* accounted for the deaths. Seventy chicks survived and some of these were stunted. The lady has decided not to mix chicks again, and to buy only from a hatchery which guarantees the chicks to be from birds tested and free of this infection, even though the price be higher.

Mr. Y. purchased several choice breeders and was annoyed when one bird after another appeared with a soiled fluff, an offensive odor and an inflammation of the vent. He was advised to remove the male birds temporarily from any pens in which he found *communicable cloacitis or vent gleet*, to inspect the hens carefully once a week, and to remove permanently those affected. After no more sick hens appeared, the males which were not affected were returned to the pens, and the annoyance ceased.

Mr. T. collected garbage, and fed some of it to his flock on range. He learned that three people in one family were ill with ptomaine poisoning, that the doctor and the cook suspected canned fruit which had "spoiled," that the physician had sent some of the fruit to the laboratory and that the rest was in the garbage can. "Oh, well, it won't hurt the hens. Hens can eat anything." The morning after feeding the garbage he found half of the flock sick or dead. A consulting chemist was unable to detect any poison in the dead birds and suggested a bacteriological examination. The diagnosis regarding the fruit and the dead birds was *botulism*.

Mrs. B. was a firm advocate of heavy feeding, particularly beef scrap, bone meal and skimmed milk. She kept her hens in the houses all the time so that they would not "run off flesh." She lost two and three birds a week but "did not like to open the dead birds." One day while

dressing a fowl for the Sunday dinner, she found the liver and heart covered with a white powdery material. The Club Leader advised her to send the organs to the State Diagnostic Laboratory. The report informed her that the bird had probably been affected with *visceral gout*, caused by feeding too much protein and by insufficient exercise. Thereafter she reluctantly examined the birds which died, found similar conditions and decided to change her methods.

Mr. R. was the proprietor of a village tea room which had a wide reputation for chicken and waffle dinners. "Home grown chicken," was featured. On the sixth of July he found a third of his flock sick or dead. He immediately concluded that the birds had been poisoned and suspected a business competitor. Some of the birds were taken to a laboratory to obtain proof for a prosecution. When the crops and gizzards were opened, a smoky vapor, with an odor of wet matches, escaped. The material was taken into a dark closet and when rubbed, glowed like a firefly. *Phosphorus poisoning* without a doubt. An absolutely certain case against the competitor. Further investigation revealed that elaborate fire-works had been furnished to entertain the patrons over the Fourth. The remains of the celebration had been carefully cleaned from the lawns and tossed into the poultry yards. Rat poisons, carelessly handled, are a more frequent source of *phosphorus poisoning* among birds than are fire-works.

The egg yield of Mr. D.'s flocks dropped fifty per cent in three days. Most of the birds were sluggish and did not respond at feeding time. The crops were well filled but hardly large enough to be considered *impaction of the crop.* The feed was of excellent quality. Postmortem examination of three birds showed the entire digestive tract, crop, proventriculus, gizzard and intestines to be stuffed with plant material. He had begun to feed alfalfa clippings several days before the hens stopped laying. The story about the small boy, his mother's dried apples and cool spring water explains what happened to the birds. Dried lawn clippings and similar feeds should be steeped in water and fed in limited amounts until the birds are accustomed to the change of dict.

Mr. S.'s flock was "going all to pieces." The birds had a fair appetite, but were under weight, and every now and then one died. Ninety per cent of the flock were lousy. Mr. S. declared that the dead birds, which he always opened, never had many lice. That was quite natural, because lice prefer warmth to cold and leave the body of the dead bird. He should have looked for eggs "nits" on the feathers. No, he "never opened the intestines" when he examined a dead bird. Several of the poorest were killed, and when the intestines were opened, each bird had more round worms than Mr. S. had ever seen. He was somewhat skeptical when told that the *lice and worms* probably were responsible for the poor condition of the flock. He agreed that a few chicken lice on his body disturbed his own rest and that the birds probably did not receive much benefit from the feed which kept the worms, from three to four inches in length, prosperous and prolific. He gave his birds the well known tobacco treatment. To save time and money, instead of using a louse powder, every bird was dipped on the first warm day in a solution of sodium fluoride—three fourths of an ounce to a gallon of luke warm water. The houses and yards were thoroughly cleaned and disinfected. In a few weeks the flock returned to a satisfactory condition.

"He that hath an ear, let him hear."

