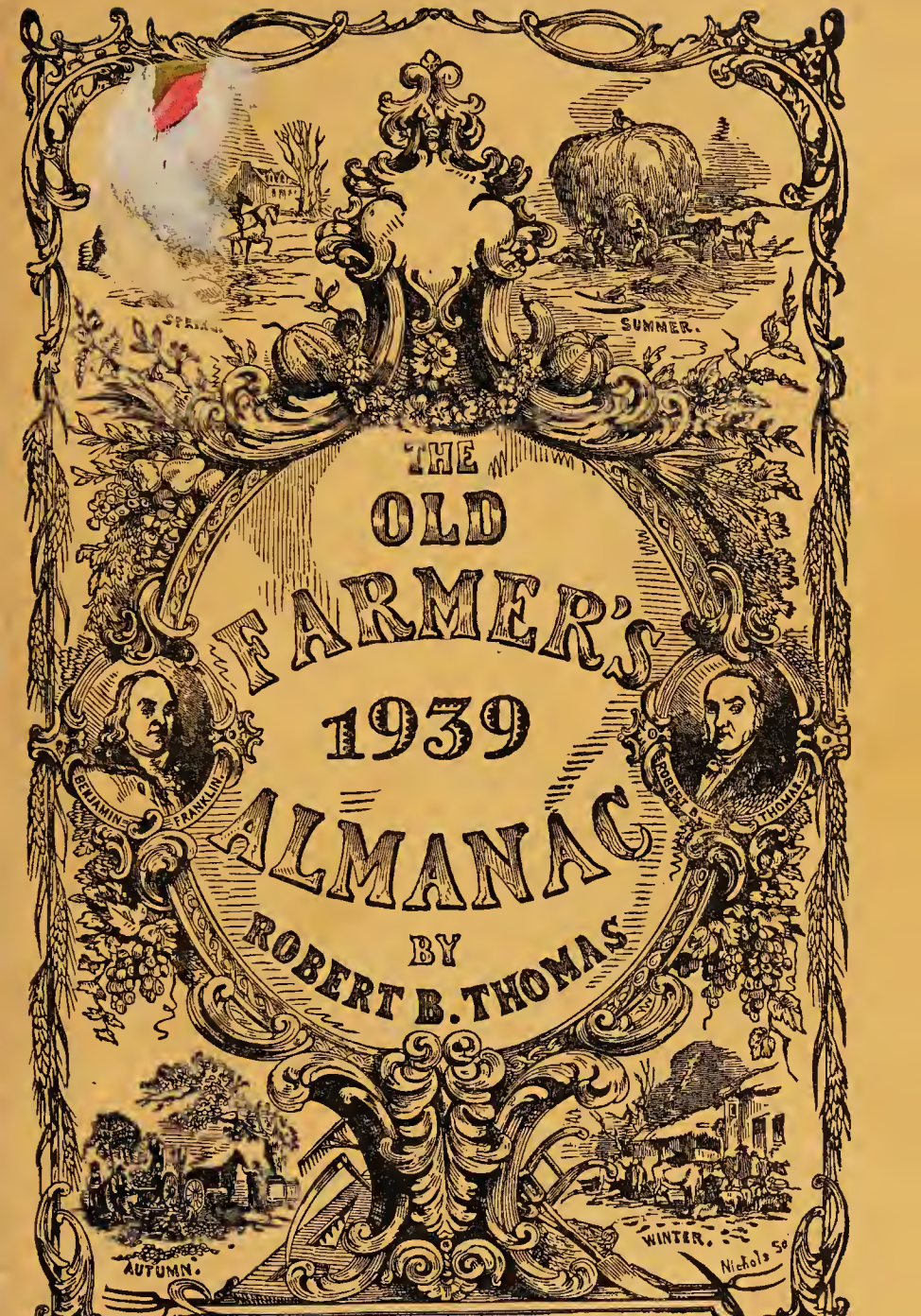
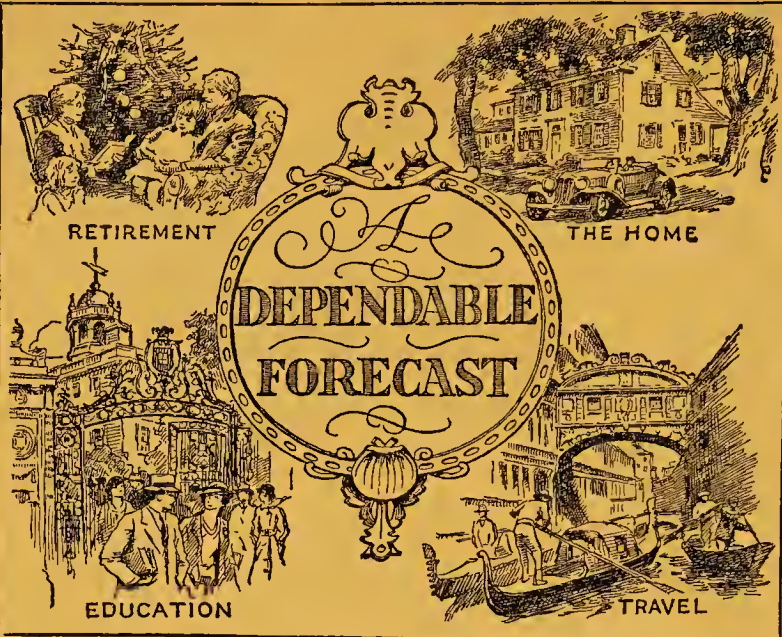
147th Year



PUBLISHED BY
LITTLE, BROWN & COMPANY
BOSTON, MASS.

Price 15 Cents



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John Hancock
MUTUAL
LIFE INSURANCE COMPANY
OF BOSTON, MASSACHUSETTS

Address JOHN HANCOCK INQUIRY BUREAU
197 Clarendon Street, Boston, Mass.

Number One Hundred and Forty-Seven

THE

(OLD)

FARMER'S ALMANACK,

CALCULATED ON A NEW AND IMPROVED PLAN
FOR THE YEAR OF OUR LORD

1939

Being 3rd after BISSEXTILE or LEAP YEAR, and (until July 4)
163rd of American Independence.

FITTED FOR BOSTON, BUT WILL ANSWER FOR ALL NEW ENGLAND STATES

Containing, besides the large number of Astronomical Calculations
and the Farmer's Calendar for every month
in the year, a variety of

NEW, USEFUL, AND ENTERTAINING MATTER.

ESTABLISHED IN 1793

BY ROBERT B. THOMAS.

Time is still on the rapid flight
That makes the changing seasons gay —
The grateful speed that brings the night,
The swift and glad return of day. — Bryant.

From the Title Page, The Old Farmer's Almanac, 1839.

Sold by Booksellers and Traders throughout New England and Atlantic States.

The above illustration is a reproduction of a photograph of a statuette of a woodchuck, executed by the eminent sculptress, Miss Katharine Lane of Boston, in the possession of Arthur W. Bell. There is no more truly rural beast of the field than the woodchuck, or ground-hog, and aside from his qualifications as weather prophet we feel his image constitutes an appropriate rustic emblem for the Almanac.

* * * * * * * * * * * * * * * * * * *

Our countryside never looked better than it does today. There is a neatness and an air of prosperity to farms and cottages, to public buildings and churches — and to the people too — as one journeys along the countless roads which form a complex network over the land. Why is this so, when from all sides comes the universal complaint of depression? One sees more paint on houses, more flowers in the little gardens, more activity of various sorts going on and, of course, automobiles in nearly every yard.

Isn't the answer that we are better off than we think we are — that we demand more than is necessary for happiness and comfort — that we become frightened by newspaper talk and apprehensive from what our neighbor may have just told us?

THE OLD FARMER was talking not long ago with the dean of one of our agricultural colleges in a State not recognized as especially fertile. He said that no farmer at that time, to his knowledge, was on relief. Farmers, he said, scrape along somehow, many very well, and yet we hear much about the farmer's plight. Undoubtedly these comments come from many who till the soil on a grand scale, and that perhaps is the root of our trouble. THE OLD FARMER likes to think of his people as simple, modest folk living their lives and striving in a small independent way; he rather believes that, if this rule were applied in all walks of life, existence would be happier and more successful.

The message, then, this year, is to practice the simple life with industry and confidence, with economy, thrift, a stout heart and a loyalty to the Country we have inherited from our forefathers.

THE OLD FARMER.

1939

JANUARY.						
S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	-	-	-	-
-	-	-	-	-	-	-

FEBRUARY.						
S	M	T	W	Th	F	S
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	-	-	-	-
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MARCH.						
S	M	T	W	Th	F	S
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	-
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APRIL.						
S	M	T	W	Th	F	S
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	-	-	-	-	-	-

MAY.						
-	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	-	-	-
-	-	-	-	-	-	-

JUNE.						
-	-	-	-	1	2	3
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18	19	20	21	22	23	24
25	26	27	28	29	30	-
-	-	-	-	-	-	-

JULY.						
-	-	-	-	-	-	1
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30	31	-	-	-	-	-

AUGUST.						
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27	28	29	30	31	-	-
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SEPTEMBER.						
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10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
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OCTOBER.						
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	-	-	-	-
-	-	-	-	-	-	-

NOVEMBER.						
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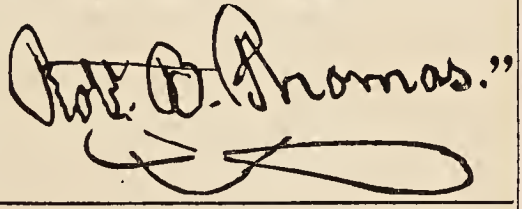
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	-	-
-	-	-	-	-	-	-

DECEMBER.						
-	-	-	-	-	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	-	-	-	-	-	-

"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. . . .



1940

JANUARY.						
S	M	T	W	Th	F	S
-	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	-	-	-
-	-	-	-	-	-	-

FEBRUARY.						
S	M	T	W	Th	F	S
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	-	-
-	-	-	-	-	-	-

MARCH.						
S	M	T	W	Th	F	S
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10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	-	-	-	-	-	-

APRIL.						
S	M	T	W	Th	F	S
-	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	-	-	-	-
-	-	-	-	-	-	-

MAY.						
-	-	-	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	-
-	-	-	-	-	-	-

JUNE.						
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	-	-	-	-	-	-

JULY.						
-	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	-	-	-
-	-	-	-	-	-	-

AUGUST.						
-	-	-	-	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
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SEPTEMBER.						
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	-	-	-	-	-
-	-	-	-	-	-	-

OCTOBER.						
-	-	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	-	-
-	-	-	-	-	-	-

NOVEMBER.						
-	-	-	-	-	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
-	-	-	-	-	-	-

DECEMBER.						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	-	-	-	-
-	-	-	-	-	-	-

EXPLANATIONS FOR CALENDAR PAGES.

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

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

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

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

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

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

If during any part of the year 1939 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. (See pages 36 and 37 for N. Y. Tides.)

Names and Characters of the Principal Planets.

☉ ☼ ☺ ⊕ The Sun.
● ☽ ☾ ☾ The Moon.
☿ Mercury.
♀ Venus.
⊕ The Earth.
♂ Mars.
♃ Jupiter.
♄ Saturn.
♅ or ♅ Uranus.
♆ Neptune.
♇ Pluto.

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 1939.

Golden Number . . .	2	Solar Cycle	16	Roman Indiction . . .	7
Epact	10	Dominical Letter . .	A	Year of Julian Period	6652

Movable Feasts and Fasts for 1939.

Septuagesima Sun.,	Feb. 5	Good Friday,	April 7	Whit Sunday,	May 28
Shrove Sunday,	" 19	Easter Sunday,	" 9	Trinity Sunday,	June 4
Ash Wednesday,	" 22	Low Sunday,	" 16	Corpus Christi,	" 8
1st Sunday in Lent,	" 26	Rogation Sunday,	May 14	1st Sunday in Advent,	
Palm Sunday,	April 2	Ascension Day,	" 18		Dec. 3

VENUS, MARS, JUPITER AND SATURN, 1939.

Below are given the times of the rising or setting of the Planets named, on the first, eleventh and twenty-first 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.

1939		VENUS		MARS		JUPITER		SATURN	
			h. m.		h. m.		h. m.		h. m.
JANUARY	1st	rises	3 44 A.M.	rises	2 38 A.M.	sets	8 31 P.M.	sets	11 58 P.M.
"	11th	"	3 41 A.M.	"	2 31 A.M.	"	8 2 P.M.	"	11 22 P.M.
"	21st	"	3 45 A.M.	"	2 23 A.M.	"	7 34 P.M.	"	10 44 P.M.
FEBRUARY	1st	rises	3 53 A.M.	rises	2 14 A.M.	sets	7 4 P.M.	sets	10 6 P.M.
"	11th	"	4 1 A.M.	"	2 5 A.M.	"	6 37 P.M.	"	9 31 P.M.
"	21st	"	4 8 A.M.	"	1 56 A.M.	"	6 9 P.M.	"	8 56 P.M.
MARCH	1st	rises	4 11 A.M.	rises	1 47 A.M.	sets	5 48 P.M.	sets	8 30 P.M.
"	11th	"	4 12 A.M.	"	1 36 A.M.	rises	6 2 A.M.	"	7 55 P.M.
"	21st	"	4 9 A.M.	"	1 22 A.M.	"	5 28 A.M.	"	7 23 P.M.
APRIL	1st	rises	4 3 A.M.	rises	1 6 A.M.	rises	4 51 A.M.	sets	6 47 P.M.
"	11th	"	3 53 A.M.	"	0 49 A.M.	"	4 17 A.M.	"	6 14 P.M.
"	21st	"	3 43 A.M.	"	0 31 A.M.	"	3 43 A.M.	rises	4 48 A.M.
MAY	1st	rises	3 31 A.M.	rises	0 10 A.M.	rises	3 8 A.M.	rises	4 12 A.M.
"	11th	"	3 20 A.M.	"	11 46 P.M.	"	2 34 A.M.	"	3 35 A.M.
"	21st	"	3 9 A.M.	"	11 21 P.M.	"	1 58 A.M.	"	2 58 A.M.
JUNE	1st	rises	2 59 A.M.	rises	10 51 P.M.	rises	1 20 A.M.	rises	2 19 A.M.
"	11th	"	2 54 A.M.	"	10 22 P.M.	"	0 44 A.M.	"	1 42 A.M.
"	21st	"	2 53 A.M.	"	9 48 P.M.	"	0 8 A.M.	"	1 5 A.M.
JULY	1st	rises	2 57 A.M.	rises	9 12 P.M.	rises	11 27 P.M.	rises	0 27 A.M.
"	11th	"	3 7 A.M.	"	8 31 P.M.	"	10 49 P.M.	"	11 46 P.M.
"	21st	"	3 23 A.M.	"	7 46 P.M.	"	10 11 P.M.	"	11 8 P.M.
AUGUST	1st	rises	3 45 A.M.	sets	3 23 A.M.	rises	9 28 P.M.	rises	10 26 P.M.
"	11th	"	4 8 A.M.	"	2 33 A.M.	"	8 49 P.M.	"	9 47 P.M.
"	21st	"	4 33 A.M.	"	1 49 A.M.	"	8 8 P.M.	"	9 8 P.M.
SEPTEMBER	1st	rises	5 1 A.M.	sets	1 11 A.M.	rises	7 23 P.M.	rises	8 24 P.M.
"	11th	sets	6 12 P.M.	"	0 43 A.M.	"	6 41 P.M.	"	7 44 P.M.
"	21st	"	6 0 P.M.	"	0 21 A.M.	"	5 59 P.M.	"	7 4 P.M.
OCTOBER	1st	sets	5 47 P.M.	sets	0 4 A.M.	sets	5 24 A.M.	rises	6 23 P.M.
"	11th	"	5 35 P.M.	"	11 49 P.M.	"	4 38 A.M.	"	5 42 P.M.
"	21st	"	5 26 P.M.	"	11 39 P.M.	"	3 53 A.M.	sets	6 9 A.M.
NOVEMBER	1st	sets	5 19 P.M.	sets	11 30 P.M.	sets	3 5 A.M.	sets	5 21 A.M.
"	11th	"	5 18 P.M.	"	11 23 P.M.	"	2 22 A.M.	"	4 38 A.M.
"	21st	"	5 23 P.M.	"	11 17 P.M.	"	1 41 A.M.	"	3 56 A.M.
DECEMBER	1st	sets	5 34 P.M.	sets	11 11 P.M.	sets	1 2 A.M.	sets	3 14 A.M.
"	11th	"	5 51 P.M.	"	11 7 P.M.	"	0 25 A.M.	"	2 32 A.M.
"	21st	"	6 13 P.M.	"	11 3 P.M.	"	11 46 P.M.	"	1 52 A.M.
"	31st	sets	6 37 P.M.	sets	10 58 P.M.	sets	11 12 P.M.	sets	1 12 A.M.

TIDE CORRECTIONS.

To obtain the time and height of high water at any place, apply the differences in accordance with the sign given to the daily predictions for Boston (Commonwealth Piers). Where a value in the "height difference" column is preceded by a *, the height at Boston should be multiplied by this ratio.

	Time Difference h.m.	*Height Difference* Feet
Augusta, Me.	+3 55	*0.4
Bangor, Me.	−0 05	+3.7
Bar Harbor, Me.	−0 25	+1.1
Bath, Me.	+1 00	−3.0
Belfast, Me.	−0 15	+0.3
Block I. Harbor, R. I.	−3 45	*0.3
Boothbay Harbor, Me.	−0 20	−0.6
Bridgeport, Conn.	+0 10	−2.6
Bristol, R. I.	−3 40	*0.4
Camden, Me.	−0 20	+0.2
Chatham Light, Mass.	+0 25	−2.7
Cohasset, Mass.	−0 05	−0.4
Eastport, Me.	−0 20	+8.8
Edgartown, Mass.	+0 30	*0.2
Fall River, Mass.	−3 35	*0.5
Gloucester, Mass.	−0 05	−0.7
Greenport, L. I.	−0 50	*0.3
Hartford, Conn.	+4 10	*0.1
Hyannisport, Mass.	+0 45	*0.4
Nantucket, Mass.	+0 55	*0.3
Narragansett Pier, R. I.	−3 50	*0.4
New Bedford, Mass.	−3 35	*0.4
Newburyport, Mass.	+0 40	−1.6
New Haven, Conn.	+0 05	−3.1
New London, Conn.	−1 40	*0.3
Newport, R. I.	−3 50	*0.4
New York, Governors I.	−2 55	*0.5
Plymouth, Mass.	0 00	+0.2
Point Judith, R. I.	−3 40	*0.3
Portland, Me.	−0 10	−0.5
Port Clyde, Me.	−0 25	−0.1
Portsmouth, N. H.	+0 10	−1.6
Providence, R. I.	−3 30	*0.5
Provincetown, Mass.	0 00	−0.2
Rockland, Me.	−0 25	+0.3
Salem, Mass.	−0 05	−0.4
Sandwich, Mass.	+0 05	0.0
Stamford, Conn.	+0 10	−2.1
Stonington, Conn.	−2 10	*0.3
Vineyard Haven, Mass.	+0 10	*0.2
West Falmouth, Mass.	−3 25	*0.4
Woods Hole, Fish Com. Whf.	−2 30	*0.2

1939] JANUARY, First Month.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	23s. 02	7	22 25	13	21 33	19	20 25	25	19 04
	2	22 57	8	22 18	14	21 22	20	20 12	26	18 49
	3	22 52	9	22 10	15	21 12	21	19 59	27	18 34
	4	22 46	10	22 01	16	21 00	22	19 46	28	18 18
	5	22 39	11	21 52	17	20 49	23	19 32	29	18 02
	6	22 32	12	21 43	18	20 37	24	19 18	30	17 46

○ Full Moon, 5th day, 4h. 30m., evening, E.
☾ Last Quarter, 12th day, 8h. 10m., morning, W.
● New Moon, 20th day, 8h. 27m., morning, E.
☽ First Quarter, 28th day, 10h. 00 m., 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 Past. m.	Moon's Age.	Full Sea, Boston. Morn h.	Full Sea, Boston. Even h.	☽'s Place	☽ Sets. h. m.	☽ Souths. h. m.
1	1	S.	7 14	4 22	9 8	0 5	12	11	6¾	7¼	Tau	2 22	8 04
2	2	M.	7 14	4 23	9 9	0 6	12	12	7½	8¼	Tau	3 28	9 01
3	3	Tu.	7 14	4 24	9 10	0 7	11	13	8½	9	G'm	4 35	10 02
4	4	W.	7 14	4 25	9 11	0 8	11	14	9¼	10	G'm	5 38	11 04
5	5	Th.	7 14	4 25	9 11	0 8	10	○	10¼	10¾	Cnc	rises	morn
6	6	Fr.	7 14	4 26	9 12	0 9	10	16	11¼	11¾	Cnc	5 53	0 06
7	7	Sa.	7 14	4 27	9 13	0 10	10	17	0	—	Leo	7 09	1 07
8	8	S.	7 13	4 28	9 15	0 12	9	18	0½	1	Leo	8 24	2 04
9	9	M.	7 13	4 29	9 16	0 13	9	19	1½	1¾	Vir	9 36	2 59
10	10	Tu.	7 13	4 30	9 17	0 14	8	20	2¼	2¾	Vir	10 45	3 51
11	11	W.	7 13	4 31	9 18	0 15	8	21	3¼	3¾	Lib	11 52	4 41
12	12	Th.	7 12	4 32	9 20	0 17	8	22	4¼	4¾	Lib	morn	5 31
13	13	Fr.	7 12	4 34	9 22	0 19	7	23	5¼	5¾	Sco	0 58	6 20
14	14	Sa.	7 12	4 35	9 23	0 20	7	24	6¼	6¾	Sco	2 00	7 09
15	15	S.	7 11	4 36	9 25	0 22	6	25	7¼	7¾	Sgr	2 59	7 58
16	16	M.	7 11	4 37	9 26	0 23	6	26	8	8¾	Sgr	3 55	8 46
17	17	Tu.	7 10	4 38	9 28	0 25	6	27	9	9½	Sgr	4 46	9 36
18	18	W.	7 10	4 40	9 30	0 27	5	28	9¾	10¼	Cap	5 31	10 24
19	19	Th.	7 9	4 41	9 32	0 29	5	29	10½	11	Cap	6 12	11 12
20	20	Fr.	7 9	4 42	9 33	0 30	5	●	11	11½	Aqr	sets	11 57
21	21	Sa.	7 8	4 43	9 35	0 32	4	1	11¾	—	Aqr	6 09	0 42
22	22	S.	7 8	4 45	9 37	0 34	4	2	0¼	0¼	Aqr	7 07	1 25
23	23	M.	7 7	4 46	9 39	0 36	4	3	0¾	1	Psc	8 06	2 08
24	24	Tu.	7 6	4 47	9 41	0 38	4	4	1½	1½	Psc	9 04	2 50
25	25	W.	7 5	4 48	9 43	0 40	3	5	2	2¼	Ari	10 03	3 33
26	26	Th.	7 5	4 50	9 45	0 42	3	6	2¾	3	Ari	11 04	4 17
27	27	Fr.	7 4	4 51	9 47	0 44	3	7	3½	3¾	Ari	morn	5 04
28	28	Sa.	7 3	4 52	9 49	0 46	3	8	4¼	4¾	Tau	0 07	5 54
29	29	S.	7 2	4 54	9 52	0 49	3	9	5¼	5¾	Tau	1 11	6 47
30	30	M.	7 1	4 55	9 54	0 51	2	10	6	6¾	G'm	2 15	7 43
31	31	Tu.	7 0	4 56	9 56	0 53	2	11	7	7¾	G'm	3 18	8 43

JANUARY hath 31 days. [1939

This day Time winds th' exhausted chain,
To run the twelvemonth's length again.

"New Year's Day" — ROBERT BURNS

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	A	Circumcision. ☌ ☉ ☾. Tides 9.3 8.4	
2	M.	□ ♄ ☉. Tides 9.8 8.7 *Warmer.*	
3	Tu.	☿ Gr. elong. W. ⊕ in Perihelion Tides 10.4 9.1	
4	W.	♀ in Per. ☾ runs high (Boston) Shortest morning 10.3 9.5	
5	Th.	Com. Stephen Decatur killed in duel, 1820. Tides 11.4 10.0	
6	Fr.	Epiphany. ☾ in Perigee. 11.7 10.3	
7	Sa.	First National Election in U.S., 1789. 11.7 — *Cold-wave*	
8	A	1st Sun. af. Epip. Tides 10.5 11.5	
9	M.	Independence of Mexico proclaimed, 1825. Tides 10.6 11.1	
10	Tu.	☌ ♆ ☽. ☾ on Eq. 10.5 10.5 *Much*	
11	W.	First school opened in N.E. for Indian children, 1651. 10.3 9.9 *colder*	
12	Th.	Bonaparte's family banished from France, 1816. Tides 10 0 9.2	
13	Fr.	A. Lawrence Lowell elected Pres. of Harvard Univ., 1909. 9.7 8.7	
14	Sa.	☌ ☍ ☾. Tides 9.5 8.3 *Deep snow.*	
15	A	2d Sun. af. Epiph. Tides 9.4 8.1	
16	M.	☿ in ♉. ☌ ♀ ☾. Tides 9.3 8.1	
17	Tu.	☾ runs low. Tides 9.4 8.2	
18	W.	☌ ☿ ☾ Tides 9.4 8.8	
19	Th.	Edgar Allen Poe born, 1809. Tides 9.5 8.5 *Melting*	
20	Fr.	☾ in Apogee. Tides 9.5 8.6	
21	Sa.	St. Agnes Eve. Tides 9.6 —	
22	A	3rd Sun. af. Epip. ☉ Stat. in R.A. 8.7 9.5	
23	M.	☌ ♓ ☾. Tides 8.8 9.4 *Severe cold.*	
24	Tu.	☾ on Equator. Tides 8.8 9.2	
25	W.	Conv. of St. Paul. Tides 8.8 9.0	
26	Th.	♀ Gr. Hel. Lat. N. ☿ in ☍ h. ☌ ♄ ☾. Tides 8.8 8.7	
27	Fr.	John P. Audubon, famous naturalist, died, 1851. Tides 8.9 8.5	
28	Sa.	☌ ☉ ☾. 9.0 8.3 *Warmer weather.*	
29	A	4th S. a. Ep. Tides 9.1 8.2	
30	M.	♀ Gr. elong. W. Tides 9.4 8.3	
31	Tu.	☾ runs high. Tides 9.8 8.6	

The Farm Shop

This is the time of year when an inventory of your equipment can be made and needed repairs planned. However, planning the repairs is not enough—they should be started immediately and carried through till spring in order of importance. This means a heated shop where you can work in comfort during the cold days to come.

Why not start today—clean up the shop space—remove all fire hazards—such as old open paint and oil cans, rags, wood scraps and shavings, etc. Then set up a stove with good metal protection for the walls and partitions and good thimbles where the smoke pipe goes through the wall or partition and build a fire.

When the shop warms up, you will really take pleasure in sorting out and arranging the tools in some handy place, finding and fitting up those you have mislaid or damaged. Then start on that accumulation of parts, bolts, nuts, washers, etc. Sort out the usable and discard the others. Clear a space in the shop large enough to work comfortably. Preferably have more than one job going at a time, so that temporary lack of a needed part may not provide too convenient an excuse for doing nothing.

Get the parts on the next trip to town. There is great satisfaction in a systematic repair of equipment.

G. M. Foulkrod

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	17s. 13	7	15 26	13	13 29	19	11 25	25	9 14
	2	16 55	8	15 07	14	13 09	20	11 04	26	8 52
	3	16 38	9	14 48	15	12 49	21	10 42	27	8 29
	4	16 20	10	14 29	16	12 28	22	10 20	28	8 07
	5	16 02	11	14 09	17	12 07	23	9 58		
	6	15 44	12	13 49	18	11 46	24	9 36		

○ Full Moon, 4th day, 2h. 55m., morning, W.

☾ Last Quarter, 10th day, 11h. 12m., evening, E.

● New Moon, 19th day, 3h. 28m., morning, E.

☽ First Quarter, 26th day, 10h. 26m., 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.
32	1	W.	6 59	4 57	9 58	0 55	2	12	8	8¾	Cnc	4 17	9 44
33	2	Th.	6 58	4 59	10 1	0 58	2	13	9	9½	Cnc	5 11	10 45
34	3	Fr.	6 57	5 0	10 3	1 0	2	14	10	10½	Leo	5 59	11 45
35	4	Sa.	6 56	5 1	10 5	1 2	2	○	10¾	11½	Leo	rises	morn
36	5	S.	6 55	5 3	10 8	1 5	2	16	11¾	—	Vir	7 11	0 42
37	6	M.	6 53	5 4	10 11	1 8	2	17	0¼	0½	Vir	8 24	1 37
38	7	Tu.	6 52	5 5	10 13	1 10	2	18	1	1½	Lib	9 36	2 31
39	8	W.	6 51	5 7	10 16	1 13	1	19	2	2¼	Lib	10 43	3 22
40	9	Th.	6 50	5 8	10 18	1 15	1	20	2¾	3¼	Sco	11 50	4 13
41	10	Fr.	6 49	5 9	10 20	1 17	1	21	3¾	4¼	Sco	morn	5 04
42	11	Sa.	6 47	5 10	10 23	1 20	1	22	4¾	5¼	Sco	0 52	5 54
43	12	S.	6 46	5 12	10 26	1 23	1	23	5¾	6¼	Sgr	1 49	6 44
44	13	M.	6 45	5 13	10 28	1 25	1	24	6¾	7¼	Sgr	2 42	7 33
45	14	Tu.	6 43	5 14	10 31	1 28	1	25	7½	8¼	Cap	3 29	8 22
46	15	W.	6 42	5 16	10 34	1 31	1	26	8½	9	Cap	4 11	9 09
47	16	Th.	6 41	5 17	10 36	1 33	2	27	9¼	9¾	Cap	4 48	9 55
48	17	Fr.	6 39	5 18	10 39	1 36	2	28	10	10½	Aqr	5 22	10 40
49	18	Sa.	6 38	5 20	10 42	1 39	2	29	10¾	11	Aqr	5 53	11 24
50	19	S.	6 36	5 21	10 45	1 42	2	●	11¼	11¾	Psc	sets	0 07
51	20	M.	6 35	5 22	10 47	1 44	2	1	0	—	Psc	6 58	0 49
52	21	Tu.	6 33	5 23	10 50	1 47	2	2	0¼	0½	Psc	7 57	1 32
53	22	W.	6 32	5 25	10 53	1 50	2	3	0¾	1¼	Ari	8 57	2 16
54	23	Th.	6 30	5 26	10 56	1 53	2	4	1½	1¾	Ari	9 59	3 02
55	24	Fr.	6 29	5 27	10 58	1 55	2	5	2¼	2½	Tau	11 01	3 50
56	25	Sa.	6 27	5 28	11 1	1 58	2	6	3	3¼	Tau	morn	4 41
57	26	S.	6 26	5 30	11 4	2 1	3	7	3¾	4¼	G'm	0 03	5 34
58	27	M.	6 24	5 31	11 7	2 4	3	8	4½	5¼	G'm	1 05	6 30
59	28	Tu.	6 23	5 32	11 9	2 6	3	9	5¾	6¼	Cnc	2 04	7 29

FEBRUARY hath 28 days. [1939

We see him now above the mist of years
As some great mountain towers above the plain
Beleaguer'd by the wintry snow and rain,
Encompass'd by a nation's hopes and fears.

"Washington" — JOHN JEROME ROONEY

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Tides	
1	W.	Oregon and Minnesota admitted as States, 1857.	Tides	10.3 / 9.1
2	Th.	Purif. of Vir. Mary.	Tides	10.8 / 9.7
3	Fr.	☐ ♁ ☉. ☾in Peri.	Tides	11.3 / 10.2
4	Sa.	Final cessation of hostilities between U.S. and Great Britain, 1783.		11.6 / 10.6
5	A	Septuagesima S.		11.6 / —
6	M.	♂ ♆ ☾. ☾ on Eq.	Tides	10.9 / 11.4
7	Tu.	Charles Dickens born, 1812.	Tides	10.9 / 11.0
8	W.	Schenectady, N. Y., burned by French and Indians, 1690.	Tides	10.8 / 10.4
9	Th.	Capitol at Harrisburgh, Pa., burned, 1887.		10.4 / 9.7
10	Fr.	French and Indian War ended, 1763.		10.0 / 9.0
11	Sa.	Thomas Edison born in Ohio, 1847.	Tides	9.5 / 8.4
12	A	Sexag. S. ♂ ☌ ☾. Abraham Lincoln born, 1809		
13	M.	☾ runs low.	Tides	8.9 / 7.8
14	Tu.	St. Valentine ♂ ♀ ☾.	Tides	8.9 / 7.8
15	W.	☿ Gr. Hel. Lat. S.	Tides	8.9 / 8.0
16	Th.	☾ in Apogee		9.1 / 8.3
17	Fr.	Park Central Hotel, Hartford, Conn., collapsed; 22 killed, 1889.		9.2 / 8.5
18	Sa.	♂ ☿ ☉ Superior	Tides	9.4 / 8.8
19	A	Quinquagesima S. ♂ ☿ ☾.		9.5 / 9.0
20	M.	♂ ♅ ☾. ☾ on Eq.	Tides	9.5 / —
21	Tu.	Shrove Tues.	Tides	9.2 / 9.5
22	W.	Ash Wed. Washington born, 1732.		9.3 / 9.3
23	Th.	♂ ♄ ☾.	Tides	9.3 / 9.1
24	Fr.	St. Matthias	Tides	9.3 / 8.9
25	Sa.	♂ ♁ ☾.	Tides	9.3 / 8.6
26	A	1st Sun. in Lent ♂ ☿ ♅.		9.4 / 8.4
27	M.	☾ Runs high.	Tides	9.4 / 8.3
28	Tu.	Greater New York bill signed by the Governor, 1894	Tides	9.5 / 8.5

Snowy days. *Colder.* *Cold-wave.* *Colder* *Snow turning to rain* *Warm for season* *Cooler.*

Farmer's Calendar.

The Hotbed

The growing season in New England is so short that it is necessary to start many of our crops in a hotbed or a greenhouse in order to get them out in time to mature them. You can also mature lettuce and radishes and other similar crops in a hotbed from three to six weeks earlier than if planted outdoors. Hotbed culture is not particularly difficult. It is largely a matter of getting enough heat to make the plants grow. The old-fashioned way of doing this was to use fermenting horse manure, but this material is so scarce and so hard to get that it has been practically discarded by the amateur gardener in favor of electricity. A heating wire may be bought which together with a thermostat will regulate the heat of your hotbed and keep the temperature approximately even. The hotbed then may be started about March first. It should be almost entirely underground and should slope towards the south to shed water and to trap the sun's rays. Provision should be made to cover the hotbed on cold and windy nights with straw mats or burlap mats so as to preserve the heat. The heating wire is laid an inch or an inch and a half under the surface of the ground. Then you can start your seed or plant your seedlings immediately.

