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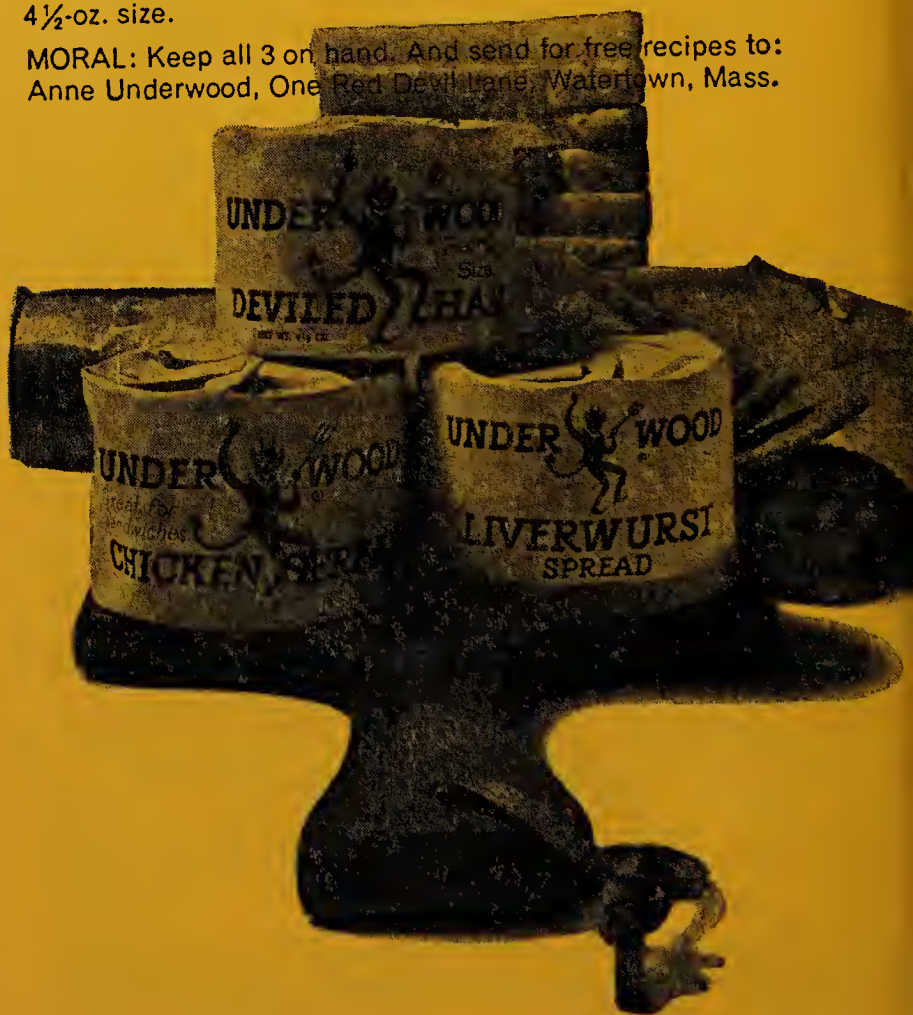
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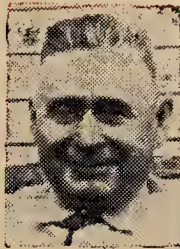
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A BOOK OF COUNTRY THINGS



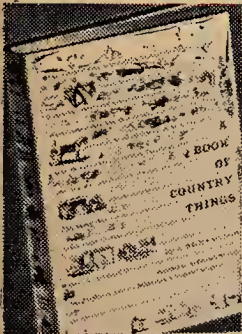
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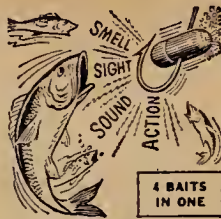
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Spread white or whole wheat bread with peanut butter. Add a dollop (1 tablespoon) Grandma's West Indies Molasses and spread over peanut butter.

Add 2 dollops (2 tablespoons) Grandma's West Indies Molasses to each 1-pound can baked beans in tomato sauce.

Fill cavity of acorn squash with 2 dollops (2 tablespoons) Grandma's West Indies Molasses, 1 tablespoon butter or margarine, a dash of salt and nutmeg before baking.

Add equal parts of Grandma's West Indies Molasses and sugar to the cored center of apple before baking.

Add a dollop (1 tablespoon) Grandma's West Indies Molasses and but-

ter to hot biscuits, cornbread or pancakes.

Fold a dollop (1 tablespoon) Grandma's West Indies Molasses into prepared whipped topping mix.

Combine 2 dollops (2 tablespoons) Grandma's West Indies Molasses and 3 tablespoons melted butter or margarine to glaze 1 bunch cooked carrots.

Add a dollop (1 tablespoon) Grandma's West Indies Molasses to 1 cup hot or cold milk.

Combine equal parts Grandma's West Indies Molasses and prepared mustard to use as ham glaze last 30 minutes baking time.

Add a dollop (1 tablespoon) Grandma's West Indies Molasses to 1 pound can chilled applesauce.

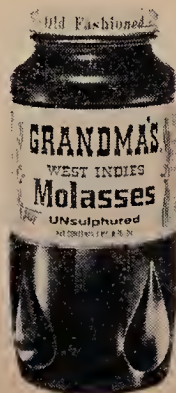
Spoon a dollop (1 tablespoon) Grandma's West Indies Molasses over hot cereal or mix molasses

with milk and pour over cold cereal.

Stir a dollop (1 tablespoon) Grandma's West Indies Molasses into 6 ounces orange juice.

Blend a dollop (1 tablespoon) Grandma's West Indies Molasses with syrup from a 1-pound can fruit (peaches, apricots, pears or fruits for salad) and spoon over fruit.

Fold 2 dollops (2 tablespoons) Grandma's West Indies Molasses into prepared vanilla flavor whipped dessert mix.



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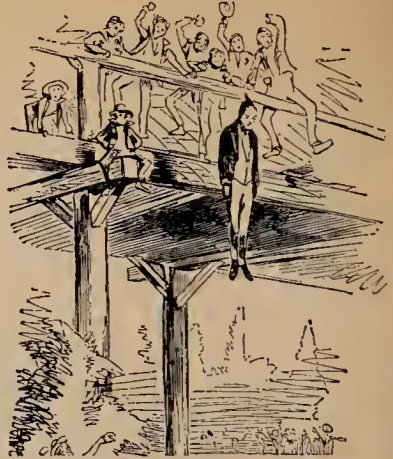
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AND DEATH
OF
SAM PATCH

The greatest jumper
that ever lived.

By
MAJOR JACK DOWNING



Pawtucket is a famous place,
Where cotton cloth is made,
And hundreds think it no disgrace
To labor at the trade.

Among the spinners there was one,
Whose name was Samuel Patch;
He moped about, and did his stint—
Folks thought him no great
scratch.

But soon a maggot, in his head,
Told Sam he was a ninny
To spend his life in twirling thread,
Just like a spinning-jenny.

And if he would become renown'd,
And live in song or story,
'Twas time he should be looking
round
For deeds of fame and glory.

"What shall I do?" quoth honest
Sam,
"There is no war a-brewing;
And duels are but dirty things,
Scarce worth a body's doing.

"And if I would be President,
I see I'm up a tree,
For neither prints nor Congress-men
Have nominated me."

But still that maggot in his head
Told Sam he was a gump,
For if he could do nothing else,
Most surely he could *jump*.

Aye, right, quoth Sam, and out
he went,
And on the bridge he stood,
And down he jump'd full twenty
feet,
And plunged into the flood.

And when he safely swam to land,
And stood there like a stump,
And all the gaping crowd cried out,
"Oh, what a glorious jump!"

New light shone into Samuel's eyes,
His heart went pit-a-pat;
"Go, bring a ladder here," he cries;
"I'll jump you more than that."

The longest ladder in the town
Against the factory was rear'd,
And Sam clomb up, and then
jump'd down,
And loud the gapers cheer'd.

Besides the maggot in his head,
Sam's ear now felt a flea;
"I want more elbow-room," he said,
"What's this dull town to me?"

"I'll raise some greater breezes yet;
I'll go where thousands are,
And jump to immortality,
And make the natives stare.

"I'm only twenty-two years old;
Before I'm twenty-five
I'll be more talk'd about, I guess,
Than any man alive.

"I'll show these politician folks,
That climb so high by stumping,
That I can climb as well as they,
And beat 'em all in jumping.

"One way is just as good as t'other
To make the people wonder,
And all the noise that they can make
Ain't nothin' to my thunder.

"I'm right, and now I'm going
ahead;
Sam Patch wasn't made to
blunder—
If any living soul's afraid,
Just let him stand from under."

And off he went on foot, full trot;
High hopes of fame his bosom
fired;
At Paterson, in Jarsay State,
He stopt awhile, for Sam was
tired;

And there he mounted for a jump,
And crowds came round to
view it,
And all began to gape and stare,
And cry, "How dare you do it?"

But Sam ne'er heeded what they
said,
His nerves wa'nt made to quiver,
And down he jump'd some fifty
feet,
And splash'd into the river.

(Continued on page 10)

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THE LIFE AND DEATH OF SAM PATCH

(Continued from page 9)

From shipmasts he would jump in
sport,
And spring from highest factory
walls;

And proclamation soon was made,
That he would leap Niagara Falls.

"What for?" inquired an honest
Hodge,

"Why scare to death our wives
and mothers?"

"To show that some things *can*
be done,"

Quoth Sam, "as well as others."

Ten thousand people throng'd
the shore,
And stood there all agog;

While Sam approach'd those
awful falls,
And leapt them like a frog.

From Clifton House to Table Rock,
And round Goat Island's brow,
The multitudes all held their
breath
While Sam plunged down below.

And when they saw his neck was
safe,
And he once more stood on his
feet,

They set up such a deafening cheer,
Niagara's roar was fairly beat.

Patch being but a scurvy name,
They solemnly did there enact,
That he henceforward should be
call'd
"Squire Samuel O'Catract."

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And here our hero should have
stopt,
And husbanded his brilliant fame;
But, ah, he took one leap too
much—

And most all heroes do the same.

Napoleon's last great battle proved
His dreadful overthrow,
And Sam's last jump was
a fearful one,
And in death it laid him low.

'Twas at the falls of Genesee,
He jump'd down six score feet
and five,
And in the waters deep he sunk,
And never rose again alive.

The crowd, with fingers in their
mouths,
Turn'd homeward, one by one,
And oft with sheepish looks they
said,
"Poor Sam's last job is done."



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Question not, but live and labor
Till your goal be won,
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Seeking help from none,
Life is mostly froth and bubble:
Two things stand like stone —
*Kindness in another's trouble,
Courage in your own.*

Adam Lindsay Gordon

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WEATHER FORECASTS

- For Entire U.S.A. — see page 17, and the verses in italics on pages 23-45.
 For Boston and Vicinity — see page 94.
 For No. New England — see page 95.
 For So. New England — see page 97.
 For Eastern States, except New England — see page 101.
 For Midwestern States — see page 105. For Great Plains — see page 111.
 For Pacific Northwest — see page 114. For Southern States — see page 119.
 For Anywhere by Moon — see page 55.

Readers will please note that the weather forecasts throughout this almanac may be read directly without correction for all of the regions indicated above.

FOR TIMES OF SUNRISE, SUNSET, MOONRISE, MOONSET, AND PLANETS — SEE PAGE 92 AND—

- For Boston and Vicinity — see pages 22-44, 46.
 For New England, except Boston — see page 95.
 For Eastern States, except New England — see page 100.
 For Midwestern States — see page 104.
 For Western and Mountain States — see page 110.
 For Southern States — see page 118.

KEY LETTER CORRECTIONS — The key letters which appear on pages 22-44, 46, for each day are for correcting the above times in areas outside of Boston.

TIDES

See pages 22-44 for times of morning and evening high tides. See pages 23-45 for heights of same. To correct these times and heights to your locality, see page 89.

TWILIGHT, SUNDIALS, ETC.

For these and detailed instructions pertaining to the above, and other matter pertaining to points outside of Boston — see pages 92-93. Here begins a series of eight sections pertaining respectively to Boston, No. New England, So. New England, the Eastern States except New England, the Midwest, Great Plains, Pacific Northwest, and the South.

To Patrons

■ THIS IS THE 177TH CONSECUTIVE annual edition of THE OLD FARMER'S ALMANAC(K). It is for the year 1969, or Atomic Year 25. It is the oldest continually-published periodical in America. Founded in 1792 while George Washington was President—the same year in which the cornerstone of the White House was laid—its name and format, with one exception, have remained unchanged. The exception is that in 1832, in order to distinguish it from imitators, the world "Old" was added to its title.

In 1968, the publishers of this Almanac (Yankee, Inc.) also acquired two other Almanacs with long and proud records. The first was **The Maine Farmers' Almanac**, founded by Daniel Robison in 1818, and published continuously ever since. It is now being published separately and distributed only in Maine. The second was the **Daboll Almanac**, founded in 1773 by Nathau Daboll in New London, Connecticut. This **Daboll Almanac** represents one of the most remarkable examples of editorial persistence in the history of American publishing—each issue in its long run (it missed only a few issues—all before 1793) having been edited by a member of the Daboll family. It will be continued as a section of THE OLD FARMER'S ALMANAC.

In this connection, during the months in 1968 while we have been compiling this 1969 OFA, we have been constantly reminded, by student revolts, racism, et al, of the need in this country for such strong traditions as this Almanac, George Washington's home at Mount Vernon, etc. Of course, tradition can be overdone; however, if youth would kick over a college curriculum as unrealistic, it still would desire a few traditions around for the new curriculum to support!

We have been more deeply concerned with the growing tendency in government, transportation, education—society as a whole—towards what in World War II we knew as the "expendibility" of an individual. This country has never really reverted since that time to its original existence as father and protector of the individual. It is this expendibility complex in high places which is a basic cause of present dissatisfactions. It is our hope and belief that new leadership—executive and congressional—ungrooved by age and World War II—will set us once again upon the road of the "Country for Me" as well as "Me for the Country."

Loring B. Andrews has again contributed, through his astronomical research, valuable scientific information for our eight regional weather forecasts. Benjamin M. Rice has again prepared the Farmer's Calendars; Rob Trowbridge, associate publisher, has solved production, transportation, distribution, advertising, and other problems; Judson D. Hale has furnished the puzzles and certain layouts. Esther Pitts, as she has done for many years, helped with proofreading and other details. Other contributions are bylined.

The undersigned asks forgiveness for not catching an author's careless error on page 50 of last year's edition. The "Salem" therein should have been New Jersey—not Massachusetts. As to the poem on the 1968 title page, some have written us that its author was Sir Walter Raleigh. (We are still looking for our OFA source which gave us "Shakespeare.") Also, we now know that Bingham Canyon, Utah offers no local stamp.

In these things, however, man can only propose. God is the true disposer. In this it is by our works and not our words we would be judged. These we hope will sustain us in the humble, though proud, station we have so long held, in the name of

Your ob'd servant,

W. O. Thomas.

Last Winter's Weather

(Nov., Dec., 1967 — Jan., Feb., Mar., Apr. 1968)

November: Almost exactly for all areas as forecast 1968 OFA. **December:** Portland, Ore. (7-14) rain did not materialize. Otherwise O.K. Pittsburgh, Pa., no snow second week. Otherwise all areas as forecast. **January:** Denver, OFA missed completely. Pittsburgh, ditto. Atlanta, no rain last week. All other locations correctly forecast. **February:** Chicago, no bad storm last week. Boston, no storm (8-15), OFA did not forecast exceptionally dry month. Other areas forecast correctly. **March:** Chicago, no storm (5-11) or (27-31). Providence, no storm (5-11), Boston, no storm (5-11), or (27-31). Portland, Ore., no deluge (18-23). Other areas O.K. **April:** Yes, the Spring did come in early, as the OFA said it would, but the month was far nicer, sunnier, drier, and less snowy than it had been for many a year. The OFA forecast for April was wrong, right across the board.

A detailed summary of last winter's weather follows:

November 1967

(1-6) 22-state rain, Gt. Lakes-Texas. **Torn.**, Miss.; (5) 2' snow Gt. Lakes-Pa. (15); 10" snow New Eng.; (21-27) Heavy snows northern prairies to New Eng. Heavy rain Ga.-New Eng.; (28-Dec. 4) Mammoth storm Wash., Ore., Col. Record snow (15-30") Wash. D.C.-New Eng. Rain Ark. and Mid. Atl. states.

December 1967

(4-10) Heavy storms Pacific N.W. Fog in East. Rain Gt. Plains to Apps. Snow, sleet, Gt. Lakes. Violent storms South; (11-18) Heavy snows (66") Utah, N.M., Col., Ariz. Glaze, Dakotas to Wisc. and Tex.; (17) Terrible storm, Ariz. Tornado, South and Hawaii; (19-25) Christmas white 32 states from storm on 24th. Heavy rains Ill.-La.; (26-31) Rain South, snow Miss. to Me. 12-24".

January 1968

(2-8) Snow North and Central States. Heavy rain South; (4) Gt. Lakes snow, 46" below, Midwest; (7) Blizzard New Eng.; (5-13) Cold wave N.Y.C.; (9-14) Below zero Mass., Vt., N.H. Snow Gt. Plains. Sleet Okla.-Carolinas. Snow Gt. Lakes to New Eng. (5-15"), Ohio-Ga.; (15-21) Schools closed (15) Ga.-Va. Rain Pacific N.W. and Texas floods; (22-28) Snow So. Apps., Ga., Carolinas. Rain Pacific N.W.; (24) 68° N.Y.C.

The Massachusetts Turnpike, courtesy of G. G. Hyland, Maintenance Engineer, keeps accurate records of snowfall, especially around Blue Hill Weather Station, the OFA's weather base. "Abe Weatherwise" likes to compare his New England forecast with these records, even if results are unfavorable.

Last year (Nov. 1967-Apr. 1968) Abe predicted 76" of snowfall for Blue Hill but only 55" were recorded at the Weston Exit (nearest B.H.). This might seem a "bust" for Abe. Not so: the OFA had a successful record because Abe forecast significant accumulations of snow for 8 out of 11 major storms (i.e., Dec. 26. "a whopper"; Feb. 29, "a blizzard," etc.) for an average of 72%.

February 1968

(Jan. 29-Feb. 5) Storms Pacific N.W. Rains E. Tex.-New Eng. and Gt. Lakes to Ark. Floods Ind., Ohio, Pa. (6-12) Snow Gt. Lakes-Miss. (2-6") and (8) Ga.-New Eng. (1-3"); also Fla.; (13-19) Rain, gales Pacific N.W. Blizzard N. Dak.-Gt. Lakes. Snow and sleet N.M., Tex., Fla. (15) Blizzard No. Plains, upper Midwest, So. Dakota, Minn. Almost no snow fell in New Eng. all of Feb.

March 1968

(5-11) Rains Pac. Coast (3" L.A.). La.-Pa.; (11) Blizzard St. Louis. (11-17) Rainy, Seattle-S.F.; (11-13) Snow Okla.-New Eng.; (15-16) Storms Atl. Coast, snow Mont. and Dakotas; (17-18) Rain Va.-New Eng. Floods R.I., E. Mass.; (18-19) Rains Tex., Gt. Lakes, New Eng.; (19-22) 12" Snow Memphis, Ky., Ohio, New Eng.; (25-28) Rain Pacific N.W.; (29-31) Thunderstorms, tornadoes, hail Tex., Ia., Minn., Ark., N.Y.

April 1968

(1-7) Snow Gt. Plains, Wyo., S.D., Col.; (2-5) Rain Va., Carolinas, Ga. with (3rd) tornadoes Ia., Ky.; (8-14) Heavy rains La., Tex. Very dry East; (15-17) Rain (7-12"). Pacific N.W.; (17-19) Snow Nev., Wyo., Ariz., N.M.; (16) Tornadoes Okla., Iowa; (19) Tornadoes Greenwood, Ark.; (20) Tornado Minn.-Tex.; (23-24) Heavy snow Minn.; (23) Tornado Ky.-Ohio; (24-25) Rainy, Tex.-Apps.; (25-26) Rainy northeast.

Weather Forecast 1968-9

The verses in *italic type (same as this)* which run vertically down the middle of the Calendar Pages (23-45), cover the country as a whole for the calendar year of 1969. These are for the days indicated by the beginning capitalized word and ending with a period. In addition, there follows herewith: 1) a prose summary of the Winter in general across the country from November, 1968 through April, 1969; and 2) a summary for the calendar year 1969 (January-December). These general forecasts are then broken down into eight regional weather forecasts, both for the Winter (November, 1968-April, 1969) and the calendar year (January-December, 1969). See pages 92-119.