ANSWERS TO CHARADES, ETC., IN LAST YEAR'S ALMANACK

Answers to Charades.

1. Birthday. 2. Sin-king.
3. Firelight. 4. Hand-led.

Answers to Riddles.

1. Shadow. 2. Portrait.
3. Anger.

Answers to Problems.

1. 41 7/13 minutes past 3. 2. 8 4/5 feet.
3. 84 years.

CHARADES AND RIDDLES.

1.

I crossed the meadow, reached the quiet stream
And sat beside it to my *first* a while,
But failing in my efforts to beguile,
I fell asleep and dreamed a funny dream.

I thought I heard a clear sonorous word,
Like to my *second*, it was full and round,
It seemed to summon me to leap and bound,
And then I dreamed I was my missing *third*.

To this strange fancy I disliked to yield,
I roused myself and rubbed my drowsy eyes,
Shook off my dream and heard with glad surprise
My *whole* flooding with gladness all the field.

Emily Shaw Forman.

2.

In crowded city mart
Where loudly beats the heart
Of human life,
In pastures green and fair
Where fragrant is the air,
My *first* is rife.

In times of war and peace,
When battles rage or cease
My *next* you'll hear.
Though tumult reign around,
Without it ne'er a sound
Will reach the ear.

When days are full of care
Of sorrows hard to bear,
That try the soul,
Or when they're brimming o'er
With gayeties galore,
They're not my *whole*.

Katherine I. Sandford.

3.

High in my *first* they waved the flag
With shouts of wild applause,
And soldiers brave marched to my *first*
And fought to win the cause.

Without my *second* we could not
Assert that right is might,
Nor virtue is its own reward
And other proverbs trite.

My *last* we all admit to be
A blessing unsurpassed,
Which some would give my last for all,
Some give all for my last.

We often pass my *total* by
With but a hurried look,
And though we cannot read it yet,
We find it in a book.

Carolyn Wells.

4.

My *first* in early Springtime
Its purest tint displays,
But deep and lush it waveth
In Autumn's golden haze.
My *second's* heavy clusters
A pungent flavor hold,
It lends a zest peculiar
To many a beverage cold.
My *third* is soft and gentle
My *second* quick and light,
My *second third* oft poises
In childhood's games for flight.
My *whole* amid my *first* you hear
"The prophet of the ripening year."

Susan C. Hosmer.

5.

My birth place is on the mountain,
Through the lovely valleys I roam,
I'm never seen in the restless sea
Though I make the sea my home.

Mighty and great, as I go, I grow
Increasing in size and power,
Yet I drift and drift to a lower grade
And am more of a servant each hour.

Of steel and of stone I can carry a load.
Yet I shrink 'neath the weight of a child.
I fall from above, yet rise out of the ground,
And am boldest when counted most wild.

I never appear on the crowded street
Though I visit city and town,
And when I am riding to perilous heights
The more rapid am gliding down.

I travel and travel and never turn back,
For the place of my birth never yearn,
Yet ever am found in the same lovely spot,
Though I travel and never return.

6.

Often we are covered with wisdom and wit,
And oft with a cloth where the dinner guests sit
In beauty around you, and over your head
We are countless, though numbered when bound to be read.

POETRY, ANECDOTES, HUMOR, Etc.

THE TREE OF MY LIFE.

When I was yet but a child, the gardener gave me a tree,
A little slim elm, to be set where-ever seemed good to me.
What a wonderful thing it seemed! with its lace-edged leaves uncurled,
And its span-long stem, that should grow to the grandest tree in the world!
So I searched all the garden round, and out over field and hill,
But not a spot could I find that suited my wayward will.
I would have it bowered in the grove, in a close and quiet vale;
I would rear it aloft on the height, to wrestle with the gale.

Then I said, "I will cover its roots with a little earth by the door,
And there it shall live and wait, while I search for a place once more."
But still I could never find it, the place for my wondrous tree,
And it waited and grew by the door, while years passed over me;
Till suddenly, one fine day, I saw it was grown too tall,
And its roots gone down too deep, to be ever moved at all.

So here it is growing still, by the lowly cottage door;
Never so grand and tall as I dreamed it would be of yore,
But it shelters a tired old man in its sunshine dappled shade,
The children's pattering feet round its knotty knees have played.
Dear singing birds in a storm sometimes take refuge there,
And the stars through its silent boughs shine gloriously fair.