J. R. Hepler

1939] MARCH, Third Month.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	7s. 44	7	5 25	13	3 05	19	0 43	25	1 39
	2	7 21	8	5 03	14	2 41	20	0s. 19	26	2 03
	3	6 58	9	4 39	15	2 18	21	0N. 04	27	2 26
	4	6 35	10	4 16	16	1 54	22	0 28	28	2 50
	5	6 12	11	3 52	17	1 30	23	0 52	29	3 13
	6	5 49	12	3 29	18	1 07	24	1 16	30	3 36

○ Full Moon, 5th day, 1h. 00m., evening, E.
☾ Last Quarter, 12th day, 4h. 37m., evening, W.
● New Moon, 20th day, 8h. 49m., evening, W.
☽ First Quarter, 28th day, 7h. 16m., morning, E.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h. m.	☉ Sets. h. m.	Length of Days. h. m.	Day's Incr. h. m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Full Sea, Boston. Even h.	☽'s Place	☽ Sets. h. m.	☽ Souths. h. m.
60	1	W.	6 21	5 33	11 12	2 9	3	10	6¾	7¼	Cnc	2 58	8 27
61	2	Th.	6 19	5 34	11 15	2 12	3	11	7¾	8¼	Cnc	3 47	9 26
62	3	Fr.	6 18	5 36	11 18	2 15	4	12	8¾	9¼	Leo	4 31	10 23
63	4	Sa.	6 16	5 37	11 21	2 18	4	13	9¾	10¼	Leo	5 10	11 19
64	5	S.	6 15	5 38	11 23	2 20	4	○	10½	11	Vir	rises	morn
65	6	M.	6 13	5 39	11 26	2 23	4	15	11½	11¾	Vir	7 10	0 14
66	7	Tu.	6 11	5 40	11 29	2 26	4	16	—	0¼	Lib	8 21	1 07
67	8	W.	6 10	5 42	11 32	2 29	5	17	0¾	1¼	Lib	9 30	2 00
68	9	Th.	6 8	5 43	11 35	2 32	5	18	1½	2	Sco	10 36	2 53
69	10	Fr.	6 6	5 44	11 38	2 35	5	19	2¼	2¾	Sco	11 37	3 45
70	11	Sa.	6 5	5 45	11 40	2 37	5	20	3¼	3¾	Sgr	morn	4 36
71	12	S.	6 3	5 46	11 43	2 40	6	21	4	4¾	Sgr	0 33	5 27
72	13	M.	6 2	5 48	11 46	2 43	6	22	5	5¾	Cap	1 23	6 16
73	14	Tu.	6 0	5 49	11 49	2 46	6	23	6	6¾	Cap	2 08	7 05
74	15	W.	5 58	5 50	11 52	2 49	7	24	7	7½	Cap	2 47	7 51
75	16	Th.	5 56	5 51	11 55	2 52	7	25	8	8½	Aqr	3 23	8 36
76	17	Fr.	5 54	5 52	11 58	2 55	7	26	8¾	9¼	Aqr	3 54	9 21
77	18	Sa.	5 53	5 53	12 0	2 57	7	27	9½	9¾	Psc	4 24	10 04
78	19	S.	5 51	5 54	12 3	3 0	8	28	10¼	10½	Psc	4 52	10 47
79	20	M.	5 49	5 56	12 7	3 4	8	●	10¾	11	Psc	sets	11 30
80	21	Tu.	5 47	5 57	12 10	3 7	8	1	11½	11¾	Ari	6 50	0 14
81	22	W.	5 45	5 58	12 13	3 10	8	2	—	0	Ari	7 52	1 00
82	23	Th.	5 44	5 59	12 15	3 12	9	3	0¼	0¾	Tau	8 55	1 48
83	24	Fr.	5 42	6 0	12 18	3 15	9	4	1	1½	Tau	9 57	2 38
84	25	Sa.	5 40	6 1	12 21	3 18	10	5	1¾	2¼	Tau	10 59	3 31
85	26	S.	5 39	6 3	12 24	3 21	10	6	2½	3	G'm	11 57	4 25
86	27	M.	5 37	6 4	12 27	3 24	10	7	3¼	4	G'm	morn	5 22
87	28	Tu.	5 35	6 5	12 30	3 27	10	8	4¼	5	Cnc	0 52	6 19
88	29	W.	5 33	6 6	12 33	3 30	11	9	5¼	6	Cnc	1 41	7 15
89	30	Th.	5 32	6 7	12 35	3 32	11	10	6¼	7	Leo	2 25	8 11
90	31	Fr.	5 30	6 8	12 38	3 35	11	11	7½	8	Leo	3 05	9 06

MARCH hath 31 days. [1939

I wonder if the sap is stirring yet,
If wintry birds are dreaming of a mate,
If frozen snowdrops feel as yet the sun
And crocus fires are kindling one by one:
Sing, robin, sing;
I still am sore in doubt concerning Spring.
"The First Spring Day" — CHRISTINA G. ROSSETTI

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Tides
1	W.	St. David.	9.8, 8.8
2	Th.	Texas proclaimed her independence of Mexico, 1836.	10.2, 9.3
3	Fr.	Steamer Nantucket arrived Nantucket, being icebound a week, 1907.	10.7, 10.0
4	Sa.	☾ in Perigee	11.1, 10.5 *Not so cold*
5	A	2nd Sun. in Lent	11.3, 11.0
6	M.	☌♆☾. ☌♃☉. ☿ in ♌. ☾ on Eq.	
7	Tu.	Webster made attack on Abolitionists, 1850.	— [6th 11.2, 11.4, 11.2
8	W.	First steam fire engine exhibited in Baltimore, Md., 1855.	11.2, 10.7
9	Th.	Moody and Sankey opened revival meetings in London, 1875.	10.9, 10.1
10	Fr.	Destructive fire in Boston, 1893.	10.4, 9.4 *Snow, rain,*
11	Sa.	☿ in Perihelion.	9.9, 8.8 *slush.*
12	A	3rd Sun. in Lent. ☾ runs low	9.4, 8.3
13	M.	☌♂☾. ☌♆☉.	8.9, 7.9
14	Tu.	Eli Whitney patented cotton gin, 1794.	8.6, 7.8 *Unsettled,*
15	W.	Maine was admitted to Statehood, 1820.	8.5, 7.9 *blustery.*
16	Th.	☿ Gr. elong. E. ☾ in Apogee.	8.6, 8.1
17	Fr.	St. Patrick. ☌♀☾.	8.8, 8.5
18	Sa.	Grover Cleveland born at Caldwell, N. J., 1837.	9.0, 8.8 *Warmer,*
19	A	4th S. in Lent. ☌ in ♉.	*Spring-*
20	M.	☌♄☾. ☾ on Eq.	9.4, 9.5 [19th 9.3, 9.2
21	Tu.	St. Bene. ☉ enters ♈ Spr. com.	☿ Gr.Hel. Lat. N. □♂☉.
22	W.	☌☿☾. ☌♄☾.	— [21st 9.6, 9.5, 9.7
23	Th.	♀ in ♉.	9.8, 9.5 *like days.*
24	Fr.	☿ Stat. in R. A. ☌♁☾	10.0, 9.8
25	Sa.	Annunc. or Lady Day	10.0, 9.1
26	A	5th Sun. in Lent	9.9, 8.9
27	M.	☾ runs high	9.8, 8.7 *Easterly gales*
28	Tu.	Resolution declaring state of war with Spain by Congress, 1898.	9.7, 8.7
29	W.	Mohawk Indians relinquished claims in New York, 1797.	9.7, 8.9
30	Th.	Metropolitan Museum of Art opened, New York City, 1880.	9.8, 9.2
31	Fr.	Last American troops evacuated Cuba, 1909.	10.1, 9.7

Farmer's Calendar.

ASPARAGUS

Asparagus is practically the first vegetable to appear in spring and it is a welcome sight to the grower because it brings him in money at a time when cash is short, and is very welcome to the consumer because it gives him a fresh vegetable and a very fine tasting one. However, there is no asparagus quite as good as the kind you get out of your own garden. Pick it and cook it within an hour and you will have all the natural flavors and sugar which this vegetable contains. If you keep it overnight, these sugars will change in the fibre and the asparagus will lose a lot of its flavor. If you want a real asparagus treat, you must grow your own asparagus, harvest it yourself, and cook it immediately after harvesting.

Asparagus is very easy to grow. Select a sunny place away from the shade of trees, dig a trench about 2 feet deep, fill it half-full of well-rotted manure and rich soil. Then set year-old asparagus plants in this trench, cover with about an inch of soil, and gradually fill up the trench as the asparagus grows up through. You have to wait two years before you can start cutting. At about the third season you make your first cuttings; do not cut it longer than about four or five weeks. In the fourth season you can cut it the whole season through.

J. R. Hepler

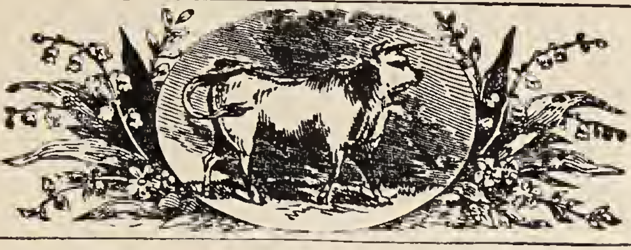
ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	4N. 23	7	6 40	13	8 54	19	11 02	25	13 04
	2	4 46	8	7 03	14	9 15	20	11 22	26	13 23
	3	5 09	9	7 25	15	9 37	21	11 43	27	13 42
	4	5 32	10	7 48	16	9 58	22	12 03	28	14 01
	5	5 55	11	8 10	17	10 20	23	12 24	29	14 20
	6	6 18	12	8 32	18	10 41	24	12 44	30	14 39

○ Full Moon, 3rd day, 11h. 18m., evening, E.
☾ Last Quarter, 11th day, 11h. 11m., morning, W.
● New Moon, 19th day, 11h. 35m., morning, E.
☽ First Quarter, 26th day, 1h. 25m., 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	☽ Sets. h. m.	☽ Souths. h. m.
91	1	Sa.	5 28	6 9	12 41	3 38	12	12	8½	9	Vir	3 41	9 59
92	2	♋	5 27	6 10	12 43	3 40	12	13	9½	9¾	Vir	4 16	10 52
93	3	M.	5 25	6 11	12 46	3 43	12	○	10¼	10¾	Lib	rises	11 45
94	4	Tu.	5 23	6 13	12 50	3 47	13	15	11¼	11½	Lib	7 07	morn
95	5	W.	5 21	6 14	12 53	3 50	13	16	0	—	Sco	8 16	0 38
96	6	Th.	5 19	6 15	12 56	3 53	13	17	0¼	0¾	Sco	9 20	1 31
97	7	Fr.	5 18	6 16	12 58	3 55	13	18	1	1½	Sgr	10 20	2 24
98	8	Sa.	5 16	6 17	13 1	3 58	14	19	1¾	2½	Sgr	11 14	3 16
99	9	♋	5 15	6 18	13 3	4 0	14	20	2¾	3¼	Sgr	morn	4 08
100	10	M.	5 13	6 19	13 6	4 3	14	21	3½	4¼	Cap	0 02	4 57
101	11	Tu.	5 11	6 20	13 9	4 6	15	22	4½	5	Cap	0 44	5 45
102	12	W.	5 10	6 22	13 12	4 9	15	23	5¼	6	Aqr	1 21	6 31
103	13	Th.	5 8	6 23	13 15	4 12	15	24	6¼	7	Aqr	1 54	7 16
104	14	Fr.	5 6	6 24	13 18	4 15	15	25	7¼	7¾	Aqr	2 24	7 59
105	15	Sa.	5 5	6 25	13 20	4 17	16	26	8	8½	Psc	2 53	8 42
106	16	♋	5 3	6 26	13 23	4 20	16	27	8¾	9¼	Psc	3 21	9 25
107	17	M.	5 2	6 27	13 25	4 22	16	28	9½	9¾	Ari	3 49	10 09
108	18	Tu.	5 0	6 28	13 28	4 25	16	29	10¼	10½	Ari	4 18	10 55
109	19	W.	4 58	6 29	13 31	4 28	17	●	11	11¼	Ari	sets	11 42
110	20	Th.	4 57	6 31	13 34	4 31	17	1	11½	11¾	Tau	7 48	0 33
111	21	Fr.	4 55	6 32	13 37	4 34	17	2	—	0¼	Tau	8 51	1 26
112	22	Sa.	4 54	6 33	13 39	4 36	17	3	0½	1	G'm	9 52	2 21
113	23	♋	4 52	6 34	13 42	4 39	17	4	1¼	1¾	G'm	10 49	3 17
114	24	M.	4 51	6 35	13 44	4 41	18	5	2	2¾	Cnc	11 39	4 14
115	25	Tu.	4 49	6 36	13 47	4 44	18	6	3	3¾	Cnc	morn	5 11
116	26	W.	4 48	6 37	13 49	4 46	18	7	4	4¾	Leo	0 24	6 06
117	27	Th.	4 46	6 38	13 52	4 49	18	8	5	5¾	Leo	1 05	6 59
118	28	Fr.	4 45	6 40	13 55	4 52	18	9	6	6¾	Vir	1 41	7 52
119	29	Sa.	4 43	6 41	13 58	4 55	18	10	7¼	7¾	Vir	2 15	8 43
120	30	♋	4 42	6 42	14 0	4 57	18	11	8¼	8¾	Lib	2 49	9 34

APRIL hath 30 days. [1939



Laughing, dancing, fresh and fair,
Springtime came with odors sweet;
Crocus-flame beneath her feet,
Pussy-willows in her hair.

"The Awakening of the Lily" — NORA M. HOLLAND

D.M.	D.W.	Aspects, Holidays, Heights of High Water, Etc.
1	Sa.	☾ in Perigee. Tides {10.4 10.3
2	A	Palm Sun. ☾ on Eq. ☌ ♆ ☾. {10.7 10.8
3	M.	☌ ☿ ☉ Inf. Tides {10.9 11.2 *Expect first*
4	Tu.	Ponce de Leon discovered Florida, 1513. {10 9 11.3 *thun-*
5	W.	Elihu Yale was born, 1649. {10.7 — *der shower.*
6	Th.	First election of Mayor in Boston, 1822. Tides {11.2 10.3
7	Fr.	Good Friday Tides {10.9 9.8
8	Sa.	☾ runs low. Tides {10.4 9 2
9	A	Easter Sunday Tides {9 8 8 7
10	M.	☌ ♂ ☾. Tides {9.3 8.3
11	Tu.	☌ ♄ ☉ Tides {8.8 8.0 *Showers*
12	W.	$5,000,000 fire in Chelsea, Mass., 1908. Tides {8.5 7.9
13	Th.	☾ in Apogee Tides {8 4 8.1
14	Fr.	☿ in ☋. Tides {8.4 8.4
15	Sa.	☿ Stationary in R.A. Tides {8.6 8.7
16	A	1st S. af. E. ☾ on Eq. ☌ ♀ ☾. ☌ ♃ ☾.
17	M.	☌ ☿ ☾. Tides {9.1 9.6 [16th {8.8 9.2
18	Tu.	Midnight ride of Paul Revere, 1775. {9.3 9.9 *Frosty*
19	W.	☉ Partial Eclipse v.s. in N. E. ☌ ♄ ☾. Tides {9 5 10.2
20	Th.	☌ ♅ ☾. Tides {9 5 10.5 *nights, sunny,*
21	Fr.	☌ ♀ ♃. Tides {— 9.6 *warm days*
22	Sa.	Building of the Bastille begun by Charles V., 1356. {10.6 9.5
23	A	2nd Sun. af. E. St. George. ☾ runs high
24	M.	☿ in Aphelion Tides {10.4 9.2 [23rd {10.5 9.4
25	Tu.	St. Mark. Tides {10.2 9.2 *Colder, rainy*
26	W.	♀ in Aphelion {10.0 9.2 *weather*
27	Th.	Dedication of Grant's Tomb, New York City, 1897. Tides {9.8 9 3
28	Fr.	☾ in Perigee. Tides {9 7 9 7
29	Sa.	☌ ♆ ☾. ☾ on Eq. Tides {9.8 10.1
30	A	3rd Sun. af. E. Daylight Savings Begins {10 0 10.5

Farmer's Calendar.

A good farm ought to be a particularly pleasant place in which to live. "By their fruits ye shall know them," and it is not primarily by the yield of apples, of milk, or of eggs that a farm is to be judged, but by its harvest in human beings and character. The records of the older New England life show the farm to have been a place of content—a nursery whence came many of our leaders. With the coming of standardization, the life of the farm has undeniably narrowed and thinned. What can be done to restore the farm to its old richness and variety?

Let us begin with the orchard. This modern trend has reduced it to some two or three varieties considered the best for packing and marketing, all good enough in their way, but tiresome in their sameness, and often growing badly in regions situated beyond their usual range. How rarely, one ever comes upon young "russets"—those "leather-jackets" of boyhood so crisply delicious when eaten "cellar-cold." Yet the northwestern agricultural schools have been developing some magnificent varieties. Try, too, a graft of the old, hardy and delicious St. Lawrence, and find yourself the true Jeniton. An orchard is not a factory. It is a place of life, and should be kept varied and living.

Henry Beston

1939] MAY, FIFTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m	Days.	d. m
	1	14N.57	7	16 42	13	18 17	19	19 41	25	20 52		
	2	15 15	8	16 58	14	18 31	20	19 54	26	21 03		
	3	15 33	9	17 15	15	18 46	21	20 06	27	21 14		
	4	15 50	10	17 31	16	19 00	22	20 18	28	21 24		
	5	16 08	11	17 46	17	19 14	23	20 30	29	21 33		
	6	16 25	12	18 02	18	19 27	24	20 41	30	21 42		

○ Full Moon, 3rd day, 10h. 15m., morning, W.
☾ Last Quarter, 11th day, 5h. 40m., morning, E.
● New Moon, 18th day, 11h. 25m., evening, W.
☽ First Quarter, 25th day, 6h. 20m., 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.
121	1	M.	4 41	6 43	14 2	4 59	19	12	9¼	9½	Lib	3 22	10 26
122	2	Tu.	4 39	6 44	14 5	5 2	19	13	10	10¼	Sco	3 57	11 18
123	3	W.	4 38	6 45	14 7	5 4	19	○	10¾	11¼	Sco	rises	morn
124	4	Th.	4 37	6 46	14 9	5 6	19	15	11¾	11¾	Sco	8 05	0 11
125	5	Fr.	4 35	6 47	14 12	5 9	19	16	—	0½	Sgr	9 03	1 04
126	6	Sa.	4 34	6 48	14 14	5 11	19	17	0½	1¼	Sgr	9 53	1 57
127	7	S.	4 33	6 49	14 16	5 13	19	18	1¼	2	Cap	10 38	2 48
128	8	M.	4 31	6 50	14 19	5 16	19	19	2¼	2¾	Cap	11 18	3 37
129	9	Tu.	4 30	6 52	14 22	5 19	19	20	3	3½	Cap	11 53	4 24
130	10	W.	4 29	6 53	14 24	5 21	19	21	3¾	4½	Aqr	morn	5 10
131	11	Th.	4 28	6 54	14 26	5 23	19	22	4¾	5¼	Aqr	0 24	5 54
132	12	Fr.	4 27	6 55	14 28	5 25	19	23	5½	6¼	Psc	0 53	6 37
133	13	Sa.	4 26	6 56	14 30	5 27	19	24	6½	7	Psc	1 21	7 19
134	14	S.	4 25	6 57	14 32	5 29	19	25	7¼	7¾	Psc	1 49	8 03
135	15	M.	4 24	6 58	14 34	5 31	20	26	8¼	8½	Ari	2 17	8 47
136	16	Tu.	4 23	6 59	14 36	5 33	19	27	9	9¼	Ari	2 48	9 34
137	17	W.	4 22	7 0	14 38	5 35	19	28	9¾	10	Tau	3 22	10 23
138	18	Th.	4 21	7 1	14 40	5 37	19	●	10½	10¾	Tau	sets	11 16
139	19	Fr.	4 20	7 2	14 42	5 39	19	1	11¼	11½	G'm	7 41	0 11
140	20	Sa.	4 19	7 3	14 44	5 41	19	2	0	—	G'm	8 41	1 09
141	21	S.	4 18	7 4	14 46	5 43	19	3	0¼	0¾	Cnc	9 35	2 07
142	22	M.	4 17	7 5	14 48	5 45	19	4	1	1½	Cnc	10 24	3 05
143	23	Tu.	4 16	7 6	14 50	5 47	19	5	1¾	2½	Leo	11 06	4 02
144	24	W.	4 15	7 7	14 52	5 49	19	6	2¾	3½	Leo	11 43	4 56
145	25	Th.	4 15	7 8	14 53	5 50	19	7	3¾	4¼	Vir	morn	5 49
146	26	Fr.	4 14	7 9	14 55	5 52	19	8	4¾	5½	Vir	0 18	6 40
147	27	Sa.	4 13	7 10	14 57	5 54	19	9	5¾	6½	Vir	0 51	7 30
148	28	S.	4 13	7 11	14 58	5 55	19	10	7	7½	Lib	1 24	8 20
149	29	M.	4 12	7 11	14 59	5 56	19	11	8	8¼	Lib	1 56	9 11
150	30	Tu.	4 11	7 12	15 1	5 58	18	12	8¾	9¼	Sco	2 33	10 03
151	31	W.	4 11	7 13	15 2	5 59	18	13	9¾	10	Sco	3 12	10 55

MAY hath 31 days. [1939

Above the rapids leap the trout
In rainbow-tinted spray,
The magazines for June are out,
And so I know 'tis May!

"May Song" — ARTHUR GUITERMAN

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Tides	Farmer's Calendar.
1	M.	St. Philip & St. James. ☿ Greatest elong. W.	10.1, 10.9	As soon as the nests of tent caterpillars appear, destroy them while they are still small. This must be done after sundown when the caterpillars have returned home from feeding. Gather up the whole nest and drop it into a can of kerosene. Trying to burn the nest with a torch will probably do the tree more harm than good.
2	Tu.	Hudson Bay Co. chartered by Charles II., 1670.	10.2, 11.1	
3	W.	☾ Tot. Eclipse inv's.	10.2, 11.1	
4	Th.	Anarchists killed six policemen in Haymarket riots in Chicago, 1886.	10 0, 11.0	
5	Fr.	Playing with cards and dice prohibited in Boston, Mass., 1630.	—, 9.8	
6	Sa.	☾ runs low	10.7, 9.4	*Warm as sum-*
7	A	4th Sun. af. ♇.	10.2, 9 0	*mer*
8	M.	Peary discovered northern coast of Greenland, 1900.	9.7, 8.7	
9	Tu.	♂ ☌ ☉. ♂ ☍ ☾.	9 8, 8.4	*followed by*
10	W.	♂ ☿ ♄.	8.8, 8.2	*northeasterly*
11	Th.	☾ in Apogee.	8.5, 8.2	*rains.*
12	Fr.	Charleston, S. C., surrendered to British, 1780.	8.3, 8.3	
13	Sa.	☾ on Equator.	8.3, 8 6	
14	A	Rog. ♋. ☿ Gr. Hel. Lat. S.	♂ ☌ ☾. 8.4, 9 0	
15	M.	Ground broken for State House, Boston, 1795.	8.6, 9.4	*Frost*
16	Tu.	♂ ♀ ♄. ♂ ♄ ☾. ♂ ♀ ☾.	8 8, 9.9	
17	W.	♂ ☿ ☾.	9.1, 10.3	*threatens inland.*
18	Th.	Ascen. Day. ♂ ☌ ☾.	9.3, 10.7	
19	Fr.	♀ Gr. Hel. Lat. S.	9.5, 11.0	
20	Sa.	☾ runs high.	9.7, —	*Spray*
21	A	Sun. af. As.	11.1, 9.8	*orchard*
22	M.	Dr. Conan Doyle born, 1859.	11.1, 9.8	*bloom*
23	Tu.	☾ in Perigee.	10.9, 9.7	
24	W.	Foundation stone laid for Catholic Univ., Washington, D. C., 1888.	10.6, 9.7	
25	Th.	♂ ☿ ☌.	10.2, 9.7	
26	Fr.	☾ on Eq.	9.8, 9.8	*Balmy*
27	Sa.	♂ ♆ ☾.	9.6, 10.0	*weather.*
28	A	Whit Sunday.	9.4, 10.2	
29	M.	Patrick Henry was born, 1736.	9.4, 10.5	
30	Tu.	Memorial Day.	9.4, 10 6	
31	W.	First colonists sailed to America from Plymouth, England, 1607	9.5, 10.7	

If the weather is too cool for planting squashes and cucumbers in the open ground, they may be started successfully in paper pots or even waxed paper drinking-cups, one seed to a cup, and then set later in the garden without disturbing the roots. Another way to give them an early start is to plant them in the garden under the paper covers that are sold in seed stores.

Choose a cloudy, still day for transplanting, when possible. Directly after rain is the ideal time when the young plants, as well as the ground, are full of moisture. If no rain or clouds seem to offer, do the transplanting late in the day so that the cool dampness of the night will help the plants' recovery.

Do not set the blades of the lawn-mower lower than one inch from the ground. The grass will better withstand the heat and drought later on, if it is not kept too short.

Margaret S. Watson

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	22 N.00	7	22 43	13	23 11	19	23 25	25	23 24
	2	22 08	8	22 49	14	23 14	20	23 26	26	23 22
	3	22 16	9	22 54	15	23 18	21	23 27	27	23 21
	4	22 23	10	22 59	16	23 20	22	23 26	28	23 18
	5	22 30	11	23 03	17	23 22	23	23 26	29	23 15
	6	22 36	12	23 07	18	23 23	24	23 25	30	23 12

○ Full Moon, 1st day, 10h. 11m., evening, E.
☾ Last Quarter, 9th day, 11h. 07 m., evening, E.
● New Moon, 17th day, 8h. 37m., morning, E.
☽ First Quarter, 23rd day, 11h. 35m., 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	☽ Sets. h. m.	☽ Souths. h. m.
152	1	Th.	4 10	7 14	15 4	6 1	18	○	10½	10¾	Sgr	rises	11 47
153	2	Fr.	4 10	7 15	15 5	6 2	18	15	11¼	11½	Sgr	7 45	morn
154	3	Sa.	4 9	7 15	15 6	6 3	18	16	—	0	Cap	8 33	0 39
155	4	♋	4 9	7 16	15 7	6 4	18	17	0¼	0¾	Cap	9 15	1 29
156	5	M.	4 9	7 17	15 8	6 5	18	18	1	1½	Cap	9 52	2 17
157	6	Tu.	4 8	7 17	15 9	6 6	17	19	1¾	2¼	Aqr	10 24	3 04
158	7	W.	4 8	7 18	15 10	6 7	17	20	2½	3	Aqr	10 55	3 49
159	8	Th.	4 8	7 19	15 11	6 8	17	21	3¼	3¾	Psc	11 23	4 32
160	9	Fr.	4 7	7 19	15 12	6 9	17	22	4	4½	Psc	11 50	5 14
161	10	Sa.	4 7	7 20	15 13	6 10	17	23	4¾	5¼	Psc	morn	5 57
162	11	♋	4 7	7 20	15 13	6 10	16	24	5¾	6¼	Ari	0 18	6 40
163	12	M.	4 7	7 21	15 14	6 11	16	25	6½	7	Ari	0 46	7 25
164	13	Tu.	4 7	7 21	15 14	6 11	16	26	7½	7¾	Tau	1 18	8 12
165	14	W.	4 7	7 22	15 15	6 12	16	27	8¼	8¾	Tau	1 54	9 03
166	15	Th.	4 7	7 22	15 15	6 12	16	28	9¼	9½	Tau	2 36	9 57
167	16	Fr.	4 7	7 23	15 16	6 13	15	29	10	10¼	G'm	3 24	10 54
168	17	Sa.	4 7	7 23	15 16	6 13	15	●	10¾	11	G'm	sets	11 53
169	18	♋	4 7	7 23	15 16	6 13	15	1	11¾	11¾	Cnc	8 17	0 53
170	19	M.	4 7	7 24	15 17	6 14	15	2	—	0½	Cnc	9 03	1 52
171	20	Tu.	4 7	7 24	15 17	6 14	14	3	0¾	1¼	Leo	9 44	2 50
172	21	W.	4 7	7 24	15 17	6 14	14	4	1½	2¼	Leo	10 20	3 44
173	22	Th.	4 7	7 24	15 17	dec.	14	5	2½	3	Vir	10 54	4 37
174	23	Fr.	4 8	7 25	15 17	0 0	14	6	3½	4	Vir	11 28	5 28
175	24	Sa.	4 8	7 25	15 17	0 0	14	7	4½	5	Lib	morn	6 18
176	25	♋	4 8	7 25	15 17	0 0	13	8	5½	6	Lib	0 00	7 08
177	26	M.	4 8	7 25	15 17	0 0	13	9	6½	7	Sco	0 34	7 59
178	27	Tu.	4 9	7 25	15 16	0 1	13	10	7½	8	Sco	1 11	8 50
179	28	W.	4 9	7 25	15 16	0 1	13	11	8½	9	Sgr	1 52	9 41
180	29	Th.	4 10	7 25	15 15	0 2	13	12	9½	9¾	Sgr	2 37	10 32
181	30	Fr.	4 10	7 25	15 15	0 2	12	13	10¼	10½	Sgr	3 26	11 23

JUNE hath 30 days. [1939

Summer's in the sound of June,
Summer, and a deeper tune
Of the bees and of the birds, —
And of loitering lovers' words, —
And the brooks that, as they go,
Seem to think aloud, yet low.
"To June" — LEIGH HUNT

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Th.	Nicomede. Tides 9.5 10.7 *Easterly*	
2	Fr.	☿ Stat. in R.A. ☿ in ♌. ☾ runs low 9.4 10.6 *winds*	
3	Sa.	Jefferson Davis, Pres. of the Confederacy, born, 1808. — 9.3 *near*	
4	A	Trin. Sun. Tides 10.3 9.1 *coast.*	
5	M.	♂ ♀ ♉. Tides 10.0 8.9	
6	Tu.	♂ ♂ ☾. Tides 9.7 8.7	
7	W.	♂ ☿ ☉ Sup. ☿ in Per. ☾ in Apogee 9.3 8.6	
8	Th.	Corpus Christi. 8.9 8.5 *Frequent showers*	
9	Fr.	John Howard Payne, author of "Home Sweet Home" born, 1791. 8.6 8.5	
10	Sa.	♄ Gr. Hel. Lat. S. ☾ on Eq. Tides 8.4 8.6 *but not*	
11	A	1st. S. af. Trin St. Barnabas. ♂ ☌ ☾.	
12	M.	□ ☿ ☉. Tides 8.2 9.1 [11th 8.2 8.3 *much*	
13	Tu.	♂ ♄ ☾. Tides 8.3 9.5 *rain.*	
14	W.	♂ ♉ ☾. Tides 8.6 10.0	
15	Th.	♂ ♀ ☾. Tides 8.9 10.6 *Warm showers*	
16	Fr.	Longest morning (Boston) Tides 9.3 11.0	
17	Sa.	☿ Gr. Hel. Lat. N. ☾ runs high. 9.6 11 3 *Easterly*	
18	A	2d S. a. T. ♂ ☿ ☾. 9.9 11.5 *winds,*	
19	M.	☾ in Per. Tides — 10.1 *thunder-showers,*	
20	Tu.	Savannah, first steamer to cross Atlantic arrived Liverpool, 1819. 11.5 10.3	
21	W.	Republican National nominated McKinley and Roosevelt, 1900. 11.2 10.3	
22	Th.	☉ enters ♋. Summer comm. 10.3 10.8 *scattered*	
23	Fr.	♂ ☿ ☾. ☾ on Eq. Tides 10.3 10.2 *hail.*	
24	Sa.	St. John, Baptist. ♂ Stat. in R.A. Tides 9.8 10.1	
25	A	3rd Sun. af. T. 9.3 10.1 *Warm.*	
26	M.	Custer Massacre on the Little Big Horn, 1876. Tides 9.0 10.1	
27	Tu.	Pres. Harrison signed Dependent Pension bill, 1890. 8.9 10.2	
28	W.	Longest Afternoon (Boston) Tides 8.8 10.2 *Sunny.*	
29	Th.	St. Peter & St. Paul. □ ☌ ☉. 8.8 10.3	
30	Fr.	☾ runs low. Tides 8.9 10.2	

Molasses Silage

In the last few years molasses silage has become increasingly popular. It offers several advantages as it is easy to make, any grasses or clovers may be used, it may be put in regardless of the weather, it supplies a succulent feed of high value that may be used either to supplement pastures during August, when they are apt to dry up, or to replace the regular corn silage. Labor and time are saved as it is unnecessary to cure the hay and fields are cleared as soon as cut.

Molasses silage is put into the silo in the same way as corn silage, only a small trickle of molasses is allowed to run onto the grass as it enters the silage cutter. About five gallons to each ton of green material is needed. Be sure to use enough molasses; otherwise proper fermentation will not take place and the silage will become evil smelling and slimy.

Edward Wigglesworth

1939] JULY, SEVENTH MONTH.

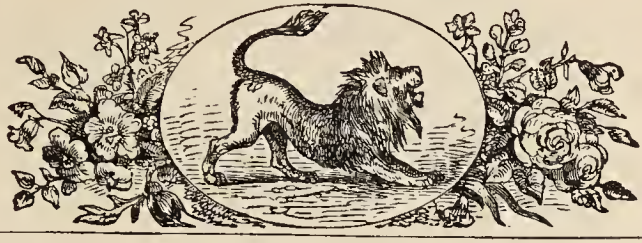
ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	23N.08	7	22 38	13	21 54	19	20 56	25	19 45
	2	23 04	8	22 32	14	21 45	20	20 45	26	19 32
	3	23 00	9	22 25	15	21 36	21	20 34	27	19 19
	4	22 55	10	22 18	16	21 26	22	20 22	28	19 05
	5	22 50	11	22 10	17	21 17	23	20 10	29	18 51
	6	22 44	12	22 02	18	21 06	24	19 58	30	18 37

○ Full Moon, 1st day, 11h. 16m., morning, W.
☾ Last Quarter, 9th day, 2h. 49m., evening, W.
● New Moon, 16th day, 4h. 03m., evening, W.
☽ First Quarter, 23rd day, 6h. 34m., morning, E.
○ Full Moon, 31st day, 1h. 37m., 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.	Full Sea, Boston. Even h.	☽'s Place	☽ Sets. h. m.	☽ Souths. h. m.
182	1	Sa.	4 10	7 25	15 15	0 2	12	○	11	11¼	Cap	rises	morn
183	2	S.	4 11	7 25	15 14	0 3	12	15	11¾	11¾	Cap	7 51	0 12
184	3	M.	4 12	7 25	15 13	0 4	12	16	—	0½	Aqr	8 26	0 59
185	4	Tu.	4 12	7 24	15 12	0 5	12	17	0½	1	Aqr	8 57	1 45
186	5	W.	4 13	7 24	15 11	0 6	11	18	1¼	1¾	Aqr	9 26	2 28
187	6	Th.	4 13	7 24	15 11	0 6	11	19	1¾	2½	Psc	9 53	3 11
188	7	Fr.	4 14	7 24	15 10	0 7	11	20	2½	3	Psc	10 20	3 53
189	8	Sa.	4 14	7 23	15 9	0 8	11	21	3¼	3¾	Ari	10 48	4 35
190	9	S.	4 15	7 23	15 8	0 9	11	22	4	4½	Ari	11 18	5 19
191	10	M.	4 16	7 22	15 6	0 11	11	23	5	5½	Ari	11 50	6 04
192	11	Tu.	4 17	7 22	15 5	0 12	10	24	6	6¼	Tau	morn	6 52
193	12	W.	4 17	7 21	15 4	0 13	10	25	6¾	7¼	Tau	0 28	7 43
194	13	Th.	4 18	7 21	15 3	0 14	10	26	7¾	8	G'm	1 12	8 38
195	14	Fr.	4 19	7 20	15 1	0 16	10	27	8¾	9	G'm	2 04	9 35
196	15	Sa.	4 20	7 20	15 0	0 17	10	28	9½	9¾	Cnc	3 03	10 35
197	16	S.	4 21	7 19	14 58	0 19	10	●	10½	10¾	Cnc	sets	11 36
198	17	M.	4 22	7 18	14 56	0 21	10	1	11¼	11½	Leo	7 38	0 36
199	18	Tu.	4 22	7 17	14 55	0 22	10	2	—	0¼	Leo	8 18	1 33
200	19	W.	4 23	7 17	14 54	0 23	10	3	0½	1	Vir	8 54	2 29
201	20	Th.	4 24	7 16	14 52	0 25	10	4	1¼	1¾	Vir	9 29	3 22
202	21	Fr.	4 25	7 15	14 50	0 27	10	5	2¼	2¾	Lib	10 03	4 14
203	22	Sa.	4 26	7 15	14 49	0 28	9	6	3¼	3¾	Lib	10 37	5 05
204	23	S.	4 27	7 14	14 47	0 30	9	7	4	4¾	Sco	11 13	5 56
205	24	M.	4 28	7 13	14 45	0 32	9	8	5	5¾	Sco	11 53	6 47
206	25	Tu.	4 29	7 12	14 43	0 34	9	9	6¼	6¾	Sgr	morn	7 38
207	26	W.	4 30	7 11	14 41	0 36	9	10	7¼	7¾	Sgr	0 36	8 29
208	27	Th.	4 31	7 10	14 39	0 38	9	11	8¼	8½	Sgr	1 23	9 19
209	28	Fr.	4 32	7 9	14 37	0 40	9	12	9¼	9½	Cap	2 14	10 08
210	29	Sa.	4 33	7 8	14 35	0 42	9	13	10	10¼	Cap	3 08	10 56
211	30	S.	4 34	7 7	14 33	0 44	9	14	10¾	10¾	Aqr	4 04	11 42
212	31	M.	4 35	7 6	14 31	0 46	9	○	11¼	11½	Aqr	rises	morn

JULY hath 31 days. [1939



I hate the crowded town!
I cannot breathe shut up within its gates!
Air, — I want air, sunshine, and blue sky,
The feeling of the breeze upon my face,
The feeling of the turf beneath my feet,
And no walls but the far-off mountain tops.