As all of these forecasts are based, for verification purposes, at established U.S.W.B. Stations, the temperature will be about 5° higher for each 100 miles south of the U.S.W.B. Station location given in the above-mentioned summaries and 5° lower for each 100 miles north. For each 1,000 feet of altitude, reduce temperatures approximately 3° . . . read, with the colder temperatures, "snow" for "rain."

THE WINTER (Nov. 1968-Apr. 1969)

For the Winter as a whole, Abe Weatherwise foresees a mild Winter in the East but a cold and snowy one from Chicago on out West. There don't seem to be any areas which, at least during the Winter months, could be called drought spots—the precipitation on the whole being up about 10% in most places. It doesn't look like a Winter of unexpected, dangerous storms in the West, South, Middle West, or East. However, March and April will be raw, uncomfortable, unseasonable, disagreeable, and definitely the months to be away in. In fact, the one really big storm of the Winter may be the one during the last week of April.

THE YEAR IN MOST OF THE U.S.A.

(Jan.-Dec. 1969)

This is a year in which the temperatures east of Chicago, and in the South will run considerably above average. This should mean a milder winter on the whole—but some real suffering in the cities during July and August. From our detailed studies, it looks as if the general area of 500 miles around Pittsburgh will have the hardest year of all areas, with heavy storms in just about every month. One of these storms in January will be transcontinental, coming East from Chicago to hit Boston about the 28th. In March there will probably be one of those Atlantic Coast storms covering the area from Atlanta to Maine about the 13th. April sees a big one from Chicago and the Great Plains on into New England about the 29th. Come September, the East Coast will catch, during the first week, a tropical storm up from Atlanta and the Gulf. In the last week, Canada will send one via the Great Lakes to Vermont and Maine. October also has a tropical storm from Florida all the way to Maine during the period between the 15th and 22nd. November sees a "northeaster" flooding New England from Rhode Island to Maine. For some reason unbeknownst to us, the last week of the year, December 23-31, seems to be rough and bad all over the U.S.A. (The West Coast in all of December has only one really good week, that of December 9-16).

ECLIPSES FOR THE YEAR 1969

There are five eclipses, two of the Sun and three of the Moon. Both eclipses of the Sun will be annular eclipses and all those of the Moon penumbral eclipses.

I. An Annular Eclipse of the Sun, March 17, 1969. The area from within which this eclipse will be seen in either its partial or annular phases lies in the Far East. Its western limit extends from the northern tip of Madagascar to northwest Antarctica, while its eastern limit is essentially the International Date Line. The northern limit starts near the northern tip of Madagascar, extends across the Indian Ocean, passes through the Orient along a line which cuts across the northern boundaries of Thailand and South Korea, and extends into the Pacific to Longitude 170° E. The southern limit runs from a point in northwest Antarctica close to the South Pole eastward, passing just east of the southeast tip of Australia, to and ending just east of the International Date Line. The narrow path from within which the annular phase will be visible begins about 1400 miles southeast of the Cape of Good Hope, where the eclipse occurs at or near sunrise, thence traces a path eastward, across the Indian Ocean to thread its way through Southeast Asia along a line passing just off the northwest tips of Australia and New Guinea, to an ending just west of the International Date Line, where the eclipse will occur at or near sundown.

II. A Penumbral Eclipse of the Moon, April 2, 1969. This eclipse will not be visible from the United States. Its beginning will be visible in the western Pacific, Asia, eastern Europe, the eastern half of Africa, the Indian Ocean, Australia, New Zealand, and Antarctica. The end of the eclipse will be visible throughout Asia except the extreme northeastern part, from most of Australia, and from the Indian Ocean, Africa, Europe, the Atlantic Ocean except its western part, and Antarctica.

III. A Penumbral Eclipse of the Moon, August 27, 1969. This eclipse will be visible from all North America except its northeastern part. It will begin at 5.22 A.M. E.S.T. and end at 6.15 A.M. E.S.T. Since the Moon will have set at Boston at 5.02 A.M. E.S.T. on this date, the region from which the eclipse will not be visible will in general embrace New England and the eastern portions of New York and New Jersey.

IV. An Annular Eclipse of the Sun, September 11, 1969. The narrow path from which the annular phase of this eclipse can be viewed essentially parallels the west coasts of North and Central America, offshore on the average by about 1,000 miles. Its beginning lies about 700 miles south of the west end of the Aleutians, while its ending is near the heart of central South America, toward which it swings after crossing the Equator. To the west and south of this path the eclipse will be seen as a partial eclipse of the Sun over a wide swath of the Pacific, including Hawaii. To the north and east of this path the area for viewing the eclipse as a partial one embraces North America except its northeastern portion, all of Central America and the islands of the Caribbean, and all of South America except its southernmost part and the "hump" of Brazil.

Along the middle of the United States (latitude 40° N.) observers will run a gamut of magnitude of partial eclipse, starting with no eclipse until as far west as the eastern border of Ohio and rising to one during which about 70% of the sun's diameter will be covered by the moon on the west coast. Sample places, times and magnitudes for cities near latitude 40° N. are these:

Place	Time	Eclipse Begins	Max. Phase	Eclipse Ends	Magnitude
Columbus, O.	E.S.T.	2.37 P.M.	3.03 P.M.	3.26 P.M.	3%
St. Louis, Mo.	C.S.T.	1.06 P.M.	1.51 P.M.	3.26 P.M.	15%
Boulder, Colo.	M.S.T.	11.16 A.M.	12.25 P.M.	1.38 P.M.	50%
San Francisco, Cal.	P.S.T.	9.36 A.M.	11.01 A.M.	12.26 P.M.	70%

Maximum eclipse will occur earlier the farther west the observer. It also occurs minutes earlier for places north of those listed and later for those south of them. North of latitude 40° N. magnitudes are lesser and durations shorter; south of that latitude the reverse holds. In Alaska the eclipse will begin shortly after sunrise, while in Hawaii the maximum phase of the eclipse will have taken place before the sun rises.

V. A Penumbral Eclipse of the Moon, September 25, 1969. The beginning of this eclipse will be visible in Asia, the western Pacific, Australia and New Zealand, the Indian Ocean, Africa but for its northwestern part, Europe except its western part, and the Arctic regions. Its ending will be visible in Asia except the eastern part, the Indian Ocean, Africa, Europe, the Atlantic Ocean, South America except its western part, the extreme northeastern part of North America, and the Arctic regions.

EARTH IN PERIHELION AND APHELION, 1969

The Earth will be in Perihelion on January 3, distant from the Sun 91,400,000 miles. The Earth will be in Aphelion on July 5, distant from the Sun 94,510,000 miles.

Holidays, 1969

†Are recommended as "with pay" holidays—regardless of regular periods—for all commercial employees. (*) Quite generally observed. (**) State holidays only. (***) Observed some places though probably not holidays.

All dates are also included in abbreviated form on the Calendar pages 23-45.

- Jan. 1 (*†) New Year's (all) **Wed.**
 Jan. 8 (**) Battle New Orleans (La.)
 Jan. 17 (**) Arbor Day, Fla.
 Jan. 19 (**) Robert E. Lee's Birthday (South)
 Jan. 26 (**) MacArthur (Ark.)
 Jan. 30 (**) F.D.R.'s Day (Ky.)
 Feb. 12 (*) Lincoln's Birthday (33 States) **Wed.**
 Feb. 14 (**) Admission Day (Ariz.)
 Feb. 14 (***) Valentine's Day
 Feb. 15 (***) Susan B. Anthony
 Feb. 17 (**) Wash. Day (Mass.)
 Feb. 18 (**) Mardi Gras. (Ala., Fla., La.)
 Feb. 22 (*†) George Washington's Birthday. **Sat.**
 Mar. 1 (**) State Day (Nebr.)
 Mar. 2 (**) Texas Ind. Day
 Mar. 7 (**) Burbank Day (Cal.)
 Mar. 15 (**) Jackson Day (Tenn.)
 March 17 (**) St. Patrick's or Evacuation Day (Boston)
 Mar. 25 (**) Maryland Day
 Mar. 26 (**) Kubio Day (Haw.)
 Mar. 30 (**) Seward's Day (Alas.)
 Apr. 2 (**) Pascua Day (Fla.)
 Apr. 4 (**) Good Friday (*Conn., Del., Fla., Haw., Ill., Ind., La., Md., Minn., N. J., Penn., Tenn. & W. Va.)
 Apr. 7 (**) Easter Mon. (N. C.)
 Apr. 12 (**) Halifax Day (N. C.)
 Apr. 13 (**) Jefferson Day (Ala., Mo., Va.)
 Apr. 14 (**) Pan Am. (Fla.)
 Apr. 19 (**) Patriots' Day (Me.) **Sat.**
 Apr. 21 (**) Patriots' Day (Mass.)
 Apr. 21 (**) San Jacinto (Tex.)
 Apr. 22 (**) Okla. Day, Arbor Day (Nebr.)
 Apr. 25 (*) Arbor Day (Utah)
 Apr. 26 (**) Memorial Day (Fla., Ga., Miss.)
 Apr. 28 (**) Fast Day (N. H.), **Mon.**
 May 4 (**) R. I. Indep. Day
 May 10 (**) Mem. Day (N. & S. C.)
 May 11 (***) Mother's Day
 May 17 (**) Armed Forces Day
 May 20 (**) Mecklenburg (N. C.)
 May 26 (**) Mem. Day (Mass.)
 May 30 (*†) Decoration or Memorial Day (exc. 5 So. States and Mass.) **Fri.**
 June 3 (**) Jefferson Davis Day (Ala., Fla., Ga., Ky., La., Miss., S. C., Tenn., Tex.)
 June 11 (**) Kamehameha (Haw.)
 June 14 (**) Flag Day (Pa.)
 June 15 (**) Pioneer Day (Idaho)
 June 15 (***) Father's Day
 June 17 (**) Bunker Hill (Suffolk Co., Mass.) **Tues.**
 June 20 (**) West Virginia Day
 July 4 (*†) Independence (all). **Fri.**
 July 13 (**) Forrest's Day (Tenn.)
 July 24 (**) Pioneer Day (Utah)
 Aug. 4 (**) Colorado Day
 Aug. 11 (**) Victory (R. I.)
 Aug. 14 (**) V. J. Day (Ark.)
 Aug. 16 (**) Bennington, Vt. Bat.
 Aug. 30 (**) Huey Long (La.)
 Sept. 1 (*†) Labor Day (all), **Mon.**
 Sept. 9 (**) Admission Day (Cal.)
 Sept. 12 (**) Defender's (Md.)
 Sept. 16 (**) Cherokee (Okla.)
 Sept. 17 (***) Citizenship Day
 Sept. 26 (***) Am. Indian Day
 Oct. 10 (**) Okla. Hist. Day
 Oct. 11 (**) Pulaski Day (Nebr.)
 Oct. 12 (*†) Columbus (All States exc. 16) **Sun.**
 Oct. 18 (**) Alaska Day
 Oct. 24 (***) United Nations Day
 Oct. 31 (**) Nevada Day
 Nov. 1 (**) All Saints' Day (La.)
 Nov. 4 (**) Will Rogers (Okla.)
 Nov. 11 (*†) Veterans' (All) **Tues.**
 Nov. 15 (***) Sadie Hawkins Day
 Nov. 23 (**) Repudiation (Md.)
 Nov. 27 (*†) Thanksgiving Day
 Dec. 10 (**) Wyoming Day
 Dec. 15 (***) Bill of Rights Day
 Dec. 21 (***) Forefathers' Day
 Dec. 25 (*†) Christmas Day (all) **Thurs.**

LONG HOLIDAY WEEKENDS

Thanksgiving and Christmas both fall on Thursday in 1969, to make two four-day vacations for some. Labor Day is, as usual, on a Monday, Independence and Memorial Days are Fridays. So there are at least three three-day weekends there. And, if the boss will allow Mon. (or Fri.) off for Washington's and Patriots' (in Maine) which fall on Saturday and Columbus Day which comes on Sunday — there are three more. No use arguing with bis or her "nibs" for a stretch of New Year's or Lincoln's (both on Wed.) or Veterans' Day (Tues.). N.B. In Mass only — Washington's Birthday celebrated Feb. 17 (Mon.), Patriots' Day Apr. 21 (Mon.); and Memorial Day May 26 (Mon.).

1968

JANUARY.							FEBRUARY.							MARCH.							APRIL.																								
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1969

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1970

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Introduction

STANDARD TIME IS USED THROUGHOUT THIS ALMANAC
Add 1 hr April 27, (deduct it Oct. 26) for Daylight Saving Time

Chronological Cycles for 1969.

Golden Number . . . 13	Solar Cycle 18	Roman Indiction . . . 7
Epact 2	Dominical Letter* . . E	Year of Julian Period 6682

*The Dominical Letter is used instead of the usual "S" for "Sunday" by almanac makers for determining at a glance (a) the year of the almanac, (b) on what day of the week any day of the month will fall.

Movable Feasts and Fasts for 1969.

Septuagesima Sun. Feb. 2	Good Friday Apr. 4	Whitsunday May 25
Shrove Sunday Feb. 16	Easter Sunday Apr. 6	Trinity Sunday June 1
Ash Wednesday Feb. 19	Low Sunday Apr. 13	Corpus Christi June 5
1st Sun. in Lent Feb. 23	Rogation Sun. May 11	1st Sunday in Advent Nov. 30
Palm Sunday Mar. 30	Ascension Day May 15	

THE SEASONS OF 1969

Winter (1968)	December 21	2.00 P.M. (Sun enters Capricornus)
Spring (1969)	March 20	2.08 P.M. (Sun enters Aries)
Summer	June 21	8.55 A.M. (Sun enters Cancer)
Fall	September 23	12.07 A.M. (Sun enters Libra)
Winter	December 21	7.44 P.M. (Sun enters Capricornus)

Names and Characters of the Principal Planets.

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

Names and Characters of the Aspects.

♁ Conjunction, or in the same degree.	♁ Dragon's Head, or Ascending Node.
♁ Quadrature, 90 degrees.	♁ Dragon's Tail, or Descending Node.
♁ Opposition, or 180 degrees.	

Calendar Page Explanations and Signs

On the right hand pages (23-45) you will find every now and again the symbols given above conjoined in groups of three to give you what is happening in the heavens. See Glossary, Page 125. Example: ☉♃♁ on Page 23, opposite Jan. 10 means Jupiter (♃) and the moon (♁) are on that day in conjunction (♁), or nearest to each other.

Weather Forecasts

For the U.S.A. in general, see Page 17 and italics on pages 23-45, next to the Farmer's Calendars. For specific weather forecasts in eight different climatic areas, see pages 92-119.

Planting Tables

See Page 53. Usual planting dates as well as those *most favored by the moon* are given for most parts of the U.S.A. Favorable signs are also included. See Pages 22-44 for the days on which these occur. Also see Page 56.

Astrology Signs and Meanings

See Pages 56-59 for birth date superstitions as well as those pertaining to brush cutting, weaning, planting, marriage, etc.

Planets

See Pages 46-47. Which planet is shining so brightly for you? These pages will help you to know. Also, the configurations these planets are making with each other are given in the symbols on Pages 23-45. Astrologers as well as students of the varying strength of radio and television signals find these configurations useful.

Tides

See Pages 22-44 for the times of morning and evening high tides, Pages 23-45 for the heights of these tides. Page 89 gives the corrections needed for your locality.

Regional Sun, Moon, etc., Times

See Part III, page 92, for correcting the times (given for Boston only on pages 22 to 44) for your area. There are separate correction tables for eight different areas — in one of which you will find yours: see pages 92-119.

Questions gladly answered free of charge if accompanied by self-addressed, stamped envelope mailed to: THE OLD FARMER'S ALMANAC, DUBLIN, N. H., 03444.

1969]

JANUARY, FIRST MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	0 /	Days.	0 /	Days.	0 /	Days.	0 /	Days.	0 /
	1	22s.59		7	22 20	13	21 25	19	20 16	25
2	22 54		8	22 12	14	21 15	20	20 03	26	18 38
3	22 48		9	22 04	15	21 04	21	19 50	27	18 23
4	22 41		10	21 55	16	20 53	22	19 36	28	18 07
5	22 35		11	21 45	17	20 41	23	19 22	29	17 51
6	22 28		12	21 36	18	20 29	24	19 08	30	17 34

○ Full Moon, 3rd day, 1 h. 28 m., evening, E.

☾ Last Quarter, 11th day, 9 h. 01 m., morning, W.

● New Moon, 17th day, 11 h. 59 m., evening, E.

☽ First Quarter, 25th day, 3 h. 24 m., morning, W.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGE 14

Day of Year	Day of Month	Day of Week	☉ Rises h. m.	☉ Key	☉ Sets h. m.	☉ Key	Length of Days h. m.	Sun Fast m.	Full Sea, Boston. Morn. h. Eve. h.	☽ Rises h. m.	☽ Key	☽ Sets h. m.	☽ Key	☽ Place	☽ Age	
1	1	W.	7 13	o	4 23	c	9 10	12	9 $\frac{1}{2}$	10	2 ^P 19	A	5 ^A 48	P	G'M	13
2	2	Th.	7 13	o	4 24	c	9 11	12	10 $\frac{1}{4}$	10 $\frac{3}{4}$	3 07	A	6 45	Q	CNC	14
3	3	Fr.	7 13	o	4 25	c	9 12	11	10 $\frac{3}{4}$	11 $\frac{1}{2}$	4 04	B	7 34	Q	—	—
4	4	Sa.	7 13	o	4 26	c	9 13	11	11 $\frac{1}{2}$	—	5 06	B	8 16	P	CNC	15
5	5	E	7 13	o	4 27	c	9 14	10	0	0 $\frac{1}{4}$	6 11	D	8 49	O	CNC	16
6	6	M.	7 13	N	4 28	D	9 15	10	0 $\frac{3}{4}$	0 $\frac{3}{4}$	7 18	E	9 17	M	LEO	18
7	7	Tu.	7 13	N	4 29	D	9 16	9	1 $\frac{1}{2}$	1 $\frac{1}{2}$	8 25	F	9 41	L	LEO	19
8	8	W.	7 13	N	4 30	D	9 17	9	2	2 $\frac{1}{4}$	9 31	H	10 02	K	VIR	20
9	9	Th.	7 12	N	4 31	D	9 18	9	2 $\frac{3}{4}$	3	10 36	I	10 21	I	VIR	21
10	10	Fr.	7 12	N	4 32	D	9 20	8	3 $\frac{1}{2}$	3 $\frac{1}{4}$	11 ^P 47	K	10 41	H	LIB	22
11	11	Sa.	7 12	N	4 33	D	9 21	8	4 $\frac{1}{4}$	4 $\frac{3}{4}$	—	—	11 02	G	LIB	23
12	12	E	7 12	N	4 34	D	9 22	7	5	5 $\frac{1}{2}$	1 ^A 00	L	11 26	E	SCO	24
13	13	M.	7 11	N	4 35	D	9 24	7	6	6 $\frac{3}{4}$	2 17	N	11 ^A 56	D	SCO	25
14	14	Tu.	7 11	N	4 36	D	9 25	7	7	7 $\frac{3}{4}$	3 37	O	12 ^P 35	C	SGR	26
15	15	W.	7 10	N	4 37	D	9 27	6	8	8 $\frac{3}{4}$	4 56	P	1 27	B	SGR	27
16	16	Th.	7 10	N	4 39	D	9 29	6	9	9 $\frac{3}{4}$	6 08	Q	2 33	A	CAP	28
17	17	Fr.	7 09	N	4 40	D	9 30	6	10	10 $\frac{3}{4}$	7 08	P	3 50	B	CAP	29
18	18	Sa.	7 09	N	4 41	D	9 32	5	11	11 $\frac{1}{2}$	7 53	O	5 12	D	AQR	1
19	19	E	7 08	N	4 42	D	9 34	5	11 $\frac{3}{4}$	—	8 29	M	6 34	E	AQR	2
20	20	M.	7 08	N	4 44	D	9 36	5	0 $\frac{1}{2}$	0 $\frac{3}{4}$	8 57	L	7 51	G	PSC	3
21	21	Tu.	7 07	N	4 45	D	9 38	4	1 $\frac{1}{4}$	1 $\frac{1}{2}$	9 19	K	9 04	H	PSC	4
22	22	W.	7 06	N	4 46	D	9 40	4	2	2 $\frac{1}{2}$	9 40	I	10 13	J	ARI	5
23	23	Th.	7 06	N	4 47	D	9 42	4	3	3 $\frac{1}{4}$	9 59	H	11 ^P 20	K	ARI	6
24	24	Fr.	7 05	N	4 49	D	9 44	4	3 $\frac{3}{4}$	4	10 19	F	—	—	TAU	7
25	25	Sa.	7 04	N	4 50	D	9 46	3	4 $\frac{1}{2}$	5	10 41	E	12 ^A 26	L	TAU	8
26	26	E	7 03	M	4 51	E	9 48	3	5 $\frac{1}{2}$	6	11 07	D	1 32	N	TAU	9
27	27	M.	7 02	M	4 52	E	9 50	3	6 $\frac{1}{4}$	7	11 ^A 37	B	2 37	O	G'M	10
28	28	Tu.	7 01	M	4 54	E	9 52	3	7 $\frac{1}{4}$	8	12 ^P 15	B	3 40	P	G'M	11
29	29	W.	7 00	M	4 55	E	9 55	3	8	8 $\frac{3}{4}$	1 00	A	4 39	Q	CNC	12
30	30	Th.	6 59	M	4 56	E	9 57	2	9	9 $\frac{1}{2}$	1 55	A	5 31	Q	CNC	13
31	31	Fr.	6 58	M	4 58	E	9 59	2	9 $\frac{3}{4}$	10 $\frac{1}{4}$	2 ^P 56	B	6 ^A 15	P	CNC	14

JANUARY hath 31 days.