Edward Rowland Sill.

A man should never be ashamed to own that he has been in the wrong. It is but saying, "I am wiser today than yesterday."

Pope.

"As they who for every slight infirmity take medicine to repair their health do rather impair it, so they who for every trifle are eager to vindicate their character, do rather weaken it."

THE DIVINITY OF POETRY.

Poetry is the record of the best and happiest moments of the happiest and best minds. We are aware of evanescent visitations of thought and feeling, sometimes associated with place or person, sometimes regarding our own mind alone, and always arising unforseen and departing unbidden, but elevating and delightful beyond all expression; so that, even in the desire and the regret they leave, there cannot but be pleasure, participating as it does in the nature of its object. It is, as it were, the interpenetration of a diviner nature through our own; but its footsteps are like those of a wind over the sea, which the morning calm erases, and whose traces remain only, as on the wrinkled sand which paves it. These and corresponding conditions of being are experienced principally by those of the most delicate sensibility and the most enlarged imagination; and the state of mind produced by them is at war with every base desire. The enthusiasm of virtue, love, patriotism, and friendship, is essentially linked with such emotions; and whilst they last, self appears as what it is, an atom to a universe. Poets are not only subject to these experiences as spirits of the most refined organization, but they can color all that they combine with the evanescent hues of this ethereal world; a word, a trait in the representation of a scene or passion, will touch the enchanted chord, and reanimate, in those who have ever experienced those emotions, the sleeping, the cold, the buried image of the past. Poetry thus makes immortal all that is best and most beautiful in the world; it arrests the vanishing apparitions which haunt the interlunations of life, and veiling them, or in language or in form, sends them forth among mankind, bearing sweet news of kindred joy to those with whom their sisters abide —abide, because there is no portal of expressions from the caverns of the spirit which they inhabit into the universe of things. Poetry redeems from decay the visitations of the divinity in man.

Percy Bysshe Shelley.

THE "WHY-DIDN'T-YOU?" MAN.

Since the world first began, the
"Why-Didn't-You?" man
Has ever been waiting around
To give, without price, countless
words of advice
From the depths of his wisdom
profound.
But whatever you do he will wait
till you're through,
Then point out some wonderful
plan
That you might have pursued to
great riches if you'd
Have asked the "Why-Didn't-
You?" man.

He hasn't a cent, for his whole life
is spent
In telling folks where they were
wrong,
And though wealth they secure
while he yet remains poor,
Still he's willing to help them
along.
Plain rules he can state to get rich
while you wait,
But he borrows a dime where he
can,
While the whole world is told that
it might have had gold,
By the ragged "Why-Didn't-
You?" man.

And day after day his one joy is to
say
"Why didn't you?" this thing
or that,
Deep wisdom he quotes and our
errors he notes,
For he seems to have all of them
pat.
When first he was told that this
earth we behold,
God took but six days to con-
trive,
For a moment he thought, then this
question he brought,
"Why didn't he make it in
five?"

Nixon Waterman.

FATHER: Mary, I wish you'd ask that young Mr. Spooner why he doesn't go home earlier.

DAUGHTER: But, papa, I know why he doesn't, already.

FATHER: Willie, why in the world are you so naughty?

WILLIE: 'Cause Ma gives me a cent when I promise to be good and she never asks me to be good 'less I'm naughty.

The man who stands upon his own soil, who feels that by the law of civilized nations he is the rightful owner of the land he tills, is by the constitution of our nature under a wholesome influence not easily imbibed from any other source. Perhaps the farm of this man has come down from his fathers;—they have gone to their last home, but he can trace their footsteps over the daily scenes of his labors. The roof which shelters him was raised by those to whom he owes his being, the favorite fruit tree was planted by his father's hand; he sported in his boyhood by the side of the brook, which still winds through the meadow; through the field lies the path to the village school of his earliest days; he still hears from his window the voice of the Sabbath bell which called his fathers and his forefathers to the house of God; and near at hand is the spot where he laid his parents down to rest, and where he trusts, when his hour has come, he shall be dutifully laid by his children. These are the feelings of the owner of the soil; words cannot paint them, gold cannot buy them; they flow out of the deepest feelings of the heart: they are the life spring of a fresh, healthy, generous, national character.

Edward Everett.

The complaints, which are now occasionally heard in this part of the country, of the arbitrary exercise of power in Congress by the Western "Farm Bloc," recalls a story which reminds us that it is not so long ago that the shoe was somewhat on the other foot.