"The Spanish Student" — H. W. LONGFELLOW

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.
1	Sa.	Charlie Ross kidnapped at Germantown, Pa.; never was found, 1874. Tides 9.0 10.2
2	A	4th Sun. af. Trin. Tides 9.0 10.0
3	M.	☌ ♂ ☾. Tides — 9.0 *Steadily warm.*
4	Tu.	Independence Day Tides 9.9 8.9
5	W.	⊕ in Aph. ☾ in Apo. Tides 9.7 8.9
6	Th.	Hawaii annexed to U.S., 1898. 9.4 8.8 *Oppressive*
7	Fr.	☾ on Eq. Tides 9.1 8.8 *humidity.*
8	Sa.	City of Washington selected as U.S. Capital, 1792. Tides 8.7 8.7
9	A	5th Sun. af. Tr. ☌ ♃ ☾. 8.5 8.8
10	M.	☌ ♄ ☾. Tides 8.2 8.9
11	Tu.	☿ in ♋. Tides 8.1 9.2 *Showers.*
12	W.	☌ ☉ ☾. Tides 8.2 9.6
13	Th.	☿ Greatest elong. E. Tides 8.4 10.1
14	Fr.	♀ in ♌. ☾ runs high. 8.8 10.7 *Showers*
15	Sa.	St. Swithin ☌ ♀ ☾. Tides 9.3 11.2 *and*
16	A	6th Sun. af. Tr. 9.8 11.6 *thunder-*
17	M.	☾ in Perigee. Tides 10.3 11.8 *storms.*
18	Tu.	☌ ☿ ☾. Tides — 10.6
19	W.	Fearful heat all over U.S., 1905. Tides 11.8 10.9
20	Th.	St. Margaret ☌ ♆ ☾. ☾ on Eq. Tides 11.5 10.9
21	Fr.	☿ in Aphelion Tides 11.0 10.8 *Cool*
22	Sa.	St. Mary Magdalene Tides 10.4 10.6 *nights.*
23	A	7th Sun. af. Tr. ☍ ♂ ☉. 9.7 10.3
24	M.	□ ♄ ☉. Tides 9.1 10.0 *Showers.*
25	Tu.	St. James. Dog days begin Tides 8.7 9.8
26	W.	St. Anne. ☿ Stat. in R. A. Tides 8.4 9.7
27	Th.	♂ nearest ⊕. ☾ runs low 8.4 9.7 *Showers.*
28	Fr.	Robespierre and 21 adherents guillotined, 1794. Tides 8.5 9.8
29	Sa.	Defeat of the Spanish Armada, 1588. Tides 8.6 9.8
30	A	8th S. a. T. ♃ Stat. in R. A. ☌ ♂ ☾. 8.8 9.8
31	M.	Columbus discovered Trinidad, 1498. Tides 9.0 9.8 *Warm*

Farmer's Calendar.

Late Planting

Too many of us think that our vegetable garden must be planted on Decoration Day. Well, if there is only one day in the year in which you are going to plant a garden, Decoration Day is probably the best time. But Decoration Day is a little late for early peas, radishes, spinach and other early crops and entirely too early for late cabbage and certain other fall growing crops. Some of us now plant up until the 15th or 20th of June. However, the peas, radishes, early turnips, spinach and other crops which are harvested by the 15th of July leave weedy places in the garden which will seed the garden and which are also very unsightly. Why not keep on planting? There are many crops that may be planted after the first of July, especially if your soil is rich and you can water the garden. Late plantings of beets and carrots provide tender roots for fall use. Endive, lettuce, spinach, Chinese cabbage, kohlrabi, rutabagas, and turnips all may be planted in late July. Radishes may be planted as late as August 15 with good success.

Winter radishes should be started around July 15 and then may be stored much like rutabagas. Fall spinach, especially the kind you harvest in November, is of much better quality than summer grown spinach. It seems that the cool weather puts an exceptionally high amount of sugar into the spinach.

J. R. Hepler

1939] AUGUST, Eighth Month.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.

Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
1	18N.08	7	16 33	13	14 48	19	12 55	25	10 55
2	17 53	8	16 16	14	14 30	20	12 36	26	10 34
3	17 37	9	15 59	15	14 12	21	12 16	27	10 13
4	17 22	10	15 42	16	13 53	22	11 56	28	9 52
5	17 06	11	15 24	17	13 34	23	11 36	29	9 31
6	16 49	12	15 06	18	13 14	24	11 15	30	9 10

☾ Last Quarter, 8th day, 4h. 18m., morning, E.
● New Moon, 14th day, 10h. 53m., evening, W.
☽ First Quarter, 21st day, 4h. 21m., evening, E.
○ Full Moon, 29th day, 5h. 09m., 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.
213	1	Tu.	4 36	7 5	14 29	0 48	10	16	0	—	Aqr	7 29	0 26
214	2	W.	4 37	7 4	14 27	0 50	10	17	0	0½	Psc	7 57	1 09
215	3	Th.	4 38	7 2	14 24	0 53	10	18	0¾	1¼	Psc	8 24	1 52
216	4	Fr.	4 39	7 1	14 22	0 55	10	19	1¼	1¾	Ari	8 52	2 34
217	5	Sa.	4 40	7 0	14 20	0 57	10	20	2	2½	Ari	9 20	3 16
218	6	S.	4 41	6 59	14 18	0 59	10	21	2¾	3¼	Ari	9 51	4 00
219	7	M.	4 42	6 57	14 15	1 2	10	22	3½	4	Tau	10 26	4 46
220	8	Tu.	4 43	6 56	14 13	1 4	10	23	4¼	4¾	Tau	11 05	5 34
221	9	W.	4 44	6 55	14 11	1 6	10	24	5¼	5¾	G'm	11 52	6 26
222	10	Th.	4 45	6 53	14 8	1 9	10	25	6¼	6¾	G'm	morn	7 20
223	11	Fr.	4 46	6 52	14 6	1 11	11	26	7¼	7½	Cnc	0 46	8 18
224	12	Sa.	4 47	6 51	14 4	1 13	11	27	8¼	8½	Cnc	1 49	9 17
225	13	S.	4 48	6 49	14 1	1 16	11	28	9¼	9½	Leo	2 58	10 17
226	14	M.	4 49	6 48	13 59	1 18	11	●	10	10½	Leo	sets	11 16
227	15	Tu.	4 50	6 46	13 56	1 21	11	1	11	11¼	Vir	6 49	0 13
228	16	W.	4 51	6 45	13 54	1 23	11	2	11¾	—	Vir	7 25	1 09
229	17	Th.	4 52	6 44	13 52	1 25	12	3	0	0½	Lib	8 01	2 04
230	18	Fr.	4 53	6 42	13 49	1 28	12	4	1	1½	Lib	8 36	2 57
231	19	Sa.	4 55	6 41	13 46	1 31	12	5	2	2¼	Lib	9 13	3 50
232	20	S.	4 56	6 39	13 43	1 34	12	6	2¾	3¼	Sco	9 53	4 42
233	21	M.	4 57	6 37	13 40	1 37	13	7	3¾	4¼	Sco	10 35	5 34
234	22	Tu.	4 58	6 36	13 38	1 39	13	8	4¾	5¼	Sgr	11 21	6 26
235	23	W.	4 59	6 34	13 35	1 42	13	9	5¾	6¼	Sgr	morn	7 16
236	24	Th.	5 06	6 32	13 32	1 45	13	10	6¾	7¼	Cap	0 12	8 06
237	25	Fr.	5 1	6 31	13 30	1 47	14	11	7¾	8¼	Cap	1 04	8 54
238	26	Sa.	5 2	6 30	13 28	1 49	14	12	8¾	9	Cap	1 59	9 40
239	27	S.	5 3	6 28	13 25	1 52	14	13	9½	9¾	Aqr	2 55	10 25
240	28	M.	5 4	6 26	13 22	1 55	14	14	10¼	10½	Aqr	3 52	11 07
241	29	Tu.	5 5	6 25	13 20	1 57	15	○	10¾	11	Psc	rises	11 51
242	30	W.	5 6	6 23	13 17	2 0	15	16	11½	11¾	Psc	6 29	morn
243	31	Th.	5 7	6 21	13 14	2 3	15	17	—	0	Psc	6 57	0 33

AUGUST hath 31 days. [1939

Throughout the long, enchanted summer hours,
In treasuries of honey-wealth untold,
Here in their bright metropolis of flowers
The banker bees are busy with their gold.

"In a Garden" — FRANK DEMPSTER SHERMAN

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.
1	Tu.	Lammas Day. ☾ in Apo. Tides 9.1 —
2	W.	Battle with Indians at Brookfield, Mass., 1675. Tides 9.8 9.2
3	Th.	☾ on Eq. Tides 9.7 9.2 *Warm and*
4	Fr.	Hudson discovered Cape Cod, 1609. Tides 9.4 9.2 *hazy.*
5	Sa.	♂ ☌ ☾. Tides 9.2 9.1
6	A	9th Sun. af. Tr. Trans-figuration 8.9 9.1
7	M.	♂ ♄ ☾. 8.6 9.1 *Showers, maybe*
8	Tu.	♂ ♁ ☾. Tides 8.3 9.2 *thunder-storms.*
9	W.	Coronation of Edward VII, 1902. Tides 8.2 9.4
10	Th.	St. Lawrence. ♂ ☿ ☉ Inf. ☿ Gr. Hel. Lat. S. ☾ runs high
11	Fr.	Destructive hurricane in Jamaica, 1903 8.5 10.2 [10th 8.2 9.7
12	Sa.	King Philip killed in a swamp; end of war, 1676. 9.0 10.7
13	A	10th S. a. Tr. ♂ ☿ ♀. Tides 9.6 11.2
14	M.	♂ ☿ ☾. ♂ ♀ ☾. ♄ Stat. in R. A. 10.2 11.6
15	Tu.	□ ♁ ☉. ☾ in Peri. 10.8 11.8 *Not so op-*
16	W.	First message sent by Atlantic cable, 1858. 11.2 — *pressive.*
17	Th.	♂ ♆ ☾. ♀ in Per. ☾ on Eq. Tides 11.8 11.4
18	Fr.	First child of English parents born in America—Virginia Dare, 1587. 11.5 11.3
19	Sa.	☿ Stat. in R.A. Tides 11.0 11.1 *Showers.*
20	A	11th Sun. af. Trin. Tides 10.3 10.7
21	M.	Mary Queen of Scots arrived in Scotland from France, 1561. 9.6 10.2
22	Tu.	Napoleon banished to Elba for life, 1814. Tides 8.9 9.8
23	W.	♂ Greatest Hel. Lat. S. ☾ runs low. 8.5 9.4 *Cooler*
24	Th.	St. Bartholomew. ♂ Stat. in R. A. Tides 8.2 9.3 *at*
25	Fr.	British evacuated City of Washington, 1814. 8.2 9.3 *night.*
26	Sa.	♂ ♂ ☾. Tides 8.4 9.3 *Cooler.*
27	A	12th Sun. af. Tr. Tides 8.6 9.5
28	M.	St. Augustine. ☿ Gr. el. W. ♁ Stat. in R. A. ☾ in Apo.
29	Tu.	♀ in ♌. Tides 9.1 9.7 [28th 8.9 9.6
30	W.	Metis sinks, worst ship disaster in Long Island Sound's history, 1872. 9.3 9.7
31	Th.	☾ on Eq. Tides — 9.5 *Warmer.*

Farmer's Calendar.

Are Farm Children Human?

If we are to have a permanent agriculture, or a civilization even that will last, we must build not for today, but for the future. If the children are never given opportunities to do anything except turn the grindstone and clean out the cow stable, what about their enthusiasm for farming? Many a grown man still harbors memories of participating in indignation meetings, after hours, out back of the barn, in which the consensus of opinion was that if the grindstone work did not let up soon there would be less boy-help in the neighborhood some hot August morning than was anticipated. Wouldn't it be the part of common sense to give the boy personal responsibilities and let him learn about some of the significant recent developments in the bigger fields of agriculture?

In the stress of circumstances, conditioned by the scarcity of time and money, the rights of the boy as well as his natural inclinations sometimes rate but little regard. If the farm boy makes a real contribution, should he not be worthy of his hire as are other workmen? One such a boy many years ago was given a pair of calves which he watched over, cared for and trained. Some years later they were sold as oxen without his permission and with no commission to salve his sorrow. He is not farming now.

1939] SEPTEMBER, Ninth Month.

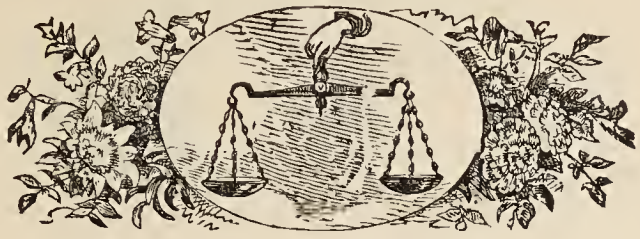
ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
	1	8N.	26	7	6	14	13	3	58	19	1	39	25	0	41
	2	8	05	8	5	51	14	3	35	20	1	16	26	1	04
	3	7	43	9	5	29	15	3	12	21	0	52	27	1	28
	4	7	21	10	5	06	16	2	49	22	0	29	28	1	51
	5	6	59	11	4	43	17	2	25	23	0N.	06	29	2	15
	6	6	36	12	4	21	18	2	02	24	0S.	18	30	2	38

☾ Last Quarter, 6th day, 3h. 24m., evening, W.
● New Moon, 13th day, 6h. 22m., morning, E.
☽ First Quarter, 20th day, 5h. 34m., morning, W.
○ Full Moon, 28th day, 9h. 27m., 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.	Full Sea, Boston. Even h.	☽'s Place	☽ Rises. h. m.	☽ Souths. h. m.
244	1	Fr.	5 8	6 20	13 12	2 5	16	18	0¼	0½	Ari	7 24	1 15
245	2	Sa.	5 9	6 18	13 9	2 8	16	19	1	1¼	Ari	7 54	1 59
246	3	S.	5 10	6 16	13 6	2 11	16	20	1½	1¾	Tau	8 27	2 43
247	4	M.	5 12	6 15	13 3	2 14	17	21	2¼	2½	Tau	9 05	3 30
248	5	Tu.	5 13	6 13	13 0	2 17	17	22	3	3¼	Tau	9 48	4 20
249	6	W.	5 14	6 11	12 57	2 20	17	23	3¾	4¼	G'm	10 37	5 12
250	7	Th.	5 15	6 9	12 54	2 23	18	24	4¾	5¼	G'm	11 34	6 06
251	8	Fr.	5 16	6 8	12 52	2 25	18	25	5¾	6¼	Cnc	morn	7 03
252	9	Sa.	5 17	6 6	12 49	2 28	18	26	6¾	7¼	Cnc	0 38	8 00
253	10	S.	5 18	6 4	12 46	2 31	19	27	7¾	8¼	Leo	1 46	8 58
254	11	M.	5 19	6 2	12 43	2 34	19	28	8¾	9¼	Leo	2 59	9 55
255	12	Tu.	5 20	6 1	12 41	2 36	19	29	9¾	10	Vir	4 15	10 52
256	13	W.	5 21	5 59	12 38	2 39	20	●	10½	11	Vir	sets	11 47
257	14	Th.	5 22	5 57	12 35	2 42	20	1	11½	11¾	Lib	6 31	0 42
258	15	Fr.	5 23	5 55	12 32	2 45	20	2	—	0¼	Lib	7 09	1 37
259	16	Sa.	5 24	5 54	12 30	2 47	21	3	0¾	1	Sco	7 48	2 31
260	17	S.	5 25	5 52	12 27	2 50	21	4	1½	2	Sco	8 30	3 25
261	18	M.	5 26	5 50	12 24	2 53	21	5	2½	2¾	Sgr	9 17	4 18
262	19	Tu.	5 27	5 48	12 21	2 56	22	6	3¼	3¾	Sgr	10 06	5 11
263	20	W.	5 28	5 46	12 18	2 59	22	7	4¼	4¾	Cap	10 59	6 01
264	21	Th.	5 30	5 45	12 15	3 2	22	8	5¼	5¾	Cap	11 53	6 50
265	22	Fr.	5 31	5 43	12 12	3 5	23	9	6¼	6¾	Cap	morn	7 37
266	23	Sa.	5 32	5 41	12 9	3 8	23	10	7¼	7¾	Aqr	0 49	8 22
267	24	S.	5 33	5 40	12 7	3 10	24	11	8¼	8½	Aqr	1 46	9 06
268	25	M.	5 34	5 38	12 4	3 13	24	12	9	9¼	Psc	2 43	9 49
269	26	Tu.	5 35	5 36	12 1	3 16	24	13	9¾	10	Psc	3 41	10 31
270	27	W.	5 36	5 34	11 58	3 19	25	14	10¼	10½	Psc	4 38	11 14
271	28	Th.	5 37	5 32	11 55	3 22	25	○	10¾	11¼	Ari	rises	11 57
272	29	Fr.	5 38	5 31	11 53	3 24	25	16	11½	11¾	Ari	5 57	morn
273	30	Sa.	5 39	5 29	11 50	3 27	26	17	—	0	Tau	6 29	0 42

SEPTEMBER hath 30 days. [1939



"Take the fruit I give you," says the bending tree;
"Nothing but a burden is it all to me.
Lighten ye my branches; let them toss in air!
Only leave me freedom next year's load to bear."

"Hints" — LUCY LARCOM

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Fr.	♂ ☌ ☾. Tides {9.6 9.6	**Your Light Bulbs**
2	Sa.	Goldsmithmaid established trotting record of 2.14 in Boston, 1874. {9.5 9.6	The days are becoming perceptibly shorter and all too soon comes a time when it will be dark at five o'clock. For this reason the size of the electric light bill will be on the increase and we will all start and end the day (and even the midday when cloudy) using our artificial lights.
3	♐	13th Su. a. Tr. ☿ in Peri. ♂ ♄ ☾. {9.3 9.6	
4	M.	Labor Day ♂ ☉ ☾. Tides {9.0 9.5 *Showery*	
5	Tu.	Dog days end ♂ ♀ ☉ Sup. {8.7 9.5 *weather.*	
6	W.	President McKinley shot, 1901. Tides {8.5 9.5	Before long now you should look over the light bulbs in all the sockets in the house, barns and outbuildings, and be sure they are cleaned of dust and dirt. Between steam, oily and greasy vapors, and dust and dirt, you will be surprised to see how opaque a curtain has collected on them.
7	Th.	♀ Gr. Hel. Lat. N. ☾ runs high. Tides {8.4 9.5	
8	Fr.	Nativ. of Vir. Mary {8.4 9.8 *Continued*	
9	Sa.	William the Conqueror died at St. Gervais, 1087. {8.8 10.1 *mild.*	
10	♐	14th Sun. af. Tr. Tides {9.3 10.6	
11	M.	Stars and Stripes first carried into battle at Battle of Brandywine, 1777. {10.0 11.1	
12	Tu.	♂ ☿ ☾. ☾ in Perigee. Tides {10.6 11.4	Studies of the efficiency of lights show that a loss of 40% in lighting efficiency is not uncommon where light bulbs and reflectors are allowed to accumulate dust and dirt. Why pay full price and then get only 60% of the value?
13	W.	☿ Gr. Hel. Lat. N. ♂ ♀ ☾. ♂ ♆ ☾. ☾ on Eq.	
14	Th.	♂ ♀ ♆. Tides {11.6 11.5 [13th {11.2 11.6	
15	Fr.	Jumbo, famous elephant killed in accident at St. Thomas, Ont., 1885. {— 11.7	
16	Sa.	♂ ♆ ☉. Tides {11.2 11.6 *Gentle south-*	
17	♐	15th Sun. af. Tri. ♂ in Perihelion. {10.7 11.2	Always take the bulbs and reflectors out of or off the sockets before washing, and be sure they are thoroughly dried off before replacing.
18	M.	George Washington laid cornerstone of Capitol at Washington, 1793. {10.0 10.6	
19	Tu.	♂ ☿ ♆. ☾ runs low. {9.3 10.1 *westerly winds*	
20	W.	"Old Ironsides" launched at Boston, Mass., 1797 Tides {8.8 9.5	
21	Th.	St. Matthew. Tides {8.3 9.1 *Fair, brisk*	
22	Fr.	♂ ☿ ☉ Superior. {8.2 8.9 *weather.*	You'll be surprised how the ones in the barns have needed this treatment and how they respond.
23	Sa.	♂ ♂ ☾. ☉ enters ♎. AUTUMN COM. {8.2 8.9	
24	♐	16th ☽. a. Tr. Daylight Saving Ends. Tides {8.4 9.0	
25	M.	☾ in Apogee. Tides {8.7 9.1	
26	Tu.	Thomas Jefferson became Secretary of State, 1789. {9.0 9.3 *West*	
27	W.	♂ ☌ ☉. ☾ on Eq. {9.3 9.5 *and north-*	
28	Th.	♂ ☌ ☾. Tides {9.6 9.5 *west winds.*	
29	Fr.	St. Michael & All Angels. Tides {9.8 9.5	G. M. Foulkrod
30	Sa.	St. Jerome ♂ ♄ ☾. Tides {— 10.0	

ASTRONOMICAL CALCULATIONS.

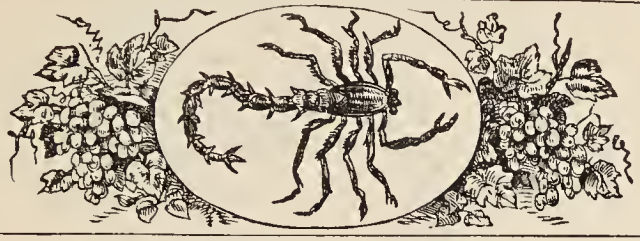
☉'s Declination.

Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
1	3s. 01	7	5 20	13	7 37	19	9 50	25	11 57		
2	3 24	8	5 43	14	7 59	20	10 11	26	12 18		
3	3 48	9	6 06	15	8 22	21	10 33	27	12 39		
4	4 11	10	6 29	16	8 44	22	10 54	28	12 59		
5	4 34	11	6 52	17	9 06	23	11 15	29	13 19		
6	4 57	12	7 14	18	9 28	24	11 36	30	13 39		

☾ Last Quarter, 6th day, 0h. 27m., morning, E.
● New Moon, 12th day, 3h. 30m., evening, W.
☽ First Quarter, 19th day, 10h. 24m., evening, W.
○ Full Moon, 28th day, 1h. 42m., 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.	Full Sea, Boston. Even h.	☽'s Place	☽ Rises. h. m.	☽ Souths. h. m.
274	1	S.	5 40	5 27	11 47	3 30	26	18	$0\frac{1}{2}$	$0\frac{3}{4}$	Tau	7 06	1 28
275	2	M.	5 41	5 25	11 44	3 33	26	19	1	$1\frac{1}{4}$	Tau	7 46	2 17
276	3	Tu.	5 43	5 24	11 41	3 36	27	20	$1\frac{3}{4}$	2	G'm	8 34	3 08
277	4	W.	5 44	5 22	11 38	3 39	27	21	$2\frac{1}{2}$	$2\frac{3}{4}$	G'm	9 27	4 01
278	5	Th.	5 45	5 20	11 35	3 42	27	22	$3\frac{1}{2}$	$3\frac{3}{4}$	Cnc	10 26	4 55
279	6	Fr.	5 46	5 19	11 33	3 44	27	23	$4\frac{1}{2}$	$4\frac{3}{4}$	Cnc	11 31	5 51
280	7	Sa.	5 47	5 17	11 30	3 47	28	24	$5\frac{1}{2}$	$5\frac{3}{4}$	Leo	morn	6 47
281	8	S.	5 48	5 15	11 27	3 50	28	25	$6\frac{1}{2}$	$6\frac{3}{4}$	Leo	0 40	7 42
282	9	M.	5 49	5 13	11 24	3 53	28	26	$7\frac{1}{2}$	$7\frac{3}{4}$	Vir	1 52	8 37
283	10	Tu.	5 50	5 12	11 22	3 55	29	27	$8\frac{1}{2}$	$8\frac{3}{4}$	Vir	3 05	9 31
284	11	W.	5 51	5 10	11 19	3 58	29	28	$9\frac{1}{4}$	$9\frac{3}{4}$	Lib	4 18	10 26
285	12	Th.	5 53	5 9	11 16	4 1	29	●	$10\frac{1}{4}$	$10\frac{3}{4}$	Lib	sets	11 20
286	13	Fr.	5 54	5 7	11 13	4 4	29	1	11	$11\frac{1}{2}$	Sco	5 40	0 15
287	14	Sa.	5 55	5 5	11 10	4 7	30	2	$11\frac{3}{4}$	—	Sco	6 22	1 10
288	15	S.	5 56	5 4	11 8	4 9	30	3	$0\frac{1}{2}$	$0\frac{3}{4}$	Sco	7 07	2 05
289	16	M.	5 57	5 2	11 5	4 12	30	4	$1\frac{1}{4}$	$1\frac{1}{2}$	Sgr	7 57	3 00
290	17	Tu.	5 58	5 0	11 2	4 15	30	5	2	$2\frac{1}{4}$	Sgr	8 49	3 52
291	18	W.	6 0	4 59	10 59	4 18	30	6	3	$3\frac{1}{4}$	Cap	9 44	4 43
292	19	Th.	6 1	4 57	10 56	4 21	31	7	$3\frac{3}{4}$	4	Cap	10 40	5 31
293	20	Fr.	6 2	4 56	10 54	4 23	31	8	$4\frac{3}{4}$	5	Aqr	11 38	6 18
294	21	Sa.	6 3	4 54	10 51	4 26	31	9	$5\frac{3}{4}$	6	Aqr	morn	7 02
295	22	S.	6 5	4 53	10 48	4 29	31	10	$6\frac{3}{4}$	7	Aqr	0 35	7 45
296	23	M.	6 6	4 51	10 45	4 32	31	11	$7\frac{1}{2}$	$7\frac{3}{4}$	Psc	1 31	8 28
297	24	Tu.	6 7	4 50	10 43	4 34	31	12	$8\frac{1}{4}$	$8\frac{1}{2}$	Psc	2 29	9 10
298	25	W.	6 8	4 48	10 40	4 37	32	13	9	$9\frac{1}{4}$	Ari	3 27	9 53
299	26	Th.	6 9	4 47	10 38	4 39	32	14	$9\frac{3}{4}$	10	Ari	4 26	10 38
300	27	Fr.	6 10	4 45	10 35	4 42	32	15	$10\frac{1}{4}$	$10\frac{3}{4}$	Ari	5 25	11 24
301	28	Sa.	6 12	4 44	10 32	4 45	32	○	11	$11\frac{1}{4}$	Tau	rises	morn
302	29	S.	6 13	4 43	10 30	4 47	32	17	$11\frac{1}{2}$	—	Tau	5 45	0 13
303	30	M.	6 14	4 41	10 27	4 50	32	18	0	$0\frac{1}{4}$	G'm	6 31	1 04
304	31	Tu.	6 15	4 40	10 25	4 52	32	19	$0\frac{3}{4}$	1	G'm	7 22	1 57

OCTOBER hath 31 days. [1939



Golden, tawny, crimson, brown,
Fast the autumn leaves fall down.

"Skindle's in October" — J. ASHBY STERRY

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	A	17th S. a. ☾. ☌ ☿ ♀. Tides 9.4 10.0	This is the month to put the garden in order for the winter and save as much spring work as possible. Remove all weeds and all stalks of frost-bitten annuals. The latter part of the month the perennials can all be cut down with a sharp sickle. Winter mulch, however, should not be put on until after the ground freezes.
2	M.	☌ ☉ ☾. 9.3 10.0 *Cool, clear, Autumn*	
3	Tu.	Whisky riots took place in Philadelphia, 1867. 9.1 9.9 *tang.*	
4	W.	☾ runs high Tides 8.9 9.8	
5	Th.	Pillager Indians killed Maj. Wilkinson at Leech Lake, Minn., 1898. 8.7 9.7	
6	Fr.	☿ in ♍ Tides 8.7 9.7	
7	Sa.	First horsepower railway in U. S. completed, 1826 Tides 8.8 9.8	
8	A	18th. Sun. af. Tr. 9.2 10.0 *Rainy*	A glass garden is an interesting thing to watch during the winter. It does best in a north window where blossoming plants do not flourish, and it is easy to make if one can go into the woods before hard frost with a basket and trowel. The first requisite is a glass dish with a close-fitting cover. The rectangular, straight-sided gold-fish tank with a pane of glass to fit the top is the perfect thing, though all shapes and sizes of glass receptacles may be used. A layer of charcoal and coarse gravel in the bottom of the dish is covered with good woods soil and leaf mould to the depth of three or four inches, the depth depending upon the size of the container. A nice stone or two, bits of different mosses and an uneven surface will add to the landscape effect. Then the planting may be made with tiny ferns, partridge berries, spotted pipsissewa and other woodsy things. After planting, the soil must be well moistened with a spray. Put the cover in place and do not water again for several weeks.
9	M.	St. Denis. Tides 9.7 10.3 *weather.*	
10	Tu.	☾ in Perigee. ☾ on Eq. Tides 10.3 10.7	
11	W.	☌ ☿ ☾. Tides 10.9 11.0	
12	Th.	Columbus Day. ☉ Tot. eclipse inv. in N.E. Tides 11.4 11.1	
13	Fr.	☌ ♀ ☾. ☌ ☿ ☾. Tides 11.7 11.0 *Fair.*	
14	Sa.	William Penn was born, 1644. Tides 11.7 —	
15	A	19th S. a. Tr. Tides 10.7 11.4	
16	M.	Noah Webster born at W. Hartford, Conn., 1758. 10.2 11.0 *Frost*	
17	Tu.	☿ in Aph. ☾ runs low. Tides 9.7 10.4 *may*	
18	W.	St. Luke. Tides 9.1 9.8 *threaten.*	
19	Th.	Roger Williams banished from Mass. Colony, 1635. Tides 8.7 9.3	
20	Fr.	Sir Christopher Wren born in London, 1632. Tides 8.3 8.9	
21	Sa.	☌ ☍ ☾. ☌ ♄ ☉. Tides 8.2 8.6	
22	A	20th S. a. Tr. ☾ in Apo. Tides 8.3 8.5	
23	M.	Nance Oldfield, British actress, born, 1683 8.5 8.6	
24	Tu.	☾ on Eq. Tides 8.8 8.8 *Days like Indian*	
25	W.	St. Crispin. ☌ ☊ ☾. 9.2 9.0 *summer.*	
26	Th.	Erie Canal completed, 1825. Tides 9.5 9.1	
27	Fr.	☌ ♄ ☾. Tides 9.8 9.3	
28	Sa.	St. Simon & St. Jude. ☾ Par. Eclipse vis. in N. E. 10.1 9.3	
29	A	21st S. a. Tr. ☌ ☉ ☾. 10 3 —	
30	M.	Birthday of Pres. John Adams, 1735. Tides 9.3 10.4	
31	Tu.	All Hallows Eve. ☾ runs high Tides 9.3 10.4	

Margaret S. Watson

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	14s. 18	7	16 09	13	17 51	19	19 22	25	20 40
	2	14 37	8	16 27	14	18 07	20	19 36	26	20 52
	3	14 56	9	16 45	15	18 23	21	19 50	27	21 03
	4	15 15	10	17 02	16	18 38	22	20 03	28	21 14
	5	15 33	11	17 19	17	18 53	23	20 16	29	21 25
	6	15 51	12	17 35	18	19 08	24	20 28	30	21 35

☾ Last Quarter, 4th day, 8h. 12m., morning, W.
● New Moon, 11th day, 2h. 54m., morning, E.
☽ First Quarter, 18th day, 6h. 21m., evening, W.
○ Full Moon, 26th day, 4h. 54m., 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.
305	1	W.	6 17	4 39	10 22	4 55	32	20	1½	1¾	Cnc	8 20	2 52
306	2	Th.	6 18	4 37	10 19	4 58	32	21	2¼	2½	Cnc	9 23	3 47
307	3	Fr.	6 19	4 36	10 17	5 0	32	22	3¼	3½	Leo	10 30	4 42
308	4	Sa.	6 20	4 35	10 15	5 2	32	23	4¼	4½	Leo	11 38	5 36
309	5	S.	6 22	4 34	10 12	5 5	32	24	5¼	5½	Leo	morn	6 29
310	6	M.	6 23	4 32	10 9	5 8	32	25	6¼	6½	Vir	0 48	7 22
311	7	Tu.	6 24	4 31	10 7	5 10	32	26	7¼	7½	Vir	1 59	8 14
312	8	W.	6 25	4 30	10 5	5 12	32	27	8	8½	Lib	3 10	9 07
313	9	Th.	6 27	4 29	10 2	5 15	32	28	9	9½	Lib	4 21	10 01
314	10	Fr.	6 28	4 28	10 0	5 17	32	29	10	10½	Sco	5 32	10 55
315	11	Sa.	6 29	4 27	9 58	5 19	32	●	10¾	11¼	Sco	sets	11 50
316	12	S.	6 30	4 26	9 56	5 21	32	1	11½	—	Sgr	5 44	0 45
317	13	M.	6 32	4 25	9 53	5 24	31	2	0	0¼	Sgr	6 36	1 39
318	14	Tu.	6 33	4 24	9 51	5 26	31	3	0¾	1	Cap	7 30	2 32
319	15	W.	6 34	4 23	9 49	5 28	31	4	1¾	1¾	Cap	8 28	3 23
320	16	Th.	6 35	4 22	9 47	5 30	31	5	2½	2¾	Cap	9 26	4 11
321	17	Fr.	6 37	4 21	9 44	5 33	31	6	3¼	3½	Aqr	10 23	4 56
322	18	Sa.	6 38	4 20	9 42	5 35	31	7	4¼	4¼	Aqr	11 21	5 40
323	19	S.	6 39	4 20	9 41	5 36	30	8	5	5¼	Psc	morn	6 23
324	20	M.	6 40	4 19	9 39	5 38	30	9	5¾	6¼	Psc	0 18	7 05
325	21	Tu.	6 41	4 18	9 37	5 40	30	10	6¾	7	Psc	1 15	7 48
326	22	W.	6 43	4 18	9 35	5 42	30	11	7½	8	Ari	2 13	8 31
327	23	Th.	6 44	4 17	9 33	5 44	29	12	8¼	8¾	Ari	3 12	9 17
328	24	Fr.	6 45	4 16	9 31	5 46	29	13	9	9½	Tau	4 13	10 05
329	25	Sa.	6 46	4 16	9 30	5 47	29	14	9¾	10¼	Tau	5 14	10 56
330	26	S.	6 47	4 15	9 28	5 49	29	○	10½	11	G'm	rises	11 49
331	27	M.	6 49	4 15	9 26	5 51	28	16	11	11¾	G'm	5 15	morn
332	28	Tu.	6 50	4 14	9 24	5 53	28	17	11¾	—	G'm	6 12	0 44
333	29	W.	6 51	4 14	9 23	5 54	28	18	0½	0½	Cnc	7 15	1 41
334	30	Th.	6 52	4 13	9 21	5 56	27	19	1¼	1½	Cnc	8 22	2 37

NOVEMBER hath 30 days. [1939

November nights — November nights!
With all their rich and rare delights;
The blazing fire whose sparkling flames
Gleam with a lovelier light than Fame's!
Oh, heartful cheer! Oh, peaceful sights,
Walled in by cool November nights.

"November Nights" — FRANK LEBBY STANTON

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	W.	All Saints Day {9.2 10.3} *Becoming raw.*	A wheelbarrow! Ay, a wheelbarrow is an implement that no real farmer will dispense with. Say what you will, Mr. Goodstick, this is a very important piece of furniture upon the premises. You think that you have no use for one; but let me ask you, how often do you borrow your neighbor the carpenter's? and how much vexation and scolding have you caused for not returning it in season? and how many times have you damaged it without reparation? and how many times has your good wife said to you, "pray, husband, do get you a wheelbarrow?" and how many times has your neighbor offered to sell you one, to prevent the trouble of lending, but you refused to buy? Now, I think that a wheelbarrow society would be highly advantageous in a neighborhood. I would have no one family be without an interest in it, and no one family without a wheelbarrow, kept constantly in good repair. Such a thing may be thought a novelty, but that is nothing against its utility. Reprinted from The Old Farmer's Almanac, 1839.
2	Th.	Tides {9.1 10.2}
3	Fr.	☿ in ♉ Tides {9.1 10.0} *Snow flurries*
4	Sa.	Wm. Hicks, Pasha, and entire command wiped out in Soudan, 1883 {9.1 9.8}
5	A	22nd Sun. af. Tri. {9.3 9.7} *threaten.*
6	M.	☿ Gr. Hel. Lat. S. Tides {9.6 9.8}
7	Tu.	♂♆☾.☿ Gr. Elong. E. ☾ on Eq. ☾ in Per. {10.0 9.9}
8	W.	Sarah Bernhardt made Amer. debut at Booth's Theater, New York, 1880 {10.5 10.1}
9	Th.	Pur. Pilgrims sighted land after 63-day voyage, 1620. {10.9 10.2} *Rain.*
10	Fr.	Meeting between Stanley and Dr. Livingstone in Africa, 1871. {11.2 10.3}
11	Sa.	St. Martin. Armistice Day. Tides {11.4 10.2}
12	A	23d S.a.T. ♂ ♀ ☾.♂☿☾. {11.3 —}
13	M.	♂ ☉. ☾ runs low. {10.0 11.1} *Fair Cool.*
14	Tu.	Gen. Sherman burned part of Atlanta, 1864. Tides {9.7 10.7}
15	W.	Discovery of Pike's Peak by Lieut. Zebulon Pike, 1806. Tides {9.3 10.2}
16	Th.	Oklahoma admitted to Union, 1907. {8.9 9.6} *Increasing*
17	Fr.	Queen Elizabeth ascended the throne, 1558. {8.6 9.1} *chill.*
18	Sa.	♂☿♀. ☿ Stationary in R.A. Tides {8.4 8.7}
19	A	24th S. a. T. ♂♂☾.☾ in Apo. {8.3 8.4}
20	M.	P. T. Barnum's menagerie burned at Bridgeport, Conn., 1887. {8.3 8.2}
21	Tu.	♂☊☾. ☾on Eq. Tides {8 5 8.2}
22	W.	St. Cecilia. Tides {8.8 8.3}
23	Th.	♂ ♄ ☾. Tides {9.1 8.5} *Freezing*
24	Fr.	Adelina Patti's debut in New York City, 1859. {9.5 8.7} *nights.*
25	Sa.	St. Catharine. ☊ Stat. in R.A. ☿ in ♌.♂☉☾.
26	A	25th S. a. T. {10.3 9.1} [25th {9.9 8.9}
27	M.	Hoosac Tunnel was completed, 1873. Tides {10.6 9.3}
28	Tu.	♂ ☿ ☉ Inf. ☾ runs high. Tides {10.7 —}
29	W.	□ ♂ ☉. Tides {9.4 10.8} *Colder.*
30	Th.	St. Andrew. Thanksgiving Day ☿ in Peri. {9.5 10.7}

ASTRONOMICAL CALCULATIONS.