[1969



No time now for self pity or ranking despair
 But bless the power that rules the changing year:
 Assured . . . though horrors round his cottage reign
 That Spring will come, and Nature smile again.

Robert Bloomfield

D. M.	D. W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓	Farmer's Calendar.
1	W.	Circumcision ☾ In Apo {9.4 ☾ Apo {8.0	Blizzards	Through the ages natural forces have been shaping and reshaping our earth. Earthquakes, volcanic eruptions, fire, hurricanes, and floods —
2	Th.	☾ runs • UNLUCKY Tides {9.5 High DAY {8.1	Great	man suffers the immediate havoc of these. But by these, in the infinite patience and pattern of time, the living balance of the earth is created. And it is by this man lives.
3	Fr.	The Full Wolf ☾ • closest {9.8 Moon 1.28 P.M. to Earth {8.2	Plains,	The floods of our great rivers, the billions of tons of erosion soils, have added quite measurably, even in our time, to the river deltas. Our market gardens, groves, and orchards in Texas, Louisiana, California, in the Connecticut Valley, are of the rich, settled soils of food and erosion.
4	Sa.	☾ Stat. • Louis Braille {9.7 in R.A. • born 1809	East and	Hurricanes, felling our trees and lifting their roots and the clinging earth, bring air and light and new minerals to sterile woodlands. In a true sense the hurricane is earth-worm and plough.
5	E	2nd S. a. Ch. 12TH NITE {8.3 Take down {9.7	South	The peasant grows his coffee trees or tends his vines on the fertile slopes of the terrible volcano. If it erupts, he, or other generations will return to even richer land.
6	M.	Epiph. Xmas greens {8.4 Latest sunrises {9.7	heavy	A forest fire warms and bursts the seeds that have lain dormant in the forest floor. Indeed, for the Douglas firs and the redwoods, fire is a chief means of procreation, as it is for the buffalo grass of our prairies.
7	Tu.	Dec. 28-Jan. 8 Tides {8.6 ☾ Stat. in Tides {9.6	rains.	While man may suffer immediately from earth's violence, he can destroy far more swiftly and permanently than nature (witness his few generations on this continent). Just possibly he is learning to understand this.
8	W.	☾ R.A. in Tides {8.7 Hol. ☾ R.A. in Tides {9.4 La.	Gales	
9	Th.	☾ on Best throw of dice ☾ Eq. is to throw them away	b(e)low	
10	Fr.	☾ ☽ • ☽ ☽ ☽ Tides {9.0 ☽ ☽ ☽ {8.9	zero.	
11	Sa.	Water gone over the dam won't run the mill wheel	Have	
12	E	1st S. a. Ep. ☽ ☽ ☽ {9.4 ☽ ☽ ☽ {8.5	fun	
13	M.	☽ Gr. El. • Star in flag for ☽ E. every star 1794	Winter's	
14	Tu.	St. Hilary coldest day ☽ ☽ ☽ Tides {10.1 Sperm whales migrating {8.5 off Nantucket & Calif. {9.6	just	
15	W.	☾ in rides • Tides {10.8 ☾ Perl. low {9.0	No use	
16	Th.	Druids began {11.2 Arbor New Year {9.4 Day-Fla.	to cavil,	
17	Fr.	[19] ☽ ☽ • ☽ Stat. {11.4 [th] ☽ ☽ • ☽ in R.A. • {9.7	no good	
18	Sa.	2nd a. Ep R. E. Lee {11.4 Hol. ☽ Stat. • birthday — So. for	So. for	
19	E	Inaugural D. Y. ☽ Stat. {9.9 ☽ in R.A. • {11.2	travel.	
20	M.	☽ ☽ Stonewall Jackson {10.0 ☽ born 1824 {10.7	Floods	
21	Tu.	De-tar chimneys ☾ Eq. Tides {9.9 ☾ Eq. {10.1	of	
22	W.	Praise doth a wise man good — a fool harm	mud.	
23	Th.	☽ ☽ Churchhill Tides {9.5 d. 1965 {8.8	Beware	
24	Fr.	Conversion. Clouds darken sky of St. Paul livestock will die	of days	
25	Sa.	3rd a. Ep. ☽ Gr. El. Hol. {9.0 ☽ E Ark. {7.7	so	
26	E	Nat'l Geographic Tides {8.8 Soc. fd. 1888 {7.5	fair.	
27	M.	☾ in City of Boston {8.7 ☾ Apo. • disappeared 1870 {7.4	Lots of	
28	Tu.	☽ ☽ Inf. • ☽ ☽ ☽ Tides {8.8 ☽ ☽ ☽ {7.5	trouble,	
29	W.	Lifeboats • F.D.R. • Hol. 1st use 1790 • Day Ky.	storm's	
30	Th.	Raccoons • As day lengthens mating the cold strengthens	double.	
31	Fr.			

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FEBRUARY, SECOND MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.		0 /		Days.		0 /		Days.		0 /		Days.		0 /	
	1	17s.	01	7	15 12	13	13 15	19	11 10	25	8 58					
2	16	43	8	14 54	14	12 55	20	10 48	26	8 36						
3	16	26	9	14 34	15	12 34	21	10 27	27	8 13						
4	16	08	10	14 15	16	12 13	22	10 05	28	7 51						
5	15	50	11	13 55	17	11 52	23	9 43								
6	15	31	12	13 35	18	11 31	24	9 21								

- Full Moon, 2nd day, 7 h. 56 m., morning, W.
- ☾ Last Quarter, 9th day, 7 h. 09 m., evening, E.
- New Moon, 16th day, 11 h. 26 m., morning, E.
- ☽ First Quarter, 23rd day, 11 h. 31 m., evening, W.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☉ Rises h. m.	☉ Key	☉ Sets h. m.	☉ Key	Length of Days h. m.	Sun Fast m.	Full Sea, Boston. Morn. h. Eve. h.	☽ Rises h. m.	☽ Key	☽ Sets h. m.	☽ Key	☽ Place	☽ Age
32	1	Sa.	6 57	M	4 59	E	10 01	2	10 $\frac{1}{2}$	11	4 $\frac{P}{M}$ 01	C	6 $\frac{A}{M}$ 51	O	LEO 15
33	2	E	6 56	M	5 00	E	10 04	2	11	11 $\frac{1}{2}$	5 08	E	7 21	N	— —
34	3	M.	6 55	M	5 01	E	10 06	2	11 $\frac{3}{4}$	—	6 16	F	7 45	M	LEO 16
35	4	Tu.	6 54	M	5 03	E	10 09	2	0 $\frac{1}{4}$	0 $\frac{1}{2}$	7 24	G	8 07	K	VIR 17
36	5	W.	6 53	M	5 04	E	10 11	2	1	1	8 31	I	8 27	J	VIR 18
37	6	Th.	6 52	M	5 05	E	10 13	2	1 $\frac{1}{2}$	1 $\frac{3}{4}$	9 40	J	8 47	H	LIB 19
38	7	Fr.	6 51	M	5 07	E	10 16	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	10 $\frac{P}{M}$ 50	L	9 07	G	LIB 20
39	8	Sa.	6 50	L	5 08	F	10 18	2	3	3 $\frac{1}{4}$	—	—	9 29	F	SCO 21
40	9	E	6 48	L	5 09	F	10 21	2	3 $\frac{3}{4}$	4 $\frac{1}{4}$	12 $\frac{A}{M}$ 04	M	9 57	D	SCO 22
41	10	M.	6 47	L	5 11	F	10 23	1	4 $\frac{1}{2}$	5 $\frac{1}{4}$	1 21	O	10 31	C	SCO 23
42	11	Tu.	6 46	L	5 12	F	10 26	1	5 $\frac{1}{2}$	6 $\frac{1}{4}$	2 38	P	11 $\frac{A}{M}$ 16	B	SGR 24
43	12	W.	6 45	L	5 13	F	10 29	1	6 $\frac{3}{4}$	7 $\frac{1}{2}$	3 51	Q	12 $\frac{P}{M}$ 13	A	SGR 25
44	13	Th.	6 43	L	5 14	F	10 31	1	7 $\frac{3}{4}$	8 $\frac{1}{2}$	4 54	Q	1 23	B	CAP 26
45	14	Fr.	6 42	L	5 16	F	10 34	2	8 $\frac{3}{4}$	9 $\frac{1}{2}$	5 45	O	2 42	C	CAP 27
46	15	Sa.	6 40	L	5 17	F	10 37	2	9 $\frac{3}{4}$	10 $\frac{1}{2}$	6 24	N	4 04	D	AQR 28
47	16	E	6 39	L	5 18	F	10 39	2	10 $\frac{3}{4}$	11 $\frac{1}{4}$	6 54	M	5 23	F	AQR 0
48	17	M.	6 38	L	5 20	F	10 42	2	11 $\frac{1}{2}$	—	7 19	K	6 39	G	PSC 1
49	18	Tu.	6 36	L	5 21	F	10 45	2	0	0 $\frac{1}{2}$	7 41	J	7 51	I	PSC 2
50	19	W.	6 35	L	5 22	F	10 47	2	0 $\frac{3}{4}$	1 $\frac{1}{4}$	8 01	H	9 01	J	ARI 3
51	20	Th.	6 33	K	5 23	G	10 50	2	1 $\frac{1}{2}$	2	8 21	G	10 09	L	ARI 4
52	21	Fr.	6 32	K	5 25	G	10 53	2	2 $\frac{1}{4}$	2 $\frac{3}{4}$	8 43	F	11 $\frac{P}{M}$ 17	M	TAU 5
53	22	Sa.	6 30	K	5 26	G	10 56	2	3	3 $\frac{1}{2}$	9 07	D	—	—	TAU 6
54	23	E	6 29	K	5 27	G	10 59	2	4	4 $\frac{1}{2}$	9 36	C	12 $\frac{A}{M}$ 23	O	G'M 7
55	24	M.	6 27	K	5 29	G	11 01	2	4 $\frac{3}{4}$	5 $\frac{1}{4}$	10 10	B	1 28	P	G'M 8
56	25	Tu.	6 26	K	5 30	G	11 04	3	5 $\frac{1}{2}$	6 $\frac{1}{4}$	10 53	A	2 29	Q	G'M 9
57	26	W.	6 24	K	5 31	G	11 07	3	6 $\frac{1}{2}$	7 $\frac{1}{4}$	11 $\frac{A}{M}$ 44	A	3 24	Q	CNC 10
58	27	Th.	6 23	K	5 32	G	11 10	3	7 $\frac{1}{2}$	8 $\frac{1}{4}$	12 $\frac{I}{M}$ 43	B	4 11	Q	CNC 11
59	28	Fr.	6 21	K	5 34	G	11 13	3	8 $\frac{1}{2}$	9	1 $\frac{P}{M}$ 47	C	4 $\frac{A}{M}$ 50	P	LEO 12



Believe me, Lucy Larcom, it gives me real sorrow
That I cannot take my carpet bag and
Go to town tomorrow;
But I'm "snowbound" and cold on cold,
Like layers of an onion
Have piled my back, and weighed me down,
As with the pack of Bunyan.
John G. Whittier, 1866

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓	Farmer's Calendar.
1	Sa.	St. Bridget Tides { 9.5 8.3	Tempest	<p>In days before farms in the Ossipee mountains had grown up to hardwood and pine, weather was considered a local matter. We knew nothing of radio meteorologists and had never heard of areas of high or low pressure. We did have an <i>Old Farmer's Almanac</i>, hanging somewhere in the kitchen; but the weather forecaster we really depended on was Bobby, the tame woodchuck who hibernated under the barn.</p> <p>Unlike the proverbial groundhog, Bobby didn't come out on Candlemas Day only. Some winters he appeared before Christmas, and he wasted no time looking for shadows. He needed food and knew the place to ask for it was at the kitchen door!</p> <p>When he had eaten an apple and a doughnut or two, he might return to his hole under the barn; or he might stay around the yard for days. He usually awakened several times during the winter and came to the door for food. Generally he did so before a period of extremely cold weather, so that the cry of, "The woodchuck is out," became a signal for preparations for a blizzard.</p> <p>We have often wondered how he knew.</p>
2	E	Sept. S. Full Snow Moon 7.56 A.M. { 9.9	Fugit,	
3	M.	The four Chaplains until Apr. 13 { —	ground-	
4	Tu.	A bad agreement better than a good lawsuit { 8.9 9.9	hoggy's	
5	W.	A day of dire calamity • 94 below Siberia 1892	soggy.	
6	Th.	♁♂♄ • ♁♃♄ • ♁♂♄ On Eq. { 9.4 9.6	Earth's	
7	Fr.	Babe Ruth • So was born 1894 Dickens (1812)	meteor	
8	Sa.	Sundials about correct (9-14) Tides { 9.7 9.0	crossing,	
9	E	Str. S. ♁ Stat. ♁ in R.A. { 9.7 8.6	starts ships	
10	M.	♁♂♄ • ♁♃♄ Tides { 9.7 8.3	tossing.	
11	Tu.	Norton, Kansas Meteorite, 1948 Tides { 9.7 8.1	Lincoln's	
12	W.	Lincoln's Birthday ♁rides low { 9.9 8.2	storm	
13	Th.	♁ Peri. • ♁♃♄ Tides { 10.1 8.5	is warm.	
14	Fr.	St. Val. { 10.5 Adm. • Hol. 9.0 Day Ariz.	No causes	
15	Sa.	Gallio S. B. Anthony b. 1564 Day — Minn.	for alarm.	
16	E	Shrove S. Boston Harbor frozen 1869 { 11.0 9.9	Drifts	
17	M.	Wash. Day, • Chnese New Year { 11.0	up to	
18	Tu.	Shrove Tu. Mardi Gras ♁♂♄ on Fla. Eq. { 10.2 9.9	snowshoes	
19	W.	Ash W. ♁♂♄ acq. 1819	make	
20	Th.	Auld deer worst in year ♁♃♄ { 10.2 9.9	Worc. Art Mus. pd. \$75,000 for Its Gainsborough 1919	
21	Fr.	Worc. Art Mus. pd. \$75,000 for Its Gainsborough 1919	a must.	
22	Sa.	Wash. B'day ♁♂♃ { 9.6 8.5	Pass	
23	E	1st S. Lent ♁ Gr. El. { 9.2 8.0	please,	
24	M.	MATTHIAS • "Pellon upon APOSTLE • Ossa" 1717 { 8.8 7.5	the	
25	Tu.	♁ Apo. in U. S. Steel first billion \$ corp.	anti-freeze.	
26	W.	♁ runs • Ember Days high 26, 28, Mar. 1 { 8.4 7.2	Be gay	
27	Th.	When you are all agreed on the time, I'll make it rain { 8.5 7.4	while	
28	Fr.	World Prayer • 1958 — Heavy snow at Buffalo { 8.8 7.8	ye may.	

February's moon looks down the chimney. If the groundhog sees his shadow on February 2nd, there'll be 6 more weeks of Wlnter.

Carroll County Independent

1969]

MARCH, THIRD MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.			Days.			Days.			Days.		
	1	0 /	Days.	0 /	Days.	0 /	Days.	0 /	Days.	0 /	Days.	
	7s. 28	7	5 09	13	2 48	19	0 26	25	1 56			
	7 05	8	4 46	14	2 25	20	0s. 02	26	2 19			
	6 42	9	4 23	15	2 01	21	0N. 21	27	2 43			
	6 19	10	3 59	16	1 37	22	0 45	28	3 06			
	5 56	11	3 35	17	1 13	23	1 09	29	3 29			
	5 33	12	3 12	18	0 50	24	1 33	30	3 53			

○ Full Moon, 4th day, 12 h. 18 m., morning, W.

☾ Last Quarter, 11th day, 2 h. 45 m., morning, E.

● New Moon, 17th day, 11 h. 52 m., evening, E.

☽ First Quarter, 25th day, 7 h. 49 m., evening, W.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☉		Key	Length of Days	Sun Fast	Full Sea, Boston.		☽	Key	☽	Key	☽	☽
			Rises	Sets				Morn	Eve.						
60	1	Sa.	6 19	K 5 35	G	11 15	3	9 $\frac{1}{4}$	9 $\frac{3}{4}$	2 $\frac{P}{M}$ 54	D	5 $\frac{A}{M}$ 22	N	LEO	13
61	2	E	6 18	K 5 36	G	11 18	4	10	10 $\frac{1}{2}$	4 02	E	5 49	M	LEO	14
62	3	M.	6 16	K 5 37	G	11 21	4	10 $\frac{1}{2}$	11	5 11	G	6 12	L	VIR	16
63	4	Tu.	6 14	K 5 38	H	11 24	4	11 $\frac{1}{4}$	11 $\frac{3}{4}$	6 19	H	6 32	J	—	—
64	5	W.	6 13	J 5 39	H	11 27	4	—	0	7 29	J	6 52	I	VIR	17
65	6	Th.	6 11	J 5 41	H	11 29	4	0 $\frac{1}{4}$	0 $\frac{3}{4}$	8 41	K	7 12	G	LIB	18
66	7	Fr.	6 09	J 5 42	H	11 32	5	1	1 $\frac{1}{2}$	9 55	M	7 34	F	LIB	19
67	8	Sa.	6 08	J 5 43	H	11 35	5	1 $\frac{3}{4}$	2 $\frac{1}{4}$	11 $\frac{P}{M}$ 11	N	8 00	E	SCO	20
68	9	E	6 06	J 5 44	H	11 38	5	2 $\frac{1}{2}$	3	—	—	8 32	C	SCO	21
69	10	M.	6 04	J 5 45	H	11 41	5	3 $\frac{1}{4}$	4	12 $\frac{A}{M}$ 28	P	9 12	B	SGR	22
70	11	Tu.	6 03	J 5 47	H	11 44	6	4 $\frac{1}{4}$	5	1 42	Q	10 05	A	SGR	23
71	12	W.	6 01	J 5 48	H	11 47	6	5 $\frac{1}{2}$	6	2 47	Q	11 $\frac{A}{M}$ 10	A	CAP	24
72	13	Th.	5 59	J 5 49	H	11 50	6	6 $\frac{1}{2}$	7 $\frac{1}{4}$	3 40	P	12 $\frac{P}{M}$ 24	B	CAP	25
73	14	Fr.	5 58	J 5 50	H	11 52	7	7 $\frac{1}{2}$	8 $\frac{1}{4}$	4 22	O	1 42	D	AQR	26
74	15	Sa.	5 56	J 5 51	I	11 55	7	8 $\frac{3}{4}$	9 $\frac{1}{4}$	4 54	M	3 01	E	AQR	27
75	16	E	5 54	I 5 52	I	11 58	7	9 $\frac{1}{2}$	10 $\frac{1}{4}$	5 20	L	4 17	G	PSC	28
76	17	M.	5 52	I 5 54	I	12 01	7	10 $\frac{1}{2}$	11	5 43	J	5 30	H	PSC	29
77	18	Tu.	5 51	I 5 55	I	12 04	8	11 $\frac{1}{4}$	11 $\frac{3}{4}$	6 03	I	6 40	J	ARI	1
78	19	W.	5 49	I 5 56	I	12 07	8	—	0	6 23	H	7 50	K	ARI	2
79	20	Th.	5 47	I 5 57	I	12 10	8	0 $\frac{1}{2}$	0 $\frac{3}{4}$	6 44	F	8 58	M	TAU	3
80	21	Fr.	5 46	I 5 58	I	12 13	9	1	1 $\frac{1}{2}$	7 08	E	10 07	N	TAU	4
81	22	Sa.	5 44	I 5 59	I	12 16	9	1 $\frac{3}{4}$	2 $\frac{1}{4}$	7 34	C	11 $\frac{P}{M}$ 13	O	TAU	5
82	23	E	5 42	I 6 00	I	12 18	9	2 $\frac{1}{2}$	3	8 07	B	—	—	G'M	6
83	24	M.	5 40	I 6 02	I	12 21	9	3 $\frac{1}{4}$	3 $\frac{3}{4}$	8 46	A	12 $\frac{A}{M}$ 17	P	G'M	7
84	25	Tu.	5 39	I 6 03	I	12 24	10	4	4 $\frac{3}{4}$	9 34	A	1 15	Q	CNC	8
85	26	W.	5 37	I 6 04	J	12 27	10	5	5 $\frac{1}{2}$	10 29	A	2 05	Q	CNC	9
86	27	Th.	5 35	H 6 05	J	12 30	10	6	6 $\frac{1}{2}$	11 $\frac{A}{M}$ 31	B	2 47	P	CNC	10
87	28	Fr.	5 33	H 6 06	J	12 33	11	7	7 $\frac{1}{2}$	12 $\frac{P}{M}$ 37	C	3 22	O	LEO	11
88	29	Sa.	5 32	H 6 07	J	12 36	11	7 $\frac{3}{4}$	8 $\frac{1}{4}$	1 44	E	3 50	N	LEO	12
89	30	E	5 30	H 6 08	J	12 38	11	8 $\frac{1}{2}$	9	2 53	F	4 14	L	VIR	13
90	31	M.	5 28	H 6 09	J	12 41	12	9 $\frac{1}{2}$	9 $\frac{3}{4}$	4 $\frac{P}{M}$ 01	H	4 $\frac{A}{M}$ 36	K	VIR	14