One day during the Fifty-first Congress, when Thomas B. Reed was Speaker of the House of Representatives, and when there had been applied to him, on account of his rulings, the name of "Czar Reed," a gentleman and his little son were in the gallery of the House.

"Who are all those men down there writing and reading newspapers?" asked the boy.

"They are the Speakers of the House of Representatives, my son," answered the father.

After a little, the boy asked:

"Papa, who is that great big man in the chair under the flag?"

"That, my son, is the House of Representatives."

THE FARMER'S WIFE.

Bird-like she's up at day-dawn's blush,
In summer heats or winter snows,
Her veins with healthful blood aflush,
Her breath of balm, her cheek a rose.
Ah! guileless creature, hale and good,
Ah! fount of wholesome womanhood,
Far from the world's unhallowed strife!
God's blessing on the farmer's wife.

Blithe as a bee, with busy care,
She's here, she's there, she's everywhere;
Long e'er the clock has struck for noon
Home chords of toil are all in tune:
And from each richly bounteous hour
She drains its use, as bees a flower.
Apart from passion's pain and strife,
Peace gently girds the farmer's wife!

Homeward his daily labors done
The stalwart farmer homeward plods,
From battling, between shade and sun,
With sullen glebe and stubborn sods.
Her welcome on his spirit bowed
Is sunshine flashing on a cloud!
O! well he knows how vain is life,
Unsweetened by the farmer's wife.

When by the hearthstone spaces bright
Blend the glad tones of girls and boys:
Their voices rise in gleeful swells,
Their laughter rings like elfin bells,
Till with a look 'twixt smile and frown
The mother lays her infant down,
And at her firm, uplifted hand,
There's silence 'mid the jovial band;

Ye dames in proud, palatial halls—
Of lavish wiles and jeweled dress,
On whom, perchance, no infant calls,—
For barren oft your loveliness—
Turn hitherward those languid eyes
And for a moment's space be wise;
Your sister 'mid the country dew
Is three times nearer Heaven than you.

Paul Hamilton Hayne.

ON SWEET SPEECH.

From lips of love without deceit
In season spoken words are sweet.
Bright smiles and pleasant tones dispense
More joys than dumb beneficence.
The heart of virtue lights the face
And speaks in sparkling words of grace.
The woe of want they need not fear
Where words with joy enrich the ear.
He is adorned and only he
Who speaks with sweet humility.
His sins decrease, his virtue grows
Whose useful speech with sweetness flows.
The courteous word and kindly deed
To righteousness and merit lead.
Pleasures from cheerful speech and true
In this world and the next ensue.
How can he utter words that sting
Who sees what sweets from kind words spring!
With sweet words near, who harsh words try,
Eat fruit that's sour when ripe is nigh.

From Poems of Southern India.

"Phoebe," said a mistress in reproof to her colored servant whom she found smoking a short pipe after having repeatedly threatened to discharge her if again caught in the act, "if you won't stop that filthy act for any other reason, do so because it is right. You are a good church member,—and, don't you know that smoking makes the breath unpleasant, and that nothing unclean can enter heaven?"

"'Deed, missie, I does," said the woman, "but Lor' bress yo' heart, when I go to heaben I'll leave my bref behin' me."

They tell a story down in Tolland County, Connecticut, of a certain dull clergyman who announced that after the close of the service there would be a meeting of the Board. All the audience, excepting members of the Board of Trustees and one stranger, passed out. The clergyman waited a little, and then addressed the stranger, saying, "My brother, perhaps you misunderstood me. This is to be a meeting of the *Board*," emphasizing the word.

"Yes," replied the stranger, "go right ahead. I was never so *bored* in my life."

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 Rutland;—of Connecticut at Hartford;—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;—Franklin 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:—Rockingham 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 Bennington;—Caledonia Co. at St. Johnsbury;—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 Rutland;—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 Castleton;—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 Providence. Superior Court:—Providence and Bristol Counties at Providence;—Kent Co. at East Greenwich;—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 Maiue, 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 peunant *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.....WARREN G. HARDING.....Ohio
Vice-President.....CALVIN COOLIDGE.....Massachusetts

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*, HUBERT WORK of Pueblo, Colorado; *Secretary of the Navy*, EDWIN DENBY, Michigan; *Secretary of the Interior*, ALBERT BACON FALL, New Mexico; *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 67TH CONGRESS.