☉'s Declination.

Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
1	21s. 45	7	22 34	13	23 07	19	23 24	25	23 25		
2	21 54	8	22 40	14	23 11	20	23 25	26	23 23		
3	22 03	9	22 47	15	23 15	21	23 26	27	23 21		
4	22 11	10	22 52	16	23 18	22	23 26	28	23 18		
5	22 19	11	22 58	17	23 21	23	23 26	29	23 15		
6	22 27	12	23 03	18	23 22	24	23 25	30	23 12		

☾ Last Quarter, 3rd day, 3h. 40m., evening, W.
● New Moon, 10th day, 4h. 45m., evening, W.
☽ First Quarter, 18th day, 4h. 04m., evening, E.
○ Full Sea, 26th day, 6h. 28m., 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.	Full Sea, Boston Even h.	☽'s Place	☽ Rises. h. m.	☽ Souths. h. m.
335	1	Fr.	6 53	4 13	9 20	5 57	27	20	2	2¼	Leo	9 30	3 33
336	2	Sa.	6 54	4 13	9 19	5 58	26	21	3	3¼	Leo	10 40	4 26
337	3	S.	6 55	4 12	9 17	6 0	26	22	3¾	4¼	Vir	11 49	5 19
338	4	M.	6 56	4 12	9 16	6 1	26	23	4¾	5¼	Vir	morn	6 10
339	5	Tu.	6 57	4 12	9 15	6 2	25	24	5¾	6¼	Lib	0 58	7 02
340	6	W.	6 58	4 12	9 14	6 3	25	25	6¾	7¼	Lib	2 08	7 53
341	7	Th.	6 59	4 12	9 13	6 4	24	26	7¾	8¼	Sco	3 16	8 45
342	8	Fr.	7 0	4 12	9 12	6 5	24	27	8¾	9¼	Sco	4 24	9 39
343	9	Sa.	7 1	4 12	9 11	6 6	24	28	9½	10¼	Sgr	5 28	10 33
344	10	S.	7 2	4 12	9 10	6 7	23	●	10½	11	Sgr	sets	11 27
345	11	M.	7 3	4 12	9 9	6 8	23	1	11¼	11¾	Sgr	5 17	0 20
346	12	Tu.	7 4	4 12	9 8	6 9	22	2	0	—	Cap	6 14	1 12
347	13	W.	7 4	4 12	9 8	6 9	22	3	0½	0¾	Cap	7 12	2 02
348	14	Th.	7 5	4 12	9 7	6 10	21	4	1¼	1½	Aqr	8 11	2 49
349	15	Fr.	7 6	4 12	9 6	6 11	21	5	2	2¼	Aqr	9 08	3 34
350	16	Sa.	7 7	4 13	9 6	6 11	20	6	2¾	3	Psc	10 06	4 18
351	17	S.	7 7	4 13	9 6	6 11	20	7	3½	3¾	Psc	11 03	5 00
352	18	M.	7 8	4 13	9 5	6 12	19	8	4¼	4½	Psc	morn	5 42
353	19	Tu.	7 9	4 14	9 5	6 12	19	9	5	5½	Ari	0 00	6 25
354	20	W.	7 9	4 14	9 5	6 12	18	10	6	6¼	Ari	0 58	7 09
355	21	Th.	7 10	4 14	9 4	6 13	18	11	6¾	7¼	Tau	1 57	7 55
356	22	Fr.	7 11	4 15	9 4	inc.	17	12	7½	8	Tau	2 57	8 44
357	23	Sa.	7 11	4 15	9 4	0 0	17	13	8¼	8¾	Tau	3 59	9 36
358	24	S.	7 11	4 16	9 5	0 1	16	14	9¼	9¾	G'm	5 00	10 31
359	25	M.	7 12	4 17	9 5	0 1	16	15	10	10½	G'm	6 00	11 28
360	26	Tu.	7 12	4 17	9 5	0 1	15	○	10¾	11¼	Cnc	rises	morn
361	27	W.	7 12	4 18	9 6	0 2	15	17	11½	—	Cnc	6 06	0 26
362	28	Th.	7 13	4 19	9 6	0 2	14	18	0	0¼	Leo	7 16	1 24
363	29	Fr.	7 13	4 19	9 6	0 2	14	19	0¾	1	Leo	8 28	2 20
364	30	Sa.	7 13	4 20	9 7	0 3	13	20	1¾	2	Vir	9 40	3 15
365	31	S.	7 13	4 21	9 8	0 4	13	21	2½	3	Vir	10 50	4 08

DECEMBER hath 31 days. [1939

Say "Yessum" to the ladies, and "Yessur" to the men;
An' when they's company, don't pass your plate fer pie again;
But thinkin' of the things yer'd like to see upon that tree,
Jest 'fore Christmas be as good as yer kin be!

"Jest 'Fore Christmas" — EUGENE FIELD

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Fr.	First patent issued for typewriter, 1866. Tides 9.5 / 10.5 *Few hours*	The handicraft tradition of the New England farm was unique. Its greatest power, perhaps, was over wood, giving to oaken trencher and maple spoon. to kitchen stool and Windsor chair, an honesty of purpose and dignity of line, but it touched on textiles as well, making of a New England quilt or parlour rug something which is still a pleasure to behold. Articles made by hand live forever with something of the life of the man or woman who made them: a machine thing is born dead. Our handicraft tradition remains vigorously alive, giving pride to the inheritance of the land. When pattering finger-tips of rain blow gustily on windward panes, or the morning light of winter arrives with a pallor of driving flakes then comes the hand to its own, the hand, most powerful and most delicate, most conservative and most creative of all devices.
2	Sa.	Gladstone succeeded Disraeli as Prime Minister of Eng., 1868. 9.5 / 10.2	
3	A	1st S. in Ad. ☽ Gr. Hel. Lat. S. ☾ in Per. 9.6 / 9.9	
4	M.	♂ ☿ ☾. ☾ on E. 9.7 / 9.6 *bright sunshine*	
5	Tu.	Gattling Gun invented by Dr. Richard J. Gattling was patented, 1861. 9.8 / 9.4	
6	W.	St. Nicholas. Tides 10.1 / 9.3	
7	Th.	♀ in Aphelion. Tides 10.3 / 9.4 *Rain*	
8	Fr.	☿ Stat. in R.A. Tides 10.6 / 9.4 *and snow.*	
9	Sa.	♂ ☿ ☾. Shortest afternoon (Boston) Tides 10.8 / 9.4	
10	A	2d Sun. in Ad. ☿ Gr. Hel. Lat. N. 10.8 / 9.4	
11	M.	☾ runs low. Tides 10.7 / 9.4 *Some*	
12	Tu.	♂ ♀ ☾. Tides 10.6 / — *ice.*	
13	W.	First Savings Bank in U.S. opened in Boston, 1816. Tides 9.2 / 10.2	
14	Th.	Famed Black Watch practically annihilated in Boer War, 1899. 9.0 / 9 8	
15	Fr.	Sitting Bull killed in fight between Soldiers and Indians, 1890. 8.8 / 9.4	
16	Sa.	☿ Gr. Elong W. Tides 8.6 / 9.0	
17	A	3d Sun. in Ad. ☾ in Apo. Tides 8.5 / 8.6	
18	M.	□ ♆ ☉. ♂ ♂ ☾. ☾ on Eq. Tides 8.4 / 8.3	
19	Tu.	♂ ☽ ☾. 8.4 / 8.1 *Sunshine changing*	
20	W.	Fitchburgh Railway opened to Waltham, Mass., 1843. 8.5 / 7.9 *to*	
21	Th.	St. Thomas. ♂ ♄ ☾. 8.7 / 8.0 *dense clouds*	
22	Fr.	☉ en. ♑, Winter Com. □ ☽ ☉. ♂ ☉ ☾. 9.1 / 8.1	
23	Sa.	Washington resigned commission in U.S. Army, 1783. 9.5 / 8.4	
24	A	4th S. in Ad. Tides 9.9 / 8.7 *Fair.*	
25	M.	Christmas. ☾ Runs high. 10 4 / 9.0 *Snowy*	
26	Tu.	St. Stephen. Tides 10.7 / 9.4 *weather.*	
27	W.	St. John, Evangelist. Tides 11.0 / —	
28	Th.	Holy Innocents. ♄ Stat. in R.A. 9.7 / 11.1 *Cold*	
29	Fr.	☿ Stat. in R.A. ♀ Gr. Hel. Lat S. ☾ in Per. 9.9 / 11.0 *wave*	
30	Sa.	Ignatius Loyola founded order of Jesuits, 1535. Tides 10.1 / 10.7	
31	A	1st S. a. Christmas. ☾ on Eq. 10.1 / 10.3	

Living forces, however, like living things, must be watched and cared for. There is creeping into New England a far too easy acceptance of trashy newspaper patterns and characterless designs, together with a willingness to use convenient and inferior materials. Away with them, and let us return to native commonsense and good taste, making our own designs or following the traditional patterns and using only materials that have beauty and integrity. The joy of the handicrafts is creation.

Henry Beston

ECLIPSES FOR THE YEAR 1939

In the year 1939 there will be four Eclipses: two of the Sun and two of the Moon.

I. *An Annular Eclipse of the Sun*, April 19, visible in New England as a Partial Eclipse. Visible as an Annular Eclipse in a band about 160 miles wide which includes the eastern Aleutian Islands and extends across Alaska, the Yukon territory, and part of the Arctic Ocean; and as a Partial Eclipse in northeastern Siberia, the northeastern Pacific Ocean, North America, Greenland, the Arctic Ocean, and western Europe. The Eclipse begins in the Pacific Ocean, in longitude 131° 5′ west from Greenwich, latitude 21° 39′ north; and ends in southeastern England, in longitude 2° 19′ east from Greenwich, latitude 51° 8′ north. The greatest duration of the annular phase is 1 minute, 53 seconds. In Boston and vicinity, the Partial Eclipse will begin at 11:05 A.M. and end at 12:53 P.M., Eastern standard time. The greatest fraction of the Sun's diameter which will be obscured here will be 0.17.

II. *A Total Eclipse of the Moon*, May 3, invisible in the United States. The beginning will be visible generally in Alaska, the Pacific Ocean, Australia, Polynesia, the Antarctic Ocean, the Indian Ocean, and eastern and central Asia; the ending will be visible generally in the western part of the Pacific Ocean, Polynesia, Australia, Asia, the Antarctic Ocean, the Indian Ocean, Madagascar, Africa except the northwestern part, and eastern Europe.

III. *A Total Eclipse of the Sun*, October 12, invisible in the United States. Visible as a Partial Eclipse in eastern Australia, New Zealand, southern South America, Antarctica, and the southern Pacific Ocean; and as a Total Eclipse along a curved band in Antarctica. The maximum duration of the total phase is 1 minute, 32 seconds. The Eclipse begins in the Pacific Ocean, in longitude 164° 59′ east from Greenwich, latitude 22° 22′ south; and ends off Cape Horn, in longitude 63° 48′ west from Greenwich, latitude 55° 34′ south.

IV. *A nearly Total Eclipse of the Moon*, October 27-28, visible in New England. The beginning will be visible generally in Europe, the western part of Africa, the Atlantic Ocean, North and South America, the eastern part of the Pacific Ocean, and the northeastern tip of Asia; the ending will be visible generally in the North Atlantic Ocean, the Arctic Ocean, North and South America, the Pacific Ocean, Polynesia, the eastern part of Australia, and northeastern Asia. At mid-eclipse, the Earth's shadow will obscure 0.992 of the diameter of the Moon.

Moon enters penumbra	October 27,	10h 42m P.M., Eastern standard time
Moon enters umbra	27,	11h 54m P.M.
Middle of the Eclipse	28,	1h 36m A.M.
Moon leaves umbra	28,	3h 18m A.M.
Moon leaves penumbra	28,	4h 31m A.M.

EARTH IN PERIHELION AND APHELION, 1939

The Earth will be in Perihelion on January 3, 1939, at 5 P.M., distant from the Sun 91,312,900 miles. The Earth will be in Aphelion on July 5, 1939, at 3 P.M., distant from the Sun 94,424,500 miles.

MORNING AND EVENING STARS, 1939

(A planet is called Morning Star when it is above the horizon at sunrise, and Evening Star when it is above the horizon at sunset.)

Mercury will be most favorably situated for being seen as a Morning Star about January 3, May 1, August 28, and December 16, on which dates it rises 1h 44m, 0h 50m, 1h 32m, and 1h 50m, respectively, before sunrise; and as an Evening Star about March 16, July 13, and November 7, on which dates it sets 1h 36m, 1h 18m, and 0h 56m, respectively, after sunset.

Venus will be Morning Star until September 5, and then Evening Star the rest of the year.

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

Jupiter will be Evening Star until March 6, then Morning Star until September 27, and then Evening Star the rest of the year.

Saturn will be Evening Star until April 11, then Morning Star until October 21, and then Evening Star the rest of the year.

THE SEASONS, 1939

Winter begins	1938, December	22, 7h.14m.	A. M.	— Sun enters	Capricornus,	♑
Spring "	1939, March	21, 7h.29m.	A. M.	— " "	Aries,	♈
Summer "	1939, June	22, 2h.40m.	A. M.	— " "	Cancer,	♋
Autumn "	1939, September	23, 5h.50m.	P. M.	— " "	Libra,	♎
Winter "	1939, December	22, 1h. 6m.	P. M.	— " "	Capricornus,	♑
Spring "	1940, March	20, 1h.20m.	P. M.	— " "	Aries	♈

Length of Winter,	1938–1939,	89	days,	0	hours,	15	minutes.
" " Spring,	1939	92	"	19	"	11	"
" " Summer,	1939	93	"	15	"	10	"
" " Autumn,	1939	89	"	19	"	16	"
" " Winter,	1939–1940,	89	"	0	"	14	"

GLOSSARY OF ASTRONOMICAL TERMS

used in the OLD FARMER'S ALMANAC

Aphelion. Point farthest from the Sun.

Apogee. Point farthest from the Earth.

Aspect. Relative apparent position in the sky (used principally with reference to the planets, the Sun, and the Moon).

Comet. A celestial body of diffuse, hazy appearance, which revolves in an orbit around the Sun. A fully developed comet consists of (1) a small, bright nucleus, surrounded by (2) a misty envelope called the coma, which extends on the side opposite the Sun into (3) a luminous tail; but in many comets the nucleus, or tail, or both, are lacking. Most known comets have been visible in the telescope only, but some have been visible to the naked eye and a few were spectacularly brilliant. Their orbits, unlike those of the planets, are mostly of high eccentricity and are inclined at the greatest possible variety of angles to the plane of the ecliptic. Many comets have orbits which, as nearly as can be determined, are parabolic; these comets approach the Sun from vast distances beyond the farthest planet, sweep once around the Sun, and recede into the depths of space. Their appearance in the heavens is of course impossible to predict. Others, moving in elliptic orbits, pass perihelion at regular intervals and can be predicted long in advance.

Conjunction. The same right ascension or celestial longitude. Used with reference to any two heavenly bodies, as the planets, the Sun and the Moon.

Conjunction, inferior. The conjunction of the planet Mercury or the planet Venus with the Sun is said to be inferior when the planet is between the Earth and the Sun.

Conjunction, superior. The conjunction of Mercury or Venus is said to be superior when the Sun is between the Earth and the planet.

Day's Increase (or decrease). This quantity, tabulated in the Almanac, is the difference between the length of the day in question and that of the shortest (or longest) day of the year.

Declination. Apparent distance north or south of the celestial equator. The Sun's declination, in degrees and minutes, is tabulated at the top of the left-hand pages.

Dip of the horizon. The depression of the apparent, or sea horizon below the true, or astronomical, horizon. The dip increases with the observer's height above sea-level.

Dominical Letter. The Sunday letter. The letters A, B, C, D, E, F, G being applied to the first seven days of any common year, the dominical letter for that year is the letter thus pertaining to the first Sunday. The intercalation of an extra day in Leap year shifts the dominical letter, for the part of the year which follows February 29, one place backward.

Eccentricity. As applied to the orbit of a comet or planet, this term signifies the ratio of the Sun's distance from the center of the orbit to the mean of the perihelion and aphelion distances. It is a measure of the non-circularity of the orbit.

Eclipse. The darkening of one heavenly body by another. The Almanac mentions (1) eclipses of the Sun, in which the Moon passes between the Sun and the observer, and (2) eclipses of the Moon, in which the Moon enters the shadow of the Earth. An eclipse may be partial or total according as the body is partly or wholly obscured; or an eclipse of the Sun may be annular, in which case the Moon, though it becomes centered on the disk of the Sun, is so far from the Earth that its apparent diameter is less than the Sun's, so that a ring, or annulus, of sunlight shows around the Moon. By far the most interesting eclipses, and also, for any given locality, the rarest, are total eclipses of the Sun.

Ecliptic. The apparent annual path of the Sun among the stars; or, the great circle which is the intersection of the celestial sphere with the plane of the Earth's orbit. It intersects the celestial equator at an angle of 23½°, at the *equinoxes.*

Elongation. Apparent distance from the Sun. The planets Mercury and Venus, in their orbital motion, appear to oscillate from one side of the Sun to the other and back. The times of their greatest elongations are given in the Almanac.

Epact. The age of the "calendar Moon" at the beginning of the year. The calendar Moon is a fictitious Moon used in determining the date of Easter, made purposely to differ from the real Moon so that Easter may not coincide with the Jewish Passover. Easter is defined as the first Sunday after the first full "calendar" Moon following the Sun's passage of the vernal equinox.

Equator, celestial. The great circle of the celestial sphere midway between the poles.

Equator, terrestrial. The imaginary circle ou the Earth's surface midway between the Earth's north and south poles. The celestial and terrestrial equators lie in the same plane.

Full sea. High water, or high tide.

Golden Number. The number of the year in the Metonic cycle. This is a cycle of 19 years established in Greece by Meton in the year 432 BC. It is almost exactly equal to 235 synodic months (a synodic month being the interval between successive new Moons), so that in years which have the same golden number the Moon's phases recur on the same dates.

Heliocentric latitude. Apparent distance north or south of the ecliptic, as seen from the Sun.

Horizon. The true, or astronomical, horizon is the great circle which is the intersection with the celestial sphere of a level plane passing through the observer's position. The apparent horizon is the line which limits the observer's view of the sky.

Inclination. As applied to the orbit of a comet or planet, inclination signifies the angle between the plane of that orbit and the plane of the Earth's orbit, or ecliptic.

Julian Period. A period proposed by Joseph Scaliger in 1582 AD to harmonize chronological systems. Its length is 7980 Julian years, being the least common multiple of the solar cycle, the Metonic cycle, and the Roman indiction. The first year of the Julian Period was 4713 BC, which was the year 1 in each of the three component cycles. The designation of a year in the Julian period is intelligible to any chronologist, whatever may be his religion.

Latitude (of a place on the Earth). The angle between the direction of gravity at the place and the plane of the Earth's equator. It is a measure of the distance of the place from the equator.

Length of Days. Time-interval between sunrise and sunset.

Longitude (of a place on the Earth). Arc of the equator between the meridian of the place and another meridian chosen as a standard, usually that of Greenwich, England.

Meridian. Great circle of the celestial sphere passing vertically north and south, through zenith and poles. Also, a north-south line on the surface of the Earth.

Meteor. A small, solid body which, revolving in an orbit around the Sun, enters the Earth's atmosphere and is made luminous by the consequent sudden stoppage of its swift flight. Often erroneously called a *falling* or *shooting star.* After falling upon the Earth, the body is called a *meteorite.*

Moon's Place. As tabuiated in the Almanac, this signifies the sign of the zodiac occupied by the Moon.

Moon Souths. Moon is on the meridian, due south of the observer.

Morning and Evening Stars. A planet is called Morning Star when it is above the horizon at sunrise, and Evening Star when it is above the horizon at sunset.

Node. The point at which a heavenly body apparently crosses the ecliptic; *ascending* if northward, *descending* if southward.

Opposition. Elongation of 180°. At opposition, a planet appears opposite the Sun.

Penumbra. Partial shadow.

Perigee. Point nearest the Earth.

Perihelion. Point nearest the Sun.

Phases of the Moon. The four principal phases of the Moon are: (1) *New Moon*, which occurs when, for the month, the Moon is most nearly between the Earth and the Sun; (2) *First Quarter*, which occurs about a week after New Moon when the angle Sun-Moon-Earth is 90° and half the Moon's illuminated side, or a quarter of the Moon, is visible; (3) *Full Moon*, when the Moon is most nearly opposite the Sun; and (4) *Last Quarter*, when the angle Sun-Moon-Earth is again 90°.

Planet. An opaque body which revolves around the Sun in a nearly circular orbit near the plane of the ecliptic. The principal planets, in order of distance from the Sun, are Mercury, Venus, the Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto. Of these, Venus, Mars, Jupiter and Saturn are brilliantly conspicuous to the naked eye, and Mercury also is bright but so near the Sun as to be found only with some difficulty. A planet may be distinguished from the "fixed" stars by its comparatively steady light and, if watched for a few nights, by the fact that it does not remain fixed relative to apparently neighboring stars.

Pole. Point in the sky around which the apparent diurnal rotation of the sky takes place; point where the Earth's axis intersects the celestial sphere.

Quadrature. Elongation of 90°.

Refraction, atmospheric. Bending of the light of a heavenly body within the Earth's atmosphere, which causes the body to seem higher in the sky than it really is.

Right ascension. Apparent distance, measured along the celestial equator eastward, from the vernal equinox.

Rising, setting. Appearing upon the horizon. The times of rising and setting of the Sun and Moon, given in the Almanac, are the times at which the upper point of the body's disk would appear at the true horizon to an observer at sea level. They are therefore corrected for atmospheric refraction, but not for dip.

Roman Indiction. An arbitrary cycle of 15 years used in Roman and ecclesiastical history. The year 1 of the first cycle was the year 313 AD.

Runs high, runs low. Has greatest declination, north or south; has greatest or least altitude in the sky at meridian passage. Used in reference to the Moon.

Signs of the zodiac. Ancient divisions of the zodiac, each 30° in length, beginning at the vernal equinox and named for the twelve zodiacal constellations.

Solar Cycle. A period of 28 years, after which the days of the week, in the ancient Julian calendar, fell on the same days of the year.

Sun fast, Sun slow. Difference between local apparent solar time (sun-dial time) and the kind of time (Eastern Standard) used in the Almanac. The Sun is "fast" when the sun-dial indicates noon before Eastern standard noon. At Boston and vicinity the Sun is always "fast," but farther west it is alternately "fast" and "slow."

Stationary. Having no apparent motion among the stars. The apparent motion of each planet among the stars is of a zigzag nature, being toward the east for a considerable time, then westward for a shorter time, and then again eastward. At the points of reversal the planet is "stationary."

Time. The time of day, or number of hours and minutes since a certain point in the sky, chosen for reference, was on the meridian. For *apparent solar time* (sun-dial time) the point of reference is the Sun. Since the Sun moves in the sky at a rate which is not constant, it is impracticable to make clocks keep apparent solar time, and so a fictitious "mean sun," which moves in the celestial equator with uniform speed, is used instead, giving *mean solar time*. *Standard time* is the mean solar time of a certain meridian which is chosen as standard for a considerable region; these meridians are chosen at regular intervals from Greenwich, and *Eastern Standard Time* is Greenwich mean solar time *minus* exactly five hours. For further details, see the Almanac for 1934.

Umbra. Complete shadow.

Vernal Equinox. The point at which, in its apparent annual motion, the Sun crosses the celestial equator from south to north; the point occupied by the Sun at the moment of the beginning of Spring.

Zodiac. The belt of sky, eighteen degrees wide, which has the ecliptic as its central line. It contains the twelve zodiacal constellations and, at all times, the Sun, Moon, and principal planets.

BIRTH STONES

January	Garnet	July	Turquoise
February	Amethyst	August	Carnelian
March	Bloodstone	September	Chrysolite
April	Diamond	October	Beryl
May	Emerald	November	Topaz
June	Agate	December	Ruby

OCTOBER

We saw leaves go to glory,
Then almost migratory
Go part way down the lane,
And then to end the story
Get beaten down and pasted
In one wild day of rain.
We heard "'Tis over!" roaring.
A year of leaves was wasted.
Oh we make a boast of storing
Of saving and of keeping,
But only by ignoring
The waste of moments sleeping,
The waste of pleasure weeping,
By denying and ignoring
The waste of nations warring.

—*Robert Frost*

RECENT COMETS

During the year which ended June 30, 1938, the following Comets have been observed:

1. Comet 1937 f, discovered by Finsler at Zurich, Switzerland, 1937 July 4, when of the seventh magnitude and situated near the star Algol. In August it was easily visible, but not conspicuous, to the naked eye; and had a multiple tail about 20° long. Orbit parabolic, motion retrograde, inclination to plane of ecliptic 34°; perihelion passage 1937 August 15 at a distance of 80,140,000 miles from the Sun.

2. Comet 1937 g, discovered by Hubble at the Mount Wilson Observatory in California, 1937 August 4, nine months after perihelion passage, when of magnitude 13.5. Orbit parabolic, motion direct, inclination 11°; perihelion passage 1936 November 22 at a distance of 180,500,000 miles from the Sun.

3. Encke's famous periodic comet, detected by Jeffers at the Lick Observatory, California, 1937 September 3. Orbit elliptic, period 3.28 years (the shortest known), inclination 13°; perihelion passage 1937 December 27, at 30,880,000 miles from the Sun.

4. Gale's periodic comet, detected by Cunningham at the Harvard College Observatory 1938 May 1. Orbit elliptic, period 11 years, inclination 12°; perihelion passage 1938 June 18, at a distance of 111,500,000 miles from the Sun.

The comets of Schwassmann-Wachmann (1925) and Van Biesbroeck (1935) were also visible with large telescopes during a part of the year. No comet except Finsler's was visible to the unaided eye.

CONNECTICUT

By WILBUR L. CROSS, Governor

I once remarked to a friend of mine that a certain person looked like a Yankee. My friend said, "He's no Yankee. He comes from Worcester, Massachusetts." From which it may be inferred that we in Connecticut consider ourselves sole legatees of this ancient name.

In the early seventeenth century Connecticut was the frontier. Small bands of settlers left Massachusetts Bay and Plymouth to journey westward to the Connecticut River Valley where the first towns were established by 1635 or a year or two earlier at Wethersfield, Windsor, and Hartford. Other settlements followed, along the coast and up the streams which penetrated the interior.

These early Connecticut settlers were prompted to migrate not only by a desire for economic freedom but also by the urge for religious and political independence. It is for this reason, perhaps, that there grew up here a race of hardy, ingenious and rather shrewd men and women, since neither the country nor the climate was especially favorable to the primary means of making a living by tilling the soil. These people were quick to seize upon manufacturing as supplementary, in some measure, to farming. Early in the eighteenth century small factories developed along rivers which supplied water power. Iron, tin, and copper were mined from local deposits and transformed into salable products. Clocks were also manufactured at an early date. Later in the century, the first silk mill was established at Mansfield, which afterwards led to the establishment of the world famous Cheney mills at South Manchester. As the technique of factory production developed, Connecticut industries grew and by 1880, we were rather more an industrial than an agricultural state.

The products of our infant industries were distributed throughout neighboring states by Yankee pedlars. A prosperous shipping trade developed from the exchange of Connecticut goods for West Indian rum and molasses and Chinese silk.

Apparently this combination of producing ingenious wares and exchanging them for other goods or cash proved profitable. Many large fortunes were created and a relatively high standard of living for the state as a whole was established. The Connecticut Yankee rose from humble beginnings to wealth and influence.

Because of the opportunities in our large industrial centers, and because Connecticut lies midway between the two great ports of Boston and New York, many immigrants from Europe have sought homes here during the past hundred years. Some sixty-five percent of our population is now either foreign born or but one generation removed from foreign born parents.

In spite of later immigration, Connecticut is still Yankeeland. There are perhaps two main reasons why this is so. First, we have preserved our beautiful countryside. Farming still occupies a large part of our population. Here in the open season is a green and pleasant land, with rolling hills and fields, with old elm-shaded villages, with forests where the dogwood and mountain laurel bloom; with rivers and lakes and rushing streams that still keep in their names echoes of the long Indian past; with miles of fine beaches and friendly harbors along beautiful shores. It is not surprising that the Connecticut Yankee has survived in these surroundings and still dominates the lower house of our General Assembly which is made up of representatives from the 169 towns in the state.

The second reason why Connecticut is still Yankeeland lies, not in our countryside but, strangely enough, in the cities, where the traditional Yankees are far outnumbered by men and women of foreign birth or parents, where each national group has its societies named for the towns or the saints of Europe. There can be no doubt of the love and sentiment of these people for their homeland. But they love Connecticut more. At no time recently has this sentiment been more apparent than during the observance of the 300th anniversary of the settlement of Connecticut, which occurred in 1935. The eager participation of groups of the so-called foreign-born was an inspiration. One of the features of the final state exercises was a parade, held in Hartford on a beautiful October day. A distinguished committee passed judgment on the many floats and awarded prizes for the most effective historical ones. The first prize went to a group of Italians for their float representing "The First Thanksgiving of Plymouth." The second prize went to a Swedish Society.

All this shows that the traditions of the world-famous Yankee still prevail in Connecticut, where many others besides myself read "The Old Farmer's Almanac."

TIDES IN NEW YORK HARBOR

The following table gives the times of Full Sea at the Battery, New York City. The Heights of High Water at that point range from 3.2 to 5.9 feet.

1939	JAN.		FEB.		MARCH		APRIL		MAY		JUNE	
Day of Month	Full Sea N. Y.		Full Sea N. Y.		Full Sea N. Y.		Full Sea N. Y.		Full Sea N. Y.		Full Sea N. Y.	
	Morn h	Even h	Morn h	Even h	Morn h	Even h	Morn h	Even h	Morn h	Even h	Morn h	Even h
1	3¾	4	5¼	6	3¾	4½	5¾	6¼	6½	6¾	7¾	8
2	4¾	5¼	6¼	6¾	5	5¾	6¾	7¼	7¼	7½	8½	8¾
3	5¾	6¼	7¼	7¾	6	6½	7½	8	8	8¼	9¼	9¼
4	6¾	7	8	8½	7	7½	8¼	8¾	8¾	9	10	10
5	7½	8	9	9½	7¾	8¼	9	9½	9½	9¾	10¾	10¾
6	8¼	8¾	9¾	10¼	8½	9	9¾	10¼	10¼	10½	11½	11½
7	9¼	9¾	10¾	11¼	9½	9¾	10¾	11	11¼	11¼	..	0¼
8	10	10¾	11½	..	10¼	10¾	11½	0	..	0	0¼	1
9	11	11¾	0	0½	11¼	11½	..	0½	0¼	1	1	1¾
10	0	..	1	1¼	..	0	0¾	1½	1	1¾	1¾	2½
11	0½	0¾	2	2¼	0½	1	1¾	2¼	1¾	2½	2½	3¼
12	1½	1¾	3	3¼	1¼	1¾	2½	3¼	2½	3½	3¼	4¼
13	2½	2¾	4	4½	2¼	2¾	3½	4¼	3½	4¼	4½	5
14	3½	3¾	5	5½	3¼	4	4½	5	4½	5	5½	5¾
15	4½	4¾	5¾	6¼	4¼	5	5½	5¾	5½	5¾	6¼	6½
16	5½	5¾	6½	7	5¼	5¾	6¼	6½	6¼	6½	7	7¼
17	6¼	6¾	7¼	7½	6	6½	6¾	7	6¾	7	7¾	8
18	7	7¼	7¾	8¼	6¾	7	7½	7¾	7½	7¾	8¾	8¾
19	7¾	8	8½	8¾	7½	7¾	8	8¼	8¼	8¼	9½	9¾
20	8¼	8¾	9	9¼	8	8¼	8½	8¾	9	9	10½	10¾
21	8¾	9¼	9½	9¾	8½	8¾	9¼	9¼	9¾	9¾	11½	11¾
22	9½	9¾	10	10¼	9	9	10	10	10¾	10¾	..	0½
23	10	10¼	10½	10¾	9½	9¾	10¾	11	11¾	11¾	0¾	1½
24	10¼	10¾	11	11½	10	10¼	11¾	0	..	0¾	1¾	2½
25	11	11½	0	..	10¾	11¼	..	0¾	1	1¾	2¾	3¼
26	11½	..	0½	0¾	11¾	..	1	2	2	2¾	3¾	4¼
27	0¼	0¼	1¼	2	0	0¾	2	3	3	3¾	4¾	5¼
28	1	1¼	2½	3¼	1	2	3¼	4	4	4¾	5¾	6¼
29	1¾	2¼			2¼	3	4½	5	5	5¾	6½	7
30	3	3½			3½	4¼	5½	6	6	6½	7½	7¾
31	4¼	4¾			4¾	5½			7	7¼		

TIDES IN NEW YORK HARBOR, Cont.

The following table gives the times of Full Sea at the Battery, New York City. The Heights of High Water at that point range from 3.2 to 5.9 feet.