Hail this first day of Spring!
 Consider the snow and hail it doth bring.
 For one more month we'll shiver and freeze
 In winds that seem below zero by 20 degrees.
 R. S.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓	Farmer's Calendar.
1	Sa.	St. David Ψ Stat. • State • Hol. <i>Gray</i>	in R.A. Day • Neb. {9.5	<p>There are few cooperages in New England, fewer elsewhere. But recently I visited one in southern New Hampshire that, after 94 years, is very much alive and prospering. Last year it used 2½ million board feet of white pine (the lumbering of 8,000 acres).</p> <p>Its products are chiefly barrels and pails of various sizes and many uses — great barrels, fish pails, ice buckets, waste baskets. Special items are surprising, such as 50,000 ice cream freezers for a mail order house. Looking to the competition from metals and plastics, the company has a line of some 60 novelties, such as beer mugs, ash trays, miniature Conastoga wagons.</p> <p>In the cooperage trade of Early America, coopers used many woods for many purposes, often several kinds in a single product, like the sap bucket with its sumac spig-got, maple back, birch staves, and hickory bindings. But in this company eastern white pine alone is used. And everywhere in the complex of whirring belts and shrieking saws — band saws, curved saws for the staves, the "merry-go-round" saw for the heads — is the rich, resinous smell of it.</p> <p>Operations are basically those of the ancient cooperage, and employees specialists in their jobs. To fit staves just tightly enough within the ring, for instance, is a craftsman's skill.</p> <p>From the roaring furnace to the final products, pine is the single utility. And there is no waste.</p>
2	E	2nd S. I. Ind. • Day • Tex. {8.7	days.	
3	M.	World's worst R.R. Disaster (2nd 1844	{9.8 <i>Spurious</i>	
4	Tu.	Purim Full Worm Moon 12.18 A.M.	Tides {10.0 and 9.6	
5	W.	♁♂♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓	On Eq. {10.0 <i>furious.</i>	
6	Th.	A wise man changes his mind, a fool never will	{9.9 <i>Blasts</i>	
7	Fr.	Luther • Maple sap Burbank • running	{10.2 9.8 <i>from the</i>	
8	Sa.	[19 Swallows return to th San Capistrano, Calif.]	<i>Winter</i>	
9	E	3rd S. I. ♂Ψ♃ Tides	{10.2 9.0 <i>just</i>	
10	M.	Jos. C. Lincoln died Irving Cobb 1944	♁♂♃ {10.1 8.6 <i>past.</i>	
11	Tu.	Blizzard of 1888	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {9.8 8.2 <i>Traditionally</i>	
12	W.	Saint Gregory	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {9.7 8.1 <i>uncertain</i>	
13	Th.	Wilson back to Paris 1919	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {9.7 8.1 <i>as Spring</i>	
14	Fr.	♁♂♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓	{15.0 15.0 <i>drops its</i>	
15	Sa.	Ides begin, beware of Old Colind	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {9.7 8.1 <i>curtain.</i>	
16	F	4th S. I. ♂♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓	{10.4 9.8 <i>South &</i>	
17	M.	St. Patrick ♀ Stat. • in R.A. • Ann. Ecl.	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {9.8 8.2 <i>midwest</i>	
18	Tu.	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓	{20.0 20.0 <i>in throes</i>	
19	W.	[21st 8♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {21.0 21.0 <i>of bad</i>	
20	Th.	Spring begins 2.08 P.M.	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {2.08 2.08 <i>tornadoes.</i>	
21	Fr.	Geo. Wash. by Gilbert Stuart brought \$75,000 from Frick '19	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {19.0 19.0 <i>Cold</i>	
22	Sa.	Earliest poss. Easter date	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {19.0 19.0 <i>gales</i>	
23	E	Passion S. Tides	{9.6 8.4 <i>burgeon</i>	
24	M.	Troops sail for Louisiana 1744	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {9.1 7.9 <i>all</i>	
25	Tu.	ANNUNC. Lady • Day • Apo.	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {9.1 7.9 <i>sails.</i>	
26	W.	Skunk cabbage flowering	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {9.1 7.9 <i>March</i>	
27	Th.	U. S. Navy fd. 1794	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {8.4 7.4 <i>was</i>	
28	Fr.	Savannah 1st str. cross Atlantic 1819	Tides {8.5 7.6 <i>adverse,</i>	
29	Sa.	God keep me from still water From rough I'll keep myself	<i>April</i>	
30	E	Palm S. Day	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {8.5 7.6 <i>will be</i>	
31	M.	L. B. J. decides not to run 1968	♃♄♅♆♇♈♉♊♋♌♍♎♏♐♑♒♓ {8.5 7.6 <i>worse.</i>	

1969]

APRIL, FOURTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.		0 /		Days.		0 /		Days.		0 /		Days.		0 /	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	4N.40	7	6	46	13	9	09	19	11	17	25	13	17			
	5 03	8	7	19	14	9	31	20	11	37	26	13	37			
	5 26	9	7	41	15	9	52	21	11	58	27	13	56			
	5 48	10	8	04	16	10	14	22	12	18	28	14	15			
	6 11	11	8	26	17	10	35	23	12	38	29	14	33			
	6 34	12	8	48	18	10	56	24	12	58	30	14	52			

- Full Moon, 2nd day, 1 h. 46 m., evening, E.
 ☾ Last Quarter, 9th day, 8 h. 59 m., morning, W.
 ● New Moon, 16th day, 1 h. 16 m., evening, W.
 ☽ First Quarter, 24th day, 2 h. 45 m., evening, E.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☉ Rises h. m.	☉ Key	☉ Sets h. m.	☉ Key	Length of Days h. m.	Sun Fast	Full Sea, Boston. Morn. h. m.	Even. h. m.	☾ Rises h. m.	☾ Key	☾ Sets h. m.	☾ Key	☾ Place	☾ Age
91	1	Tu.	5 26	H	6 11	J	12 44	12	10 $\frac{1}{2}$	5 ^P _M 11	I	4 ^A _M 56	J	LIB	15	
92	2	W.	5 25	H	6 12	J	12 47	12	10 $\frac{3}{4}$	11 6 23	K	5 15	H	—	—	
93	3	Th.	5 23	H	6 13	J	12 50	12	11 $\frac{1}{2}$	11 $\frac{3}{4}$ 7 38	L	5 37	G	LIB	16	
94	4	Fr.	5 21	H	6 14	J	12 53	13	—	0 $\frac{1}{4}$ 8 56	N	6 02	E	SCO	17	
95	5	Sa.	5 20	H	6 15	J	12 56	13	0 $\frac{1}{2}$	1 10 16	O	6 32	D	SCO	18	
96	6	E	5 18	H	6 16	J	12 58	13	1 $\frac{1}{4}$	2 11 ^P _M 32	P	7 11	B	SGR	19	
97	7	M.	5 16	H	6 17	K	13 01	14	2	2 $\frac{3}{4}$ —	—	8 00	A	SGR	20	
98	8	Tu.	5 15	G	6 18	K	13 04	14	3	3 $\frac{3}{4}$ 12 ^A _M 41	Q	9 02	A	CAP	21	
99	9	W.	5 13	G	6 20	K	13 07	14	4	4 $\frac{3}{4}$ 1 38	P	10 14	B	CAP	22	
100	10	Th.	5 11	G	6 21	K	13 10	14	5 $\frac{1}{4}$	6 2 23	O	11 ^A _M 31	C	AQR	23	
101	11	Fr.	5 10	G	6 22	K	13 11	15	6 $\frac{1}{4}$	7 2 57	N	12 ^P _M 47	E	AQR	24	
102	12	Sa.	5 08	G	6 23	K	13 15	15	7 $\frac{1}{2}$	8 3 24	L	2 02	F	PSC	25	
103	13	E	5 06	G	6 24	K	13 18	15	8 $\frac{1}{2}$	9 3 47	K	3 15	H	PSC	26	
104	14	M.	5 05	G	6 25	K	13 21	16	9 $\frac{1}{2}$	9 $\frac{3}{4}$ 4 08	J	4 24	I	PSC	27	
105	15	Tu.	5 03	G	6 26	K	13 23	16	10 $\frac{1}{4}$	10 $\frac{1}{2}$ 4 27	H	5 33	K	ARI	28	
106	16	W.	5 01	G	6 27	K	13 26	16	11	11 $\frac{1}{4}$ 4 48	G	6 41	L	ARI	29	
107	17	Th.	5 00	G	6 29	K	13 29	16	11 $\frac{3}{4}$	— 5 09	E	7 50	M	TAU	1	
108	18	Fr.	4 58	G	6 30	K	13 32	16	0	0 $\frac{1}{4}$ 5 35	D	8 57	O	TAU	2	
109	19	Sa.	4 57	G	6 31	K	13 34	17	0 $\frac{1}{2}$	1 6 05	C	10 03	P	G'M	3	
110	20	E	4 55	F	6 32	L	13 37	17	1 $\frac{1}{4}$	1 $\frac{3}{4}$ 6 42	B	11 04	Q	G'M	4	
111	21	M.	4 53	F	6 33	L	13 40	17	2	2 $\frac{1}{2}$ 7 26	A	11 ^P _M 58	Q	G'M	5	
112	22	Tu.	4 52	F	6 34	L	13 42	17	2 $\frac{1}{2}$	3 $\frac{1}{4}$ 8 18	A	—	—	CNC	6	
113	23	W.	4 50	F	6 35	L	13 45	17	3 $\frac{1}{2}$	4 9 18	B	12 ^A _M 43	P	CNC	7	
114	24	Th.	4 49	F	6 36	L	13 48	18	4 $\frac{1}{4}$	5 10 21	C	1 20	P	LEO	8	
115	25	Fr.	4 47	F	6 38	L	13 50	18	5 $\frac{1}{4}$	6 11 ^A _M 27	D	1 50	N	LEO	9	
116	26	Sa.	4 46	F	6 39	L	13 53	18	6 $\frac{1}{4}$	6 $\frac{3}{4}$ 12 ^P _M 34	F	2 15	M	VIR	10	
117	27	E	4 45	F	6 40	L	13 55	18	7	7 $\frac{1}{2}$ 1 41	G	2 37	L	VIR	11	
118	28	M.	4 43	F	6 41	L	13 58	18	8	8 $\frac{1}{2}$ 2 50	H	2 57	J	VIR	12	
119	29	Tu.	4 42	F	6 42	L	14 00	18	8 $\frac{3}{4}$	9 4 00	J	3 17	I	LIB	13	
120	30	W.	4 40	F	6 43	L	14 03	19	9 $\frac{1}{2}$	9 $\frac{3}{4}$ 5 ^P _M 14	L	3 ^A _M 39	G	LIB	14	

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MAY, FIFTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.		0 /		Days.		0 /		Days.		0 /		Days.		0 /	
	1	15N.10	7	16 54	13	18 27	19	19 50	25	21 00						
2	15 28	8	17 10	14	18 42	20	20 03	26	21 11							
3	15 46	9	17 26	15	18 56	21	20 15	27	21 21							
4	16 03	10	17 42	16	19 10	22	20 27	28	21 31							
5	16 20	11	17 57	17	19 24	23	20 38	29	21 40							
6	16 37	12	18 13	18	19 37	24	20 49	30	21 49							

○ Full Moon, 2nd day, 12 h. 14 m., morning, W.

☾ Last Quarter, 8th day, 3 h. 12 m., evening, W.

● New Moon, 16th day, 3 h. 27 m., morning, E.

☽ First Quarter, 24th day, 7 h. 16 m., morning, E.

○ Full Moon, 31st day, 8h. 19 m., morning, W.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☉ Rises h. m.	☉ Key	☾ Sets h. m.	☾ Key	Length of Days h. m.	Sun Fast	Full Sea, Boston. Morn. h. Eve. h.	☽ Rises h. m.	☽ Key	☽ Sets h. m.	☽ Key	☽ Place	☽ Age
121	1	Th.	4 39	F	6 44	M	14 05	19	10 $\frac{1}{4}$	10 $\frac{1}{2}$	6 $\frac{P}{M}$ 32	M	4 $\frac{A}{M}$ 02	F	SCO 15
122	2	Fr.	4 38	E	6 45	M	14 08	19	11	11 $\frac{1}{4}$	7 52	O	4 30	D	— —
123	3	Sa.	4 36	E	6 47	M	14 10	19	—	0	9 13	P	5 05	C	SCO 16
124	4	E	4 35	E	6 48	M	14 13	19	0	0 $\frac{3}{4}$	10 29	Q	5 52	B	SGR 18
125	5	M.	4 34	E	6 49	M	14 15	19	1	1 $\frac{1}{2}$	11 $\frac{P}{M}$ 32	P	6 51	A	SGR 19
126	6	Tu.	4 32	E	6 50	M	14 17	19	2	2 $\frac{1}{2}$	—	—	8 02	B	CAP 20
127	7	W.	4 31	E	6 51	M	14 20	19	2 $\frac{3}{4}$	3 $\frac{1}{2}$	12 $\frac{A}{M}$ -1	O	9 19	C	CAP 21
128	8	Th.	4 30	E	6 52	M	14 22	19	4	4 $\frac{1}{2}$	12 59	N	10 38	D	AQR 22
129	9	Fr.	4 29	E	6 53	M	14 24	19	5	5 $\frac{3}{4}$	1 29	M	11 $\frac{A}{M}$ 53	F	AQR 23
130	10	Sa.	4 28	E	6 54	M	14 26	19	6	6 $\frac{3}{4}$	1 52	K	1 $\frac{P}{M}$ 05	G	PSC 24
131	11	E	4 27	E	6 55	M	14 29	19	7	7 $\frac{3}{4}$	2 14	J	2 15	I	PSC 25
132	12	M.	4 25	E	6 56	M	14 31	19	8	8 $\frac{1}{2}$	2 33	I	3 23	J	ARI 26
133	13	Tu.	4 24	E	6 57	M	14 33	19	9	9 $\frac{1}{2}$	2 53	G	4 30	L	ARI 27
134	14	W.	4 23	E	6 58	M	14 35	19	10	10	3 14	F	5 37	M	TAU 28
135	15	Th.	4 22	E	6 59	M	14 37	19	10 $\frac{1}{2}$	10 $\frac{3}{4}$	3 37	D	6 45	N	TAU 29
136	16	Fr.	4 21	D	7 00	N	14 39	19	11 $\frac{1}{4}$	11 $\frac{1}{2}$	4 06	C	7 51	P	TAU 0
137	17	Sa.	4 20	D	7 01	N	14 41	19	—	0	4 40	B	8 54	Q	G'M 1
138	18	E	4 19	D	7 02	N	14 43	19	0	0 $\frac{1}{2}$	5 22	A	9 50	Q	G'M 2
139	19	M.	4 18	D	7 03	N	14 45	19	0 $\frac{3}{4}$	1 $\frac{1}{4}$	6 11	A	10 38	Q	CNC 3
140	20	Tu.	4 17	D	7 04	N	14 47	19	1 $\frac{1}{2}$	2	7 08	B	11 18	P	CNC 4
141	21	W.	4 17	D	7 05	N	14 49	19	2	2 $\frac{3}{4}$	8 10	B	11 $\frac{P}{M}$ 50	O	LEO 6
142	22	Th.	4 16	D	7 06	N	14 51	19	3	3 $\frac{1}{2}$	9 14	D	—	—	LEO 7
143	23	Fr.	4 15	D	7 07	N	14 52	19	3 $\frac{3}{4}$	4 $\frac{1}{2}$	10 20	E	12 $\frac{A}{M}$ 17	M	LEO 8
144	24	Sa.	4 14	D	7 08	N	14 54	19	5	5 $\frac{1}{4}$	11 $\frac{A}{M}$ 25	G	12 40	L	VIR 9
145	25	E	4 13	D	7 09	N	14 56	19	5 $\frac{1}{2}$	6	12 $\frac{P}{M}$ 32	H	1 00	K	VIR 10
146	26	M.	4 13	D	7 10	N	14 57	19	6 $\frac{1}{2}$	7	1 39	I	1 20	I	LIB 11
147	27	Tu.	4 12	D	7 11	N	14 59	19	7 $\frac{1}{4}$	7 $\frac{3}{4}$	2 50	K	1 39	H	LIB 12
148	28	W.	4 11	D	7 12	N	15 00	19	8	8 $\frac{1}{2}$	4 04	L	2 01	G	SCO 13
149	29	Th.	4 11	D	7 13	N	15 02	18	9	9 $\frac{1}{4}$	5 24	N	2 26	E	SCO 14
150	30	Fr.	4 10	D	7 13	N	15 03	18	10	10	6 45	O	2 58	D	SGR 15
151	31	Sa.	4 10	D	7 14	N	15 04	18	10 $\frac{3}{4}$	11	8 $\frac{P}{M}$ 06	P	3 $\frac{A}{M}$ 40	B	— —



The Spring is come,
The goodly nymphs now dance in every place.
Thus hath the year,
Most pleasantly, if lately, changed her face.
Surrey

D. M.	D. W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓	Farmer's Calendar.
1	Th.	Philip & James Law Day { 9.8 / 10.9	Cloudy	
2	Fr.	Full Flower Moon 12.14 A.M. Tides { 9.9 / 11.2	and	
3	Sa.	Kentucky Derby Virginia Gold Cup ♂ ♀ ☽ { 9.9 / 9.9	rowdy.	
4	E	4th. E. ☽ in Peri. • ♂ ♂ ☽	How's	
5	M.	Gr. El. ☽ low Tides { 11.2 / 9.5	for a	
6	Tu.	Animals. Moses on retreat Sinai 1491 Tides { 11.0 / 9.2	jog in	
7	W.	2/3 U.S. tornadoes occur this month { 10.6 / 9.0	this here	
8	Th.	Dandelions • Learn to sail for supper? in all winds { 10.1 / 8.9	fog.	
9	Fr.	Mackerel in market • Humming birds 42 deg. N. Lat.	Cold	
10	Sa.	Blossom time. Mem. Day in snow belt. N.-S. Car.	and	
11	E	Rog. S. Mother's Day ☽ on Eq. { 9.3 / 9.5	bold.	
12	M.	The Three Chilly Saints: Pankratus ♂ ♀ ☽ { 9.3 / 9.9	Squalls	
13	Tu.	Liberatus. Mexican War, 1846 { 9.8 / 10.1	and more	
14	W.	Make these. ☽ Greatest days cool brilliance. ☽ ☽ ☽	hail to	
15	Th.	Asc. D. • 1st N.Y.-Wash. Airmail 1918	make you	
16	Fr.	First female dancers Parisian stage 1681 { 9.0 / 10.1	wail.	
17	Sa.	♂ ♀ ☽ Heloise • Armed d. 1164 • Forces	Hear the	
18	E	Ista. A. ☽ Stat in R.A. ♂ ♀ ☽	buzzing	
19	M.	☽ runs high • Earth thru tall Halley's Comet 1910	of bees	
20	Tu.	☽ Apo. Tides { 9.8 / 8.2 } Meck- • Hol. N.C.	in the	
21	W.	Lady slippers under foot • DeSoto d. 1542 { 9.3 / 8.1	apple	
22	Th.	[23 Stat in R.A.] ☽ Tides { 9.1 / 8.0	trees.	
23	Fr.	Shevnoth Descent of Holy Spirit (24A.) 34 A.D.	Rain	
24	Sa.	Longest twilights now to July 23 Tides { 8.7 / 8.3	they say	
25	E	Whit. • Pent. { 8.6 / 8.8	St. Louis	
26	M.	♂ ♀ ☽ • ♂ ♂ ☽ • ☽ on Eq. { 8.7 / 9.1	to Pa.	
27	Tu.	St. Bede • Julia Ward Howe b. 1819 • Tides { 8.8 / 9.6	Best	
28	W.	Anyone can leap. over a low wall. Ember Days 28, 30, 31	chance	
29	Th.	♂ ♀ ☽ Inf. • Walt Whitman b. 1819 (31st) { 9.8 / 10.8	to get	
30	Fr.	Mem. Day ♂ ♀ ☽ • Hol. exc. 5 states	in your	
31	Sa.	Full Invasion Moon 8.19A.M. ♂ ♂ ☽ • ♂ ♂ ☽	plants.	