President of the Senate.....CALVIN COOLIDGE, *Vice-President of U.S., ex-Officio.*
President pro tempore of the Senate.....ALBERT B. CUMMINS, Iowa.
Speaker of the House of Representatives..... FREDERICK H. GILLETT, Mass.

According to the Congressional Directory the political classification of the 67th Congress is as follows: *Senate* —Republicans, 59, Democrats, 36, Republican Progressive, 1; Total, 96. *Representatives*—Republicans, 298, Democrats, 131, Socialist, 1, Vacancies, 5; Total, 435.

The term of the 67th Congress expires March 3, 1923.

MEMBERS 67TH CONGRESS FROM NEW ENGLAND.

R—Republican. D—Democrat.

SENATORS.

Terms expire March 3d, in the year following each name.

Maine.—Bert M. Fernald, R., West Poland, 1925; Frederick Hale, R., Portland, 1923. **New Hampshire.**—George Higgins Moses, R., Concord, 1927; Henry Wilder Keyes, R., Haverhill, 1925. **Vermont.**—William Paul Dillingham R., Montpelier, 1927; Carroll Smalley Page, R., Hyde Park, 1923. **Massachusetts.**—Henry Cabot Lodge, R., Nahant, 1923; David Ignatius Walsh, D., Fitchburg, 1925. **Rhode Island.**—LeBaron Bradford Colt, R., Bristol, 1925; Peter G. Gerry, D., Warwick, 1923. **Connecticut.**—Frank Bosworth Brandegee, R., New London, 1927; George Payne McLean, R., Simsbury, 1923.

REPRESENTATIVES.

Terms of all expire March 3d, 1923.

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, Sherman E. Burroughs, R., Manchester; 2nd District, Edward H. Wason, R., Nashua. **Vermont.**—1st District, Frank L. Greene, R., St. Albans; 2nd District, Porter Hinman Dale, R., Island Pond. **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, Robert S. Maloney, R., Lawrence; 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, Joseph Walsh, R., New Bedford. **Rhode Island.**—1st District, Clark Burdick, R., Newport; 2nd District, Walter R. Stiness, R., Cowesett; 3rd District, Ambrose Kennedy, R., Woonsocket. **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, James P. Glynn, R., Winsted.

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; WILLIAM R. DAY, of Ohio, Sixth Circuit; WILLIS VAN DEVANTER, of Wyoming, Eighth Circuit; MAHLON PITNEY, of New Jersey, Third Circuit; JAMES C. MCREYNOLDS, of Tennessee, Fifth Circuit; LOUIS D. BRANDEIS, of Massachusetts, Second Circuit; GEORGE SUTHERLAND, of Utah, Seventh Circuit.

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 cents**; limit of indemnity for loss:—1st Class, $50.00; 3d Class, $25.00. Parcel Post matter may be **insured**; fee, 3 cents for not exceeding $5.00; 5 cents for not exceeding $25.00; 10 cents for not exceeding $50.00; 25 cents for not exceeding $100.00.

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.—DOMESTIC.

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 exe'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, Balearic Islands, Bermuda, Brazil, Caicos Islands, Cayman Islands, Costa Rica, Ecuador, Haiti, Jamaica, Martinique, Spain, Spanish Islands, Spanish possessions in North Africa, Rep. Panama, Bahamas, Barbados, Windward Islands. Trinidad, Colombia, Peru, Bolivia, Republic of Honduras, Nicaragua, Dominican Republic, Salvador, British Guiana, British Honduras, Dutch West Indies, Great Britain** and **Ireland, Leeward Islands, Newfoundland** and **New Zealand, is 2 cents per ounce** or fraction. Limit of weight, 11 pounds.

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, 4 lbs. 6 oz. Printed Matter, Commercial Papers and Samples of Merchandise, Postal Union rates. Merchandise, except Samples, is subject to Domestic Parcel Post Regulations 8th zone, but is limited to 4 lbs. 6 oz. and may be registered but not insured. 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. Nothing may be sealed except Letters.

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; 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; N. E. DEACONESS BIBLE TRAINING SCHOOL, Boston; NEWTON THEOLOGICAL INSTITUTION, Newton Centre, (Baptist); NORTHEASTERN COLLEGE, BOSTON; ST. JOHNS' NORMAL 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.

SOME GARDEN HINTS.