1939	JULY		AUGUST		SEPT.		OCT.		NOV.		DEC.	
Day of Month	Full Sea N. Y.		Full Sea N. Y.		Full Sea N. Y.		Full Sea N. Y.		Full Sea N. Y.		Full Sea N. Y.	
	Morn h	Even h	Morn h	Even h	Morn h	Even h	Morn h	Even h	Morn h	Even h	Morn h	Even h
1	8	8 1/4	9	9 1/4	9 1/2	9 3/4	9 1/4	9 3/4	10 1/2	11 1/4	11 1/4	..
2	8 3/4	9	9 3/4	9 3/4	10	10	10	10 1/4	11 1/4	..	0 1/4	0 1/4
3	9 1/2	9 1/2	10 1/4	10 1/4	10 1/2	10 3/4	10 3/4	11 1/4	0 1/4	0 1/2	1 1/4	1 1/4
4	10 1/4	10 1/4	10 3/4	10 3/4	11 1/4	11 1/2	11 1/2	..	1 1/4	1 1/2	2	2 1/4
5	11	11	11 1/4	11 1/4	0	..	0 1/4	0 1/2	2 1/4	2 1/2	3 1/4	3 1/2
6	11 3/4	11 1/2	0	..	0 1/4	1	1 1/4	1 3/4	3 1/2	3 3/4	4 1/4	4 1/2
7	..	0 1/4	0	0 3/4	1 1/2	2	2 1/2	2 3/4	4 1/2	4 3/4	5 1/4	5 1/2
8	0	1	0 3/4	1 1/2	2 1/2	3 1/4	3 3/4	4	5 1/2	5 3/4	6	6 1/2
9	0 3/4	1 1/2	1 3/4	2 1/2	4	4 1/2	4 3/4	5 1/4	6 1/4	6 3/4	7	7 1/4
10	1 1/2	2 1/4	3	3 1/2	5 1/4	5 1/2	5 3/4	6 1/4	7 1/4	7 1/2	7 3/4	8
11	2 1/4	3 1/4	4 1/4	4 3/4	6	6 1/2	6 3/4	7	8	8 1/4	8 1/4	8 3/4
12	3 1/2	4 1/4	5 1/2	5 3/4	7	7 1/4	7 1/2	7 3/4	8 3/4	9	9	9 1/2
13	4 3/4	5 1/4	6 1/2	6 3/4	7 3/4	8	8 1/4	8 1/2	9 1/2	10	9 3/4	10 1/2
14	5 3/4	6 1/4	7 1/4	7 1/2	8 1/2	9	9	9 1/2	10 1/4	10 3/4	10 1/2	11 1/4
15	6 3/4	7	8	8 1/2	9 1/2	9 3/4	9 3/4	10 1/4	11	11 3/4	11 1/4	0
16	7 1/2	7 3/4	9	9 1/4	10 1/4	10 3/4	10 3/4	11 1/4	0	..	..	0
17	8 1/2	8 3/4	9 3/4	10 1/4	11 1/4	11 3/4	11 1/2	..	0 1/2	0 3/4	0 3/4	0 3/4
18	9 1/4	9 1/2	10 3/4	11	..	0	0 1/4	0 1/2	1 1/2	1 1/2	1 1/2	1 1/2
19	10 1/4	10 1/2	11 3/4	..	0 1/2	1	1	1 1/2	2 1/4	2 1/2	2 1/4	2 1/4
20	11 1/4	11 1/2	0	0 1/2	1 1/2	2	2	2 1/4	3 1/4	3 1/4	3	3 1/4
21	..	0 1/4	1	1 1/2	2 1/2	3	3	3 1/4	4	4 1/4	4	4 1/4
22	0 1/2	1	2	2 1/2	3 1/2	4	4	4 1/4	5	5 1/4	5	5 1/4
23	1 1/4	2	3	3 1/2	4 1/2	5	4 3/4	5	5 3/4	6	5 3/4	6
24	2 1/4	3	4	4 1/2	5 1/2	5 3/4	5 3/4	6	6 1/4	6 3/4	6 1/2	6 3/4
25	3 1/4	4	5	5 1/2	6 1/4	6 1/2	6 1/4	6 1/2	7	7 1/4	7 1/4	7 1/2
26	4 1/2	5	6	6 1/4	6 3/4	7	7	7 1/4	7 1/2	8	7 3/4	8 1/4
27	5 1/2	5 3/4	6 3/4	7	7 1/2	7 3/4	7 1/2	7 3/4	8	8 1/2	8 1/2	9
28	6 1/4	6 1/2	7 1/4	7 1/2	8	8 1/4	8	8 1/4	8 3/4	9 1/4	9 1/4	10
29	7	7 1/4	8	8 1/4	8 1/2	8 3/4	8 1/2	8 3/4	9 1/2	10	10 1/4	11
30	7 3/4	8	8 1/2	8 3/4	9	9 1/4	9	9 1/2	10 1/4	11 1/4	11	11 3/4
31	8 1/2	8 1/2	9	9 1/4			9 1/2	10 1/4			..	0

THE NEW BREED, "NEW HAMPSHIRES"

T. B. CHARLES

University of New Hampshire

Old-time New Hampshire poultry keepers from about 1900 to 1905 were uuknowingly laying the foundation for the "present business hen of America." Formerly called New Hampshire Reds and still so known by many, this new breed was admitted to the American Standard of Perfection in August 1935 under the name "New Hampshires."

New Hampshires are a gradual evolution from the uative birds of the state that were kept then as farm flocks. Those characteristics for which the "Granite State" is famous have been built into the breed, and have made the state famous, and will continue to do so. Ruggedness, vitality and high livability are a few of the assets of birds that are not pampered.

While the real foundation for this new and highly popular breed was firmly laid thirty to thirty-five years ago, the "broiler boom" of ten to fifteen years ago added other valuable economic factors for a dual purpose of meat aud egg breed, such as rapid growth, rapid and full feathering, and size and type of body. Breeding for uniformity of color has beeu chiefly stressed for the past six to eight years.

When you realize that New Hampshire normally has about 1,200,000 mature birds, and that 85 to 90 percent of these are of the one breed—New Hampshires—you can appreciate the profitableness of making a trip to the Granite State to see these birds in their native haunts. Many farms keep 3,000 to 10,000 or more breeders which are destined to be the progenitors of hundreds of thousands of hatching eggs and chicks that are going to the four corners of the United States and Canada, as well as to England and other countries.

Who first said "New Hampshire Reds" or "New Hampshire Yellow Necks"? Hundreds outside of New Hampshire were using the name long before our New Hampshire breeders decided to capitalize on it and take advantage of the nation-wide publicity and growing popularity of their birds.

Fifteen or twenty years ago "Yellow Necks" was a characteristic of many flocks. When finally, after years of breeding and selection a standard was set, a chestnut red, that is really a natural color to breed, was selected as an ideal towards which to work. This brief story of the development of New Hampshires would not be complete without a note relative to disease eradication, because both went hand in hand. In 1918, a total of 4,000 birds were tested for the eradication of Pullorum disease (then called bacillary white diarrhea). By 1928 the number had increased to 78,000. By 1934-35 it was 235,000 and during the past testing season, ending March 31, 1937, it was close to 550,000 (out of about 1,200,000 birds in the state). This program, developed by the poultrymen of the state co-operating with the State Department of Agriculture and the State Agricultural Experimeut Station, has placed New Hampshires in the forefront as to freedom from Pullorum disease and is an additional reason for their popularity and rapid spread. All tests are made by the standard tube agglutination method and only 100 percent clean flocks are given official recognition.

In briefly discussing the origin and development of New Hampshires, I have mentioned some of the morc important economic factors, and the natural cause of their inclusion. Let me again emphasize that this breed development is based on those economic factors that today make poultry keeping profitable and bring in cash returns. Among others might be mentioned (1) early maturity, (2) rapid growth, (3) rapid and full feathering, (4) size and type of body for a dual purpose breed, (5) high vitality and ruggedness, (6) high livability, (7) high hatchability, (8) high average production, (9) large egg size.

One thoroughly familiar with the breed can have no doubts that the future development of the New Hampshires will be steady, sure and economically satisfactory to those who are willing to give it half a chance. If you could see and read the hundreds of letters that come to my desk monthly, asking for sources of hatching eggs—at the rate of averages from four to five cases, to demands for forty or fifty cases of hatching eggs weekly, there could be no question in your mind of the demand, a demand coming from every state in the Union and provinces of Canada, a demand based on the real merit of a new breed—New Hampshires.

NEW METHODS IN FERTILIZATION

FORD S. PRINCE

New methods of fertilizatiou consist in placing the plant food into the soil near enough to the young plauts to influence their development without delay and not close enough to cause injury to seed or seedlings. This is accomplished by distributing the fertilizer in narrow bauds one and oue-half to two iuches away from the seed on either side of the row and about two to four inches in depth, depending upon the depth of seeding.

Experiment stations, farm machinery manufacturers, and fertilizer concerns have co-operated in an effort to determine the best methods of distribution with a desire to increase the returns from the fertilizer which farmers use. The results obtained for all row crops indicate that proper placement gives better yields than similar amounts of fertilizer applied by old methods, or from larger applications broadcast.

Trials in several states with potatoes indicate an average yield of 289 bushels per acre with the fertilizer distributed at the sides of the seed and on a level with the seed pieces in the soil, a yield 49 bushels higher than when the same amount of fertilizer was mixed with the soil in the row and 21 bushels more than when the fertilizer was placed in the row without being mixed with the soil.

Tests with corn at Ohio attribute a 13 bushel higher yield to correct fertilizer placement as against placing the fertilizer and the seed at the same point in the soil. Similarly, trials with most crops show striking increases for side placement of fertilizers. These results lead to the conclusion that when economy is considered the returns on money spent for fertilizers are much greater with correct placement.

So placed, the fertilizer comes into contact with a smaller amouut of soil than if it is broadcast or mixed with the soil before planting. This prevents the rapid fixation of phosphorus and permits of greater stimulation to the crop from this element. Phosphorus is the nutrient which has most effect on the growth and multiplication of feeding roots and on hastening maturity.

If fertilizers are delivered into the soil so they come into contact with the seed or young seedlings when they start to grow, they may cause burning of the tender tissues, resulting iu a poor stand and lowered yield. Correctly placed, this cannot happen, for the fertilizer is far enough away so that seed iniury cannot occur, diffusion of the fertilizer salts is downward, leaving the seedlings unharmed, and by the time the feeding roots enter the fertilizer zone the concentration of soluble fertilizer is apparently not strong enough to cause injury. Rather, the number of feeding roots appears to increase in the fertilizer zone, which accounts for quick and maximum stimulation from the fertilizers which are applied.

There is a labor saving feature to the system too, for with up-to-date machinery, planting and fertilizing are accomplished in one operation. This not only hastens the planting process but assures the farmer that the fertilizer will be so placed that it will be ready for use as soon as his young plants require it.

Applied at the sides of the row, double strength fertilizers are just as safe to use as single strength materials. Plant food in the high analysis goods can be purchased for less money pound for pound of plant food, resulting in a saving of both money and labor to the farmer.

Farmers who use fertilizers are not all equipped with planters that have attachments to deliver the fertilizer into the soil correctly. Most equipment makers have developed attachments that can be purchased and adapted to these older machines. They have also been quick to design and manufacture their new models so that side placement of fertilizer will be accomplished with the planting. Farmers buying new machinery should make certain that it is up-to-date with respect to fertilizer distribution.

The home gardener, if he desires, can approximate better methods by placing a ring of fertilizer around his plants in the transplanting process or by furrowing when planting his seeds so that he can place the fertilizer to one or both sides of the row.

The home gardener may not be vitally interested in economy of fertilization since he probably uses an excess of the substance anyway. But all farmers who grow field crops and vegetables are tremendously concerned with profitable fertilizer usage. These recent results on side placement point the way by which more profits can be obtained from the fertilizer applied.

GARDEN HINTS

J. R. HEPLER

Among the newer insecticides or bug killers for your garden none shows more promise than *rotenone*. This material is slightly poisonous to eating insects and it is a contact insecticide which is non-poisonous to higher animals. It is an insecticide that can be used safely on beans and is recommended for cabbage worm and other leaf eating insects because it leaves no poison residue on the plants. It may be used in liquid or dust form.

Many plant growers and amateur gardeners have had considerable trouble the last few years from too rich a soil burning the roots of seedling plants. Do not use any commercial fertilizer in a compost soil. The chances are that you will do your plant far more harm than good. Make your compost of equal parts of well-rotted manure and garden loam or allow two loads sod and one of cow manure to rot for a year or two for a hotbed frame or cold frame soil.

Pinkie is a new popcorn from the middle west which is said to equal or surpass Japanese Hulless in quality and much superior in yield. Those of us who like popcorn will want to try out this new and promising variety.

There is no sweet corn quite as delicious, quite as good-looking, quite as satisfactory as Golden Cross Bantam. However, it is a little late for early maturity.

If you are troubled with damping off on seedling plants, it might be worth your while to make a disinfectant by pouring a pint of 40% formalin over 6 lbs. of dry compost or finely ground peat, roll with some stones for three or four minutes, use at the rate of 6 oz. per bushel.

A variety of eggplant which is sure to yield and bear fruit early in northern and central New England is the New Hampshire Hybrid. This is a medium-sized, dark colored, and very prolific eggplant of good quality.

Lettuce growers who have trouble in maturing summer lettuce will welcome the new variety Imperial No. 44 and Imperial No. 847. Reports from various experiment stations show that these type head up to 50% where the ordinary New York lettuce refuses to head at all.

You can take the guess out of the fertilizer treatment by sending a quart sample of your soil to your experiment station for analysis. They will tell you what the soil lacks and what fertilizer to apply. The service is free.

The people in northern New England who have trouble in maturing watermelons will find that the variety Sweet Japanese is from two to three weeks earlier than the earliest American kind and is very high in quality.

You can make artificial manure in your garden by composting with a little soil, all your garden refuse and trash such as the tops of plants, vines, grass clippings, and leaves. Sprinkle over these materials at least one lb. of a high grade fertilizer to about 25 lbs. of leaves. Allow this material to rot for a year and spread it over your land.

Tomato plant growers who have started their plants early in February should be glad to know that unhardened plants set out May 25th in the field with the seed planted around April 10th yielded better fruit, more fruit, and earlier fruit, than those early overgrown plants.

It is well to resist the urge that comes every spring to plant tomatoes and similar seeds too early. Allow only five to seven weeks to grow these plants.

The sand method of starting seeds in the kitchen window or in the greenhouse reduces danger of disease to a minimum. After the seeds are up, they may be fed once or twice a week. Put two tablespoonsful of a 5-8-7 fertilizer in a gallon of water, allow this to stand for two minutes and then pour the water off throwing away the undissolved portion of the fertilizer. Water your flats first and then put the solution containing the plant food on the flat. Sand grown plants have a much larger root system.

The tarnished plant bug has done a great deal of damage on many garden plants including celery and asters, dahlias, and others. It causes Black Heart of celery and destroys the shape of the flower in asters and dahlias. Dusting every 10 days with a mixture of equal parts of sulphur and lime will repel this insect.

STATE AGRICULTURAL EXPERIMENT STATIONS

New England States

MAINE
Location ..... Orono
Director ..... Fred Griffee

NEW HAMPSHIRE
Location ..... Durham
Director ..... J. C. Kendall

VERMONT
Location ..... Burlington
Director ..... J. L. Hills

MASSACHUSETTS
Location ..... Amherst
Director ..... F. J. Sievers

RHODE ISLAND
Location ..... Kingston
Director ..... G. E. Adams

CONNECTICUT
Location ..... Storrs
Director ..... W. L. Slate

Middle Atlantic States

NEW YORK
Location (New York State) Geneva
Director ..... P. J. Parrott
Location (Cornell Univ.).. Ithaca
Director ..... Dean Carl E. Ladd

NEW JERSEY
Location ..... New Brunswick
Director of Station Dr. Jacob G. Lipman
Director of Research Dr. W. H. Martin

PENNSYLVANIA
Location ..... State College
Director ..... R. L. Watts

DELAWARE
Location ..... Newark
Director ..... C. A. McCue

MARYLAND
Location ..... College Park
Act'g Director .... J. E. Metzger

WEST VIRGINIA
Location ..... Morgantown
Director ..... C. R. Norton

STATE AGRICULTURAL EXTENSION SERVICE LEADERS

New England States

MAINE
R. C. Dolloff ..... Orono

NEW HAMPSHIRE
E. P. Robinson ..... Durham

VERMONT
H. W. Soule ..... Burlington

MASSACHUSETTS
S. R. Parker ..... Amherst

RHODE ISLAND
R. H. Hewitt ..... Kingston

CONNECTICUT
R. K. Clapp ..... Storrs

Middle Atlantic States

NEW YORK
Earl A. Flansburgh ..... Ithaca

NEW JERSEY
W. H. Allen .... New Brunswick

PENNSYLVANIA
M. S. McDowell .... State College

DELAWARE
A. D. Cobb ..... Newark

MARYLAND
E. I. Oswald ..... College Park

WEST VIRGINIA
R. H. Gist ..... Morgantown

NEW METHODS IN AN OLD CALLING

M. GALE EASTMAN

Whether the reasons for coming were religious, political or economic, our ancestors for the most part found that the exigencies of the situation demanded that they grow crops and animals for a living. For generations, even centuries, the principal business of those early settlers was to try to eke out a scanty existence by means of tilling the land and feeding their flocks and herds.

This agriculture which they pursued in those earlier days has later come to be classified as a self-sufficient type. It was characterized by conditions under which the farmer grew or otherwise produced practically everything that he and his family and his flocks and herds needed for their existence. He hewed his farm out of the forest and ont of the round logs he built his humble cabin. He even kindled the fire in his rude home-made fireplace from the chips of his handiwork. From the flax that he grew in the fields, and from the wool that sheep's backs afforded, combined with the dexterity of the womenfolk in the home, the clothes of the family were fabricated, and, while homespun today means something less finished than most of us wear, the clothing was serviceable and, at that time, sufficient.

Cereals, beans, many vegetables, apples and less important crops were started in this country from seeds brought from Europe. Herds and flocks had developed from a similar source. Fish from the abounding streams and wild animals doubtless supplemented the domestic meat supply. Local wild plants and Indian corn added to the list of consumable products, also both sweet and white potatoes, and tobacco. These were novelties in the new country but in the case of Indian corn, doubtless, saved some groups from disaster. From the hides of the cattle the farmer clothed his feet and from their fat he lighted his home. His trade was barter; his recreation mostly in productive feats of strength.

The contrasts between the beginning and the end of this self-sufficient period of farm production are more conspicuous by years than by changes in practices. For two centuries this farmer vied with nature for existence. He worked with unbelievably crude implements—the hand hoe; the hand fork, made of wood; the sickle; the ax, perhaps. Animal power was used for traction, as well as for bearing burdens, and the early colonist had his crude two-wheeled cart, the wheels often sawed circles from a big log, the A-shaped harrow, all of wood, and a crude, heavy wooden plow.

But the last century has seen a great change. We evolved from a self-sufficient to a commercial type of farming. The industrial revolution had been doing things to mechanical business, and it now infected agriculture. Economically, we have been forced to consider the farm as a factory. The individual farmer in any locality tries to supply that which he can produce better or cheaper than anyone else, and to buy from others what they can produce more efficiently than he. In rural America, the connotations for agriculture are not dissimilar to the effect of "division of labor" in the city industries.

What is the significance of all this? What are the new methods involved in our old calling of agriculture? Scarcely a century ago, each family in the United States was trying to work out its own salvation, directly, in seeking a living from the land. These families expected little except bare necessities. Over-production then meant joy and gladness,—better potatoes for the household and more for the cattle, hens and hogs.

Today, less than a quarter of our population is actually engaged in farming, yet their production is still used to feed the other three-quarters and also parts of the rest of the world. It is not only difficult to know just what to produce to satisfy these people one never contacts, but costs of distribution are often misleading to both producers and consumers. Over-production means that the potatoes rot in the cellar, if not in the field, for want of a market price that will pay the costs of harvesting or transportation.

One of the recent new methods that has been introduced in this country to remedy this difficulty of our modern civilization is co-operative marketing. This movement may be equally significant in buying or selling. It strives, through a special non-profit corporation, to give the farmer better control over the processing, handling and distribution of his product, and, by providing him with the facilities of trade, to give him a chance to reduce middleman profits, recover some of them himself, pass them on to the consumer, and understand better why they are necessary. Further than this, and probably more important, is its educational value in interpreting customer needs and preferences for influencing producer quantity and quality.

CHARADES

By ARTHUR W. BELL

1

My First too often, I'm afraid,
Is of such stuff as dreams are made.
When men become My Last with age
Their place is nearest to the stage.
The thing to which My Whole's applied
In color is diversified.

2

My First sounds flat if struck below.
My Last I'm certain is a go;
My Whole is just the self I know.

3

My First's a medium, a fluid link,
Between what men may say and what they think;—
My Last, beneath the surface sunk, forsooth,
The fabled dark abiding place of Truth;—
My Whole a tiny cistern where, inside,
My First doth rise and fall in murky tide.

4

My First alternative allows,
Or, that a choice exists avows.
My Last is but a morsel small,
Considerably less than all.
My Whole is the way of the world
On which we are all of us whirled.

5

My First
Though voted the above, in name,
This Nation never so became.

My Second
Is well contrived to catch the eyes;
They say it pays to advertise.
My Whole was once supposed to dwell
In forest green and woodland dell.

6

My First was Lord Douglas's own,
Of fealty free to the throne.
My Last of the sum is a part,
A paradox here I impart.
What is My Whole is good to see
Which as it does is said to be.

7

My First the bear
And bull may share,
My Last an able
Man in fable.

My Whole
Array of posts
'Gainst hostile hosts.

8

My First is the part of a sword,
My Whole from My Last may be poured;
Who seeks for My Whole in the cup
Must find it before "bottoms up."

9

My First, tail foremost, is a rat,
My Last a summer coat for man;
My Whole has certain patterns that
Identify a Scottish clan.

10

My First has best its purpose served
When builded where 'tis least observed.
My Last with alternating dart
Denotes man's finish and his start.
My Whole eggs on its wretched dupe
Which elsewise fain would fly the coop.

11

Into each life must fall My First.
But Noah knew by far the worst.
Untrustworthy the one is reckoned
Who ever draws a long My Second.

My Whole
Aflame with beauties manifold,
There, at its foot, is fabled gold.

12

He feels himself imposed upon
On whom My First's imposed
And I, as much as any one;
My Next is thus disclosed.
So much the verse above explains
Of two I have disposed,
My Third, My Whole, alone remains,
A little job enclosed.

The answers to these charades will be found on page 51.

THE LENGTH OF THE YEAR

A year, in the exact language of astronomy, is the time required by the Earth to go around the Sun; or, what is the same thing, the time occupied by a complete apparent revolution of the Sun around the ecliptic. There are different kinds of year, depending on the refereuce point used for determining the revolution. For example, the sidereal year is the time taken by the Sun in passing from any given apparent place among the stars, around the sky, to the same place again; the anomalistic year is the time taken by the Earth in going from perihelion around to perihelion again; and the tropical year is the time taken by the Sun, in its apparent motion, to pass from the vernal equinox arouud the sky to the vernal equinox again.

For ordinary purposes, the tropical year is the only one of any importance because it is the year of the seasons. Spring begins (technically) at the moment the Sun's center, seen from the direction of the Earth's center, appears at the vernal equinox; Summer begins when the Sun's center appears at the summer solstice, the point of the ecliptic 90° east of the vernal equinox; Autumn and Winter, with the Sun at the autumnal equinox and winter solstice, points opposite the vernal equinox and summer solstice respectively.

The average length of the tropical year is 365 days, 5 hours, 48 minutes, 46 seconds.

The actual length of any given year, also the length of any season, may vary from the average by several seconds. One reason for this variation is the gravitational pull of the planets, which, acting with continually changing intensity and direction, accelerates or retards the Earth minutely in its orbital motion. Because of the number and the changing positions of the planets, these perturbations of the Earth's motiou (which without them would be in a simple ellipse) are very complicated, and their prediction, even by the most advanced methods of modern mathematical astronomy, is very laborious. The principal additional reason for the variation of the year's length is the non-uniform motion of the vernal equinox. This motion (called precession) is itself a result of a slow gyration of the Earth's axis in a period of about 25,000 years, caused by the gravitational attraction of the Moon and the Sun upon the protuberant material at the Earth's equator; and its calculation, like that of the planetary perturbations, is complicated.

The ordinary calendar year consists of 365 days; but as this is in error by 5 hours, 48 minutes, aud 46 seconds, or nearly a quarter of a day, if all years were taken of this length the seasons would slip backward in the calendar and we would eventually have summer weather in what we would call January. This error is nearly effaced by the insertion of a "leap" year of 366 days every four years as was decreed nearly two thousand years ago by Julius Caesar. In this way, however, the effacement is a little overdone and so, following a plan adopted by the Catholic Church under Pope Gregory XIII in the sixteenth century, we omit the quadrennial leap year in the century years whose numbers are not exactly divisible by 400. For example, the year 2000 A.D. will be a leap year but the year 1900 was uot, nor was there any leap year in the 8-year interval between 1896 and 1904. This Gregorian calendar will not need alteration for many centuries to come.

SEPTEMBER 21, 1938

In the Latin West Indies hurricanes are given a name of the Saint of the Church of that day of occurrence. What shall be the historical name of the New England storm of September 21, 1938?

On that Wednesday at daybreak a hurricane of tropical origin was off Cape Hatteras, far enough to seaward so that there was little or no shore damage. The center was moving north- or northeastward at but little more than normal rate.

During the two or so days previous a heavy rain development had extended northeastward along the coast from the Carolinas to middle New Hampshire and northern Vermont, resulting in destructive floods in central New England rivers.

Into this region, already disastrously stricken by the Divine Elements two and a half years ago and again at the present moment, rushed the hurricane, increasing its speed of travel to an unheard of rate, as if bent on seizing as its victims those already grievously smitten, and gathering in for destruction others beyond the flooded river regions.

A windstorm from the eastward of great force always rolls up a storm wave of several feet in height along our shores; if this comes on the top of the regular high tide, the damage is serious, but in this instance, the storm wave topped the high tide, which in turn was approaching the "spring" tide, and the resulting wave along the southern Massachusetts, Rhode Island and eastern Connecticut shores was overwhelming, and then add the wind force whose gusts are rarely measurable but probably upwards of 100 miles per hour, the destruction becomes nearly total. That nature destroys itself, that wind and storm uproot trees, destroy crops and take lives must remain one of the mysteries of creation.

Man has mastered many of the elemental forces of wind and water, great bridges and structures withstood the hurricane and water, lesser construction suffered. Man's records of the dynamics of weather are very brief; it is reasonable to suppose that the most terrible record, remember, it is brief, may be yet exceeded, and our needed factor of safety in planning probably is not high enough.

If man encroaches upon the domain of nature, man must defend such invasion, by building dams or ships or bridges or canals or tunnels or buildings not necessarily greater, but stronger than nature's elements have yet overthrown.

We have invaded nature's domain. Nature has driven us back.

THE AUTOMOBILE IN NEW ENGLAND

	MAINE	NEW HAMPSHIRE	VERMONT
Registration	Expires Dec. 1. May be used until March 1 (except dealers).	Expires April 1.	Expires March 31.
Fees	*Passenger — 25c. h.p. plus 25c. cwt.; 50c. cwt. solid tires. If used for hire or livery, double fee.	Based on weight and tires. Minimum for passenger car $10.	Pleasure cars $12 to $35, depending upon weight.
License	To persons 15 or over $2. Examination required. Expires Dec. 31. Chauffeur's license, persons 18 or over, $3.	To persons 16 or over. License & examination $3. Expires March 31st midnight. Renewal $2. Chauffeur's license to persons over 18, $5. Renewal $2.	Junior License 16 and 17. Regular License 18 or over $2.50. Examination $2. Expires March 31.
Lights	From half hour after sunset to half hour before sunrise. Must conform to regulations of Sec. of State.	From half hour after sunset to half hour before sunrise. Head lights visible 200 ft. Must have dimmers.	I.C.C. Regulations apply.
Speed	35 mi.; 25 mi. in business & residential districts; 15 mi. by schools. Trucks 35 mi. open country, 12 mi. residential.	15 mi. by schools; 20 mi. business districts; 25 mi. residential and as determined by Commissioner.	Pleasure cars: 50 mi. per hr.; with trailer, 40. Trucks: 1 to 2 tons 35 mi.; over 2 tons, 30. Bus 40 mi.
Non-Residents	Exempt: Pleasure cars registered in owners' state; commercial vehicles not owned by foreign corporations of 1½ tons or less. Cars operated for hire must register.	Pleasure cars used by visitors exempt if registered in owner's state.	Vt. registration and license required for motor vehicles used for transporting people or property for hire.
Trucks	*Fees based on capacity and kind of tires, from $10 on 1,000 lbs. or less to $400 for over 12 tons with hard tires.	Based on weight and kind of tires.	Fee 50c. cwt. to 80c. cwt., depending on weight.
Insurance	Proof of financial responsibility required in case of conviction or violation of laws.	Proof of financial responsibility required following accident or conviction of violation of motor vehicle laws.	Financial Responsibility Law applicable following accident (damage over $75.00 or personal injury) or conviction.
Trailers	Must register. MIN. fee $2. House Trailers $4.75 flat rate.	Registration based on weight. Inspection required.	1 trailer or 1 semi-trailer only permitted. Trailer Coach. Safety chain, fire extinguisher required.

*5% Reduction on that computation.

Parking Laws and Speed in Various Cities Change Continually — BE ON THE LOOKOUT

THE AUTOMOBILE IN NEW ENGLAND

	MASSACHUSETTS	RHODE ISLAND	CONNECTICUT
Registration	Expires December 31.	Expires December 31.	Expires last day of February.
Fees	Less than 30 h.p. $3. 30-40 h.p. $4.50. 40-50 h.p. $6.00. 50 or more $7.50.	With pneumatic tires minimum fee $8 for gross wt. of 2,500 lbs. or less. Increases with weight. Over 6,000 lbs. $23.	Based on weight — $7.00 to $11.00
License	Any person 16 yrs. or over. Examination fee $2. License fee $2. Renewal fee $2.	To persons 16 or over. Examination $1. License or renewal $2. Valid one year from date of issue.	To persons 16 or over. Fee $3. Examination $2. Expires April 30.
Lights	From half hour after sunset to half hour before sunrise. Front lights must show 160 ft. Rear red light & white light to illuminate registration number.	From half hour after sunset to half hour before sunrise. Headlights must illuminate 200 ft. ahead. Registration number must be illuminated.	Half hour after sunset to half hour before sunrise. Red light in rear, white light to illuminate number plate.
Speed	Reasonable and proper. Prima facie evidence of speed greater than reasonable and proper: over 15 m. per hr. at curves & intersections; over 20 m. in business or residential section; over 30 m. open country.	Reasonable speed at all times. 20 mi. per hr. in thickly settled sections; 35 mi. elsewhere.	Controlled by State Traffic Commission. Maximum 50 mi. per hour, day (40 at night).
Non-Residents	Reciprocal. Must apply for permit within 30 days.	Reciprocal.	Reciprocity arrangement.
Trucks	Fee: 15c. cwt. of truck and carrying capacity.	Fee based on weight. Minimum for gross wt. of 3,000 lbs. or less $12.50; more than 28,000 lbs. $100. Other than pneumatic tires increase of 10c. per 100 lbs.	30c. cwt. to 50c. cwt. depending on weight.
Insurance	Compulsory. Cannot be registered unless insured to cover personal injuries.	Proof of financial responsibility required in case of conviction of violation of various laws.	Proof of financial responsibility required in case of conviction of violation of various laws.
Trailers	Must register. House and camp trailers $1. Insurance required.	Over 2500 lbs. gross weight must register.	Camp trailers $2.

Parking Laws and Speed in Various Cities Change Continually — BE ON THE LOOKOUT

THE AUTOMOBILE IN THE MIDDLE ATLANTIC STATES

	NEW YORK	NEW JERSEY	PENNSYLVANIA	DELAWARE	D. C.	MARYLAND	W. VIRGINIA
Registration	Expires December 31 but renewals may be secured during January.	Expires March 31.	Expires December 31.	Expires December 31.	Expires December 31.	Expires March 31. Plates ensuing year may be displayed March 15.	Expires June 30.
Fees	Private passenger cars 50c. cwt. up to 3500 lbs.; 75c. cwt. for all weight in excess of 3500 lbs.	Private passenger cars 40c. per h.p. up to 29 h.p.; 50c. per h.p. for vehicles of 30 h.p. or over.	Private passenger cars, $10 minimum for 25 h.p. 40c. for each additional h.p. over 25.	$1.50 for every 500 lbs. or fraction thereof up to and including 5,000 lbs.; $2.00 for each 500 lbs. over.	Certificate of title must be obtained. Fee $1. Identification tag at front and rear. Fee depends on weight.	Private passenger cars 32c. per h. p. — quarterly basis.	Private passenger cars $11 up to 2,000 lbs.; 60c. additional for each 100 lbs. or fractions thereof in excess.
License	To persons 18 years or over. Expires 3 years or 1 year from date of issue at option of applicant. Fees: 3 yr. chauf., $5; oper. $2; renewals, chauf. $4; oper. $1.50. 1 yr. chauf., $3; oper. $1; renewals, chauf. $2; oper. 50c.	To persons 17 years and over. Expires March 31. Fee $3.	To persons 16 years or over. Fee $1. Expires February 28. Learners' permits, $2. (Good for ninety days.)	Operator's license to persons 16 or over. Chauffeur's license to persons 18 or over. Fee $1.50. Expires last day of February.	To persons over 16. Operator's permit $3 for period of 3 years	To persons 16 years or over. Examination permit $1. Operator's license $2; good until suspended or revoked. Chauffeur's liceuse $3; good for twelve months.	To persons 15 years or over. Operator's fee $1; good until revoked or suspended. Chauffeur's license $3 if issued on or before June 30; $1.50 if issued on or after July 1. Chauffeur's license expires December 31.
Lights	From ½ hr. after sunset to ½ hr. before sunrise. Two white or yellow lights in front; one red light in rear. White light must illuminate rear number plate. Headlights must illuminate 200 ft. ahead.	From ½ hr. after sunset to one-half hour before sunrise. Two front lights; red light in rear. Rear number plate must be illuminated.	From ½ hr. after sunset to ½ hr. before sunrise. Headlights must illuminate objects 350 ft. ahead. Red light in rear. Number plate illuminated with white light.	From one-half hour after sunset to one-half hour before sunrise. Red light in rear; white light to illuminate rear number plate.	From one-half hour after sunset to one-half hour before sunrise. Head lamps must show clearly objects 200 ft. ahead. Red light in rear; number plate illuminated with white light.	Two white headlights. Red light in rear. One spot light permitted. Trucks, commercial vehicles 90 inches wide display clearance lights.	Two front lights — red light in rear.

Speed	Careful and prudent. Over 40 miles per hour presumed not careful and prudent.	Careful at all times. 10 mi. per hr. passing schools; 15 mi. at intersections and curves; 15 mi. business districts; 20 mi. residential; 40 mi. elsewhere.	Careful. 10 mi. per hr. passing street cars and at intersections; 15 mi. by schools; 50 mi. unless otherwise limited.	Reasonable. 25 mi. in business and residential districts; 45 miles on highway.	Reasonable. Must not exceed 7 mi. per hr. in any alley, nor 15 mi. when passing schools; not over 22 mi. on highways unless otherwise indicated.	20 mi. per hr. in business or residential sections; 25 mi. in outlying districts; maximum 45 miles.	Careful. 15 mi. per hr. passing schools; 20 mi. in business districts or at intersections; 25 mi. on suburban streets; 45 mi. on open highways.
Non-Resident	Reciprocal arrangement, except for intrastate transportation for hire or profit. Licensee must be 18 years of age.	Reciprocity arrangement.	Reciprocity arrangement except for vehicles used for transportation of persons for hire.	Reciprocity arrangement, except for vehicles used for transportation of persons for hire.	Reciprocal arrangement.	Reciprocal arrangement, but not to exceed 90 days in year. All "for hire" vehicles must secure insurance permit (gratis) from C.M.V. in Baltimore before entering State. Intrastate operation prohibited.	Reciprocal arrangement, for a period of three months.
Trucks	Fee: 80c. per cwt. of unladen weight.	Fee governed by gross weight of vehicle and load, ranging from $10 for 1000 lbs. or less to $99 for 3000 lbs.	Fee based on chassis weight, number of wheels and type of tires.		Not over 33 ft. long, 8 ft. wide, 12 ft. high. 4 wheels not over 30,000 lbs.; 6 or more wheels not over 39,000 lbs. Full reciprocity.	Solid tire vehicles. Fee based on carrying capacity. Speed: 6 tons or less, 25 mi. per hr.; over 6 tons, 20 mi.	Fee based on capacity of vehicle, ranging from $15 for one ton or less to $540 for over 10 tons.
Insurance	For hire passenger cars must be covered by bond or policy filed with Commissioner. Proof of financial responsibility required upon conviction for certain offences.	Proof of financial responsibility required upon conviction for certain offences.	Proof of financial responsibility required of persons with certain accident record and of persons failing to satisfy judgment.	Proof of financial responsibility required when driver is adjudged guilty of certain violations.	Proof of financial responsibility required when driver is adjudged guilty of certain violations.	Required for all commercial vehicles (pass. or prop.) operating "for hire."	Proof of financial responsibility required in cases of violation of motor laws.
Trailers	Semi-trailers, boat-, camping-, coach- and machine-trailers 80c. cwt. of unladen weight. Other trailers $8 per ton of combined weight and carrying capacity.	Same as Trucks. (See above.)	Same as trucks. (See above.)		See Trucks. No train of vehicles more than 85 ft. long.	Fee based on chassis shipping weight.	Fee governed by capacity, ranging from $9 for ½ ton to $100 for 10 tons.

Parking Laws and Speeds in Various Cities Change Continually — **BE ON THE LOOKOUT!**

"POETRY, ANECDOTES AND PLEASANTRIES"

RETREAT

I saw a broken soldier in the West
With antique tricorne hat pulled forward low,
His poor old shoulders hunched, his chin on chest
And belt and sabre sagged. I saw him go
Reeling and tottering, but still he pressed
In one direction only. Driven so,
A left, a right, mechanical, possessed,
The Guard retreated in the Russian snow.

I looked again: my veteran was gone
Across the frozen wilderness of space,
But somewhere he slogs desperately on
Limping, and accoutrement awry,
Like Napoleon's marshals in disgrace—
Orion, that great straggler of the sky.

Christopher Morley
In Saturday Review of Literature

LITTLE RABBITS

By Ruth Lambert Jones

Little rabbits are about,
Hopping nimbly in and out
Of country roads within the span
Of the motors' caravan.
They do not pause to contemplate
The fate of rabbits who leapt too late,
They do not pause to ponder why
Their own sleek bodies do not lie
Beneath the grim, Gargantuan wheel
Of every passing automobile.
Little rabbits are abroad,
Leaving such affairs to God.