Here in the Northeast, glacial evidences are all about us, in scarred and rounded mountains, solitary boulders, gravel banks and moraines. But few of us recognize the not-uncommon glacial bogs, some of them exactly as the retreating glacier left them 12,000 years ago.

Just off the main highway, I approach the bog I know from an oak knoll, high and dry and sunny, lively with bluejays and squirrels. As I walk down its slopes, in a few yards I will be at the fringes of the bog, thickets of sheep laurel, scatterings of black alder, low bush blueberries — then a few steps farther ankle-deep, knee-deep sphagnum moss, a hundred yards ahead the heart of the bog, the slate-black tarn.

Each step I take now will draw water, and with each step the bog will rise and fall, for this is but a mat I walk on, moss woven and tightened through centuries, a living roof. Devoid of mineral matter or soil, it is a garden of water and light alone, living upon itself, its ecology forever unchanged.

Dwarf spruces, only a few feet high but incredibly old, are its trees. Rhodora and leather leaf grow through patches of wild cranberry; sweet salvia and pitcher plants abound; with bog rosemary, yellow bloodwort, swamp loosestrife, and many a tiny orchid. Time . . . time. But in this enchanted place, there is no time — only a quiet waiting.

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JUNE, SIXTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.		0 /		Days.		0 /		Days.		0 /		Days.		0 /	
	1	22	N.	06	7	22	47	13	23	14	19	23	26	25	23	23
	2	22		14	8	22	52	14	23	17	20	23	27	26	23	21
	3	22		21	9	22	58	15	23	19	21	23	27	27	23	19
	4	22		28	10	23	02	16	23	22	22	23	26	28	23	16
	5	22		35	11	23	07	17	23	24	23	23	26	29	23	13
	6	22		41	12	23	10	18	23	25	24	23	25	30	23	10

☾ Last Quarter, 6th day, 10 h. 40 m., evening, E.

● New Moon, 14th day, 6 h. 09 m., evening, E.

☽ First Quarter, 22nd day, 8 h. 45 m., evening, W.

○ Full Moon, 29th day, 3 h. 04 m., evening, E.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☉ Rises h. m.	☉ Key	☉ Sets h. m.	☉ Key	Length of Days h. m.	Sun m. Fast	Full Sea, Boston Morn. h.	Full Sea, Boston Eve. h.	☽ Rises h. m.	☽ Key	☽ Sets h. m.	☽ Key	☽ Place	☽ Age
152	1	E	4 09	D	7 15	N	15 06	18	11½	11¾	9 ^P _M 16	Q	4 ^A _M 34	A	SGR	16
153	2	M.	4 09	D	7 16	O	15 07	18	—	0½	10 14	P	5 43	B	CAP	17
154	3	Tu.	4 08	C	7 17	O	15 08	18	0¾	1½	10 57	O	7 01	C	CAP	18
155	4	W.	4 08	C	7 17	O	15 09	18	1½	2½	11 30	M	8 22	D	AQR	19
156	5	Th.	4 08	C	7 18	O	15 10	17	2½	3¼	11 ^P _M 56	L	9 41	E	AQR	20
157	6	Fr.	4 07	C	7 19	O	15 11	17	3½	4¼	—	—	10 ^A _M 56	G	PSC	21
158	7	Sa.	4 07	C	7 19	O	15 12	17	4½	5¼	12 ^A _M 19	J	12 ^P _M 07	H	PSC	22
159	8	E	4 07	C	7 20	O	15 13	17	5¾	6¼	12 39	I	1 15	J	ARI	23
160	9	M.	4 07	C	7 21	O	15 14	17	6¾	7¼	12 58	H	2 22	K	ARI	24
161	10	Tu.	4 06	C	7 21	O	15 15	16	7¾	8	1 19	F	3 29	M	TAU	25
162	11	W.	4 06	C	7 22	O	15 16	16	8½	9	1 42	E	4 36	N	TAU	26
163	12	Th.	4 06	C	7 22	O	15 16	16	9½	9½	2 08	D	5 42	O	TAU	27
164	13	Fr.	4 06	C	7 23	O	15 17	16	10¼	10¼	2 40	B	6 46	P	G'M	28
165	14	Sa.	4 06	C	7 23	O	15 17	16	11	11	3 19	A	7 44	Q	G'M	29
166	15	E	4 06	C	7 24	O	15 18	15	11½	11¾	4 06	A	8 34	Q	CNC	1
167	16	M.	4 06	C	7 24	O	15 18	15	—	0¼	5 01	A	9 17	P	CNC	2
168	17	Tu.	4 06	C	7 24	O	15 18	15	0¼	1	6 02	B	9 51	O	CNC	3
169	18	W.	4 06	C	7 25	O	15 19	15	1	1½	7 06	C	10 20	N	LEO	4
170	19	Th.	4 06	C	7 25	O	15 19	15	1¾	2¼	8 10	E	10 44	L	LEO	5
171	20	Fr.	4 06	C	7 25	O	15 19	14	2½	3	9 15	F	11 04	K	VIR	6
172	21	Sa.	4 07	C	7 25	O	15 19	14	3¼	3¾	10 19	G	11 23	J	VIR	7
173	22	E	4 07	C	7 26	O	15 19	14	4	4½	11 ^A _M 24	I	11 ^P _M 42	I	VIR	8
174	23	M.	4 07	C	7 26	O	15 19	14	4¾	5¼	12 ^P _M 31	J	—	—	LIB	9
175	24	Tu.	4 07	C	7 26	O	15 18	13	5¾	6¼	1 42	L	12 ^A _M 02	G	LIB	10
176	25	W.	4 08	C	7 26	O	15 18	13	6½	7	2 57	M	12 25	F	SCO	11
177	26	Th.	4 08	C	7 26	O	15 18	13	7½	8	4 16	O	12 53	D	SCO	12
178	27	Fr.	4 08	C	7 26	O	15 18	13	8½	8¾	5 37	P	1 28	C	SGR	13
179	28	Sa.	4 09	C	7 26	O	15 17	13	9½	9¾	6 53	Q	2 15	B	SGR	14
180	29	E	4 09	C	7 26	O	15 17	12	10½	10¾	7 58	P	3 17	A	—	—
181	30	M.	4 10	C	7 26	O	15 16	12	11¼	11½	8 ^P _M 49	O	4 ^A _M 33	B	CAP	15

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JULY, SEVENTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.			Days.			Days.			Days.					
	0	/	Days.	0	/	Days.	0	/	Days.	0	/	Days.			
1	23	N.	06	7	22	34	13	21	47	19	20	48	25	19	36
2	23	01		8	22	27	14	21	38	20	20	37	26	19	23
3	22	56		9	22	20	15	21	29	21	20	25	27	19	09
4	22	51	10	22	12	16	16	21	19	22	20	13	28	18	55
5	22	46	11	22	04	17	17	21	09	23	20	01	29	18	41
6	22	40	12	21	56	18	18	20	59	24	19	49	30	18	27

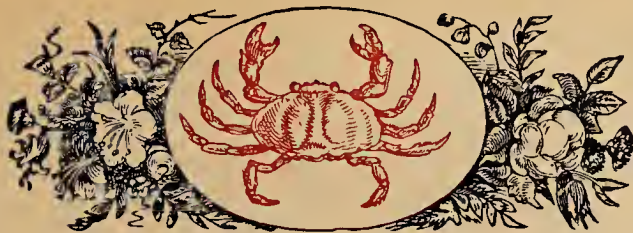
- ☾ Last Quarter, 6th day, 8 h. 18 m., morning, W.
 ● New Moon, 14th day, 9 h. 12 m., morning, E.
 ☽ First Quarter, 22nd day, 7 h. 10 m., morning, E.
 ○ Full Moon, 28th day, 9 h. 46 m., evening, E.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☉ Rises h. m.	Key	☾ Sets h. m.	Key	Length of Days h. m.	Sun Fast m.	Full Sea, Boston.		☽ Rises h. m.		Key	☽ Sets h. m.	Key	☽ Place	☽ Age
									Morn. h.	Eve. h.	h.	m.					
182	1	Tu.	4 10	C	7 26	o	15 15	12	—	0 $\frac{1}{4}$	9 $\frac{P}{M}$ 27	N	5 $\frac{A}{M}$ 56	C	CAP	16	
183	2	W.	4 11	C	7 25	o	15 15	12	0 $\frac{1}{2}$	1 $\frac{1}{4}$	9 57	L	7 19	E	AQR	17	
184	3	Th.	4 11	C	7 25	o	15 14	12	1 $\frac{1}{2}$	2	10 21	K	8 38	F	PSC	18	
185	4	Fr.	4 12	C	7 25	o	15 13	11	2 $\frac{1}{4}$	3	10 43	I	9 54	H	PSC	19	
186	5	Sa.	4 13	C	7 25	o	15 12	11	3 $\frac{1}{4}$	4	11 03	H	11 $\frac{A}{M}$ 05	I	PSC	20	
187	6	E	4 13	C	7 24	o	15 11	11	4 $\frac{1}{4}$	4 $\frac{3}{4}$	11 24	G	12 $\frac{P}{M}$ 13	K	ARI	21	
188	7	M.	4 14	C	7 24	o	15 10	11	5 $\frac{1}{4}$	5 $\frac{3}{4}$	11 $\frac{P}{M}$ 46	E	1 21	L	ARI	23	
189	8	Tu.	4 14	C	7 24	o	15 09	11	6 $\frac{1}{4}$	6 $\frac{3}{4}$	—	—	2 28	N	TAU	24	
190	9	W.	4 15	C	7 23	o	15 08	11	7 $\frac{1}{4}$	7 $\frac{1}{2}$	12 $\frac{A}{M}$ 11	D	3 35	O	TAU	25	
191	10	Th.	4 16	C	7 23	N	15 07	10	8 $\frac{1}{4}$	8 $\frac{1}{2}$	12 41	C	4 39	P	G'M	26	
192	11	Fr.	4 17	D	7 22	N	15 06	10	9	9 $\frac{1}{4}$	1 18	B	5 39	Q	G'M	27	
193	12	Sa.	4 17	D	7 22	N	15 04	10	9 $\frac{3}{4}$	10	2 03	A	6 32	Q	G'M	28	
194	13	E	4 18	D	7 21	N	15 03	10	10 $\frac{1}{2}$	10 $\frac{1}{2}$	2 55	A	7 17	P	CNC	29	
195	14	M.	4 19	D	7 21	N	15 02	10	11 $\frac{1}{4}$	11 $\frac{1}{4}$	3 54	B	7 53	O	CNC	0	
196	15	Tu.	4 20	D	7 20	N	15 00	10	11 $\frac{3}{4}$	—	4 58	C	8 23	N	LEO	1	
197	16	W.	4 21	D	7 19	N	14 59	10	0	0 $\frac{1}{2}$	6 03	D	8 48	M	LEO	2	
198	17	Th.	4 21	D	7 19	N	14 57	10	0 $\frac{1}{2}$	1	7 08	F	9 09	L	VIR	3	
199	18	Fr.	4 22	D	7 18	N	14 56	10	1 $\frac{1}{4}$	1 $\frac{3}{4}$	8 12	G	9 29	J	VIR	4	
200	19	Sa.	4 23	D	7 17	N	14 54	10	2	2 $\frac{1}{2}$	9 16	H	9 47	I	VIR	5	
201	20	E	4 24	D	7 16	N	14 52	9	2 $\frac{1}{2}$	3	10 21	J	10 06	H	LIB	6	
202	21	M.	4 25	D	7 15	N	14 51	9	3 $\frac{1}{2}$	4	11 $\frac{A}{M}$ 29	K	10 27	F	LIB	7	
203	22	Tu.	4 26	D	7 15	N	14 49	9	4 $\frac{1}{4}$	4 $\frac{3}{4}$	12 $\frac{P}{M}$ 40	M	10 51	E	SCO	8	
204	23	W.	4 27	D	7 14	N	14 47	9	5 $\frac{1}{4}$	5 $\frac{1}{2}$	1 55	N	11 $\frac{P}{M}$ 22	C	SCO	9	
205	24	Th.	4 28	D	7 13	N	14 45	9	6	6 $\frac{1}{2}$	3 13	O	—	—	SGR	10	
206	25	Fr.	4 29	D	7 12	N	14 43	9	7 $\frac{1}{4}$	7 $\frac{1}{2}$	4 29	P	12 $\frac{A}{M}$ 03	B	SGR	11	
207	26	Sa.	4 30	D	7 11	N	14 41	9	8 $\frac{1}{4}$	8 $\frac{1}{2}$	5 38	Q	12 56	A	CAP	13	
208	27	E	4 31	D	7 10	N	14 39	9	9 $\frac{1}{4}$	9 $\frac{1}{2}$	6 36	P	2 04	B	CAP	14	
209	28	M.	4 32	E	7 09	M	14 37	9	10 $\frac{1}{4}$	10 $\frac{1}{2}$	7 20	O	3 23	C	—	—	
210	29	Tu.	4 32	E	7 08	M	14 35	9	11	11 $\frac{1}{4}$	7 54	M	4 48	D	AQR	15	
211	30	W.	4 34	E	7 06	M	14 33	9	—	0	8 21	L	6 11	F	AQR	16	
212	31	Th.	4 35	E	7 05	M	14 31	9	0 $\frac{1}{4}$	0 $\frac{3}{4}$	8 $\frac{P}{M}$ 44	J	7 $\frac{A}{M}$ 31	G	PSC	17	

JULY hath 31 days.

[1969



The farmer's life displays in every part
 A moral lesson to the sensual heart;
 He views the future with the present hours
 And looks for failure as he looks for showers.
Robert Bloomfield

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓	Farmer's Calendar.
1	Tu.	Dominion • R 34 Ireland Day to N.Y. 1919 (2nd)	Hot	<p>When I was a boy, our market, "Mister Healey's," had something of the flavor of cracker-barrel days. In winter it was toasty from the generous heat of floor registers. In summer, ponderous wooden fans revolved leisurely. Customers were largely townfolk, housewives with their market baskets — and they probably fared best. Father was as sure of this as that Mr. Healey had three prices for everything: first, and lowest, for a certain clergyman and Mike, the cop; second, for the townfolk; third, and highest, for the telephone trade, like ourselves, who lived far out. But Mother really looked forward to Mr. Healey's twice-weekly telephone calls, minuets of courtesy — Mother's health? Mr. Healey's?; then the consideration of Mother's list, Mr. Healey's counter suggestions, Mother's hesitant inconclusions, Mr. Healey's final assurances, and the order to be delivered "not later than three." It never was.</p> <p>Mr. Healey's bills came unitemized, "unless requested." Father did request and reminded Mother of Mr. Graham's experience with "that d - - - d rascal." It seemed Mr. Graham's family were summering at the cape, while he put up at his club. Upon receiving an enormous unitemized bill from Mr. Healey, he was justifiably outraged. Mr. Healey was deeply apologetic — but puzzled. "Why hadn't Mrs. Graham let him know she was to be away?"</p>
2	W.	Visit of • Yrs. highest A.M. {11.6 Mary high tide {10.0	with	
3	Th.	Tammaz Little strokes {11.3 fell great oaks {10.0	rain	
4	Fr.	Ind. Day Hawaii bec. Tides {10.8 rep. 1894 {10.0	that is	
5	Sa.	☾ on Sun farthest Tides {10.2 Eq. from earth {9.9	plain.	
6	E	6th a. ♀. Corn's knee high by the 4th of July	In this	
7	M.	Frances Tragic Hartford {9.0 Cabrini Circus Fire, 1944 {9.6	worst	
8	Tu.	♁ Stat. • ♁♁ Tides {3.5 in R.A. {9.5	week,	
9	W.	Ellas Howe • D.S. Medal born 1819 auth. 1918	vacations	
10	Th.	♀♁ Wilson presented League to Senate 1919	do not	
11	Fr.	Telstar I transm'ts {8.1 Maine to Eng. 1962 {9.5	seek.	
12	Sa.	☾ high Movie-U.S. 1912 {8.1 runs 1st Foreign {9.6	Now	
13	E	6th a. ♁. ♁♁ • ☾ in Hol. Apo. Tenn. tans	for all	
14	M.	Bastille • Fch. Rev. Tides {8.5 Day beg. 1789 {9.3	beach	
15	Tu.	St. Swithin Today's pour {8.5 brings 40 more {—	fans.	
16	W.	1st complete ptd. Tides {9.8 World Atlas 1482 {8.6	Too	
17	Th.	1st trolley car to Old Town, Maine 1895 {9.8 {8.7	humid	
18	Fr.	♁♁ "Wrong Way" {9.7 Corrigan 1938 {8.9	even for	
19	Sa.	One can slip ☾ on Tides {9.5 in July, too ☾ Eq. {9.0	Cupid.	
20	E	8th a. ♀. ♁♁ • ♁♁ {9.3 {9.2	Tempera-	
21	M.	Daniel Atomic Savannah Prophet launched 1959	ture good	
22	Tu.	M. Magdalene ♁♀ ☾ Sup.	for adventure.	
23	W.	S.A.G. letter • {8.6 1st del'd 1729 {9.7	Some	
24	Th.	♁♀ • ♁♁ • {8.5 Hol. {10.0 Utah	rough	
25	Fr.	St. James Fast • Dog Days {8.5 of Av. begin {10.4	stuff	
26	Sa.	Twin cloudbursts Catskill N.Y., Westfield, Mass. 1819 ☾ low	ahead,	
27	E	8th a. ♁. Seven Sleepers Tides {9.0 {11.2	in	
28	M.	Full Buck Moon 9.46 P.M. • End Fch. in Rev. 1794 ☾ Perl. on	no wild	
29	Tu.	McKlinley Mt. • Tides {9.3 Disaster, 1967 {11.6	trips	
30	W.	DeLisle's Marselllalse first sung 1792 {—	be led.	
31	Th.	Pony penning • Tides {10.2 Assateague, Va. {11.5 {10.4		

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AUGUST, EIGHTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.		0 /		Days.		0 /		Days.		0 /		Days.		0 /	
	1	17	N.	57	7	16	21	13	14	35	19	12	41	25	10	40
	2	17		42	8	16	04	14	14	17	20	12	21	26	10	19
	3	17		26	9	15	46	15	13	58	21	12	01	27	9	58
	4	17		10	10	15	29	16	13	39	22	11	41	28	9	37
	5	16		54	11	15	11	17	13	20	23	11	21	29	9	15
	6	16		37	12	14	53	18	13	00	24	11	00	30	8	54

☾ Last Quarter, 4th day, 8 h. 39 m., evening, E.