The home garden is sometimes the farmer's most valuable crop and at least deserves his careful consideration. Vegetables supply the table with all the elements of nutrition that the body needs at a much smaller cost than fruits, cereals or meats. Beans and peas are a very excellent source of protein; potatoes, sweet potatoes and the other root vegetables of starch and sugar; string beans, lettuce, onions, spinach and cabbage of iron and other minerals; while all vegetables contain considerable fiber which is used by the body as roughage. Nearly all vegetables contain the vitamines so essential to health. Why not raise more vegetables and eat more vegetables?

The garden should be carefully planned so as to raise the largest amount of vegetables with the least labor. The plan may be drawn to scale on paper with dates of planting after each crop. The average farmer does not care to go to a great deal of trouble, but he should plan very carefully where each vegetable is to go, when it should be planted and how much of each to plant.

One of the most common sources of failure in the farmer's garden is the tendency to plant the whole garden in one day. As a consequence some of the vegetables will be planted too early, others too late. There are in general two classes of vegetables: — The cool season vegetables, or those that make most of their growth during the cool part of the year when the night temperature is 60° or lower. They must be grown before July or after the middle of August. Cool season vegetables include radishes, cabbage, cauliflower, peas, turnips, lettuce, spinach, parsnips, salsify, celery, parsley, endive, beets, carrots, onions, and potatoes. The second class includes the warm season vegetables or those which make most of their growth during the hot season in late June, July and August. They include beans, corn, cucumbers, muskmelons, watermelons, squashes, pumpkins, tomatoes, eggplant, peppers, and sweet potatoes. Plant the cool season crops as early as possible, while the warm season crop should not be planted until the ground is warm.

There are two classes of weeds that infest the home garden; the perennial weeds which spread from enlarged root stocks, and the annual or seed weeds. Witch grass and wild morning glory are the most common examples of the first class, while hog weed, lambs quarters, purslane and chick weed are seed weeds found in every garden. There is no easy way of eliminating the former. Late fall plowing, constant cultivation, and shaking out the roots, are suggested methods of control. Seed weeds are less troublesome, and constant cultivation with one or two hand hoeings will check them.

Keep your hand labor down by planting all rows at least three feet apart and cultivating with horse once a week.

Stable manure is the best fertilizer for the garden. Fifteen cords per acre will supply all the plant food and humus the average vegetable crops need. On poor soils or where manure is scarce, apply from 500 to 1000 lbs. per acre of a fertilizer analyzing about 4% nitrogen, 8% phosphoric acid and 2% potash.

Are you bothered with wormy radishes or maggots in cauliflower and cabbage? This insect may be controlled by covering the radish row, just as the radishes are germinating, with a mixture of equal parts of an air slaked lime and tobacco dust, and repeating the treatment twice at intervals of seven to ten days. On cabbage and cauliflower it may be controlled by putting a handful of the mixture around each plant when set out and repeating the application.

Fresh rhubarb may be had in mid winter by taking up the clumps just before frost and allowing them to freeze solid. They are then planted in a dark cellar with a temperature of 50° or more. In about four weeks the first picking may be made. The roots however, are worthless after forcing.

Head lettuce should be started in the greenhouse or hot bed by March, and transplanted at least once before setting in the field. Transplant by May 1 in rich moist soil, and cultivate twice a week. Big Boston and May King are the best early varieties and New York and Hanson the best hot weather kinds.

HOUSEHOLD HINTS.

Cheese too dry to serve may be grated, put in a bottle, and kept for use in making cheese crackers, cheese straws, au gratin vegetables, and for flavoring sauces and soups. A small amount sprinkled over a fruit salad is an attractive addition.

A small sized curling iron is useful for fluting ruffles or gathered Valenciennes.

Stains caused by hard water standing in or drying on glassware can be removed with vinegar.

Windows can easily be washed with a chamois skin wrung out of water containing a little denatured alcohol.

A useful device for reaching the outside of upstairs windows from the inside is made by nailing two pieces of stick together in the shape of a T and winding the cross of the T with padding. The cross should be, when padded, nearly the width of the pane.

Grease spots can be removed from unfinished wood by laying on a piece of unglazed wrapping paper, tissue paper, or blotting paper, and applying a hot iron.

A slight scorch in ironing may be bleached by laying the garment in the sunshine.

Grass stains will come out in the ordinary laundering process if the spots are rubbed with fat before wetting.