In Saturday Review of Literature

THUMBS ALONG THE MOHAWK

Indian Summer Travelogue

The breadth of Mother Nature's lap
Now constitutes the tourist's map;
And motorists of, faces pale,
Frequent the redskin Mohawk Trail,
A route the length of which displays
Faint vestiges of Indian days.
The dance, a tribal danger sign,
Is witnessed should one stop to dine.
Delays at crossings may transpire
To watch a threatening signal fire.
Though with his scalp one may escape,
Hair-raising shaves hold him agape;
We grazed, by swerving from the track,
A gaily painted "Pontiac,"
Avoiding thus a bloody end,
With tortured death, around the bend;
For Jacob's Ladder, mark ye well,
May lead to Heaven, via Hell.
The brand of "Indian" to fear
Approaches panting in our rear
Whence sounds the dread command, to STOP,
As shouted by a motor-cop.
Though once a happy hunting ground,
No more do fish and game abound;
Yet travelers along the trails
Still catch a glimpse of furry tails.
Few tracks are seen, by woodcraft read,
Just imprints of all-weather tread,
For signs where foot has touched the ground
Are far between, if ever found.
Where savages once beat their way
Hitch-hikers do the same today;
The tramp, the wandering Jew, the bum,
All travel now by rule of thumb.

Falmouth Enterprise

ANTIQUE CHAIR

A Windsor chair
Has quite an air:—
Of all the highly prized antiques
This type displays more quirks and freaks,
Whose variant contours none the less
Enfold one in a fond caress.
The legs are braced and wide apart;
A hardy folk has sturdy art.
Form-fitting spindles tapered thin
Outline an occupant within,
Fate's arrows drawn clear to the head
Along the bow in fanlike spread:
Its bygone owner, I declare,
In spirit might be sitting there.
With highly burnished saddle groove
And knuckle grips hand-polished smooth,
With nice support for back and limb.
He fitted it, it fitted him.
All which combine to make one feel
A kind of psychical appeal:—
I like a rare
Old Windsor chair.

STONE FENCES

I have seen
Old fences built of stones
Picked up by pioneers
And have felt
The bleak, bare heart-break
Of work that scars
And sears;

I have heard
The sigh of a heavy sky
Till my very soul cried out:
"Oh, with all
Our Age's wisdom, can't
We know what we're
About?"

And the poor
Old fences' answer: "We're
The heaped up hopes of the years"!—
Yet there is
A light of loveliness
We see through all
Our tears.

Helen Douglas Robinson
In The Poetry Review, January '38

OF THE CLOTH

The day that He, in Galilee,
His followers bespoke,
Among the dozen Saints then chosen,
Four were fisher folk.

In later days, with freer ways,
The sporting parson flourished,
Within the mesh of sins of flesh,
On richest viands nourished.

He chased the fox, kept fighting cocks,
About the ladies dangled;
He drank a lot, he gamed, he shot,
In gentler mood he angled.

He had to go, but now although
The type no more exists,
Divinity's affinity
For trout today persists.

From "The Fishing Gazette"
London, England

"It is a funny thing," said Daphne. "My mother's age is half the sum of my father's age and my age, and my father's age and my mother's age total 100, and both their ages are prime numbers."

How old is Daphne?

(A prime number is a number which has no factors other than the number itself and unity)

A metal ingot weighs 40 pounds.

How can it be converted into four ingots, with which any number of pounds can be weighed from one to 40 inclusive?

(The two puzzles given above are taken from "Brush Up Your Wits," by Hubert Phillips)

A Science Note says that brook trout lose 2.6% of their length in death. There is a fisherman's alibi that is an alibi.

Detroit Free Press

In certain wagers the comparative financial responsibility of the parties concerned constitute odds enough.

The physician has this advantage over other salesmen; namely, that he always encounters his clients in a moment of weakness.

A clergyman wrote to a wealthy and influential business man requesting a subscription to a worthy charity and soon received a curt refusal which ended by saying:—"As far as I can see this Christian business is just one continuous Give, give, give."

After a decent interval the clergyman answered as follows;—"I wish to thank you for the best definition of the Christian life that I have yet heard."

As related by Rev. W. F. A. Stride of Hamilton, Mass.

A man was walking down the street, in Richmond, Va., shortly after the autumn convocation of public schools and when passing a group of young colored girls on their way to the seat of learning overheard one girl ask of another: — "Is yuh did yuh Greek"?

At a large Thanksgiving dinner an eminent scientist was to speak. The piece de resistance of the feast was the conventional toothsome bird with usual stuffing and garnishing. The Toastmaster arose at the conclusion of the meal and said;—"We have all thoroughly enjoyed a turkey stuffed with sage, I am now offering you the pleasure of listening to a Sage stuffed with turkey."

Answers to Charades

(The answers are printed backwards to prevent seeing others when verifying any one.)

1. Dlabeip
2. Oge
3. Llewkni
4. Tibro
5. Dayrd
6. Emosdnah
7. Edakcots
8. Patleeh
9. Natrat
10. Ggetsen
11. Wobniar
12. Bacixat

Answers to Puzzles

1. Daphne 23; Father 59; Mother 41
2. 27 lbs., 9 lbs., 3 lbs., 1 lb.

SHOOTING AND FISHING

Since game laws, though frequently lacking in detailed information and subject to last minute changes, are now so widely published these pages have been substituted in the space commonly allotted to this feature.

Love of the chase is deeply rooted in man's nature and even under the rapidly changing conditions of modern civilization with consequent evolution of sport and recreation the number of devoted anglers and gunners shows no diminution despite the growing scarcity of their quarry. Last year's Maine Edition of "The Old Farmer's Almanac" gave some revealing statistics with regard to the uumber of sporting licenses issued in that State in recent years, which would probably constitute a fair sample for the New England and Middle Atlantic district and attest the unwaning enthusiasm of lovers of rod and gun. For many thousand readers of the Almanac certain of its calendar pages are steeped in associations of field and stream, for whom spring fever is that fishing fever which bursting buds beget and to whom spring means trout and trout means spring. For many also, some of them the same individuals, other months are quite as full of meaning; frosty moonlit skies remind them of nocturnal flights of south bound woodcock and falling showers of sere and yellow leaves suggest the whir of the partridge which stirs them again. There are few more genuine thrills in life than those which the changing seasons supply to such true lovers of field sports. For them appropriate calendar pages are punctuated with red letter days emphasizing the legal and licensed revels of the Red Gods.

These recreations are typical but all branches and varieties of fishing and shooting have their particular devotees. Some prefer the little rivers, or even rivulets, with the gurgling sound of clear water running over pebble stones, the idylic charm which appealed so strongly to old Izaak, while others prefer the greater wave length of broader floods, waters of the salmon rivers, great mountain lakes or the coastal estuaries and open sea. It is all a matter of taste, an individual reaction, or innate emotional response to the proper stimulus; and who shall decide where sportsmen disagree? In the shooting game, one specialist is captivated with the excitement iucident to the approach of far-off dark, yet twinkling, constellations of ducks and he, on opening day, annually enters the trenches at the zero hour prepared for the first early morning volley. Another finds more fascination in the greater opportunity for dog work required by quail shooting but, alas, Bob White is hard pressed to hold his own under present conditions and is no longer encountered in great abundance anywhere in the northeastern states. In the few localities where he is still extant he is hedged about with restrictions such as short open season and small bag limits and, even so, survives only with the aid of frequent artificial replenishment. For yet another class of gunners a fall of tracking snow arouses hopes of a propitious opportunity to indulge in their favorite sport of following in the footsteps of rabbit, fox, deer or bear when every move of the game is mapped out on a clean white sheet together with certain information as to their size and numbers. Shore bird shooting had a special allure but for something like ten years these birds have been protected by federal prohibition in the spirit of which Canada has joined. Unfortunately the expected benefits do uot yet appear to be very marked.

In a survey of the prospects for future sport in North Eastern America, competent fish and game commissions with intelligeut legislation and wise policies for conservation and for restocking arc of prime importance. In replenishment two alien species have been introduced which appear well suited to their new environment and have already achieved important positions respectively, in our list of fish and game. These are the English pheasant, so called, or ring-neck, and the brown trout of the Continent of Europe. The ring-neck has a wide range and the spread is very gratifying. Usually only males are allowed to be shot except in private preserves where birds are released by the proprietors. This newcomer does not possess quite as wild a nature as most of our game birds but after he once gets under way is a fast flyer and will carry off a lot of shot; he is a nice piece of meat as well. The brown trout, and also the rainbow, from the western United States are both better adapted to the higher temperatures and lower levels of water to which today our trout streams arc subject in the late summer than are the native brook trout; also they grow much faster. In waters stocked with rainbows or browns the brook trout gradually decrease and ultimately disappear. Some state game commissions display their ignorance by prescribing the same open season for the rainbow, which is a springtime spawner,

as for the brook and brown trout which spawn in the late autumn; on the upper Connecticut this difference has been recognized but, generally speaking, it has been ignored.

In addressing the Sporting Fraternity it should not be necessary to emphasize obedience to fish and game laws since that is implicit in the very title of sportsman. To acquaint oneself with the pertinent legislation is obviously one's first duty and fortunately the information is easily secured. In rural districts, in practically every post office and in every town hall, to say nothing of barber shops the game laws are posted in conspicuous places where he who runs may read. Information with regard to migratory birds and other federal rulings is often received too late to be included, and it is well to check up on such points by communicating with the Fish and Game Commissions of the various States, as well as for other changes and corrections. The best late information with regard to migratory birds may be obtained from the Game Commissioner of the Bureau of Biological Survey, Washington, D. C. For duck shooting a federal stamp must be attached to the shooting license and these may be had from any post office for one dollar. Do not neglect this governmental stamp of approval. Shooting of brant, wood-duck, canvasback, red-head and ruddy duck is now prohibited entirely.

All states require both resident and non-resident sportsmen to take out a license and the rates and rules governing this formality vary considerably. Some states now offer short-term licenses at reduced rates for the benefit of those who plan brief trips of from one day to two weeks' duration.

Governors of the States may at their discretion close the woods to shooting and fishing in times of prolonged drought until a satisfactory rainfall has occurred. In certain States the Governor may modify the season and bag limit for grouse when adverse conditions call for it.

Deer shooting is regulated by rather complicated provisions which differ in various states and in counties of the same state. Generally bucks only may be shot and those which have three inches of horn showing above the hair. The laws regarding the lawful weapons to be used in deer hunting display similar variations for different localities. Other laws cover the subject of the killing of deer which are actually doing damage to garden crops. Special legislation applies to the number of deer that may be killed by any single camp. Deer may not be hunted with dogs and the use of jack-lights is prohibited. There are certain hours in relation to sunrise and sunset when it is illegal to shoot wild game, and trapping is subject to a special set of laws and a special trapper's license. Sometimes shooting is allowed only on certain days of the week. There are states which specify the required age of an applicant for a license, often with provisions necessitating the parent's consent in the case of younger boys. Of late it is possible in some states to purchase a combined shooting and fishing license at a smaller cost than the sum of the two. In most states vermin, such as weazels and, among birds, hawks, owls, etc., may be shot at any time regardless of season. In New York State bear may not be hunted with dogs. Certain States will not issue licenses to aliens.

A list of game animals protected by law includes bear, deer, red fox, hares and rabbits, raccoon, beaver, otter, muskrat, opossum, skunk and squirrel. Protected game birds are ducks, geese, wild turkey, pheasant, grouse, quail, woodcock, snipe and rail birds.

The fish laws prescribe limits as to size, or weight, and numbers per day and season. In some localities only a few fish may be retained while others may be caught and returned to the water. There are many rules applying to various individual streams and lakes and many county laws. In some northern states the open season begins from the time the ice goes out, a somewhat ambiguous term often further defined. Special rulings in counties and states govern fishing through the ice. Certain streams and ponds are closed to fishing for stated periods and tributary streams may be closed as feeders. Some places permit only fly fishing at certain seasons; that is, after a fixed date for the balance of the season. As in shooting, fishing is often prohibited before and after stated hours. There are numerous laws for various counties. Methods of fishing with regard to the number of hooks to be used or of fly hooks attached to leaders and even the type of rods employed are occasionally encountered. Seining of fish, if permitted at all, is governed by special regulations. For information, or where any ambiguity exists, write to Fish and Game Commissioner at the capital of the state in question.

The following are the fresh water fish protected by law: salmon,

Continued on page 73

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.

LETTERS AND POSTAL CARDS.—FIRST CLASS.

Written and Typewritten Matter, each ounce and fraction ..... .03
(Except when mailed for local delivery when the rate is 2c for each ounce or fraction.)

Post Cards and Private Mailing Cards which comply with Departmental requirements ..... .01

Business Reply Cards or Letters, consult Post Office.

NEWSPAPERS AND PERIODICALS—SECOND CLASS.

Entire Newspapers or Magazines when mailed by the public; for each two ounces or fraction, regardless of distance or weight ..... .01

Fourth class rate applies when it is lower than second class.

MERCHANDISE AND MISCELLANEOUS.—THIRD CLASS.

(Limit of weight 8 ounces.)

Merchandise, incomplete copies of newspapers, printed and other mailable matter, each 2 ounces or fraction ..... .015

Books, catalogues (must be of 24 or more pages and substantially bound, with at least 22 pages printed, seeds, cuttings, bulbs, roots, scions and plants, 2 ounces or fraction ..... .01

Plain Printed Cards containing no writing other than the address, and not conforming with regulation size of Post Card, shall be considered Third Class and mailed for ..... .015

Permit Mail. Envelopes, folders, etc., which are to be mailed under Third Class permit privileges should indicate the amount of postage paid.

Bulk Mailings. Applications for bulk mailing privilege should be submitted to the Post Office.

PARCEL POST.—FOURTH CLASS.

(For Zone consult Post Office)

Everything over 8 ounces, including books and printed matter, except **First Class** and newspapers and other periodicals entered as **Second Class** matter mailed by the publishers :—

Table of fourth-class or parcel-post rates

Weight in pounds	ZONES Local	1st Up to 50 miles	2d 50 to 150 miles	3d 150 to 300 miles	4th 300 to 600 miles	5th 600 to 1,000 miles	6th 1,000 to 1,400 miles	7th 1,400 to 1,800 miles	8th Over 1,800 miles
1	$0.07	$0.08	$0.08	$0.09	$0.10	$0.11	$0.12	$0.14	$0.15
2	.08	.10	.10	.11	.14	.17	.19	.23	.26
3	.08	.11	.11	.13	.17	.22	.26	.32	.37
4	.09	.12	.12	.15	.21	.27	.33	.41	.48
5	.09	.13	.13	.17	.24	.33	.40	.50	.59
6	.10	.14	.14	.19	.28	.38	.47	.59	.70
7	.10	.15	.15	.21	.31	.43	.54	.68	.81
8	.11	.16	.16	.23	.35	.49	.61	.77	.92
9	.11	.17	.17	.25	.38	.54	.68	.86	1.03
10	.12	.18	.18	.27	.42	.59	.75	.95	1.14
11	.12	.19	.19	.29	.45	.64	.82	1.04	1.25
12	.13	.21	.21	.31	.49	.70	.89	1.13	1.36
13	.13	.22	.22	.33	.52	.75	.96	1.22	1.47
14	.14	.23	.23	.35	.56	.80	1.03	1.31	1.58
15	.14	.24	.24	.37	.59	.86	1.10	1.40	1.69
16	.15	.25	.25	.39	.63	.91	1.17	1.49	1.80
17	.15	.26	.26	.41	.66	.96	1.24	1.58	1.91
18	.16	.27	.27	.43	.70	1.02	1.31	1.67	2.02
19	.16	.28	.28	.45	.73	1.07	1.38	1.76	2.13
20	.17	.29	.29	.47	.77	1.12	1.45	1.85	2.24
21	.17	.30	.30	.49	.80	1.17	1.52	1.94	2.35
22	.18	.32	.32	.51	.84	1.23	1.59	2.03	2.46
23	.18	.33	.33	.53	.87	1.28	1.66	2.12	2.57
24	.19	.34	.34	.55	.91	1.33	1.73	2.21	2.68
25	.19	.35	.35	.57	.94	1.39	1.80	2.30	2.79
26	.20	.36	.36	.59	.98	1.44	1.87	2.39	2.90
27	.20	.37	.37	.61	1.01	1.49	1.94	2.48	3.01
28	.21	.38	.38	.63	1.05	1.55	2.01	2.57	3.12
29	.21	.39	.39	.65	1.08	1.60	2.08	2.66	3.23
30	.22	.40	.40	.67	1.12	1.65	2.15	2.75	3.34
31	.22	.41	.41	.69	1.15	1.70	2.22	2.84	3.45
32	.23	.43	.43	.71	1.19	1.76	2.29	2.93	3.56
33	.23	.44	.44	.73	1.22	1.81	2.36	3.02	3.67
34	.24	.45	.45	.75	1.26	1.86	2.43	3.11	3.78
35	.24	.46	.46	.77	1.29	1.92	2.50	3.20	3.89
36	.25	.47	.47	.79	1.33	1.97	2.57	3.29	4.00
37	.25	.48	.48	.81	1.36	2.02	2.64	3.38	4.11
38	.26	.49	.49	.83	1.40	2.08	2.71	3.47	4.22
39	.26	.50	.50	.85	1.43	2.13	2.78	3.56	4.33
40	.27	.51	.51	.87	1.47	2 18	2.85	3.65	4.44
41	.27	.52	.52	.89	1.50	2.23	2.92	3.74	4.55
42	.28	.54	.54	.91	1.54	2.29	2.99	3.83	4.66
43	.28	.55	.55	.93	1.57	2.34	3.06	3.92	4.77
44	.29	.56	.56	.95	1.61	2.39	3.13	4.01	4.88

Weight in pounds	Local	ZONES 1st Up to 50 miles	2d 50 to 150 miles	3d 150 to 300 miles	4th 300 to 600 miles	5th 600 to 1,000 miles	3th 1,000 to 1,400 miles	7th 1,400 to 1,800 miles	8th Over 1,800 miles
45	.29	.57	.57	.97	1.64	2.45	3.20	4.10	4.99
46	.30	.58	.58	.99	1.68	2.50	3.27	4.19	5.10
47	.30	.59	.59	1.01	1.71	2.55	3.34	4.28	5.21
48	.31	.60	.60	1.03	1.75	2.61	3.41	4.37	5.32
49	.31	.61	.61	1.05	1.78	2.66	3.48	4.46	5.43
50	.32	.62	.62	1.07	1.82	2.71	3.55	4.55	5.54
51	.32	.63	.63	1.09	1.85	2.76	3.62	4.64	5.65
52	.33	.65	.65	1.11	1.89	2.82	3.69	4.73	5.76
53	.33	.66	.66	1.13	1.92	2.87	3.76	4.82	5.87
54	.34	.67	.67	1.15	1.96	2.92	3.83	4.91	5.98
55	.34	.68	.68	1.17	1.99	2.98	3.90	5.00	6.09
56	.35	.69	.69	1.19	2.03	3.03	3.97	5.09	6.20
57	.35	.70	.70	1.21	2.06	3.08	4.04	5.18	6.31
58	.36	.71	.71	1.23	2.10	3.14	4.11	5.27	6.42
59	.36	.72	.72	1.25	2.13	3.19	4.18	5.36	6.53
60	.37	.73	.73	1.27	2.17	3.24	4.25	5.45	6.64
61	.37	.74	.74	1.29	2.20	3.29	4.32	5.54	6.75
62	.38	.76	.76	1.31	2.24	3.35	4.39	5.63	6.86
63	.38	.77	.77	1.33	2.27	3.40	4.46	5.72	6.97
64	.39	.78	.78	1.35	2.31	3.45	4.53	5.81	7.08
65	.39	.79	.79	1.37	2.34	3.51	4.60	5.90	7.19
66	.40	.80	.80	1.39	2.38	3.56	4.67	5.99	7.30
67	.40	.81	.81	1.41	2.41	3.61	4.74	6.08	7.41
68	.41	.82	.82	1.43	2.45	3.67	4.81	6.17	7.52
69	.41	.83	.83	1.45	2.48	3.72	4.88	6.26	7.63
70	.42	.84	.84	1.47	2.52	3.77	4.95	6.35	7.74

EXCEPTIONS

(a) In the first or second zone, where the distance by the shortest regular practicable mail route is 300 miles or more, the rate is 9 cents for the first pound and 2 cents for each additional pound.

(b) On parcels collected on rural routes the postage is 2 cents less per parcel than shown in the foregoing table when for local delivery and 3 cents less per parcel when for other than local delivery.

(c) Parcels weighing less than 10 pounds measuring over 84 inches, but not more than 100 inches in length and girth combined, are subject to a minimum charge equal to that for a 10-pound parcel for the zone to which addressed.

Limit of size for parcels is 100 inches in length and girth combined. Limit of weight is 70 pounds in all zones.

Library Books. A special rate is allowed under certain conditions. (Inquire at Post Office as to requirements.)

SPECIAL HANDLING. (Fourth Class Matter Only)

Parcels will receive first-class handling if, in addition to regular postage, there is added—

2 lbs. or less	.10
Over 2 lbs. and not more than 10 lbs.	.15
Over 10 lbs.	.20

SPECIAL DELIVERY FEES

	First Class	Second, Third or Fourth Class
Up to 2 pounds	10c	15c
Over 2 pounds up to 10 pounds	20c	25c
Over 10 pounds	25c	35c

The prepayment of the foregoing fee on second, third, or fourth class mail entitles it to the most expeditious handling and transportation practicable, and also entitles it to special delivery at the office of address.

To Canada (including Newfoundland and Labrador) 20c prepaid in addition to regular postage on letters or articles only prepaid at the letter rate.

For special delivery rates to other foreign countries, consult post office.

REGISTERED MAIL.

Not to exceed $5	$0.15	Not to exceed $500	$0.70
Not to exceed 25	.18	Not to exceed 600	.80
Not to exceed 50	.20	Not to exceed 700	.85
Not to exceed 75	.25	Not to exceed 800	.90
Not to exceed 100	.30	Not to exceed 900	.95
Not to exceed 200	.40	Not to exceed 1000	1.00
Not to exceed 300	.50		
Not to exceed 400	.60		

POSTAL MONEY ORDERS.

For Orders		For Orders	
From $0.01 to $2.50	6 cents	From $20.01 to $40.00	15 cents
From $2.51 to $5.00	8 cents	From $40.01 to $60.00	18 cents
From $5.01 to $10.00	11 cents	From $60.01 to $80.00	20 cents
From $10.01 to $20.00	13 cents	From $80.01 to $100.00	22 cents

POSTAL RATES.—FOREIGN

Letters.—For the places in the following list the postal rate is 3 cents each ounce or fraction. For all other foreign destinations, 5 cents first ounce and 3 cents each additional ounce or fraction: **Andorra (Republic), Argentina, Balearic Islands, Bolivia, Brazil, Canada, Canary Islands, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Haiti, Honduras (Republic), Labrador, Mexico, Newfoundland, Nicaragua, Panama, Paraguay, Peru, Salvador, El; Spain, including Alhucemas Island, Ceuta, Chafarinas or Zafarani Islands, Melilla, Penon de Velez de la Gomera; Uruguay, Venezuela.**

Post Cards.—Single post cards for places enumerated above 2 cents; maximum size 6x4¼ inches, minimum size 4x2¾ inches. Single post cards for all other foreign destinations 3 cents.

Printed Matter.—1½ cents for each two ounces or fraction. Limit of weight. Inquire at Post Office. (Canada, 4 lbs., 6 oz.)

Samples of merchandise.—For all foreign destinations, 1½ cents each 2 ounces or fraction, with a minimum charge of 3 cents. Limit of weight: 18 ounces.

Commercial papers.—For all foreign destinations, 1½ cents each 2 ounces or fraction, with a minimum charge of 5 cents. Limit of weight 4 lbs., 6 oz.

Maximum dimensions.—For all foreign destinations on all classes of mail noted above (except Post Cards), 36 inches in length, breadth and thickness combined, the length being limited to 24 inches. When sent in the form of a roll the length (the maximum of which is 32 inches) plus twice the diameter is limited to 40 inches.

Registration fee.—For all foreign destinations, 15 cents in addition to postage. When a return receipt is requested there is an additional charge of 5 cents.

INTERNATIONAL PARCEL POST.

International (Foreign) Parcel Post.—For all countrles, colonies and places the postage rate is 14 cents a pound. Because of the varying transit charges, surcharges, etc., applicable to most foreign countries, in addltion to the regular parcel post rates, it is important that a qualified postal employee handle transactions. Foreign parcel post must not be posted in a letter box; it must be taken to a regular post office and handed to a postal clerk.

POSTAL MONEY ORDERS.—INTERNATIONAL.

Limit of a Single Order, $100.
For Orders from—

$0.01 to $10	10 cents
From $10.01 to $20	20 cents
From $20.01 to $30	30 cents
From $30.01 to $40	40 cents
From $40.01 to $50	50 cents
From $50.01 to $60	60 cents
From $60.01 to $70	70 cents
From $70.01 to $80	80 cents
From $80.01 to $90	90 cents
From $90.01 to $100	1 dollar

AIR MAIL SERVICE.

The rate on Air Mail in the Continental United States is 6 cents for each ounce or fraction thereof. This rate is also applicable to Canada.
The rate to Bahamas, Cuba, Dominican Republic, Haiti, Jamaica, British Virgin Islands, Mexico, Puerto Rico, and Virgin Islands of the United States, is 10 cents for each ½ ounce or fraction thereof.

WHEN YOU VISIT THE FAIR

By GROVER A. WHALEN
President, New York World's Fair 1939

I know that you already have some idea of the wonders that will be unveiled to millions of people from this country and from abroad when the New York World's Fair opens its gates to the world on April 30th, 1939—a fitting commemoration of the inauguration of George Washington as first President of the United States under our Federal Constitution.

You have seen pictures of the magic city we are building over an area of some twelve hundred acres. The Fair grounds extend southwards from Flushing Bay for about three and a half miles and reach a maximum width of a mile and a half. After the Fair is over, this will be the site of magnificent Flushing Meadow Park, and so several of the Fair buildings and most of the extensive landscaping and gardening that will beautify the area have been planned to fit in with the plans for the Park.

But here in 1939 you will find the best in art, in science and in industry that man has yet produced; for, by showing the finest and most useful tools and techniques now available to the average, intelligent American citizen, the Fair will provide him with definite ideas that he can use in building a better home and community life. Hence, there arose a slogan that makes clear that this Fair is a fair with a purpose: "Building the World of Tomorrow."

Here, too, you will find fascinating exhibits and colorful displays of the arts, the industries and the scenic beauties of most of the states in the Union and of more than sixty foreign nations. You will have an unparalleled opportunity to meet and know people, their ideas and their hopes, from every part of the world. The astonishing progress of transportation and communication in recent years has made these men and women our neighbors. I think it particularly important today that we in America should point out to them as vividly as we can that the vital problems with which the world is faced *can* be solved if we use the best techniques available to us and if we remain true to the democratic way of life. The World's Fair presents us with a magnificent opportunity to present this American message to the world.

When I say that private exhibitors, states and territories of the United States, foreign governments, and the Fair Corporation itself will together spend some $125,000,000 to $150,000,000 in creating this magnificent summary of twentieth century civilization, I am really advising you to plan your trip to the Fair well in advance, for it will be worth your while to do so. We have conservatively estimated that it will take three or four days to see the whole Exposition, even superficially, but you will probably want to spend more time than that in New York City and at the Fair itself. We have taken steps to ensure that you will be able to see what you really want to see with a minimum of fatigue, for the great Exposition is divided into zones each of which is devoted to a particularly important phase of man's activity. The New York World's Fair is the only international exposition to have undertaken such careful and intelligent planning for the convenience of visitors. In addition, our Welfare Department is working out a comprehensive system whereby it will be possible for you to get the accommodations you want, at the price you want to pay, in New York City or in the suburban areas.

I am happy to take this opportunity of welcoming you to the Fair next year. You will find the gayest playground ever constructed by the hand of man. I advise you to make your reservations early.

WHAT OUR GOVERNMENT DOES FOR EDUCATION

By J. W. STUDEBAKER
Commissioner of Education

One of every four Americans attends some kind of school at some time each day. Our Nation's schools enroll approximately 33,000,000 children and adults. There are about 22,500,000 pupils in elementary schools, 6,500,000 in high schools, and 1,250,000 students in colleges and universities throughout the United States. All other types of schools enroll approximately 2,750,000 persons.

The Federal Government's agency created to promote education in our country is the Office of Education in the United States Department of the Interior. Ever since the year 1867, when it was established by Act of Congress, the Office of Education has gathered and disseminated facts and statistics concerning all types of schools and educational problems, and has, in general, promoted the cause of education.

While strengthening its traditional service in many ways, the Office, during the past five years, has beut its program to help meet some of the current crucial, social, and economic issues confronted by the Nation. The Office of Education co-operated with the F.E.R.A., in establishing an emergency education program which helped to keep schools open in poor districts, extended educational opportunities to more than 2,000,000 adults, and, at the peak, gave employment to 40,000 needy teachers.

More than 130,000 persons were enabled to go to college through the N.Y.A., college student-aid plan which the Office of Education helped to develop.

As early as June, 1934, the Office of Education sponsored a conference on youth problems as the result of which the Committee of Youth Problems was appointed. Publications of this Committee were among the earliest factual data available concerning the conditions confronting unemployed, out-of-school youth, and were influential in determining the Government's policy in creating the National Youth Administration.

The Office of Education took the initiative in securing the incorporation of an education program into the activities of each of the CCC Camps in the United States.

Through emergency funds the Office of Education has enabled some two scores of communities in about as many States to establish public forum demonstration centers. In these forums various practices have been tried out in an effort to determine the most practicable administrative policies and technical procedures for improviug public enlightenment with respect to social, economic, and political issues of the day. The Office has fostered a radio project which has tried out numerous educational programs and is making the results of its efforts available to educational institutions, radio stations, and the public generally throughout the Nation.

A newly-established library service division is helping to establish closer relationship between libraries and schools and is attempting to improve the service which public libraries are able to afford to their clientle. An occupational information and guidance service now being organized should provide much-needed and very-necessary guidauce facilities for young people trying to find their way into occupations.

Each year the Office compiles and publishes an Educational Directory which lists the names of 15,000 school officials including State, city, and county school officers, colleges and universities in the United States, college officials, and educational associations and directories. This national education directory costs 35 cents.

Every two years the Office issues its biennial survey of education in the United States, which is the only source of school statistics on a nation-wide scale. The Office sometimes conducts field surveys at the request of State, county, institutional or local school authorities, and continually calls into conference leaders in the various fields of education to consider urgent problems. Staff members co-operate with organizations and committees both national and State, offer advisory service, carry on extensive correspondence, and participate in educational and other important meetings, conferences, and conventions.

Current reports of progress, trends, and events in American education are published by the Office of Education each month in its official journal, SCHOOL LIFE. This magazine, with a March-of-Education news-letter service, may be ordered from the Superintendent of Documents, Government Printing Office, Washington, D. C. The fee is $1 a year.

THE ADVANTAGES OF TRAILER LIFE

By LARRY NIXON

Author of "Vagabond Voyaging"

To those who love the open spaces, enjoy motoring with a spice of adventure and a touch of camp life, the trailer is a great discovery and a joy which extends to every member of the family, and when one considers that the trailer takes the place of a summer cottage, avoids the expenses of de luxe travel either on land or sea and yet makes it possible to see the country or settle in some beautiful district or among congenial friends, the trailer is not a great expense, but rather a sound investment.

The owner of a trailer must, however, acquire experience in driving with his house behind him. When a motorist is dragging a heavy, awkward trailer house behind him, the driver is required to learn an entirely new set of safety practices or else expect trouble. There is more to this trailer business than meets the eye, strange as it may seem. Therefore, any driver who intends to annex a trailer must see to his brakes, must calculate his turns, his hills, his skidding possibilities and what-not. One easily acquires the necessary knack in a short time, but he must never forget his trailer while driving on the highway.

The choice of trailers is important, both as to comfort and safety. One should remember the special license required, the attention to the coupling device, the accommodations necessary for the family, the size of the water tank and other conveniences where the trailer is to be taken into remote places—and then there is the price—for trailers vary greatly in prices.

In setting forth in a trailer great care should be taken to plan the trip—the distance, the choice of roads (always keeping out of dead-end streets), the availability of parking spaces, the necessary permits, etc. Much annoyance and trouble can be avoided by planning ahead.

They say New England is becoming trailer minded and this is natural since New England is the happy hunting ground of vacationists and it possesses thousands of beauty spots, many of which are accessible. At the first sign of spring many a trailer family packs up a few belongings and hikes to the mountains, lakes or seashore. Then the trailer is parked and the father of the family returns to business in his car, leaving his family comfortably settled for the hot weather; or one finds a couple off for the holidays, taking their trailer into unknown country, becoming explorers and discoverers in a small way, but none the less exciting to them. It is almost as easy to travel four as two upon one of these trailer excursions so that this form of outing has its advantages in giving companionship and sharing expenses.

It is astonishing how little space one actually needs in traveling. In the average trailer there is much more room than in a boat. The cruising on shore is much more comfortable and much more varied and one is not so dependent upon perfect weather conditions.

Trailer camps complete with hot and cold running water, collect-in-advance managers and free movies three nights a week are scattered along the main highways of the nation. New England's state and federal parks have dozens of special camps for trailer owners, back in the woods off the main roads, and some of them just around the corner from the centers of population.

Keep your trailer always stocked. Be ready to jump away for a week-end or a month without any special preliminaries. You'll soon learn to keep stocked up on the road. There's nothing quite so thrilling as casually to leave the gang pitching horseshoes in Palatka—and ten minutes later be on your way to California or Chicago.

SKI EQUIPMENT

(Recommended by Payson T. Newton of the Springfield, Mass., Ski Club, and reprinted from THE SKIER'S GUIDE TO NEW ENGLAND by courtesy of the New England Council.)*

Boots and bindings should be considered first. Controlled skiing depends on the quality of these items. They will last for many years if they are right to start with. If economy is necessary, get the best boots and bindings that you can, and economize on skis, poles, etc. We cannot urge too strongly the purchase of the best boots.

Ski Boots: A comfortable, strong, well-made boot that will "take it." *Specifications:* 1 Steel Shank—to prevent buckling; absolutely essential, otherwise tremendous strain of heel strap will buckle the boot in a few week-ends. 2. All leather construction preferable. 3. Boots should have straight sides to climinate side play in bindings. 4. Snug fit at ankle over customary socks. 5. Box toe, especially if toe strap is used. 6. Good groove for heel strap. Low cut front of ankle is desirable to prevent chafing and give freedom of movement.

Bindings: Control of the ski depends on the bindings. *Specifications:* 1. Rigid—no "give" to side plates of adjustment mechanism under stress. Heavy construction. 2. Adjustable—to line up the boot perfectly and keep it there; also to allow for wear of boot. 3. Straight side plates. Straight sides of boots wedged against straight side plates give maximum security. 4. Strong heel strap with sturdy clamp. *Types of Toe Irons:* 1. Toe Strap—safer, especially if used with low hitch and Bildstein heel springs. 2. Lip Type—have to pull off sole of boot if you get in a jam, but claimed by some to hold cheaper boots more firmly. *Types of Heel Straps:* 1. Leather—the old standby. 2. Metal—no stretch, keeps adjustment. 3. Bildstein Spring—more flexible; with low hitch holds heels down and will release feet under severe twisting strain using toe strap binder.

Skis: If economy rules, savings should be made here rather than in boots or bindings. *Specifications:* 1. Single grooves for downhill skiing. 2. Straight grain—no run out on sides. 3. Matched—equal tension when bending. 4. No knots or weak places (note tips especially). 5. Camber—about 1½ to 2 inches with bottoms together. 6. Materials—hickory by far the best, being tough, hard, durable and flexible. Then come ash, birch, maple and pine. 7. Length—when standing erect with arm overhead, tip of ski should reach base of thumb. Better slightly short than too long for general skiing. 8. Types: A, Ridge Tops—best balance, easier handling, better wood. B. Flat Top—satisfactory for learning, less expensive.

Poles: TWO poles should always be used. *Specifications:* 1. Hardened steel points—must hold in hard snow. 2. Rings—ample diameter, strong webbing and firmly attached to pole. 3. Wide strap—prevents cutting off circulation with consequent numbing of hand. 4. Weight—lightness generally desirable, but depends on user. 5. Stock—straight for freedom from splitting. 6. Length—floor to under armpit. 7. Controversial—bamboo and tonkin poles vs. metal types.

Clothing: Hard finish, tightly woven fabrics keep out the wind and prevent snow from sticking. Corduroy and soft fuzzy fabrics hold snow which melts by body heat, becoming very uncomfortable.

Those who go into the mountains or ski during severe weather will find the following essential: light or medium woolen underwear, woolen socks, windproof wool gabardine trousers, or dungarees over woolen trousers, flannel shirt, sweater, and lightweight, tightly woven windbreaker. The windbreaker is most essential. Mountains over 3500 feet high require the hooded type of windbreaker or "parka" for safety in midwinter.

The windbreaker should not be absolutely waterproof. Perspiration must be given a chance to evaporate or it will freeze on the body, but it is essential to keep out the wind. The bottom should be tight so wind cannot blow up under it.

**Copies may be obtained without charge from the New England Council, Statler Building, Boston.*

SKI AMERICA

By ROBERT LIVERMORE, JR.