● New Moon, 13th day, 12 h. 17 m., morning, E.

☽ First Quarter, 20th day, 3 h. 04 m., evening, E.

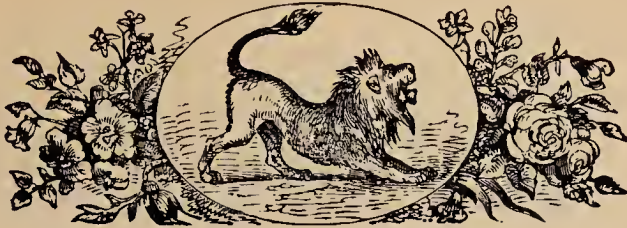
○ Full Moon, 27th day, 5 h. 33 m., morning, W.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☉		☽		Length of Days	Sun Fast	Full Sea, Boston.		☽		☽		Place	Age
			Rises h. m.	Key	Sets h. m.	Key			Morn.	Eve.	Rises h. m.	Key	Sets h. m.	Key		
213	1	Fr.	4 36	E	7 04	M	14 28	10	1	1½	9 ^P _M 06	I	8 ^A _M 46	I	PSC	18
214	2	Sa.	4 37	E	7 03	M	14 26	10	2	2½	9 26	G	9 56	J	ARI	19
215	3	E	4 38	E	7 02	M	14 24	10	3	3¼	9 49	F	11 ^A _M 08	L	ARI	20
216	4	M.	4 39	E	7 01	M	14 22	10	3¾	4¼	10 13	D	12 ^P _M 17	M	TAU	21
217	5	Tu.	4 40	E	7 00	M	14 20	10	4¾	5	10 42	C	1 25	O	TAU	22
218	6	W.	4 41	E	6 58	M	14 17	10	5¾	6	11 16	B	2 31	P	TAU	23
219	7	Th.	4 42	E	6 57	M	14 15	10	6¾	7	11 ^P _M 59	A	3 33	Q	G'M	24
220	8	Fr.	4 43	E	6 56	M	14 13	10	7¾	8	—	—	4 28	Q	G'M	25
221	9	Sa.	4 44	E	6 54	M	14 10	10	8½	8¾	12 ^A _M 49	A	5 16	Q	CNC	26
222	10	E	4 45	E	6 53	L	14 08	10	9½	9½	1 47	B	5 55	P	CNC	27
223	11	M.	4 46	F	6 52	L	14 05	11	10	10¼	2 49	C	6 27	O	LEO	28
224	12	Tu.	4 47	F	6 50	L	14 03	11	10¾	11	3 54	D	6 53	M	LEO	29
225	13	W.	4 48	F	6 49	L	14 01	11	11½	11½	4 59	E	7 15	L	LEO	0
226	14	Th.	4 49	F	6 47	L	13 58	11	—	0	6 04	G	7 35	K	VIR	2
227	15	Fr.	4 51	F	6 46	L	13 56	11	0¼	0½	7 09	H	7 54	I	VIR	3
228	16	Sa.	4 52	F	6 45	L	13 53	12	0¾	1¼	8 14	I	8 12	H	LIB	4
229	17	E	4 53	F	6 43	L	13 50	12	1½	1¾	9 21	K	8 32	G	LIB	5
230	18	M.	4 54	F	6 42	L	13 48	12	2¼	2½	10 30	L	8 55	E	SCO	6
231	19	Tu.	4 55	F	6 40	L	13 45	12	3	3¼	11 ^A _M 42	N	9 23	D	SCO	7
232	20	W.	4 56	F	6 38	L	13 43	12	3¾	4¼	12 ^P _M 57	O	9 58	C	SCO	8
233	21	Th.	4 57	F	6 37	L	13 40	13	4¾	5	2 13	P	10 45	B	SGR	9
234	22	Fr.	4 58	F	6 35	L	13 37	13	5¾	6¼	3 23	Q	11 ^P _M 44	A	SGR	10
235	23	Sa.	4 59	F	6 34	K	13 35	13	7	7¼	4 24	P	—	—	CAP	11
236	24	E	5 00	G	6 32	K	13 32	13	8	8¼	5 12	O	12 ^A _M 57	B	CAP	12
237	25	M.	5 01	G	6 31	K	13 29	14	9	9¼	5 50	N	2 18	C	AQR	13
238	26	Tu.	5 02	G	6 29	K	13 27	14	10	10¼	6 20	L	3 41	E	AQR	14
239	27	W.	5 03	G	6 27	K	13 24	14	10¾	11	6 45	K	5 02	F	—	—
240	28	Th.	5 04	G	6 26	K	13 21	15	11½	—	7 07	I	6 20	H	PSC	15
241	29	Fr.	5 05	G	6 24	K	13 19	15	0	0½	7 28	H	7 35	J	ARI	16
242	30	Sa.	5 06	G	6 22	K	13 16	15	0¾	1¼	7 50	F	8 48	K	ARI	17
243	31	E	5 08	G	6 21	K	13 13	15	1½	2	8 ^P _M 14	E	9 ^A _M 59	M	ARI	18

AUGUST hath 31 days.

[1969



Summer ebbs; — each day that follows
Is a reflux from on high
Tending to darksome hollows
Where the frosts of winter lie.

Wordsworth

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓	Farmer's Calendar.
1	Fr.	Lammas D. ☾ ^{on} Eq. Tides {11.2 10.4	In or	<p>Towns in our country region have countless hidden corners, hundreds of lost, forgotten acres whose ghostly boundaries, when we seek them out in ancient deeds, might be, typically, "from a great oak, 20 rods east along a wall to the King's Highway" (unused since the Revolution); or "200 rods from the site of the Larkin glass works, west to a break in the wall." Only the forest remembers, and the break in the wall, like as not, lies deep in the waters of a beaver dam or swamp.</p> <p>It was such a piece of land that I lately spent a day straightening out with our wise old local surveyor. The piece was a controversial part of the boundary of our town and the next. We proceeded well enough with the walls, breaks in walls, stakes, iron pipes, and piles of stones, even with the site of the old schoolhouse (three bricks under a hemlock stump). It was getting on to dusk, and there was only a piece of wall, so many rods north to an iron pipe, and we would be done. But there was no iron pipe. Sam scratched his head, then laid his sights north and set off. After some time he was back with a pipe. He drove it into the ground at our feet. "You reckon that's the right pipe?" I asked. "Reckon," said he.</p> <p>"Someone made a mistake, maybe," I ventured. "Mebbe," said he. And we went home.</p> <p>Our town had just gotten itself 400 acres of land — more or less.</p>
2	Sa.	The talkers sow • Tides {10.7 10.3	out of	
3	E	10th a. ☽. Coolidge Pres. 1923 {10.0 10.1	a tent	
4	M.	Gomorrhah and Sodom overthrown ☽ h ☾ ^{Hol.} Col. {8.6 9.4	it is	
5	Tu.	Hiroshima Atom Bomb 1945 Tides {8.6 9.4	inclement.	
6	W.	Transfiguration Tides {8.1 9.2	Thunder &	
7	Th.	Name of • ☽ Stat. Jesus in R.A. {7.8 9.1	lightning	
8	Fr.	☾ runs • Bulfinch b. 1763 Tides {7.7 9.1	can be	
9	Sa.	☽ ☾ • ☾ ⁱⁿ Apo. Tides {7.8 9.2	frightening.	
10	E	10th a. ☽. Tides {8.0 9.0	Now, we	
11	M.	Barbados • Carnegie Vic. hurr. 1780 • d. 1919 tory R.1. {9.9 9.3	suggest	
12	Tu.	Lodge opposes Wilson League, Senate 1919 • J.P.K. Jr. k. 1944 {8.8 9.9	a first class	
13	W.	W. Berlin to East Germany wall 1961 • Tides {8.8 9.9	tempest.	
14	Th.	Tillamook burn, 1933 ☽ ☾ VJ Day. Ark. {9.9 9.3	Better	
15	Fr.	[16th — Battle of Bennington, Vt.] Rain of fish 1769 {9.8 9.5	take	
16	Sa.	☽ ☾ • ☽ ☾ • ☾ ^{on} Eq. Tides {9.7 9.6	along a	
17	E	12th a. ☽. Hurricane Texas 1915 {9.4 9.7	sweater.	
18	M.	St. Helena 1712 A.D. built oldest church now stgd. {9.1 9.8	It	
19	Tu.	Record heat wave ended in 1944 Tides {8.7 9.8	pours	
20	W.	☽ ☽ ☾ Holy Light Athlone 1882 {8.7 9.8	The	
21	Th.	Destroy bushes ☽ ☾ • h Stat. in R.A. {8.3 9.9	seas	
22	Fr.	1st k. frosts No. Maine ☾ rides low Tides {8.4 10.2	roar	
23	Sa.	1st Lake Erie Steam Boat Trip 1818 Tides {8.6 10.6	while	
24	E	12th a. ☽. Early frost? Cold winter {9.1 11.0	you I	
25	M.	Swallows leave North Country in Perl. {9.7 11.2	adore. This	
26	Tu.	Celia Thaxter died 1894 Tides {11.2 10.6	is cold	
27	W.	Full Sturgeon Moon 5.33 A.M. • Penumbra Eclipse {11.2 10.6	storm	
28	Th.	A fog cannot be dispelled with a fan ☾ on Eq. {11.2 10.3	and to	
29	Fr.	John Bapt. • I. Bergman beheaded born 1917 {10.3 10.3	the devil	
30	Sa.	Flacius Gardener ☽ ☽ Huey Long • Hol. La. {10.3 10.5	sold.	
31	E	14th a. ☽. Tides {10.3 10.5		

1969]

SEPTEMBER, NINTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.		0 /		Days.		0 /		Days.		0 /		Days.		0 /	
	1	8N, 11	7	5 58	13	3 41	19	1 22	25	0 58						
	2	7 49	8	5 35	14	3 18	20	0 59	26	1 21						
	3	7 27	9	5 12	15	2 55	21	0 36	27	1 45						
	4	7 05	10	4 50	16	2 32	22	0N. 12	28	2 08						
	5	6 42	11	4 27	17	2 09	23	0s. 11	29	2 31						
	6	6 20	12	4 04	18	1 45	24	0 35	30	2 55						

- ☾ Last Quarter, 3rd day, 11 h. 58 m., morning, W.
 ● New Moon, 11th day, 2 h. 56 m., evening, W.
 ☽ First Quarter, 18th day, 9 h 25 m., evening, W.
 ○ Full Moon, 25th day, 3 h. 22 m., evening, E.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☉		Key	☽		Key	Length of Days h. m.	Sun Fast m.	Full Sea. Boston.		☽	Key	☽	Key	☽	☽
			Rises h. m.	Sets h. m.		Morn h.	Eve. h.				Rises h. m.	Sets h. m.						
244	1	M.	5 09	G 6 19	K	13 10	16	2½	2¾	8 ^P _M 41	C	11 ^A _M 10	N	TAU	19			
245	2	Tu.	5 10	G 6 17	K	13 08	16	3¼	3½	9 14	B	12 ^P _M 18	O	TAU	20			
246	3	W.	5 11	G 6 16	K	13 05	16	4	4½	9 54	A	1 23	P	G'M	21			
247	4	Th.	5 12	G 6 14	J	13 02	17	5	5½	10 42	A	2 22	Q	G'M	22			
248	5	Fr.	5 13	H 6 12	J	12 59	17	6	6½	11 ^P _M 37	A	3 12	Q	CNC	23			
249	6	Sa.	5 14	H 6 10	J	12 57	17	7	7¼	—	—	3 54	P	CNC	24			
250	7	E	5 15	H 6 09	J	12 54	18	8	8¼	12 ^A _M 38	B	4 28	O	CNC	25			
251	8	M.	5 16	H 6 07	J	12 51	18	8¾	9	1 43	C	4 56	N	LEO	26			
252	9	Tu.	5 17	H 6 05	J	12 48	18	9½	9¾	2 48	E	5 20	L	LEO	27			
253	10	W.	5 18	H 6 03	J	12 45	19	10¼	10½	3 53	F	5 40	K	VIR	28			
254	11	Th.	5 19	H 6 02	J	12 43	19	10¾	11	4 59	G	6 00	J	VIR	29			
255	12	Fr.	5 20	H 6 00	J	12 40	19	11½	11¾	6 05	I	6 19	H	LIB	1			
256	13	Sa.	5 21	H 5 58	J	12 37	20	—	0	7 11	J	6 38	G	LIB	2			
257	14	E	5 22	H 5 56	J	12 34	20	0¼	0½	8 21	L	7 00	F	LIB	3			
258	15	M.	5 23	H 5 55	J	12 31	21	1	1¼	9 33	M	7 26	D	SCO	4			
259	16	Tu.	5 24	H 5 53	J	12 28	21	1¾	2	10 ^A _M 47	O	7 59	C	SCO	5			
260	17	W.	5 26	I 5 51	I	12 26	21	2½	3	12 ^P _M 03	P	8 41	B	SGR	6			
261	18	Th.	5 27	I 5 49	I	12 23	22	3½	3¾	1 13	Q	9 35	A	SGR	7			
262	19	Fr.	5 28	I 5 48	I	12 20	22	4½	4¾	2 16	Q	10 42	B	CAP	8			
263	20	Sa.	5 29	I 5 46	I	12 17	22	5½	6	3 07	P	11 ^P _M 57	C	CAP	9			
264	21	E	5 30	I 5 44	I	12 14	23	6¾	7	3 47	N	—	—	AQR	10			
265	22	M.	5 31	I 5 42	I	12 11	23	7¾	8	4 20	M	1 ^A _M 18	D	AQR	11			
266	23	Tu.	5 32	I 5 40	I	12 09	23	8¾	9	4 46	L	2 38	F	PSC	12			
267	24	W.	5 33	I 5 39	I	12 06	24	9½	10	5 08	J	3 55	G	PSC	13			
268	25	Th.	5 34	I 5 37	I	12 03	24	10½	10¾	5 30	H	5 11	I	ARI	14			
269	26	Fr.	5 35	I 5 35	I	12 00	24	11¼	11½	5 51	G	6 24	J	—	—			
270	27	Sa.	5 36	I 5 33	I	11 57	25	—	0	6 14	F	7 37	L	ARI	15			
271	28	E	5 37	J 5 32	H	11 54	25	0½	0¾	6 40	D	8 49	M	TAU	16			
272	29	M.	5 38	J 5 30	H	11 52	25	1	1½	7 11	C	10 00	O	TAU	17			
273	30	Tu.	5 39	J 5 28	H	11 49	26	2	2¼	7 ^P _M 48	B	11 ^A _M 08	P	G'M	19			



I heard or seemed to hear the chiding sea
 Say, Pilgrim, why so late and slow to come?
 Am I not always here, thy summer home?
 Is not my voice thy music, morn or eve?
 Ralph Waldo Emerson

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓	Farmer's Calendar.
1	M.	Labor Day 6hC Tides {9.6 10.1	Stay alive	<p>This is an era of publishing in which the art of the camera has helped produce (and wonderfully) vast, eagle-sized volumes, bold with pictures and captions, slim in text. And it is (incongruously) the age of the little books — the paperbacks. This too is wonderful, for we have the reprinting of literary masterpieces (and much else) at modest prices. So — an explosion of books and readers, but seldom gentle readers or true book lovers.</p> <p>Other than its content, the value of a paperback is little. As a book it cannot command respect. It will not break properly; it will not fall open easily. Nor are the clumsy picture volumes for the library or the hand. We must flop them open, and stack them away at last.</p> <p>A man's library, a place for reading, a sanctuary of books, is neither in fashion nor on the architect's board, for at the price of a house today one is lucky to achieve his rumpus room.</p> <p>In this age of many books and impatient reading, I am sad so few young people will be taught the art of gentle reading. Who will teach them, in a quiet library, to draw — not wrench — a volume from the bookshelf and lay it in hand to experience the feel of a fine leather binding, the rare pleasure of beautiful type on mellow pages? And who will teach them the joy of reading?</p>
2	Tu.	New Style 6Gr. El. {8.9 Cal. 1752 ♀E. {9.6	take care	
3	W.	Catch the bear before you sell its skin {8.3	how you	
4	Th.	Moses Hay Fever runs Patriarch peak C high	drive.	
5	Fr.	Dog Days Cat Nights {7.6 end begin {18.7	Heavenly	
6	Sa.	Shortest twilights in {7.6 now—Apr. 11 C Apo. {8.8	sputters	
7	E	14th a. T. 6♂♂ Tides {7.7 {9.0	bring	
8	M.	Nativity 6♀C Tides {8.1 of Mary {9.3	stutters	
9	Tu.	Separate ewes Adm. Hol. Day Cal. {8.8	to gutters.	
10	W.	Middlesex Canal begun 1794 {8.9	Cheer, Dear	
11	Th.	Heslod's Reapers Annular Eclipse {9.3	here's the	
12	Fr.	Lucky Day Boston Police Strike 1919 6♂♂C C on Eq. {8.8	Md. best	
13	Sa.	6♂♂C 6♂♂C Tides {9.9	week	
14	E	16th a. 3 Holy Cross (New Year) Rosh Hashanah of	the year.	
15	M.	Fall foliage color begins now in No. ends Oct. 15 So. {8.4	Anyone's	
16	Tu.	♀Stat. in R.A. 6♂♂C Tides {10.2	guess	
17	W.	Woodchucks hibernate 6♂♂C Citizen-ship Day {8.7	hurri-	
18	Th.	World began at Fall Equinox 4004 BC 9.00 A.M. {9.9	cane, gale	
19	Fr.	6♂♂C 6♂♂♂ C rides low {10.0	or a	
20	Sa.	Herring spawn [26 Day equals] only now [th Night] {8.4	climatic	
21	E	16th a. T. Saint Matthew {10.0	finesse.	
22	M.	YOM in Tides {8.9	Coolin'	
23	Tu.	KIPPUR C Perl. Sun ent. Libra {10.3	no	
24	W.	Panic Ember Days 1869 24, 26, 27 Tides {10.0 {10.7	on	
25	Th.	Full Harvest Moon 3.22 P.M. Penumh. Eclipse C on Eq. {10.2	foolin'. This rain	
26	Fr.	Woodrow Wilson collapsed 1919 {10.9	the	
27	Sa.	TABERNACLES (27th—Oct. 4) 6♂♂C {10.2 {10.7	Gulf	
28	E	18th a. 3. 6hC Tides {9.8 {10.4	states	
29	M.	Michael Archangel 6♀C Inf. {10.4	inundates.	
30	Tu.	St. Jerome Adam & Eve banished		

To a crazy ship, all winds are contrary.

1969]

OCTOBER, TENTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.		0 /		Days.		0 /		Days.		0 /		Days.		0 /	
	1	3s. 18	7	5 37	13	7 53	19	10 05	25	12 12						
2	3	41	8	6 00	14	8 15	20	10 27	26	12 33						
3	4	05	9	6 23	15	8 38	21	10 48	27	12 53						
4	4	28	10	6 46	16	9 00	22	11 09	28	13 13						
5	4	51	11	7 08	17	9 22	23	11 30	29	13 33						
6	5	14	12	7 31	18	9 43	24	11 51	30	13 53						

☾ Last Quarter, 3rd day, 6 h. 06 m., morning, W.

● New Moon, 11th day, 4 h. 40 m., morning, E.

☽ First Quarter, 18th day, 3 h. 32 m., morning, W.