Silk fish line makes a strong thread for stringing beads. If the beads are transparent a white line such as Japanese grass line should be used.

If a commercial drying form for children's woolen stockings and socks is not available, a satisfactory substitute can be made by cutting out the shape of the new sock from stiff cardboard. Stockings which have already shrunk slightly can be brought back by drying on this device.

When a long handled brush is not available for cleaning the drain tube of an ice chest or other open tube, use the following device. Tie a piece of absorbent cotton in the middle of a string more than twice the length of the tube. Run one end through with the help of running water and pull the wad back and forth through the tube.

A wooden sink rack will last longer if painted over with boiled linseed oil before using and at intervals of about three months.

To keep the pattern from wearing off linoleum varnish it when it is first laid and at intervals.

The old rubber rings washed and replaced on glass jars which have been emptied prevent the edges from becoming nicked during handling in storage or shipping.

A silk dress crushed by packing can be put into condition to wear without pressing by hanging it over a bathtub full of hot water for a few hours.

In an emergency with damp matches try rubbing on a dry cork before attempting to scratch them.

A mixture of sugar and tartar emetic placed on window sills where ants are entering serves as a repellant.

Any piece of old knitted material such as a sweater or muffler makes an excellent polisher for copper or brass.

There is much less danger of leaving soap in the hair in a home shampoo if the soap is made into a solution.

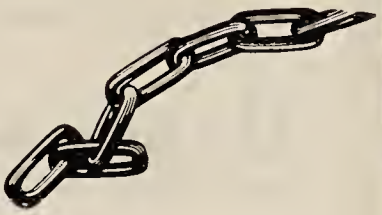
A discarded safety razor blade is a useful addition to the work basket to use for ripping and cutting threads.

A cork makes a good safety end for crochet hooks in the work basket.

Make a rough sketch of kitchen and storage places, and mark on it the lines of travel which you use often in doing your work. If the paths you use most frequently are the longest, will it not pay to consider carefully whether the kitchen can be rearranged to save steps.

An attractive and easy way to ornament the icing of a cake for a children's party is to dip fluffy popped corn into jelly to color it and arrange with a clean small leaf on the top of the icing.

White window shades may be renewed by painting with a coat of flat white paint.



Like a chain—a boot is only as strong as its weakest point

Months of wear can be built into the ankle, the heel, the leg—

And a crack across the instep makes three-quarters of this wear wasted!

One break in a vital spot and your boots are ready for the junk pile before the other parts have really begun to wear!

There are four points where the strain is hardest—ankle, back of the heel, instep and sole. Unless the boot is properly constructed at these points it wears out quickly.

How "U. S." reinforcements insure against breaks

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You'll find every type of rubber footwear in the big U. S. line. There's the U. S. Walrus, the famous all-rubber overshoe—the U. S. lace Bootee, a rubber workshoe to be worn over your socks for spring and fall—U. S. Arctics and Rubbers—all styles and sizes for the whole family. Look for the "U. S." trademark whenever you buy—the honor mark of the oldest rubber organization in the world.

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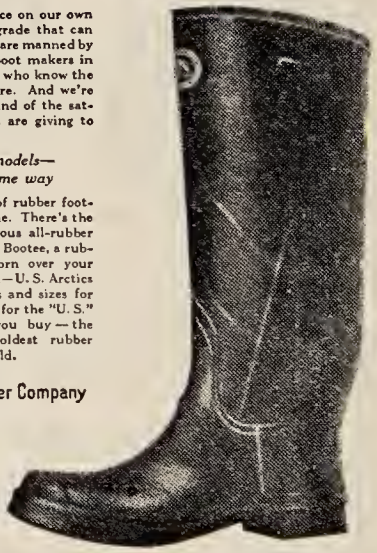

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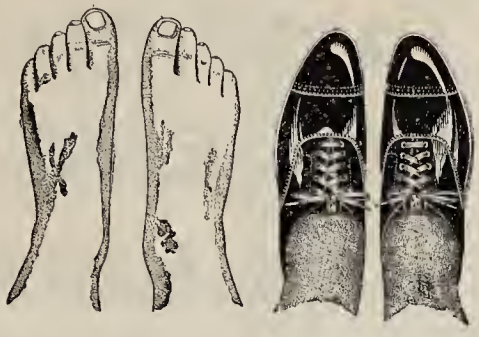

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