Ten short years have seen America learu how to ski. The "toe-strap" era previous to 1929 has been displaced by a phenomenal army of thousands of well-equipped skiers. It skis with the first November fall of suow until long after you are thinking of moving to the beach. It skis on golf courses at sea level, on 14,000 foot peaks, and it claims for its own the wintry mouutain ranges of the whole country.

Sun Valley, Paradise Lodge, and the White Mountains are names that coujure pictures of this colorful and still growing winter army. It is not a quiet, half-frozen army watching a few skiers soaring off jumping scaffolds, but always on the move busily engaged iu trying to make its own "boards" behave. Whether it is a comet-like descent of Dollar Mountain, long eveu swings down Panorama Point, or breath-taking corners on the Wild Cat Trail, everyone tastes the same thrill.

One and four tenths miles of the Taft Trail drop 1800 feet off Cannon Mountain in New Hampshire. Nothing thrilling about that, but put skis on a good man and he will come down it in one hundred and fifty seconds. Take him a mile and a half up the Wild Cat Trail, 2000 feet above you on the valley floor, aud he will be blowing clouds of frosty breath in your face within two minutes and forty seconds!

Such a man is far from superhuman. There are hundreds like him, and thousands more who may ski a few seconds slower down the same trail. Fast or slow, however, the enjoyment total is identical for each. As a skier finishes his or her run there is always a tense, absorbed expression on the face which changes with the final swishing Christiania turn, into a broad smile of accomplishment and pride. The skier is thinking too with relief, of a fall averted in the nick of time, or of a perfectly executed turn just as the skis began to run out of control.

Ten years ago skiing in America was confined almost entirely to jumping. Ski jumpers were a relatively small group of young men whose sport became a spectacle of a beautiful and apparently daring accomplishment. It was fun for the jumpers and thrilling for the spectators, but few of the spectators cared to risk learning to jump themselves. One was supposed to be "born" a skier.

Not until Alpine skiers developed a technique for control on all sorts of mountainous, wooded, and rocky terrain did skiing become a thrilling recreation for everyone. The beginner no longer had to launch himself into the air to learn skiing. He worked slowly up to it.

Today, because there are thousands who ski, roads are now ploughed far up into the mountains. Ski trails have been carefully designed by experts and cut on the wooded slopes of the Appalachian ranges. An entire town for skiers has been built at Sun Valley in the Sawtooth Range of Idaho, and the national parks of the West Coast, formerly deserted in winter are now taxed to their limits with winter visitors.

Because it is hard and slow work to climb mountains, taking two or three hours to gain a few precious minutes of descent, there are now ski tows or rope pull-ups in all the well-known centres. A new and imposing aerial tramway has been built in Franconia Notch, New Hampshire. In seven or eight minutes a skier will be whisked to the top of Cannon Mountain with a choice of winding ski trails dropping off below him.

The summer hotels of America's scenic mountain resorts now have heating systems. Whole villages of inns are sold out of accommodations weeks in advance all winter long. Professional teachers school their classes on the front lawn in the morning, and take their better pupils to the steeper, higher slopes in the afternoon.

Tomorrow there may be a championship race scheduled. Thousands of skiers will watch some sixty odd racers twisting at forty or fifty miles per hour down a mountainside. The spectators are thrilled, but they are also getting pointers on how to ski. As soon as the race is over they will put on their own "boards" to practice what they have just seen accomplished by the racers. They may be weeks learning it, but meanwhile America is skiing.

THE REVENUE ACT OF 1938

Enacted 27 May 1938

This Revenue Act, which became law without the President's approval, does not differ materially from its predecessor insofar as the individual taxpayer is concerned. Normal tax and surtax rates remain unchanged, but for the reader's convenience they are reprinted in this issue. Personal exemptions, similarly, continue as under the earlier law.

There is, however, an alteration in the prescribed method of computing capital loss or gain for the taxable period. The changes are so extensive and so detailed that all those affected by this provision should make a careful study of Section 117 of the Revenue Act.

The method of determining the income tax liability of corporations has also been radically altered, and the regulations governing undistributed net income and "excess profits" liberalized, in deference to the criticism of the previous law voiced by business men of all classes. It is anticipated that still further revisions will be made in later tax laws.

INDIVIDUAL INCOME TAXES

Every single person (whether or not the head of a family) and every married person not living with husband or wife, earning more than $1,000, must file a return. Every married person, living with husband or wife, earning $2,500 or more, must file a return. Where the combined income of both is $2,500 or more, a joint return is required, or each may file an individual return, dividing the exemption in any manner they may agree upon.

If the gross income is $5,000 or more, a return is required even if the net income is less than the personal exemption. (Gross income is defined as "gains, profits and income derived from salaries, wages, compensation for personal services, profits from professions, trades, business, commerce, or sales, dealings in property, rent, interest, dividends, securities, or gains or profits derived from any source whatsoever.")

In calculating the net amount of individual income tax due, the following credits are allowed against net income:

1. For normal tax only—
   (a) Interest on United States obligations:
   The amount received as interest upon obligations of the United States which is included in gross income under Section 22.
   (b) Interest on obligations of instrumentalities of the United States:
   The amount received as interest on obligations of a corporation organized under Act of Congress, if (A) such corporation is an instrumentality of the United States; and (B) such interest is included in gross income under Section 22; and (C) under the Act authorizing the issue thereof, as amended and supplemented, such income is exempt from normal tax.
   (c) Earned income credit:
   10% of the amount of the earned net income, but not in excess of 10% of the amount of the net income. (For this purpose, "earned income" means wages, salaries, professional fees, and other amounts received as compensation for personal services actually rendered.) If the taxpayer's net income is not more than $3,000, his entire net income is considered to be "earned" net income, and if his net income is more than $3,000, his earned net income is not considered to be less than $3,000. For this credit, in no case is the earned net income considered to be more than $14,000, regardless of its actual amount.

2. For both normal tax and surtax—

(a) Personal exemption and credit for dependents:
$2,500 for a married person or the head of a family.
$1,000 for a single person.
$400 for each dependent, subject to certain limitations.

The normal tax is 4% of the net income after deduction of credits as indicated above. It is a flat percentage, which does not increase with the amount of income.

The surtax is also based on net income after similar deduction of the credits indicated above. It is determined by a sliding scale of percentages which increase rapidly with increasing amounts of net income. The below table shows the percentages of surtax payable:

Surtax net income	Rate of tax on block	Surtax on highest amount	Surtax net income	Rate of tax on block	Surtax on highest amount
First $4,000	0	0	$ 56,000 to $ 62,000 ..	35	$ 11,660
$ 4,000 to $ 6,000 ..	4	$ 80	62,000 to 68,000 ..	39	14,000
6,000 to 8,000 ..	5	180	68,000 to 74,000 ..	43	16,580
8,000 to 10,000 ..	6	300	74,000 to 80,000 ..	47	19,400
10,000 to 12,000 ..	7	440	80,000 to 90,000 ..	51	24,500
12,000 to 14,000 ..	8	600	90,000 to 100,000 ..	55	30,000
14,000 to 16,000 ..	9	780	100,000 to 150,000 ..	58	59,000
16,000 to 18,000 ..	11	1,000	150,000 to 200,000 ..	60	89,000
18,000 to 20,000 ..	13	1,260	200,000 to 250,000 ..	62	120,000
20,000 to 22,000 ..	15	1,560	250,000 to 300,000 ..	64	152,000
22,000 to 26,000 ..	17	2,240	300,000 to 400,000 ..	66	218,000
26,000 to 32,000 ..	19	3,380	400,000 to 500,000 ..	68	286,000
32,000 to 38,000 ..	21	4,640	500,000 to 750,000 ..	70	461,000
38,000 to 44,000 ..	24	6,080	750,000 to 1,000,000 ..	72	641,000
44,000 to 50,000 ..	27	7,700	1,000,000 to 2,000,000 ..	73	1,371,000
50,000 to 56,000 ..	31	9,560	2,000,000 to 5,000,000 ..	74	3,591,000
			Over $5,000,000	75	.....

ESTATE TAXES

Under the new Revenue Act, no change has been made in the *rates* of estate taxes prescribed by earlier laws, but the amount of *exemption* has now been reduced to $40,000. In consequence, the aggregate tax payable, on the net amount of an estate after deduction of the $40,000 exemption, will be as below:

Net Estate From	To	Rate of tax on block	Highest Tax on total net estate	Net Estate From	To	Rate of tax on block	Highest Tax on total net estate
$	$ 10,000	2%	$ 200	$2,000,000	$2,500,000	38%	$ 747,600
10,000	20,000	4%	600	2,500,000	3,000,000	41%	952,600
20,000	30,000	6%	1,200	3,000,000	3,500,000	44%	1,172,600
30,000	40,000	8%	2,000	3,500,000	4,000,000	47%	1,407,600
40,000	50,000	10%	3,000	4,000,000	4,500,000	50%	1,657,600
50,000	70,000	12%	5,400	4,500,000	5,000,000	53%	1,922,600
70,000	100,000	14%	9,600	5,000,000	6,000,000	56%	2,482,600
100,000	200,000	17%	26,600	6,000,000	7,000,000	59%	3,072,600
200,000	400,000	20%	66,600	7,000,000	8,000,000	61%	3,682,600
400,000	600,000	23%	112,600	8,000,000	9,000,000	63%	4,312,600
600,000	800,000	26%	164,600	9,000,000	10,000,000	65%	4,962,600
800,000	1,000,000	29%	222,600	10,000,000	20,000,000	67%	11,662,600
1,000,000	1,500,000	32%	382,600	20,000,000	50,000,000	69%	32,362,600
1,500,000	2,000,000	35%	557,600	50,000,000	.....	70%	.....

"THE WEATHER IS UNUSUAL"; IT USUALLY IS

By G. H. NOYES

Senior Meteorologist U. S. Weather Bureau, Boston, Mass.

Weather usually plays the game very closely according to the rules, as far as we know the rules. But as we ascribe more and more rules we are likely to think the weather goes astray and plays us false. The simplest rules of weather are: cold at night and in winter, warm in the early afternoon and in summer; these rules are never broken. Take a period of, say ten years of rainfall, in that period of time we have a fairly full supply of precipitation with no greatly accumulated excess or deficiency. If we select a longer period, the variation from a normal is so little as to be negligible. If we shorteu the period to months, weeks or days, the unreliability of the weather to follow our mentally-made rules is notorious. Using Boston as an example, we may have a 70 degrees in some startling upset in a January, or a 50 degrees in July; or we may have more snow some April than has fallen in some January. In March 1915, there was not enough rain and snow to measure; this was the driest month since 1818. In July 1938, there were 17 days with measurable rain, while from the 18th through the 24th there was a week of consecutive rainy days amounting to the heaviest mid-summer rainy period ever known in Boston. Some persons may tell you of a month (or more) without a drop of rain; or of continuous rainy days for 3 weeks or longer, but such reports are not in accordance with duly authenticated records.

As early specimens of the human race we were very much the victims of our surrounding weather, and we immediately started air-conditioning, by moving into a dry cave and filling the opening with tree-boughs, grass, brush, etc. Then fire was discovered, and the cave was heated for warmth and further dryness. If there were no caves we built a shelter, with a little change as to detail and technique.

If we take an hemisphere and could have weather observations spaced with great regularity entirely over it, we would find that normal weather persisted practically all the time. The abnormalities of some localities for a brief period would be balanced elsewhere, so that the whole half of the earth would be practically regular. A few winters ago, New England experienced two of the coldest winters ever recorded. Averaging those in with the temperatures of the United States as a unit, those two winters were actually warmer than normal. Thus we, in New England, suffered unduly from the cold, while our country as a whole was benefited. An interesting commentary on these two winters brings to mind that many of our "oldest inhabitants" are sure that our winters now are much more gentle than they "used to be." They ignore all the circumstances of accuracy of measurement, and base their assertions on dimly recalled impressions. In this connection, it is pertinent to recall that in the present age we have in nearly all localities mechanical and other means of mitigating the effects of severe cold and deep snow far better than those of earlier generations. In New England we can say with considerable accuracy that it is abnormal to have normal weather.

It would be a great step in meteorological science to advance fundamental reasons why the frequent irregularities in our weather occur. The weather processes are known: the regular migration of equator-warmed air poleward to be cooled, and the reverse journey of arctic air equatorward to be warmed, and burden of moisture to be evaporated from oceans and lakes to be suspended as clouds and then returned to our land as rain and snow. The routes of those journeys are ever the same but always different enough to cause the greatest of measurable results in individual localities. Bear in mind that in the vastness of the atmospheric masses, it is but a few steps from tropics to arctic; from unlimited waters to deserts, and a far shorter distance from the earth to elevations of 60 to 90 degrees below zero. If nature's balance should tilt slightly, how long would it take for minus 90 degree weather to reach the earth and persist? The question must be ruled out. There is no answer. But the close proximity of these extremes of weather are the sources of the great and rapid changes, which is at once our joy and our despair and our sole means of existence.

NATURAL HISTORY MUSEUMS

By FRANCIS A. YOUNG
Assistant in Education in the New England Museum
of Natural History, Boston*

People are more apt to thiuk of Museums as cultural and ornamental than as practical and useful. But, if one stops to think, he will see that this is really a mistaken view. Museums are actually one of our most valuable aids to intelligent and happy living. They stand between us and our highly complicated environment, explaiuing it to us, and helping us to uuderstand it more clearly, to use it more effectively, and to appreciate it more. Communities which have good Museums and support them adequately are pursuing a wise and far-sighted policy.

The practical importance of understanding our environment and of dealing with it intelligently may be strikingly illustrated. Not so long ago, the oystermen along the Atlantic coast frequently cut up great uumbers of starfish and dumped them back into the sea in the belief that thereby they were dealing a heavy blow to this arch-enemy of the oyster. As a matter of fact, these tactics did little good and may have done much harm, for a mutilated starfish thrown back into the sea can regenerate a completely new animal and there is evidence that the halves of a starfish may survive as two.

It is the same in the case of the farmer who indiscriminately shoots every hawk on sight thinking that he is thereby protecting his poultry. His unisunderstanding of his environment is equally unfortunate for he suffers far greater evils from an increase in rodents and vermin than are represented in an occasional loss of a chicken from the barnyard.

Popular education is needed to correct such mistakes, and as educational institutions Museums fill a special place. Schools deal mostly with young people; libraries are limited to the use of the printed page. But Museums are open to all, irrespective of age or previous training, and they combine print with the actual objects themselves.

Wherever there are people, there is work for Museums to do; and wherever there are Museums there are benefits for the people. Consider, for example, some of the ways in which a Museum of Natural History or Science may be of real service to the people in its community. There are few leisure-time activities which do not touch upou the world of nature whether the activity be gardening, photography, fishing, mountain climbing, plain hiking, travel by motor or otherwise, or any one of the many varieties of nature study or outdoor sports. In each case the modern Museum has some contribution to make. To the gardener it exhibits his mortal insect enemies and the best methods of controlling them. To the candid-camera fan it offers the curiosities of nature, with information as to where the local specimens can be found. And so on.

Another important field of service in the community is that of public health and safety. The biological basis of public health, the achievements of sanitation and preventive medicine, and the public health service of the community are or can be popularized by Museums. It is vitally important that people should recognize and appreciate these benefits and should be willing to support further the great work of reducing the sick list of the United States from its present average of 6,000,000 each day.

One further example: Americans are discovering that they must restore or conserve their valuable natural resources, their depleted stock of wild-life, and the natural beauty of their landscapes. In this work of conservation Museums play an important part by depicting graphically the ravages of fire, the effects of carelessness or of ruthless exploitation, and the valuable species of wild-life which have suffered extinction at the hand of man.

Museums are or can be extremely useful institutions. By means of their public exhibits, their lectures, their publications, and their special educational activities, through cooperation with schools, clubs, and other organizations, they are serving their communities in a great variety of ways.

**The Society operating the Museum was founded in 1830 and is one of the oldest free educational institutions in New England. Contrary to general opinion its services to the community are made possible largely because of private memberships. In return members receive free information regarding sports and hobbies, involving bird and animal life—may attend lectures without charge—have access to the finest library of its kind in the country—are sent complimentary copies of special Museum publications, etc.*

"A GROUP OF INTERESTING RECIPES FOR WOMEN WHO ARE AMBITIOUS TO HAVE GOOD MEALS IN THEIR HOMES AND WHO LIKE TO TRY NEW DISHES"

Prepared by HAZEL YOUNG
Author of "The Working Girl Must Eat," and a leading Home Economist

There are times when this business of meal-getting becomes quite a chore and we just can't think of anything new under the sun. It's then that we must get busy and strive for a little variety in our menus—try some new dishes or a new slant on our old favorites.

And remember that successful meal-getting isn't entirely a question of being a good cook. It means, as well, putting the right foods together for a well-balanced meal. You wouldn't think of serving macaroni and cheese, mashed potatoes, and hot biscuits in the same meal. Too many starchy foods and no variety in color or texture! Replace the mashed potatoes and hot biscuits with buttered carrots and a crisp green salad and see how the picture changes.

So let's not stay in a rut in feeding our families. Let's be original and use our imaginations!

RAGOUT OF CHICKEN

1½ to 2 pound broiler, dressed
3 ripe tomatoes, peeled and sliced, or 1½ cups canned tomatoes
2 tablespoons tomato paste
2 tablespoons chopped parsley
½ clove garlic, crushed

Cut the broiler in pieces for serving. Season with salt and pepper. Sauté in small amount of hot fat or cooking oil until lightly browned. Add remaining ingredients. Cover and cook slowly about 1 hour, or until chicken is tender. Season with salt and pepper. Serve with boiled rice. Serves 2 to 3.

HUNGARIAN PORK CHOPS

4 pork chops
2 pounds sauerkraut
1 tablespoon paprika
2 large ripe tomatoes, peeled and cubed, or 1 cup canned tomatoes

Sear pork chops lightly in skillet. Place remaining ingredients on chops and cook slowly, covered, 30 to 40 minutes, or until chops are done. Serves 4.

BAKED STUFFED FRANKFURTS

8 medium frankfurts
2 cups soft bread crumbs
4 tablespoons melted butter
¼ teaspoon salt
½ teaspoon sage
¼ teaspoon pepper
8 slices bacon

Cook frankfurts gently in boiling water 5 minutes. Cool slightly and split lengthwise through center, leaving ends intact. Mix bread crumbs lightly with butter and seasonings. Fill cavity in frankfurts. Wrap each stuffed frankfurt in a slice of bacon. Arrange in shallow pan and bake in moderate oven (350° F.) until bacon is well cooked and crisp. Serves 4.

SALMON SOUFFLÉ

4½ tablespoons quick-cooking tapioca
½ teaspoon salt
½ teaspoon minced onion
1 cup milk
1 cup meat stock, or 1 cup water and 2 bouillon cubes
1¾ cups minced salmon
3 egg yolks, beaten until thick and lemon-colored
3 egg whites, stiffly beaten

Combine quick-cooking tapioca, salt, onion, milk, and stock in top of double boiler. Place over rapidly boiling water and cook 8 to 10 minutes after water boils again, stirring frequently. Add salmon. Cool slightly while beating eggs. Add egg yolks and mix well. Fold into egg whites. Turn into greased baking dish. Place in pan of hot water and bake in moderate oven (350° F.) 1 hour, or until soufflé is firm. Serves 8.

GRAPE-NUTS APRICOT BREAD

2 cups milk, scalded
1 cup Grape-Nuts
3 cups sifted flour
4 teaspoons baking powder
1½ teaspoons salt
½ cup sugar
1 egg, well beaten
3 tablespoons melted butter or other shortening
1 cup finely cut apricots

Pour milk over Grape-Nuts; cool. Sift flour once, measure, add baking powder, salt, and sugar, and sift again. Add egg, shortening, and fruit to Grape-Nuts mixture and stir well; add flour mixture, stirring only enough to dampen all flour. Turn into greased loaf pan, 9x4x3 inches; let stand 20 minutes. Bake in moderate oven (350° F.) 1 hour and 20 minutes, or until done. Bread should be stored overnight to cut easily in thin slices.

DATE MUFFINS

2 cups sifted flour
2½ teaspoons baking powder
3 tablespoons sugar
½ teaspoon salt
½ cup finely cut dates
1 egg, well beaten
1 cup milk
3 tablespoons melted butter

Sift flour once, measure, add baking powder, sugar, and salt, and sift again. Add dates. Combine egg and milk; add to flour mixture and stir only until mixed. Add shortening and blend. Do not beat. Bake in greased muffin pans in hot oven (425° F.) 20 to 30 minutes. Makes 1 dozen muffins.

ENCHANTED CREAM SPONGE CAKE

1 cup sifted cake flour
1 teaspoon baking powder
¼ teaspoon salt
½ cup cold water
1 teaspoon grated lemon rind
2 egg yolks, unbeaten
¾ cup sugar
2 egg whites, unbeaten
1 teaspoon lemon juice
2 tablespoons sugar

Sift flour once, measure, add baking powder and salt, and sift together three times. Add water and lemon rind to egg yolks and beat with rotary egg beater until light colored and at least trebled in volume. Add ¾ cup sugar, 2 tablespoons at a time, beating well with rotary beater after each addition; then add flour, a small amount at a time, beating slowly and gently with rotary beater only enough to blend. Beat egg whites until they form rounded mounds when beater is raised, then add lemon juice and 2 tablespoons sugar and continue beating until stiff enough to hold up in moist peaks. Fold into flour mixture. Pour into two ungreased deep 8-inch layer pans, stirring lightly while pouring. Bake in moderate oven (350° F.) 25 minutes, or until done. Remove from oven and invert on rack until cakes are cold. Spread Lemon Cream Filling between layers of cake. Sprinkle top with confectioners' sugar and mark a design with fork. Serve in wedges with Lemon Cream Sauce.

LEMON CREAM FILLING AND SAUCE

1 cup sugar
5 tablespoons cake flour
1 egg, slightly beaten
1/3 cup lemon juice
2/3 cup water
2 teaspoons butter
1 teaspoon grated lemon rind
½ cup cream, whipped

Combine sugar and flour in top of double boiler; add egg, lemon juice, water, and butter, mixing thoroughly. Place over boiling water and cook 10 minutes, stirring constantly. Chill. Fold in lemon rind and ¼ of whipped cream. Use half of this filling to spread between layers of cake. To other half of filling, fold in remaining whipped cream and use as sauce. Makes about 2 1/3 cups filling and sauce.

MOCHA LAYER CAKE

3 cups sifted cake flour
3 teaspoons baking powder
½ teaspoon salt
2/3 cup butter or other shortening
1¾ cups sugar
5 egg whites, unbeaten
1 cup milk
1 teaspoon vanilla

Sift flour once, measure, add baking powder and salt, and sift together three times. Cream butter thoroughly, add sugar gradually, and cream together until light and fluffy. Add egg whites, one at a time, beating very thoroughly after each. Add flour, alternately with milk, a small amount at a time, beating after each addition uutil smooth. Add vanilla. Bake in three greased 9-inch layer pans in moderate oven (375° F.) 20 to 25 minutes, or until done. Spread Mocha Chocolate Frosting between layers and on top and sides of cake.

MOCHA CHOCOLATE FROSTING

2 tablespoons butter
5 cups sifted confectioners' sugar
2 squares unsweetened chocolate, melted
⅛ teaspoon salt
½ cup strong coffee (about)

Cream butter; add part of sugar gradually, blending after each addition. Add chocolate and salt and mix well. Add remaining sugar, alternately with coffee, until of right consistency to spread. Beat after each addition until smooth. Makes enough frosting to cover tops and sides of three 9-inch layers.

COCONUT DROPS

1 cup sweetened condensed milk
½ pound shredded coconut
Dash of salt
1 teaspoon vanilla

Mix ingredients well. Drop from teaspoon on greased baking sheet. Bake in moderate oven (350° F.) 10 minutes. Makes 3 dozen drops.

JELLIED HOLIDAY PUDDING

1 package raspberry-flavored gelatin
½ teaspoon cinnamon
¼ teaspoon cloves
Dash of salt
2 cups hot water
¼ cup brandy
¾ cup chopped raisins
¾ cup chopped cooked prunes
¾ cup chopped figs
½ cup broken nut meats

Combine gelatin, spices, and salt and dissolve in hot water. Chill until slightly thickened, then fold in brandy, fruits, and nuts. Turn into mold. Chill until firm. Unmold. Serve with Foamy Sauce. Serves 10.

MARMALADE BAVARIAN

1 package orange-flavored gelatin
1¾ cups hot water
¼ teaspoon salt
½ cup heavy cream
1/3 cup orange marmalade

Dissolve gelatin in hot water. Add salt. Chill until cold and syrupy. Fold in cream, whipped only until thick and shiny, but not stiff. Fold in marmalade. Chill until slightly thickened. Turn into mold. Chill until firm. Unmold. Garnish with whipped cream and additional orange marmalade. Serves 6.

APRICOT RICE WHIP

¼ cup strawberry jelly
12 canned apricot halves, drained
½ cup heavy cream
1 cup canned apricot juice and water
1 cup cooked rice

Melt jelly over low flame and add apricots. Cook until glazed, turning occasionally. Remove apricots. Add apricot juice and water to jelly and cook about 1 minute. Chill. Whip cream until thick but not stiff. Fold lightly into rice. Place apricot syrup in sherbet glasses, then fill with rice-cream mixture, and garnish with apricots. Serves 4.

EGGNOG PIE

1 tablespoon granulated gelatin
¼ cup cold water
1½ cups hot milk
Dash of nutmeg and salt
4 tablespoons sherry
2 egg whites
6 tablespoons sugar
2 egg yolks
½ cup cream, whipped
1 baked 9-inch pie shell

Soak gelatin in cold water 5 minutes. Add hot milk and stir until gelatin is dissolved. Cool and add nutmeg, salt, and sherry. Chill. Beat egg whites until foamy. Add 3 tablespoons sugar and beat until mixture will stand in peaks. Beat egg yolks until thick, add 3 tablespoons sugar and beat well. Fold egg whites, egg yolks, and whipped cream into slightly thickened gelatin mixture. Turn into cold baked pie shell. Chill until firm. Top with whipped cream.

CHOCOLATE COFFEE FUDGE

2 squares unsweetened chocolate
½ cup strong coffee
¼ cup heavy cream
1 cup brown sugar, firmly packed
1 cup granulated sugar
Dash of salt
2 tablespoons butter
1 teaspoon vanilla

Add chocolate to coffee and cream and place over low flame. Cook until mixture is smooth and blended, stirring constantly. Add sugar and salt, and stir until sugar is dissolved and mixture boils. Continue boiling, without stirring, until a small amount of mixture forms a very soft ball in cold water (232° F.). Remove from fire. Add butter and vanilla. Cool to lukewarm (110° F.); then beat until mixture begins to thicken or lose its gloss. Turn at once into greased pan, 8x4 inches. When cold, cut in squares. Makes 18 large pieces.

THE FAMILY MEDICINE CLOSET

They say, "See your doctor first," but most cases of simple ailments such as slight burns and cuts, headaches and stomach upsets and the like, familiar in every home, can be satisfactorily and easily treated with common sense and simple medicinal supplies. Except with organic diseases, serious illnesses or bad accidents, an emergency kit or its equivalent made up from separately purchased articles, a few reliable ointments and solutions, and a thermometer, will generally prove adequate and a saving on doctors' bills. "See your doctor" is highly recommended, however, when the home remedy does not work, or it is apparent that the trouble is too serious for home care.

Some shelf space, preferably in the bathroom and preferably with a cabinet door that will either lock or is well out of reach of children, should be kept free for a supply of medicinal aids, and it should be kept orderly and everything well marked. If it is an open shelf care should be taken to wash and wipe nose droppers, spoons and open salve tubes, etc., before use.

Certain essentials should always be kept on hand. A ready-made emergency kit usually includes most of them such as bandages, large and small, iodine and Mercurochrome (the latter is less effectual but is also less painful and is adequate for small scratches), some adhesive tape, a wad of absorbent cotton and a pair of scissors. It is important to have a good thermometer available, kept in a case, and disinfected before use. A small bottle of Spirits of Ammonia should be there for fainting spells. Zinc oxide is excellent for open sores, for bites and skin irritations, and a tube of Unguentine is reliable for mild burns and gentian violet (a preparation which is not patented but which can be obtained in any drug store) for severe burns. Boric acid is always useful either in small crystal (or powder) form or in salve; it makes a good eye-wash and is recommended for washing wounds. Orangewood sticks or toothpicks with a little cotton wound around the tip and dipped in a solution of boric acid and water or just plain water are handy for lifting foreign bodies out of eyes. Vaseline has many uses as well as being a good lubricant. The simplest cathartic, especially for children, is milk of magnesia, which comes both in liquid and tablet form; and bicarbonate of soda is good for acidity and mild stomach disturbances. There are countless cathartics and laxatives on the market but they should be used with discrimination and avoided entirely if possible. The old-fashioned bottle of castor oil is still an excellent remedy. Aspirin tablets and possibly Anacin or Empirin Compound tablets are usually indispensable, although it should always be remembered that headaches can come from many sources, such as defective eyesight, constipation or hyperacidity. Some simple mouth-wash is desirable in addition to a tooth cleaner and dental floss, and there should also be a bottle of rubbing alcohol (also good for disinfecting thermometers and droppers, etc.), and a talcum powder, preferably unscented. For common colds ephedrine and saline is one of the safest and most effective solutions for nose drops although Vicks and many others on the market are good but not recommended for long usage. Inhalants, such as Benzedrine, are good but should be used carefully. Ordinary salt is reliable and usually adequate for gargling.

Drugs prescribed by a physician should always be marked clearly when obtained from the apothecary and the number noted in case the supply needs to be replenished. There are so many drugs, tonics and other patented medicines offered in drug stores that the general tendency is to purchase too much medicine. It is advised that no additions be made to this list without consulting your doctor, since the use of too much medicine is just as dangerous as too little. The habitual use of drugs is always to be avoided.

Here are a few First Aid "hints," for minor accidents or sudden illness. If the accident is serious, be sure to call the doctor. In the meantime:

For Small Wounds—If dirty, cleanse with plenty of water. Then apply iodine (or Mercurochrome, for small scratches). Cover with gauze and bandage. Do not touch the wound, or the part of the gauze that contacts the wound.

Burns—If produced by fire, cover with a paste made of baking soda and water or smear with grease—as lard, vaseline or a good burn ointment. Cover with a piece of clean cloth or gauze and bandage loosely.

If produced by alkalies or acids, wash off as quickly as possible and neutralize. For acids use baking soda, weak ammonia or soapsuds. Alkalies—lemon juice or vinegar. Afterwards treat like burn.

Stings and Insect Bites—Wash off at once with a solution of ammonia or washing soda. Then apply a paste of soda bicarbonate (baking soda) or wet salt and bandage. If sting is left in wound, pull it out before beginning treatment.

Mosquito bites—apply ammonia or lime water with two drops of carbolic acid to the ounce.

Sunstroke—Raise the head slightly. Cool the skin as quickly as possible with cold cloths or ice packs, especially around the head. Give no stimulants.

Ivy Poisoning—Apply a paste made from baking soda and water to the affected parts and cover with a damp cloth. This treatment should be repeated every eight to ten hours.

Frostbite—Circulation through the frozen part must be restored gradually. Rub the part first with cold water or snow; then gradually with warm water until circulation is fully restored. Then treat as a minor burn.

Snake Bite—Tie cord around leg or arm just above bite. Make a cross cut clear through skin over each fang mark. Suck wound for half hour unless your mouth has any abrasions. Keep patient lying down until doctor comes. There is now available in a small syringe an antidote called Anti-Snake Venom, which may be injected into the blood stream.

Dog Bites—Swab deeply into wound with iodine immediately. Then let physician decide whether to give Pasteur or vaccine treatment.

Pulse—A normal pulse rate for a man is around 72, for a woman 80, for a child 90, for a baby 100 beats per minute.

Temperature—Temperature of an average person in health is 98.6 F. A temperature of above 100 degrees, if it continues, is serious.

A SELECTION FROM THE MEMOIRS OF ROBERT B. THOMAS

Founder of The Old Farmer's Almanac and written in 1839

In the garden and the mansion-house I spent many pleasant hours in the company of the female members of the family. I was invited to take a ride to Cambridge at Commencement with my young associates, and enjoyed a pleasant time. In the course of the summer I made an excursion with a party to the fashionable resort *Fresh Pond*, in Watertown, where we passed the day in different amusements, and spent our money freely. I boarded in Milk Street, in the same house that Mr. D. Hill since owned, and where he kept a grocery store adjoining. Mr. Hill was noted for selling the best *dry fish*, or, at least, he possessed the faculty of making his customers believe it. In the latter part of August, the small-pox became very prevalent in Boston, which made me anxious to leave the town, not having had it myself. I left and came to L. Bemis, Esq.'s, in Watertown, with whom I had an intimacy. Here I enjoyed myself some days. At length my father sent me a horse, and I returned home. After tarrying a few weeks, and copying for the press my first Almanack, I went to the hospital in Worcester, situated on the hill a mile north of the street, and was inoculated with the small-pox by Dr. J. Green, sen. When inoculated, I flattered myself, and was flattered by the doctor, of being a good subject, and would have the disease light, having never exposed myself to heat and cold nor excessive labor, and had ever been temperate; but it turned out quite otherwise. I had the disease very severely. For many days my life was despaired of; and, in fact, it was, I afterward learned, currently reported in the neighboring towns that I was dead. I suffered much, but received every attention. My kind father frequently visited and encouraged me to keep up my spirits, which is of the utmost consequence in this disorder. After spending five weeks here, the doctor gave me a clear discharge, though I made a most ghastly appearance, and the people shunned me as I returned home, supposing me to be infectious. I shall ever remember with the liveliest sense of gratitude a worthy young man, then of Worcester, an inmate of the hospital, by the name of Perley Healy, who was ever ready and willing to serve me, by day or by night, to the utmost of his abilities. After I returned home I was weak and feeble for some months; after which I enjoyed good health, and, in general, have to this day, though advanced in 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 Burlington;—of Connecticut at New Haven and 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.

The Supreme Judicial Court holds eight Law Terms, four at Augusta and four at Portland. This is the Court of last resort. It also meets in the several counties for Equity and other matters as occasion requires. The Superior Court which is a Circuit Court holds terms in the sixteen counties of the State, terms comprising a minimum of two in Lincoln, Piscataquis and Hancock and a maximum of ten in Cumberland County.

Superior Court convenes in the following places: Androscoggin County at Auburn, Aroostook County at Houlton or Caribou, Cumberland County at Portland, Franklin County at Farmington, Hancock County at Ellsworth, Kennebec County at Augusta, Knox County at Rockland, Lincoln County at Wiscasset, Oxford County at South Paris or Rumford, Penobscot County at Bangor, Piscataquis County at Dover-Foxcroft, Sagadahoc County at Bath, Somerset County at Skowhegan, Waldo County at Belfast, Washington County at Machias or Calais, and York County at Alfred.

Superior Court is a trial court. Clerks of the Supreme Judicial Courts in the several counties are also Clerks of the Superior Court.

Probate Courts are County Courts and meet in the County seat of each county.

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 and Manchester;—Cheshire Co. at Keene;—Sullivan Co. at Newport;—Grafton Co. at Woodsville;—Coos Co. at Lancaster.

Vermont.

Supreme Court: Montpelier;—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 Fair Haven;—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 in the County of Nantucket, cases which are to be heard by one justice of the Supreme Judicial Court shall be entered, tried and determined at the court held in the county of Bristol; and in the county of Dukes County, cases which are to be heard by one justice of the Supreme Judicial Court shall be tried and determined at the court held for the county of Bristol, but the records and papers shall be entered and kept in the county of Dukes County and transferred for purposes of hearing as may be required. All matters cognizable by the full court arising in either of the counties of Dukes County or Nantucket shall be heard and determined as if arising in the county of Bristol.

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. In towns which have not elected a Judge of Probate the Town Councils act as Probate Courts.

Connecticut.

Supreme Court of Errors:—All sessions at Hartford. Superior Court:—Hartford Co. at Hartford;—New Haven Co. at New Haven and Waterbury;—Fairfield Co. at Bridgeport and at Danbury;—New London Co. at Norwich and New London—Litchfield Co. at Winsted, Litchfield and New Milford;—Middlesex Co. at Middle-

Continued on page 73

COURTS IN MIDDLE ATLANTIC STATES

NEW YORK

Court of Appeals. This is the court of last resort, with appellate jurisdiction only. It sits at Albany for one term each year, holding sessions of four weeks each, with intervening recesses usually of one or two weeks, except in the summer when a recess is usually taken from the latter part of June to the first Monday of October. In 1846 this court succeeded the Court for the Trial of Impeachments and Correction of Errors. The records of this former court, the records of the former Court of Chancery, and those of the Supreme Court prior to 1847, are all deposited in the office of the Court of Appeals at Albany.