○ Full Moon, 25th day, 3 h. 45 m., morning, W.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☉ Rises h. m.	☉ Key	☉ Sets h. m.	☉ Key	Length of Days h. m.	Sun Fast	Full Sea. Boston. Morn. Eve.	☽ Rises h. m.	☽ Key	☽ Sets h. m.	☽ Key	☽ Place	☽ Age
274	1	W.	5 41	J	5 27	H	11 46	26	2 $\frac{3}{4}$	3	S ^P _M 34	A	12 ^P _M 10	Q	G' M 20
275	2	Th.	5 42	J	5 25	H	11 43	26	3 $\frac{1}{2}$	3 $\frac{3}{4}$	9 26	A	1 05	Q	G' M 21
276	3	Fr.	5 43	J	5 23	H	11 40	27	4 $\frac{1}{2}$	4 $\frac{3}{4}$	10 25	B	1 51	P	CNC 22
277	4	Sa.	5 44	J	5 21	H	11 38	27	5 $\frac{1}{2}$	5 $\frac{3}{4}$	11 ^P _M 9	C	2 28	P	CNC 23
278	5	E	5 45	J	5 20	H	11 35	27	6 $\frac{1}{2}$	6 $\frac{3}{4}$	—	—	2 58	N	LEO 24
279	6	M.	5 46	J	5 18	H	11 32	27	7 $\frac{1}{4}$	7 $\frac{1}{2}$	12 ^A _M 34	D	3 23	M	LEO 25
280	7	Tu.	5 47	J	5 16	H	11 29	28	8	8 $\frac{1}{2}$	1 39	F	3 45	L	LEO 26
281	8	W.	5 48	J	5 15	H	11 26	28	9	9 $\frac{1}{4}$	2 44	G	4 04	J	VIR 27
282	9	Th.	5 49	J	5 13	G	11 24	28	9 $\frac{1}{2}$	9 $\frac{3}{4}$	3 50	H	4 24	I	VIR 28
283	10	Fr.	5 51	K	5 11	G	11 21	29	10 $\frac{1}{4}$	10 $\frac{1}{2}$	4 57	J	4 43	H	LIB 29
284	11	Sa.	5 52	K	5 10	G	11 18	29	10 $\frac{3}{4}$	11 $\frac{1}{4}$	6 06	K	5 04	F	LIB 0
285	12	E	5 53	K	5 08	G	11 15	29	11 $\frac{1}{2}$	—	7 19	M	5 29	E	SCO 1
286	13	M.	5 54	K	5 06	G	11 12	29	0	0	8 34	N	6 00	C	SCO 2
287	14	Tu.	5 55	K	5 05	G	11 10	30	0 $\frac{1}{2}$	0 $\frac{3}{4}$	9 51	O	6 39	B	SGR 3
288	15	W.	5 56	K	5 03	G	11 07	30	1 $\frac{1}{2}$	1 $\frac{1}{2}$	11 ^A _M 05	P	7 30	A	SGR 4
289	16	Th.	5 58	K	5 01	G	11 04	30	2 $\frac{1}{4}$	2 $\frac{1}{2}$	12 ^P _M 11	Q	8 33	A	CAP 5
290	17	Fr.	5 59	K	5 00	G	11 01	30	3 $\frac{1}{4}$	3 $\frac{1}{2}$	1 05	P	9 46	B	CAP 7
291	18	Sa.	6 00	K	4 58	G	10 58	31	4 $\frac{1}{4}$	4 $\frac{1}{2}$	1 48	O	11 ^P _M 04	D	AQR 8
292	19	E	6 01	K	4 57	G	10 56	31	5 $\frac{1}{2}$	5 $\frac{3}{4}$	2 21	N	—	—	AQR 9
293	20	M.	6 02	K	4 55	G	10 53	31	6 $\frac{1}{2}$	6 $\frac{3}{4}$	2 49	L	12 ^A _M 22	E	PSC 10
294	21	Tu.	6 03	K	4 54	G	10 50	31	7 $\frac{1}{2}$	S	3 11	K	1 39	G	PSC 11
295	22	W.	6 05	L	4 52	F	10 47	31	8 $\frac{1}{2}$	8 $\frac{3}{4}$	3 33	I	2 53	H	ARI 12
296	23	Th.	6 06	L	4 51	F	10 45	31	9 $\frac{1}{4}$	9 $\frac{3}{4}$	3 54	H	4 05	J	ARI 13
297	24	Fr.	6 07	L	4 49	F	10 42	32	10	10 $\frac{1}{2}$	4 16	F	5 17	K	ARI 14
298	25	Sa.	6 08	L	4 48	F	10 39	32	10 $\frac{3}{4}$	11 $\frac{1}{4}$	4 40	E	6 29	M	—
299	26	E	6 10	L	4 46	F	10 37	32	11 $\frac{1}{2}$	—	5 09	C	7 40	N	TAU 15
300	27	M.	6 11	L	4 45	F	10 34	32	0	0 $\frac{1}{4}$	5 44	B	8 49	P	TAU 16
301	28	Tu.	6 12	L	4 44	F	10 32	32	0 $\frac{3}{4}$	1	6 26	A	9 56	P	G' M 17
302	29	W.	6 13	L	4 42	F	10 29	32	1 $\frac{1}{2}$	1 $\frac{1}{2}$	7 16	A	10 54	Q	G' M 18
303	30	Th.	6 14	L	4 41	F	10 26	32	2 $\frac{1}{4}$	2 $\frac{1}{2}$	8 13	B	11 ^A _M 44	Q	CNC 19
304	31	Fr.	6 16	L	4 40	F	10 24	32	3	3 $\frac{1}{4}$	9 ^P _M 15	B	12 ^P _M 25	P	CNC 20

1969] NOVEMBER, ELEVENTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	0 /	Days.	0 /	Days.	0 /	Days.	0 /	Days.	0 /
	1	14s.	32	7	16 22	13	18 03	19	19 32	25
2	14	51	8	16 40	14	18 18	20	19 46	26	21 00
3	15	09	9	16 57	15	18 34	21	19 59	27	21 11
4	15	28	10	17 14	16	18 49	22	20 12	28	21 22
5	15	46	11	17 30	17	19 04	23	20 24	29	21 32
6	16	04	12	17 47	18	19 18	24	20 37	30	21 42

☾ Last Quarter, 2nd day, 2 h. 14 m., morning, E.

● New Moon, 9th day, 5 h. 12 m., evening, W.

☽ First Quarter, 16th day, 10 h. 46 m., morning, E.

○ Full Moon, 23rd day, 6 h. 54 m., evening, E.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☉ Rises h. m.	☉ Sets h. m.	Key	Length of Days h. m.	Sun Fast	Full Sea, Boston. Morn. Eve.	☽ Rises h. m.	☽ Sets h. m.	Key	☽ Place	☽ Age	
305	1	Sa.	6 17	L 4 38	F	10 21 32	4	4	10 ^P _M 19	D	12 ^P _M 57	O	CNC	21
306	2	E	6 18	L 4 37	F	10 19 32	4 ³ / ₄	5	11 ^{P24} _M	E	1 24	N	LEO	22
307	3	M.	6 19	L 4 36	E	10 16 32	5 ³ / ₄	6	—	—	1 47	L	LEO	23
308	4	Tu.	6 21	M 4 35	E	10 14 32	6 ¹ / ₂	6 ³ / ₄	12 ^{A29} _M	F	2 07	K	VIR	24
309	5	W.	6 22	M 4 33	E	10 11 32	7 ¹ / ₂	7 ³ / ₄	1 33	H	2 26	J	VIR	25
310	6	Th.	6 23	M 4 32	E	10 09 32	8	8 ¹ / ₂	2 39	J	2 45	H	LIB	26
311	7	Fr.	6 24	M 4 31	E	10 07 32	8 ³ / ₄	9 ¹ / ₄	3 47	K	3 06	G	LIB	27
312	8	Sa.	6 26	M 4 30	E	10 04 32	9 ¹ / ₂	10	4 58	L	3 29	E	LIB	28
313	9	E	6 27	M 4 29	E	10 02 32	10 ¹ / ₄	10 ³ / ₄	6 13	M	3 58	D	SCO	29
314	10	M.	6 28	M 4 28	E	10 00 32	11	11 ¹ / ₂	7 31	O	4 35	C	SCO	1
315	11	Tu.	6 29	M 4 27	E	9 57 32	11 ³ / ₄	—	8 49	P	5 23	B	SGR	2
316	12	W.	6 31	M 4 26	E	9 55 32	0 ¹ / ₄	0 ¹ / ₂	10 00	Q	6 24	A	SGR	3
317	13	Th.	6 32	M 4 25	E	9 53 31	1 ¹ / ₄	1 ¹ / ₂	11 00	P	7 36	B	CAP	4
318	14	Fr.	6 33	M 4 24	E	9 51 31	2	2 ¹ / ₄	11 ^{A47} _M	O	8 54	C	CAP	5
319	15	Sa.	6 34	M 4 23	E	9 49 31	3	3 ¹ / ₄	12 ^{P24} _M	N	10 12	E	AQR	6
320	16	E	6 36	M 4 22	E	9 46 31	4	4 ¹ / ₂	12 52	L	11 ^{P29} _M	F	AQR	7
321	17	M.	6 37	N 4 21	D	9 44 31	5	5 ¹ / ₂	1 16	K	—	—	PSC	8
322	18	Tu.	6 38	N 4 20	D	9 42 30	6 ¹ / ₄	6 ¹ / ₂	1 38	J	12 ^{A43} _M	H	PSC	9
323	19	W.	6 39	N 4 20	D	9 40 30	7	7 ¹ / ₂	1 58	H	1 54	I	ARI	10
324	20	Th.	6 41	N 4 19	D	9 38 30	8	8 ¹ / ₂	2 19	G	3 04	K	ARI	11
325	21	Fr.	6 42	N 4 18	D	9 37 30	9	9 ¹ / ₂	2 42	E	4 14	L	TAU	12
326	22	Sa.	6 43	N 4 18	D	9 35 30	9 ³ / ₄	10 ¹ / ₄	3 09	D	5 24	N	TAU	13
327	23	E	6 44	N 4 17	D	9 33 29	10 ¹ / ₂	11	3 41	C	6 34	O	G'M	14
328	24	M.	6 45	N 4 16	D	9 31 29	11	11 ³ / ₄	4 20	B	7 42	P	—	—
329	25	Tu.	6 46	N 4 16	D	9 29 29	11 ³ / ₄	—	5 08	A	8 43	Q	G'M	15
330	26	W.	6 48	N 4 15	D	9 28 28	0 ¹ / ₂	0 ¹ / ₂	6 03	A	9 36	Q	G'M	16
331	27	Th.	6 49	N 4 15	D	9 26 28	1	1 ¹ / ₄	7 03	B	10 20	P	CNC	17
332	28	Fr.	6 50	N 4 14	D	9 24 28	1 ³ / ₄	2	8 06	C	10 56	O	CNC	18
333	29	Sa.	6 51	N 4 14	D	9 23 27	2 ¹ / ₂	2 ³ / ₄	9 11	E	11 25	N	LEO	19
334	30	E	6 52	N 4 14	D	9 22 27	3 ¹ / ₄	3 ¹ / ₂	10 ^P _M 14	F	11 ^{A49} _M	M	LEO	20

NOVEMBER hath 30 days.

[1969



At length Indian Summer, the lovely, doth come,
With its blue frosty nights, and days still,
When distantly sounds the waterfall's hum
And the sun smokes ablaze on the hill.

John G. Whittier

D. M.	D. W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓	Farmer's Calendar.
1	Sa.	All Saints C in Apo. {7.8 Hol. 8.6 La.	Don't	Though a far cry to the thrills of "the Leather Stocking Tales," I cannot walk through the woods without listening for the "snapping of a twig." But if no twig snaps, here in the deep forest are other sounds I listen out, the little sounds of silence.
2	E	22nda. C . All Souls {7.7 Tides 8.4	cry	A beech leaf flutters down and I catch, perhaps, the whisper of its settling. About my mossy stump a tiny spring gurgles over a dam of twigs. Then a sudden "plop!" — and the chatter and scold of a red squirrel, angry because he has dropped his nut. Or just angry.
3	M.	Wm. Cullen Bryant b. 1794 O Ψ {7.8 8.4	this gale	A chickadee, curious and friendly, comes chickadeeing around me; and in the pine tops are rustlings and cheepings and the pattering of cone fragments where siskins feed. Somewhere a woodpecker is hammering. "Scratch, scratch, rasp, rasp," and a grizzled old porcupine backs down a hemlock and shuffles away.
4	Tu.	Geo. Peabody died 1869 • Will Rogers • Okla.	is dry.	And now at last I hear the hunting cry of my old friend, the hawk, "cree, cree, cree." Often as not when I come upon him, he is but a swooping shadow, utterly silent.
5	W.	Fawkes' Plot's not forgot • Tides {8.5 8.7	You freeze,	My stump is beside a deer trail, and I am watchful, for a deer can pass as silently as my hawk. But not today. Not today a mink hunting from the stream, nor a fox trotting down the logging road. I creak to my feet. "Whir, whir, flick, flick" — off goes a partridge from the very boughs above me. When — on what ghostly, mocking wings — has he glided there, to wait out the silence more patiently than I?
6	Th.	O C • C on Noah b. Eq. B.C. 2948	then sneeze.	
7	Fr.	Antarctic seals bearing young • Tides {9.6 9.2	East is	
8	Sa.	O Ψ • O Ψ • Tides {10.1 9.4	quiet,	
9	E	24th a. P . Good for travel bad for theft	West	
10	M.	U.S. Marine Corps fd. 1775 • Tides {10.9 9.6	has a	
11	Tu.	St. Martin Veterans D. Tides {11.1 —	Hol. all sts. riot.	
12	W.	C in Peri. • C rides low Tides {9.5 11.1	Indian	
13	Th.	Indian Summer—trad. date (13-20) {9.4 10.9	(Indians march to Winter qtrs.)	
14	Fr.	Borrow not too much on time to come	Summer can	
15	Sa.	Sady Hawkins • Methusaleh born B.C. 2349	O C be	
16	E	24th a. C . O Ψ • Sup.	nice but	
17	M.	Ell Terry Clock Patent 1794 • Tides {9.0 9.5	change	
18	Tu.	G. B. Deval Alewives Pound 1967 • back in sea Eq. C	on nasty	
19	W.	Senate rejects Wilson Peace Treaty & League 1919	{9.6 9.3 in a	
20	Th.	Better a full barn than a full bed O Ψ • Tides {9.9 9.2	trice.	
21	Fr.	Mayflower Compact Kennedy Russ. bomb assas. 1963 • Desert 1955	{10.2 9.2 Steady	
22	Sa.	26th a. P . Full Beaver Moon 6.54 P.M.	storms	
23	E	Prune grapevines • Champlain Canal navigable 1819	{10.3 8.9 are	
24	M.	C runs [26th—still there high in the Hussar	{10.2 — nigh.	
25	Tu.	900,000 Gold Guineas sank N.Y. Harbor 1780	{8.7 9.9 See, I	
26	W.	Thanksgiving Day Tides {8.5 9.6	told	
27	Th.	To forget other's faults remember your own C in Apo.	you so,	
28	Fr.	Gen. Arnold at Quebec 1775 • Tides {8.1 9.0	look at	
29	Sa.	Adbent S . Andrew Apostle {8.0 8.8	it snow.	
30	E			

No Indian Summer in 1967 brought early cold Winter and early nice Spring in 1968.

1969]

DECEMBER, TWELFTH MONTH.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.		0 /		Days.		0 /		Days.		0 /		Days.		0 /																																												
	1	21s. 51	7	22 39	13	23 10	19	23 26	25	23 24	2	22 00	8	22 45	14	23 14	20	23 27	26	23 22	3	22 09	9	22 51	15	23 17	21	23 27	27	23 19	4	22 17	10	22 57	16	23 20	22	23 27	28	23 16	5	22 25	11	23 02	17	23 22	23	23 26	29	23 13	6	22 32	12	23 06	18	23 24	24	23 25	30

- ☾ Last Quarter, 1st day, 10 h. 51 m., evening, E.
 ● New Moon, 9th day, 4 h. 43 m., morning, E.
 ☽ First Quarter, 15th day, 8 h. 10 m., evening, W.
 ○ Full Moon, 23rd day, 12 h. 36 m., evening, E.
 ☾ Last Quarter, 31st day, 5 h. 53 m., evening, E.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGE 14

Day of Year	Day of Month	Day of Week	☺ Rises h. m.	Key	☾ Sets h. m.	Key	Length of Days h. m.	Sun Fast m.	Full Sea, Boston. Morn. Eve.	☽ Rises h. m.	Key	☽ Sets h. m.	Key	☽ Place	☽ Age
335	1	M.	6 53	N	4 13	D	9 20	27	4	4 $\frac{1}{4}$	11 $\frac{P}{M}$ 17	G	12 $\frac{P}{M}$ 10	K	VIR 21
336	2	Tu.	6 54	N	4 13	D	9 19	26	5	5 $\frac{1}{4}$	—	—	12 29	J	VIR 23
337	3	W.	6 55	N	4 13	D	9 18	26	5 $\frac{3}{4}$	6	12 $\frac{A}{M}$ 21	H	12 47	I	VIR 24
338	4	Th.	6 56	N	4 13	D	9 16	25	6 $\frac{1}{2}$	7	1 27	J	1 07	G	LIB 25
339	5	Fr.	6 57	N	4 12	D	9 15	25	7 $\frac{1}{2}$	7 $\frac{3}{4}$	2 35	K	1 28	F	LIB 26
340	6	Sa.	6 58	N	4 12	D	9 14	25	8	8 $\frac{3}{4}$	3 47	M	1 54	E	SCO 27
341	7	E	6 59	O	4 12	C	9 13	24	9	9 $\frac{1}{2}$	5 04	N	2 27	C	SCO 28
342	8	M.	7 00	O	4 12	C	9 12	24	9 $\frac{3}{4}$	10 $\frac{1}{2}$	6 23	O	3 10	B	SGR 29
343	9	Tu.	7 01	O	4 12	C	9 11	23	10 $\frac{1}{2}$	11 $\frac{1}{4}$	7 39	P	4 06	A	SGR 0
344	10	W.	7 02	O	4 12	C	9 10	23	11 $\frac{1}{2}$	—	8 46	P	5 16	B	CAP 1
345	11	Th.	7 03	O	4 12	C	9 10	22	0	0 $\frac{1}{4}$	9 40	O	6 35	C	CAP 2
346	12	Fr.	7 04	O	4 12	C	9 09	22	1	1 $\frac{1}{4}$	10 22	N	7 57	D	AQR 3
347	13	Sa.	7 04	O	4 13	C	9 08	21	1 $\frac{3}{4}$	2	10 54	M	9 17	F	AQR 4
348	14	E	7 05	O	4 13	C	9 08	21	2 $\frac{3}{4}$	3	11 21	K	10 33	G	PSC 6
349	15	M.	7 06	O	4 13	C	9 07	20	3 $\frac{3}{4}$	4	11 $\frac{A}{M}$ 43	J	11 $\frac{P}{M}$ 46	I	PSC 7
350	16	Tu.	7 07	O	4 13	C	9 07	20	4 $\frac{3}{4}$	5	12 $\frac{P}{M}$ 03	H	—	—	ARI 8
351	17	W.	7 07	O	4 14	C	9 06	20	5 $\frac{3}{4}$	6 $\frac{1}{4}$	12 24	G	12 $\frac{A}{M}$ 56	J	ARI 9
352	18	Th.	7 08	O	4 14	C	9 06	19	6 $\frac{3}{4}$	7 $\frac{1}{4}$	12 46	F	2 06	L	TAU 10
353	19	Fr.	7 08	O	4 14	C	9 06	19	7 $\frac{1}{2}$	8 $\frac{1}{4}$	1 12	D	3 15	M	TAU 11
354	20	Sa.	7 09	O	4 15	C	9 06	18	8 $\frac{1}{2}$	9	1 42	C	4 24	O	TAU 12
355	21	E	7 10	O	4 15	C	9 06	18	9 $\frac{1}{4}$	10	2 18	B	5 31	P	G'M 13
356	22	M.	7 10	O	4 16	C	9 06	17	10	10 $\frac{3}{4}$	3 02	A	6 34	Q	G'M 14
357	23	Tu.	7 11	O	4 16	C	9 06	17	10 $\frac{3}{4}$	11 $\frac{1}{2}$	3 54	A	7 30	Q	—
358	24	W.	7 11	O	4 17	C	9 06	16	11 $\frac{1}{2}$	—	4 53	B	8 17	P	CNC 15
359	25	Th.	7 11	O	4 18	C	9 06	16	0	0	5 56	C	8 55	P	CNC 16
360	26	Fr.	7 12	O	4 18	C	9 06	15	0 $\frac{3}{4}$	0 $\frac{3}{4}$	7 00	D	9 26	N	LEO 17
361	27	Sa.	7 12	O	4 19	C	9 07	15	1 $\frac{1}{2}$	1 $\frac{1}{2}$	8 04	E	9 52	M	LEO 18
362	28	E	7 12	O	4 19	C	9 07	14	2	2 $\frac{1}{4}$	9 07	G	10 13	L	LEO 19
363	29	M.	7 13	O	4 20	C	9 08	14	2 $\frac{3}{4}$	3	10 09	H	10 33	K	VIR 20
364	30	Tu.	7 13	O	4 21	C	9 08	13	3 $\frac{1}{2}$	3 $\frac{3}{4}$	11 $\frac{P}{M}$ 12	I	10 51	I	VIR 21
365	31	W.	7 13	O	4 22	C	9 09	13	4 $\frac{1}{4}$	4 $\frac{1}{2}$	—	K	11 $\frac{A}{M}$ 09	H	LIB 22

DECEMBER hath 31 days.