Supreme Court. This is the court of general jurisdiction in law and equity, subject to the limited appellate jurisdiction of the Court of Appeals. For judicial election purposes the state is divided into nine judicial districts, each district comprising certain counties. For administrative purposes, the state is divided into four judicial departments, each department comprising certain of the judicial districts. Each department has its Appellate Division of the Supreme Court. The location of the court house for each Appellate Division is as follows: First Department, at Madison Square, New York City; Second Department at Borough Hall, Brooklyn; Third Department at Albany; Fourth Department, at Rochester.

In the Supreme Court legal and equitable matters are heard at separate times; legal disputes at Trial Terms and equitable disputes at Special Terms.

NEW JERSEY

Supreme Court convenes at Trenton third Tuesday of January, first Tuesday in May and October.

Court of Errors at Trenton first Tuesday in February, third Tuesday in May and October.

Pardons at Trenton first Tuesday in April and September.

U. S. District Court at Trenton third Tuesday in January and second Tuesday in September; at Newark third Tuesday in January, first Tuesday in April, second Tuesday in September and first Tuesday in November; at Camden second Tuesday in May and first Tuesday in December.

PENNSYLVANIA

Supreme Court: At Philadelphia, Eastern District comprising counties of Adams, Bedford, Berks, Blair, Bradford, Bucks, Cameron, Carbon, Centre, Chester, Clearfield, Clinton, Columbia, Crawford, Cumberland, Delaware, Elk, Franklin, Huntingdon, Juniata, Lackawanna, Lancaster, Lebanon, Lehigh, Luzerne, Lycoming, McKean, Monroe, Montgomery, Montour, Northampton, Northumberland, Perry, Philadelphia, Pike, Potter, Schuylkill, Snyder, Sullivan, Susquehanna, Tioga, Union, Warren, Wayne, Wyoming. At Pittsburgh, Western District, comprising counties of Allegheny, Armstrong, Beaver, Butler, Cambria, Clarion, Erie, Fayette, Forest, Greene, Indiana, Jefferson, Lawrence, Mercer, Somerset, Venango, Washington, Westmoreland. At Harrisburg, Middle District, comprising the counties of Dauphin, Fulton, Mifflin, York.

Superior Court: At Philadelphia, counties of Bedford, Berks, Blair, Bradford, Bucks, Carbon, Centre, Clearfield, Clinton, Chester, Delaware, Franklin, Fulton, Huntingdon, Lancaster, Lebanon, Lehigh, Lycoming, McKean, Montgomery, Montour, Northampton, Northumberland, Philadelphia, Potter, Schuylkill, Sullivan, Wyoming. At Scranton, counties of Columbia, Lackawanna, Luzerne, Monroe, Pike, Susquehanna, Wayne. At Harrisburg, counties of Adams, Cameron, Cumberland, Dauphin, Elk, Juniata, Mifflin, Perry, Snyder, Tioga, Union, York. At Pittsburgh, counties of Allegheny, Armstrong, Beaver, Butler, Cambria, Clarion, Crawford, Erie, Fayette, Forest, Greene, Indiana, Jefferson, Lawrence, Mercer, Somerset, Venango, Warren, Washington, Westmoreland.

DELAWARE

Supreme Court:—All sessions at Dover.

Court of Chancery, Superior Court, Court of General Session, Common Pleas Court, and Probate Court:—At Dover, Kent Co.; at Wilmington, New Castle Co.; at Georgetown, Sussex Co.

DISTRICT OF COLUMBIA

The following courts are located in Washington, D. C.:—Supreme Court of the United States, District Court of the United States for the District of Columbia, Police Court, Municipal Court, Juvenile Court, U. S. Court of Appeals for the District of Columbia, Court of Claims of the United States, United States Court of Customs and Patent Appeals.

MARYLAND

Court of Appeals sits at Annapolis for three terms each year. The first term begins on the second Monday in January; second term begins on the first Monday in April; third term begins on the first Monday in October.

WEST VIRGINIA

Supreme Court of Appeals. This is the court of last resort, with appellate and original jurisdiction (in certain classes of cases). It sits at Charleston, for two regular terms each year, beginning on the second Wednesday in January and the first Wednesday in September. Special terms are held on the warrant of three judges.

SUPREME COURT OF THE UNITED STATES

The Constitution divides the Government into three branches, Congress, the Legislative branch in which was vested the power to legislate on certain specific and limited subjects—the only subjects which the people in the several States in 1787 and 1788 were willing to place under control of the National Government; the Executive branch, vesting the executive power in a President with certain express provisions and limitations as to the exercise of that power; and the Judicial branch, giving the Judicial power to a Supreme Court and such inferior courts as Congress should establish.

The Supreme Court consists of a Chief Justice and eight Associate Justices. The personnel of the present Court is as follows:

Chief Justice, Charles Evans Hughes.

Associate Justices, Louis Dembitz Brandeis, James Clark McReynolds, Owen J. Roberts, Pierce Butler, Harlan F. Stone, Hugo L. Black, Stanley F. Reed.

Courts in New England *(Continued)*

town;—Windham Co. at Willimantic and Putnam;—Tolland Co. at Rockville. 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 and Common Pleas Court, for Waterbury Judicial District at Waterbury. 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.

Shooting and Fishing *(Continued)*

salmon trout, trout (all kinds), muscallonge, bass, pike, pickerel, white fish, perch, horned pout, suckers, eels and cat-fish.

Salt water fishing is a freer sport and subject to less legislative control; licenses are not commonly required. There are probably quite as many salt water fishermen as enthusiastic as their inland brother anglers but their activities are less hampered by legal formalities to be complied with; probably on the theory that they are less likely to fish out the ocean. In late years the bluefish, mackerel and striped bass seem to be more plentiful in our coastal waters and we hear much more news of satisfactory catches with rod and reel. Some other varieties appear to have been adversely affected by the dearth of eel-grass. All summer long salt water anglers border our seacoast intent upon the capture of everything from the giant tuna to the lowly side-stepping blue-claw crab. In these days even porpoise and dolphins have become the potential victims of rod and reel while Leviathan himself is scarcely immune from the hook attached with many threaded line to a stiff sea rod and reel of huge diameter.

In conclusion, familiarize yourselves with the laws, obey the laws and equip yourselves with the proper license, and above all prevent forest fires.

STATE ELECTIONS AND HOLIDAYS

NEW ENGLAND STATES

In all the New England States, Legislatures and Governors are now elected every second year. The next elections will be in 1940. All these elections are on the Tuesday next after the first Monday in November, except that in Maine, which is on the second Monday in September.

HOLIDAYS

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., State Election Day, Nov. 11, Thanksgiving and Christmas. **New Hampshire.** Jan. 1, Feb. 22, 3rd or 4th Thurs. April, May 30, July 4, 1st. Mon. Sept., Oct. 12, Nov. Election Day, Nov. 11, Thanksgiving and Christmas. **Vermont.** Jan. 1, Feb. 22, May 30, July 4, Aug. 16, 1st Mon. Sept., Oct. 12, Nov. 11, Thanksgiving and Christmas. **Massachusetts.** Jan. 1, Feb. 22, Apr. 19, May 30, June 17 in Suffolk Co. only, July 4, 1st Mon. Sept., Oct. 12, Nov. 11, Thanksgiving and Christmas. **Rhode Island.** Jan. 1, Feb. 22, May 4, May 30, July 4, 1st Mon. Sept., Oct. 12, Nov. Election Day, Nov. 11, Thanksgiving and Christmas. **Connecticut.** Jan. 1, Feb. 12, Feb. 22, Fast, May 30, July 4, 1st Mon. Sept., Oct. 12, Nov. 11, Thanksgiving and Christmas.

MIDDLE ATLANTIC STATES

The General Election Day in all the Middle Atlantic States is the Tuesday next after the first Monday in November.

New York. Governor elected for four years, Senators for two years, Assembly Members for two years. Election annually.

New Jersey. Governor elected for three years, Senators for three years, Assembly Members for one year. Election annually.

Pennsylvania. Governor elected for four years, Senators for four years, Representatives for two years. Next election in 1940.

Delaware. Governor elected for four years, Senators for four years, Representatives for two years. Next election in 1940.

District of Columbia: Governed by a Board of three Commissioners, two of whom are appointed by the President of the United States for a term of three years; third member is an officer of the Engineer Corps of the U. S. Army detailed by the President. Congress legislates for the District of Columbia. Each House of Congress has a Committee on the District of Columbia.

Maryland. Governor elected for four years, Senators for four years, Representatives for four years.

West Virginia. Governor elected for four years, Senators for four years, and members of House of Delegates for two years.

LEGISLATURES IN MIDDLE ATLANTIC STATES

SESSIONS COMMENCE AS FOLLOWS:

New York—First Wednesday in January, each year.

New Jersey—Second Tuesday in January, each year.

Pennsylvania—First Tuesday in January, 1939, and each alternate year.

Delaware—First Tuesday in January, 1939, and each alternate year.

Maryland—First Wednesday in January, 1939, and each alternate year.

West Virginia—Second Wednesday in January, 1939, and each alternate year.

HOLIDAYS

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

New York. Jan. 1, Feb. 12, Feb. 22, May 30, July 4, 1st Mon. Sept., Oct. 12, 1st Tues. after 1st Mon. of Nov., Nov. 11, Thanksgiving and Christmas. **New Jersey.** Jan. 1, Feb. 12, Feb. 22, Good Friday, May 30, July 4, 1st Mon. Sept., Oct. 12, 1st Tues. after 1st Mon. of Nov., Nov. 11, Thanksgiving and Christmas. **Pennsylvania.** Jan. 1, Feb. 12, Feb. 22, Good Friday, May 30, June 14, July 4, 1st Mon. Sept., Oct. 12, 1st Tues. after 1st Mon. of Nov., Nov. 11, Thanksgiving and Christmas, and every Saturday from 12 o'clock noon to 12 o'clock miduight.

Continued on page 75

THE FIRST SUNDAY

By REV. RICHARD R. BEASLEY

As would be expected, the origiu of Sunday as au official day of rest has roots that go far into the past. It seems to be the Babylonians who divided the week into days and named them after the planets. The Jews while in captivity in Babylon very naturally took over this planetary week in connectiou with their owu life but they gave the seventh day of this week a special religious significance, following the fourth commandment. As the Roman Caesars began to exert their sway over the theu knowu Mediterranean world, they naturally adopted this planetary week. But no day was as yet recognized officially as a day of rest. The only thing that approached it was that one day a month was called the Emperor's Day, when the empire made merry in honor of the head of the State. Meanwhile a little group within the empire was observing the day after the Jewish Sabbath in a special way. They were known as Christians and because of Christ's resurrection on that day, it became a day hallowed with sacred associations. To them it was the Lord's day. It was therefore observed as a day of worship with the eucharist (thanksgiving) as the primary rite of worship. But of course these early Christians were also in the fold of Judaism. That meant that they specially observed two days: the Jewish Sabbath, the end of the week, and the Lord's Day, the beginning of the week. As the Christians increased in numbers among the Gentiles—those who had no connection with Judaism—it was these who put more emphasis on the Lord's Day and ignored the Jewish Sabbath.

Although the pagans very early began a systematic persecution of the Christians, they did observe how these Christians regarded their Lord's Day as one of joy and the festive spirit: a weekly holiday, whereas the non-Christian in the empire had only the Emperor's Day to which to look forward.

When Constantine became emperor, he effected an immense change. He was a Christian—the first Roman emperor who was Christian. In 316 A.D. he proclaimed his famous edict of Milan. By this persecutions among the Christians were not only banned (they were given the civil rights of any citizen of the empire) but Christianity became the official religion of the empire. Five years later (321 A.D.) he set aside the Lord's Day or Sunday as a feast and forbade certain labors and duties on that day.

Continued from page 74

Delaware. Jan. 1, Feb. 12, Feb. 22, Good Friday, May 30, July 4, 1st Mon. Sept., Sept. 28 (schools only—Birthday of Frances E. Willard), Oct. 12, 1st Tues. after 1st Mon. of Nov., Nov. 11, Thanksgiving and Christmas, and every Saturday after 12 o'clock noon. **District of Columbia.** Jan. 1, Feb. 22, May 30, July 4, 1st Mon. Sept., Nov. 11, Thanksgiving, Christmas, and every Saturday after 12 o'clock noon, and every fourth year the day of the inauguration of the President. **Maryland.** Jan. 1, Feb. 22, March 25, Good Friday, May 30, July 4, 1st Mon. Sept., Sept. 12, Oct. 12, Nov. 11, Dec. 25 and all days of general and congressional elections throughout the State. **West Virginia.** Jan. 1, Feb. 12, Feb. 22, May 30, June 20, July 4, 1st Mon. Sept., Oct. 12, Nov. 11, last Thurs. Nov., Dec. 25 and National, State or other election day.

SLEEP HABITS OF LITTLE CHILDREN

Proper sleep habits are important and should have been well established by the time the child is one year old. At night, let him sleep as long as he will—from 6 P.M. until 7 A.M. if possible. There should still be two nap periods, a long one of from two to two and a half hours in the morning and a shorter one of from one to one and a half in the afternoon, either or both of which may be taken in the open air. Let him learn to drop off to sleep from habit and not depend upon circumstances—as, for instance, the taking of toys to bed with him; nor should you allow him to form the habit of having you near him. He should learn to sleep in a moderate light, since a darkened room means a lack of fresh air in summer. Your aim is to see that, when put to bed, he relaxes completely, sleeping at regular times, indifferent to daily noise.

At eighteen months the child may be expected to sleep through the night. Most charts give for this age fourteen to sixteen hours of sleep as the requirement for health, which means that the night's sleep extends from 5:30 or 6 P.M. until 7 A.M., and that there is a nap after luncheon of not more than two hours, beginning and ending at a fixed time. But, you say, "Should I waken the baby? He needs the sleep!" He does, but he also needs to be outdoors when the sun is shining and to be regular in his habits of sleeping and waking. So if he tends to sleep beyond the stated hour, arouse him gently and propose something he will want to do. The process of wakening should be gradual and as restful as going to sleep.

These suggestions apply to the well child and are aimed toward establishing regular sleep habits. An illness, whether short or long, is upsetting to routine. Therefore, when a child has been sick, let him sleep as long as he will. But watch afterwards and do not allow yourself to take him up at night once the exigency which justified you in breaking into his routine is over. When the child drops off to sleep in mid-morning, there is no reason why he should not have this additional rest if he continues to sleep well in the afternoon and throughout the night. Keep the windows open and the temperature of the sleeping room at 60°, if possible.

In a recent study of the sleep of children, the conclusion was reached that each child has a "pattern" of sleep which is constant for him and rarely disturbed except when he is ill. There were quiet and restless sleepers. The most active sleep hour—the time in which more motions were observed—was the first hour after the child went to sleep, and the least active the hour immediately following this. A bath at bedtime seemed to have no constant effect upon sleep. When milk was given prior to the sleep hour, it had a quieting effect, and when an unusual quantity of food was given for supper, it resulted in marked restlessness. The children slept more quietly in cold weather.

These observations were made upon well children of an older age group—nine to fourteen years—and are based upon 8736 nights.

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HEALTHY BABIES ARE HAPPY BABIES by
Dr. Josephine Hemenway Kenyon,
published by Little, Brown and Company

Tables of Measures

(English Units)

Linear Measure

1 foot=12 inches
1 yard=3 feet
1 rod=5½ yards=16½ feet
1 mile=320 rods=1760 yards=5280 feet
1 nautical mile=6080 feet
1 knot=1 nautical mile per hour
1 furlong=⅛ mile=660 feet=220 yards
1 league=3 miles=24 furlongs
1 fathom=2 yards=6 feet
1 chain=100 links=22 yards
1 link=7.92 inches
1 hand=4 inches
1 span=9 inches

Square Measure

1 square foot=144 square inches
1 sq. yard=9 sq. feet
1 sq. rod=30¼ sq. yards=272¼ sq. ins.
1 acre=160 sq. rods=43560 sq. ft.
1 sq. mile=640 acres=102400 sq. rods
1 sq. rod=625 square links
1 sq. chain=16 square rods
1 acre=10 square chains

Cubic Measure

1 cubic foot=1728 cubic inches
1 cubic yard=27 cu. feet
1 register ton (shipping measure)=100 cubic feet
1 U. S. shipping ton=40 cu. ft.
1 cord=128 cubic feet
1 U. S. liquid gallon=4 quarts=231 cubic inches
1 imperial gal.=1.20 U. S. gals.=0.16 cubic feet
1 board foot=144 cubic inches

(Metric Units)

Linear Measure

1 centimeter=10 millimeters
1 decimeter=10 centimeters
1 meter=10 decimeters
1 dekameter=10 meters
1 hektometer=10 dekameters
1 kilometer=10 hektometers
1 inch=2.54 centimeters
1 meter=39.37 inches
1 yard=0.914 meters
1 mile=1609 meters=1.61 kilometers

Square Measure

1 square centimeter=100 square millimeters
1 sq. decimeter=100 sq. centimeters
1 sq. meter=100 sq. decimeters=1 centar
1 ar=100 centars
1 hektar=100 ars
1 sq. kilometer=100 hektars
1 sq. centimeter=0.15 sq. inches
1 sq. meter=1.20 sq. yards
1 sq. kilometer=0.39 sq. miles
1 hektar=2.47 acres
1 sq. inch=6.45 sq. cm.
1 sq. yard=0.84 sq. m.
1 sq. mile=2.59 sq. km.
1 acre=0.40 hektars

Cubic Measure

1 cubic centimeter=1000 cubic millimeters
1 cu. decimeter=1000 cu. centimeters
1 cu. meter=1000 cu. decimeters
1 cu. yard=0.76 cubic meters
1 cu. meter=1.31 cubic yards
1 liter=1.06 U. S. liquid quarts
1 hektoliter=100 liters=26.42 U. S. liquid gallons
1 U. S. liquid quart=0.94 liters
1 U. S. liquid gallon=3.76 liters

Weights

Avoirdupois

1 pound=16 ounces
1 hundredweight=100 pounds
1 ton=20 hundredweight=2000 pounds
1 long ton=2240 pounds

Troy

(Used in weighing gold, silver, jewels)

1 pennyweight=24 grains
1 ounce=20 pennyweight
1 pound=12 ounces

Apothecaries

1 scruple=20 grains
1 dram=3 scruples
1 ounce=8 drams
1 pound=12 ounces

Metric

1 centigram=10 milligrams
1 decigram=10 centigrams
1 gram=10 decigrams
1 dekagram=10 grams
1 hektogram=10 dekagrams
1 kilogram=10 hektograms
1 metric ton=1000 kilograms
1 kilogram=2.20 pounds
1 pound avoirdupois=0.45 kilograms

PRESIDENT, VICE-PRESIDENT AND CABINET

President .....Franklin Delano Roosevelt .....New York
Vice-President .....John Nance Garner .....Texas

Members of the Cabinet: Secretary of State, Cordell Hull, Tennessee; Secretary of the Treasury, Henry Morgenthau, Jr., New York; Secretary of War, Harry H. Woodring, Kansas; Attorney General, Homer S. Cummings, Connecticut; Postmaster General, James A. Farley, New York; Secretary of the Navy, Claude A. Swanson, Virginia; Secretary of the Interior, Harold L. Ickes, Illinois; Secretary of Agriculture, Henry A. Wallace, Iowa; Secretary of Commerce, Daniel C. Roper, South Carolina; Secretary of Labor, Miss Frances Perkins, New York.

CHIEF INDEPENDENT OFFICES

Civil Service, Harry B. Mitchell; Interstate Commerce, Carroll Miller; Federal Reserve Bank, Marriner S. Eccles, Chairman; U. S. Tariff Commission, Raymond B. Stevens, Chairman; Veterans Administration, Brig. Gen. Frank T. Hines; Tennessee Valley Authority, Harcourt A. Morgan; Farm Credit, W. I. Myers; Federal Emergency Relief, Harry L. Hopkins; Works Progress, Harry L. Hopkins; Securities and Exchange Commission, William O. Douglas; Social Security Board, Arthur J. Altmeyer; Director of the Budget, Daniel W. Bell, Acting Director.

PRESIDENTS OF THE UNITED STATES

No. and Name	Politics	Native State	Born	Inaug.	Age at Inaug.	Date of Death	Age at Death
1. George Washington	Fed.	Va.	1732, Feb. 22	1789	57	1799, Dec. 14	67
2. John Adams	Fed.	Mass.	1735, Oct. 30	1797	61	1826, July 4	90
3. Thomas Jefferson	Rep.	Va.	1743, Apr. 13	1801	57	1826, July 4	83
4. James Madison	Rep.	Va.	1751, Mar. 16	1809	57	1836, June 28	85
5. James Monroe	Rep.	Va.	1758, Apr. 28	1817	58	1831, July 4	73
6. John Quincy Adams	Rep.	Mass.	1767, July 11	1825	57	1848, Feb 23	80
7. Andrew Jackson	Dem.	N. C.	1767, Mar. 15	1829	61	1845, June 8	78
8. Martin Van Buren	Dem.	N. Y.	1782, Dec. 5	1837	54	1862, July 24	79
9. William Henry Harrison	Whig	Va.	1773, Feb. 9	1841	68	1841, Apr. 4	68
10. John Tyler	Dem.	Va.	1790, Mar. 29	1841	51	1862, Jan. 17	71
11. James Knox Polk	Dem.	N. C.	1795, Nov. 2	1845	49	1849, June 15	53
12. Zachary Taylor	Whig	Va.	1784, Nov. 24	1849	64	1850, July 9	65
13. Millard Fillmore	Whig	N. Y.	1800, Jan. 7	1850	50	1874, Mar. 8	74
14. Franklin Pierce	Dem.	N. H.	1804, Nov. 23	1853	48	1869, Oct. 8	64
15. James Buchanan	Dem.	Pa.	1791, Apr. 23	1857	65	1868, June 1	77
16. Abraham Lincoln	Rep.	Ky.	1809, Feb. 12	1861	52	1865, Apr. 15	56
17. Andrew Johnson	Rep.	N. C.	1808, Dec. 29	1865	56	1875, July 31	66
18. Ulysses Simpson Grant	Rep.	Ohio	1822, Apr. 27	1869	46	1885, July 23	63
19. Rutherford Birchard Hayes	Rep.	Ohio	1822, Oct. 4	1877	54	1893, Jan. 17	70
20. James Abram Garfield	Rep.	Ohio	1831, Nov. 19	1881	49	1881, Sept. 19	49
21. Chester Alan Arthur	Rep.	Vt.	1830, Oct. 5	1881	50	1886, Nov. 18	56
22. Grover Cleveland	Dem.	N. J.	1837, Mar. 18	1885	47	1908, June 24	71
23. Benjamin Harrison	Rep.	Ohio	1833, Aug. 20	1889	55	1901, Mar. 13	67
24. Grover Cleveland	Dem.	N. J.	1837, Mar. 18	1893	55	1908, June 24	71
25. William McKinley	Rep.	Ohio	1843, Jan. 29	1897	54	1901, Sept. 14	58
26. Theodore Roosevelt	Rep.	N. Y.	1858, Oct. 27	1901	42	1919, Jan. 6	61
27. William Howard Taft	Rep.	Ohio	1857, Sept. 8	1909	51	1930, Mar. 8	72
28. Woodrow Wilson	Dem.	Va.	1856, Dec. 28	1913	56	1924, Feb. 3	67
29. Warren Gamaliel Harding	Rep.	Ohio	1865, Nov. 2	1921	55	1923, Aug. 2	58
30. Calvin Coolidge	Rep.	Vt.	1872, July 4	1923	51	1933, Jan. 5	60
31. Herbert Clark Hoover	Rep.	Iowa	1874, Aug. 10	1929	54	.....	..
32. Franklin Delano Roosevelt	Dem.	N. Y.	1882, Jan. 30	1933	51	.....	..

SLEEPING SICKNESS AMONG ANIMALS

During the latter part of the summer of 1938 horses in New England suffered from the plague of sleeping sickness (equine encephalomyelitis) which has been prevalent in the Middle West.

The Horse and Mule Association of America, through its secretary, Wayne Dinsmore, has very kindly given us permission to quote the following:

"Actual cases of virus type equine encephalomyelitis are often confused with the non-virus type due to forage poisoning. Symptoms seem almost the same, but they are readily distinguished by the fact that fever ranging from 102 to 105, or higher, is almost always present in the virus type, while there is no fever (or very little) or temperature may be sub-normal, in cases due to poisoning on moldy grass, hay, corn fodder or corn, or poisonous weeds.

"The non-virus type of equine encephalomyelitis readily can be avoided by feeding horses and mules sound, clean forage, hay and grain and keeping them out of cornstalk fields when close examination shows some mold or rot in fodder or in ears missed by pickers. Let hogs, sheep and cattle glean such fields, but keep horses out of them; and watch all hay fed to horses with an eagle eye,—a little mold in the middle of a bale may kill a good horse. Poisonous weeds should be eradicated from pastures and meadows.

"Work horses and mules can utilize bright green corn fodder and bright straw for part of their forage ration in fall and winter if care is taken to feed enough bright green clover or alfalfa to keep kidneys and bowels in a healthy condition. Such hay, fed as the night ration three times a week, generally will keep such idle animals O.K. if they have access to salt and plenty of good water.

"Vaccination with the chick-embryo vaccine seems to have given fairly effective protection this season, and offers hope that it may afford reasonable protection in future seasons: but not enough time has elapsed, nor enough cases tested in the field, to warrant stronger comment now.

"Veterinarians are still experimenting on treatment and agree on only a few points. These are:

"1st—Fever, ranging from 102 to 105, exists for several days before the external symptoms appear. When horses begin to stagger or stumble around, the disease has existed for several days, and has attacked the brain.

"2nd—If farmers are extremely watchful, they will notice the horse is 'off' (not quite normal)—by the lack of spirit, freshness, or by sluggish response to feed or water. If they notice such indications and take the temperature via rectum with a physician's thermometer, they will detect many cases near the beginning.

"3rd—If temperature is above 101½ in morning before work, horse should be put in a cool, dark stall, away from mosquitoes or flies, and given water every hour for 24 hours a day. The water should be fresh, and pail held up to the horse's lips, to induce drinking. Do not leave pail of water in stall,—horses have drowned when water has been left in stall, as they are so nearly unconscious that they do not appear able to get their heads out of a pail of water. Green feed,—fresh cut corn with ears husked out, or green alfalfa,—salted lightly, are excellent, and stimulate increased consumption of water.

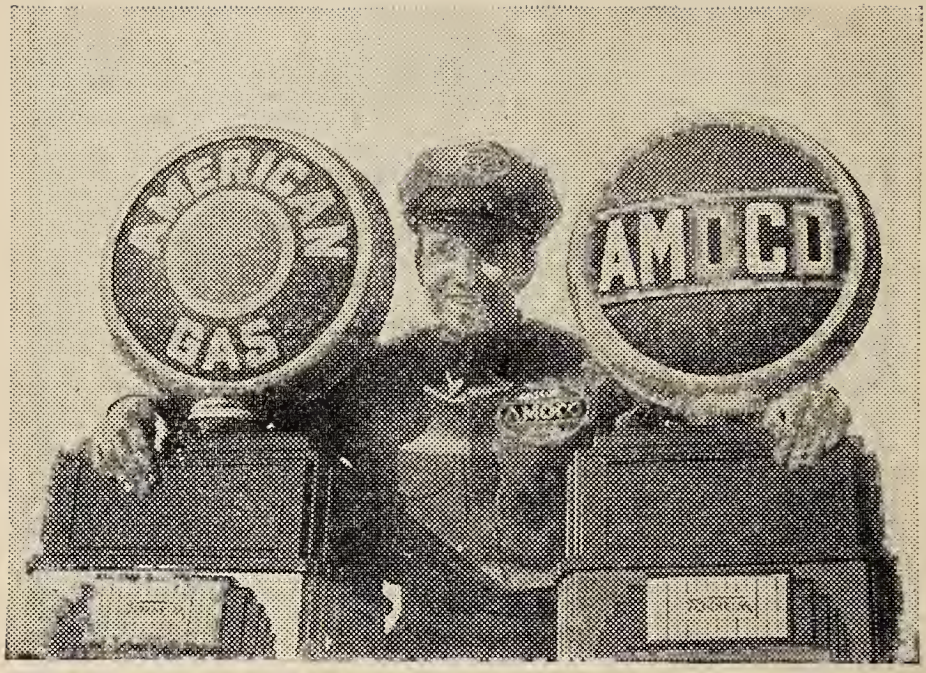
"One veterinarian remarked that most cases, if caught at the start and handled as just suggested, probably would recover in from 5 to 7 days without ever developing the external symptoms of staggering, etc., even if a veterinarian were not called."

We are also indebted to George Turrell, Associate Editor of COUNTRY LIFE, for permission to quote the following paragraph from the September issue of that magazine:

"Sleeping sickness is seasonal and known to be carried by mosquitoes and probably biting flies, and, as far as any one knows now, it isn't transmitted in any other way. Therefore protection against mosquitoes and flies is the first essential. If and when the disease appears in a locality, horses and mules should be kept in screened stables at night and, when not being used, from about July 1st until after the first frost. When at work, animals should be protected by muslin or burlap fly covers reaching from head to tail, and head, legs, all other exposed parts of the animal, and the fly covers should be sprayed with a good insecticide every two hours or so."

Not only farmers but those owning horses for pleasure and especially the owners of racing stables should be prepared for this disease in 1939.

THE OLD FARMER



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YOUR AMERICAN AMOCO GAS DEALER

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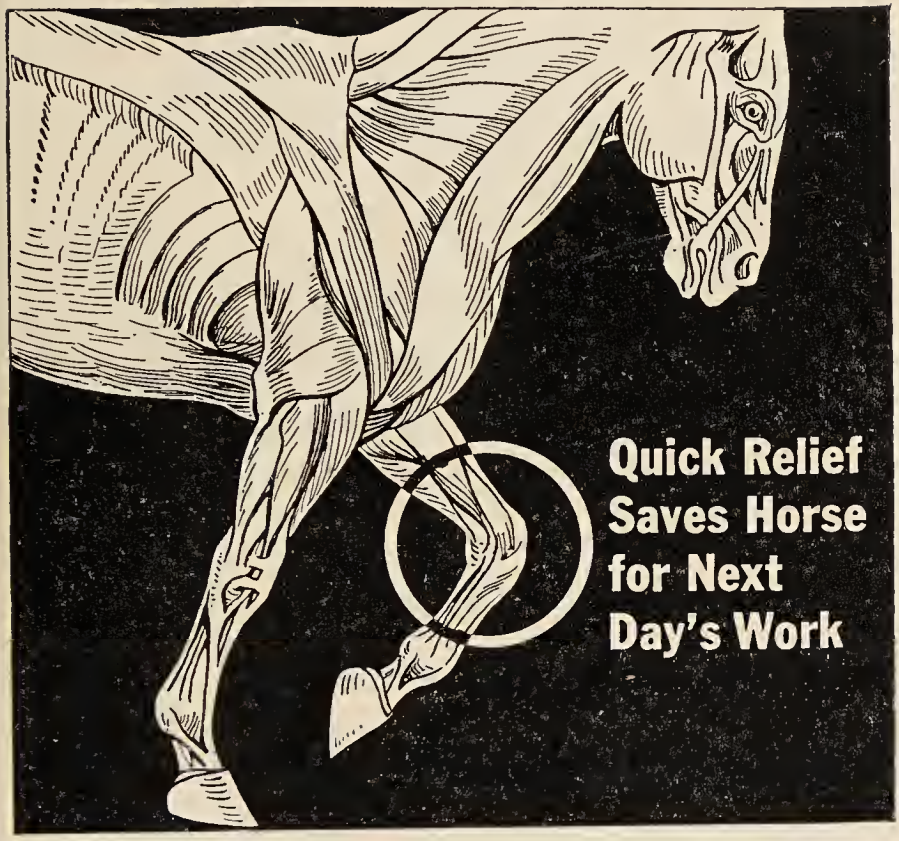

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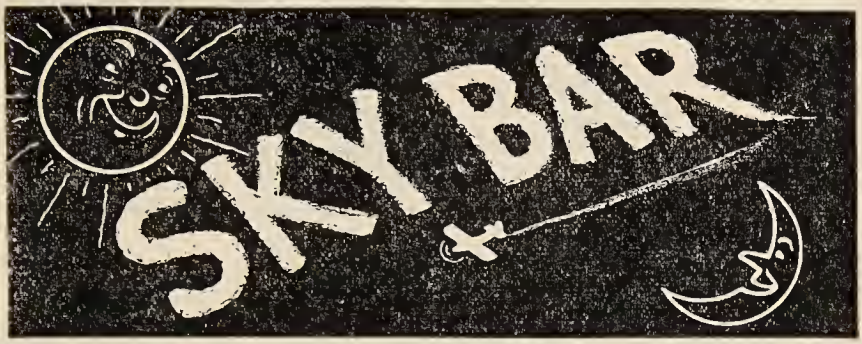
ABSORBINE



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MR. SOL: "Yes, Old Man! And notice how they all go for SKY BAR'S four different centers . . . it's something new under me!"

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MR. SOL: "Delightful to taste, I'll wager, Old Man, but where do we get a nickel?"

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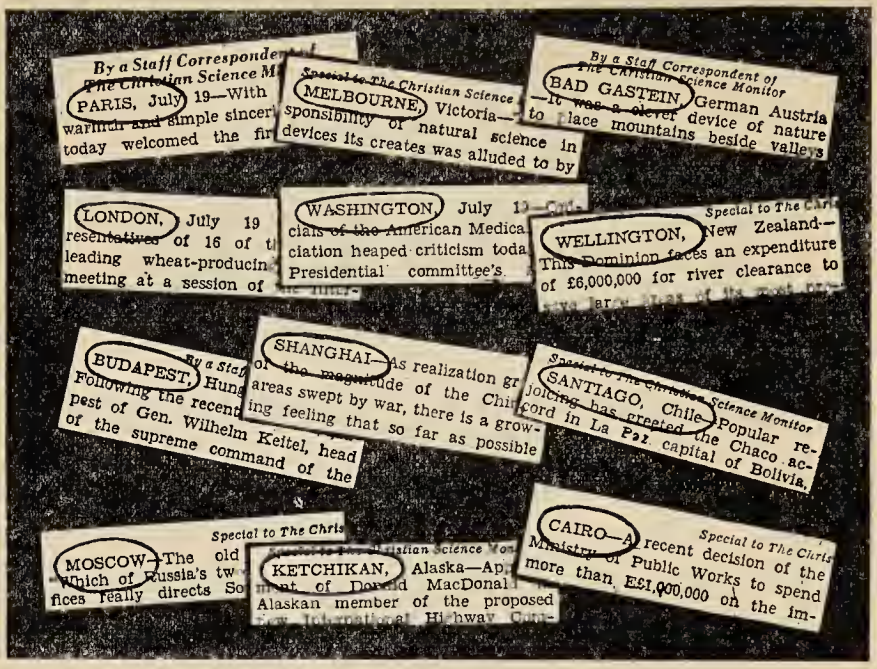

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INDEX

WIND-BAROMETER TABLE

From the U. S. Department of Agriculture, Weather Bureau

The wind and barometer indications for the United States are generally summarized in the following table:

Wind direction	Barometer reduced to sea level	Character of weather indicated
SW. to NW.	30.10 to 30.20 and steady.....	Fair, with slight temperature changes, for 1 to 2 days.
SW. to NW.	30.10 to 30.20 and rising rapidly.....	Fair, followed within 2 days by rain.
SW. to NW.	30.20 and above and stationary.....	Continued fair, with no decided temperature change.
SW. to NW.	30.20 and above and falling slowly...	Slowly rising temperature and fair for 2 days.
S. to SE....	30.10 to 30.20 and falling slowly.....	Rain within 24 hours.
S. to SE....	30.10 to 30.20 and falling rapidly....	Wind increasing in force, with rain within 12 to 24 hours.
SE. to NE..	30.10 to 30.20 and falling slowly.....	Rain in 12 to 18 hours.
SE. to NE..	30.10 to 30.20 and falling rapidly....	Increasing wind, and rain within 12 hours.
E. to NE...	30.10 and above and falling slowly...	In summer, with light winds, rain may not fall for several days. In winter, rain within 24 hours.
E. to NE...	30.10 and above and falling rapidly...	In summer, rain probable within 12 to 24 hours. In winter, rain or snow, with increasing winds, will often set in when the barometer begins to fall and the wind sets in from the NE.
SE. to NE..	30.00 or below and falling slowly....	Rain will continue 1 to 2 days.
SE. to NE..	30.00 or below and falling rapidly ...	Rain, with high wind, followed, within 36 hours, by clearing, and in winter by colder.
S. to SW...	30.00 or below and rising slowly.....	Clearing within a few hours, and fair for several days.
S. to E.....	29.80 or below and falling rapidly ...	Severe storm imminent, followed, within 24 hours, by clearing, and in winter by colder.
E. to N. ...	29.80 or below and falling rapidly ...	Severe northeast gale and heavy precipitation; in winter, heavy snow, followed by a cold wave.
Going to W.	29.80 or below and rising rapidly	Clearing and colder.

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