[1969



All the bells in heaven shall ring,
 In heaven shall ring, in heaven shall ring;
 All the bells in heaven shall ring
 On Christmas-day in the morning.

Anon

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓	Farmer's Calendar.
1	M.	Do not marry [8 on until Jan. 13 [rd Eq.]	{8.0 }8.5	Sunny
2	Tu.	Francis Cardinal Spellman d. 1967	Tides {8.1 }8.4	honey,
3	W.	Last run (2nd-6 P.M.) 20th Century 1967	♂♀Ψ {8.4 }8.3	come
4	Th.	Robert L. Stevenson died (3rd) 1894	♂♂♂ {8.8 }8.4	skate
5	Fr.	Hanukkah	Tides {9.2 }8.5	on the
6	Sa.	St. Nich. Earliest sunsets Dec. 5-12	{9.3 }8.3	lake.
7	E	2nd S. A. {10.3 Del. 9.0 Day	• Hol. Del.	Now
8	M.	Conception Virgin Mary	rides low ♂Ψ♂ {10.8 }9.2	bursts
9	Tu.	Albatrosses nesting (thru Feb.) off Good Hope		Winter's
10	W.	Perl. Tides {11.3 Wyo. 11.3 Day	• Hol. Wyo.	real
11	Th.	1st use laughing gas pull tooth 1844	Tides {9.5 }11.4	first.
12	Fr.	Hudson River frozen 1819	Tides {9.5 }11.2	Foggy,
13	Sa.	Gt. storm S.W. 50 die, 1967	• Dartmouth chart. 1769	smoggy,
14	E	3rd S. A. ♂♂♂	Tides {9.5 }10.3	hazy,
15	M.	Ohio R. Bridge disaster 1967	{9.4 }9.8	Bill of Rights
16	Tu.	Battle Bulge began 1944	♂♂♂ on Eq. Tides {9.5 }9.3	Earmuffs
17	W.	Whittier b. 1807	{9.5 }17, 19, 20	desired
18	Th.	♂♂♂ Shortest days 17-26 (Dec.)	{9.6 }8.6	even by
19	Fr.	Fast of Tebet East River, N.Y. Bridge op. 1903		ski-buffs.
20	Sa.	Winter begins 7.44 P.M. tomorrow		Christmas
21	E	4th S. A. • Thomas Apostole	• Forefathers' Day	Day
22	M.	Haleyon Days calm seas	Tides {9.9 }8.4	will be
23	Tu.	Full Moon 12.36 P.M.	♂♂♂ runs high {9.9 }8.4	white
24	W.	Keeping company with the wolf teaches one to howl	{9.8 }—	and
25	Th.	Christmas D.	Tides {8.4 }9.8	gay.
26	Fr.	St. Stephen, Apo	♂ in Apo. {8.4 }9.6	Then it
27	Sa.	St. John, Evang.	♂ Gr. El. ♀ E. {8.4 }9.5	snows
28	E	1st S. a. Ch. Judas	Holy Innocents {8.4 }9.2	and
29	M.	born Bat. Wounded Knee Creek 1890	{8.4 }8.9	blows
30	Tu.	♂♂♂ on Eq. now to Jan. 8	{8.5 }8.7	don't you
31	W.	♂♂♂ Happy New Year to you	{8.6 }8.4	know.

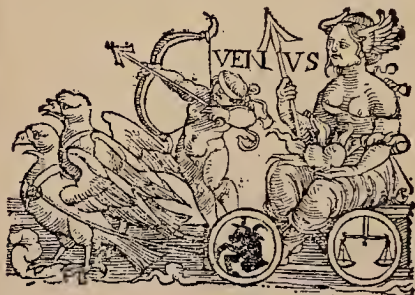
Our house was on a hill near the harbor, and my window looked out over it to the northeast where the winter storms came driving in from the ocean. As a boy I always looked forward to their coming and felt the excitement of them long before they came. Half the fun of a storm is in watching it make up — the leaden sky at sunset, the freshening cold wind off the water, the falling barometer. And tonight a storm is brewing for sure.

As darkness falls, my little desk and school books hold me duty-bound — but fitfully, for I hear the wind rising in the pines and crying at my window. I peer out at the harbor lights and, sure enough, they are not as bright as before (lights are always very bright before a storm). The beacon on Hunt's Island blurs and is gone; the nearer lights dim, and I hear the first dry whisper of snow on my pane. Now there is only the street light at the field's end; then it fades and dims and is gone, too, in a rush and smother of snow. I can smell the snow. And this is a true thing. It is raw like the smell of blood, though few people believe this.

I prop myself on my pillow and watch the white fury outside, and feel the house shake. When I fall asleep, it is knowing that the wonderful wild storm will be with me all the night, and that tomorrow the drifts will be too deep to walk to school.

The Planets, 1969

Below are given the times of rising or setting of the Planets named, on the first, eleventh and twenty-first 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. For explanation of keys (used in adjusting times given to your town) see page 14. Keys appear below in capital letters.



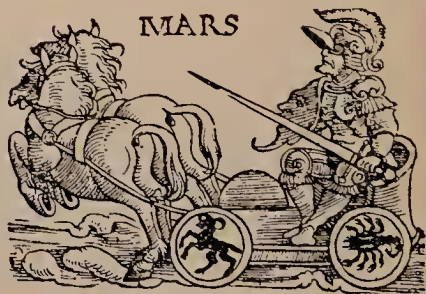
VENUS

Venus is an Evening Star until April 8th when it comes to Inferior Conjunction and a Morning Star for the remainder of the year. It will be at its greatest brilliance in the evening sky on and about March 3rd and in the morning sky on and about May 14th. At these times it will be more than ten times brighter than the brightest star, Sirius. Its greatest elongations occur on January 26th when it will be furthest east of the sun (47°) in the sky and June 11th when it will be furthest west (46°).

JAN	1st sets	8 04 P.M.	F	MAY	1st rises	3 11 A.M.	H	SEP	1st rises	2 09 A.M.	D
	11th "	8 26 P.M.	G		11th "	2 49 A.M.	H		11th "	2 30 A.M.	E
	21st "	8 41 P.M.	H		21st "	2 27 A.M.	H		21st "	2 49 A.M.	F
FEB	1st sets	8 57 P.M.	I	JUN	1st rises	2 08 A.M.	G	OCT	1st rises	3 12 A.M.	G
	11th "	9 07 P.M.	J		11th "	1 56 A.M.	G		11th "	3 36 A.M.	H
	21st "	9 11 P.M.	K		21st "	1 43 A.M.	F		21st "	3 59 A.M.	I
MAR	1st sets	9 08 P.M.	L	JUL	1st rises	1 33 A.M.	E	NOV	1st rises	4 25 A.M.	J
	11th "	8 53 P.M.	M		11th "	1 27 A.M.	E		11th "	4 51 A.M.	K
	21st "	8 19 P.M.	M		21st "	1 24 A.M.	D		21st "	5 17 A.M.	L
APR	1st sets	7 16 P.M.	M	AUG	1st rises	1 28 A.M.	D	DEC	1st rises	5 42 A.M.	M
	11th rises	5 01 A.M.	F		11th "	1 36 A.M.	D		11th "	6 08 A.M.	N
	21st rises	3 42 A.M.	G		21st "	1 50 A.M.	D		21st "	6 30 A.M.	O
									31st rises	6 49 A.M.	O

MARS

Mars is a Morning Star until May 31st when it reaches Opposition and, thereafter, an Evening Star during the rest of the year. Mars is nearest the earth and also at its peak brilliancy on June 8th, being then about 44,580,000 miles from the earth and outshining the brightest star. Its brilliancy will increase from one akin to the average brightest star at the year's beginning to its peak and slowly decline thereafter to about the same brightness at the year's end as it had as the year started.



JAN	1st rises	1 32 A.M.	K	MAY	1st rises	9 31 P.M.	O	SEP	1st sets	10 30 P.M.	B
	11th "	1 21 A.M.	L		11th "	8 49 P.M.	O		11th "	10 14 P.M.	B
	21st "	1 10 A.M.	L		21st "	7 59 P.M.	O		21st "	9 57 P.M.	B
FEB	1st rises	12 57 A.M.	M	JUN	1st sets	4 00 A.M.	C	OCT	1st sets	9 48 P.M.	B
	11th "	12 43 A.M.	M		11th "	3 06 A.M.	C		11th "	9 41 P.M.	C
	21st "	12 29 A.M.	M		21st "	2 16 A.M.	C		21st "	9 36 P.M.	C
MAR	1st rises	12 16 A.M.	N	JUL	1st sets	1 30 A.M.	C	NOV	1st sets	9 33 P.M.	D
	11th "	11 56 P.M.	N		11th "	12 50 A.M.	C		11th "	9 32 P.M.	D
	21st "	11 34 P.M.	N		21st "	12 14 A.M.	C		21st "	9 31 P.M.	E
APR	1st rises	11 08 P.M.	N	AUG	1st sets	11 40 P.M.	C	DEC	1st sets	9 31 P.M.	E
	11th "	10 40 P.M.	N		11th "	11 14 P.M.	C		11th "	9 31 P.M.	F
	21st "	10 03 P.M.	O		21st "	10 51 P.M.	C		21st "	9 31 P.M.	G
									31st sets	9 30 P.M.	G

JUPITER

Jupiter is an Evening Star from the date of its Opposition, March 21, to that of its Conjunction, October 9. The rest of the year it is a Morning Star. Its brilliancy, consistently brighter than all the stars but the brightest star throughout the year, reaches its peak during March, the month it reaches Opposition. At its nearest approach to the earth at that time, it will be about 413,750,000 miles away.

JUPITER



JAN	1st rises	11 16 P.M.	I	MAY	1st sets	3 08 A.M.	J	SEP	1st sets	7 24 P.M.	H
	11th "	10 39 P.M.	I		11th "	2 27 A.M.	J		11th "	6 53 P.M.	H
	21st "	10 00 P.M.	I		21st "	1 48 A.M.	J		21st "	6 18 P.M.	H
FEB	1st rises	9 15 P.M.	I	JUN	1st sets	1 04 A.M.	J	OCT	1st sets	5 40 P.M.	H
	11th "	8 33 P.M.	I		11th "	12 26 A.M.	J		11th rises	5 41 A.M.	J
	21st "	7 49 P.M.	I		21st "	11 44 P.M.	I		21st "	5 13 A.M.	J
MAR	1st rises	7 14 P.M.	I	JUL	1st sets	11 07 P.M.	I	NOV	1st rises	4 42 A.M.	K
	11th "	6 32 P.M.	I		11th "	10 30 P.M.	I		11th "	4 03 A.M.	K
	21st rises	5 46 P.M.	I		21st "	9 53 P.M.	I		21st "	3 44 A.M.	K
APR	1st sets	5 13 A.M.	I	AUG	1st sets	9 13 P.M.	I	DEC	1st rises	3 14 A.M.	K
	11th "	4 31 A.M.	I		11th "	8 38 P.M.	I		11th "	2 44 A.M.	K
	21st "	3 49 A.M.	I		31st "	8 03 P.M.	I		21st "	2 13 A.M.	K
									31st rises	1 42 A.M.	L



SATURN

Saturn adorns the evening sky as an Evening Star until April 18, when it reaches Conjunction, and again from October 28, the date it reaches Opposition, onward. Between April 18 and October 28 it is a Morning Star. Its brightness throughout the year is approximately that of the average, brightest star. When nearest the earth, near its Opposition, it will be about 765,800,000 miles away.

JAN	1st sets	12 33 A.M.	J	MAY	1st rises	4 24 A.M.	G	SEP	1st rises	8 41 P.M.	F
	11th "	11 51 P.M.	J		11th "	3 48 A.M.	G		11th "	8 01 P.M.	F
	21st "	11 14 P.M.	J		21st "	3 12 A.M.	G		21st "	7 21 P.M.	F
FEB	1st sets	10 35 P.M.	J	JUN	1st rises	2 32 A.M.	G	OCT	1st rises	6 40 P.M.	F
	11th "	10 00 P.M.	J		11th "	1 56 A.M.	G		11th "	5 59 P.M.	F
	21st "	9 25 P.M.	J		21st "	1 19 A.M.	G		21st rises	5 18 P.M.	G
MAR	1st sets	8 58 P.M.	J	JUL	1st rises	12 42 A.M.	F	NOV	1st sets	5 57 A.M.	K
	11th "	8 24 P.M.	K		11th "	12 05 A.M.	F		11th "	5 14 A.M.	K
	21st "	7 51 P.M.	K		21st "	11 23 P.M.	F		21st "	4 31 A.M.	K
APR	1st sets	7 15 P.M.	K	AUG	1st rises	10 42 P.M.	F	DEC	1st sets	3 48 A.M.	K
	11th sets	6 45 P.M.	K		11th "	10 03 P.M.	F		11th "	3 06 A.M.	K
	21st rises	4 57 A.M.	G		21st "	9 24 P.M.	F		21st "	2 25 A.M.	K
									31st sets	1 45 A.M.	K

MERCURY

Mercury is most easily seen when near its greatest elongation. For observation just after sundown the best dates will be on or about those of its greatest eastern elongation, January 13, May 5, September 2, and December 27, when it will set 1 hr. 32 m., 1 h. 53 m., 0 h. 44 m., and 1 h. 29 m., respectively, after the sun. For observation just before sunrise the best dates will be on or about those of its greatest western elongation, February 23, June 3, and October 14, when it will rise 1 h. 21 m., 1 h. 10 m., and 0 h. 32 m., respectively, before the sun. Mercury will be in Superior Conjunction on April 8, July 22, and November 16, and in Inferior Conjunction on January 29, May 29, and September 29.

(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. More precisely, it is a Morning Star when it is less than 180° west of the Sun in right ascension and Evening Star when it is less than 180° east. When the planet is near conjunction or opposition, the distinction is unimportant.)

SEASONAL STAR GUIDE, 1969

Maps portraying the starry sky in the evening hours of each of the four seasons appear on the following pages.

The maps are useful throughout the United States, though drawn specifically for Boston. For any point outside Boston the sky will appear essentially as it does at Boston but at a local standard time found by correcting Boston's time by the amount of the place's key letter "I", found in the tables which are part of the Almanac's Regional Forecasts beginning on page 92.

Starviewers in places south of Boston or Lat. 42°21' will be able to see some stars which lie below the southern horizon of Boston at a given time in any season and not see some stars which appear above, but close to its northern horizon. For viewers north of Boston or Lat. 42°21' the situation is the reverse.

No attempt has been made to show all the stars and constellations there are to be seen. The intent is to introduce you only to the brighter stars in the more readily identifiable constellations. When these have become old friends, any one of the many complete star maps which are readily available can be used to extend your knowledge of the starry skies.

BRIGHT STARS, 1969

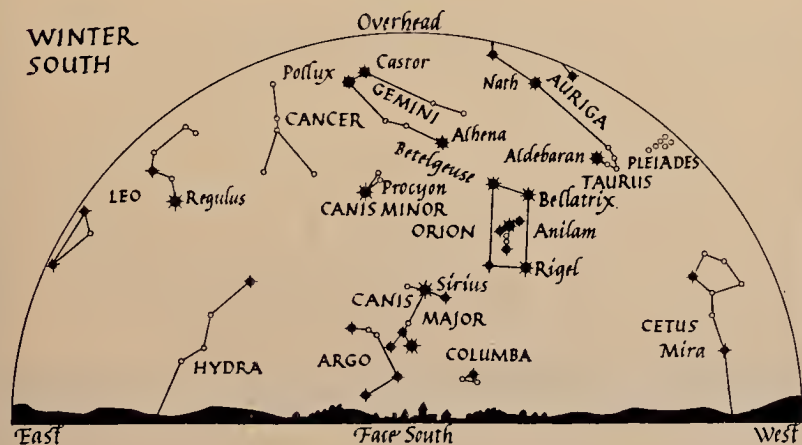
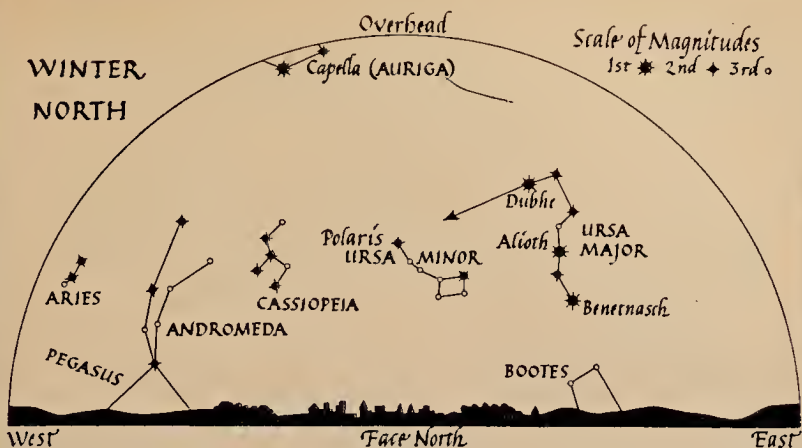
The upper table shows the Eastern Standard Time when each star transits the meridian of Boston on the dates shown, i.e. lies directly above the horizon's south point there, and its altitude above that point at transit. The time of transit on any other date differs from that on the nearest date listed by approximately four minutes of time for each day's difference between the dates. For a place outside Boston the local standard time of the star's transit is found by correcting the time at Boston by the value of key letter "I" for the place. (See footnote.)

Star	Constellation	Magni- tude	Time of Transit (E.S.T.)						Alt.
			Bold face — PM; Light face — AM						
			Jan. 1	Mar. 1	May 1	Jul. 1	Sep. 1	Nov. 1	
Altair	Aquila	0.9	12 49	8 57	4 57	12 57	8 49	4 50	56.4
Fomalhaut	Pis. Aust.	1.3	3 55	12 03	8 03	4 03	11 55	7 52	17.8
Aldebaran	Taurus	1.1	9 28	5 40	1 40	9 40	5 37	1 33	64.1
Rigel	Orion	0.3	10 07	6 19	2 19	10 19	6 16	2 12	39.4
Bellatrix	Orion	1.7	10 17	6 29	2 29	10 29	6 26	2 22	54.0
Betelgeuse	Orion	Var.	10 48	6 59	2 59	11 00	6 56	2 52	55.0
Sirius	Can. Maj.	-1.6	11 38	7 46	3 50	11 50	7 46	3 42	31.0
Procyon	Can. Min.	0.5	12 35	8 39	4 43	12 44	8 40	4 36	52.9
Pollux	Gemini	1.2	12 41	8 45	4 49	12 49	8 45	4 42	75.7
Regulus	Leo	1.3	3 04	11 08	7 08	3 12	11 08	7 05	59.8
Spica	Virgo	1.2	6 20	2 28	10 24	6 28	2 25	10 21	36.6
Arcturus	Bootes	0.2	7 11	3 19	11 15	7 15	3 15	11 11	67.0
Antares	Scorpius	1.2	9 24	5 32	1 32	9 28	5 28	1 24	21.3

Risings and Settings. The times of the star's rising and setting at Boston on any date are found by applying the interval shown to the time of the star's transit on that date, subtracting it for the star's rising, adding it for its setting. These times for a place outside Boston are found by correcting the times found for Boston by the values of the key letters shown. (See footnote.) The directions in which the star rises and sets shown for Boston are generally useful throughout the United States.

Star	Int. h m	Rising		Setting		Star	Int. h m	Rising		Setting	
		Key	Dir.	Key	Dir.			Key	Dir.	Key	Dir.
Altair	6 36	G	EbN	K	WbN	Procyon	6 23	H	EbN	J	WbN
Fomalhaut	3 59	Q	SE	A	SW	Pollux	8 01	A	NE	Q	NW
Aldebaran	7 06	E	ENE	M	WNW	Regulus	6 49	F	EbN	L	WbN
Rigel	5 33	K	EbS	G	WbS	Spica	5 23	L	EbS	F	WbS
Bellatrix	6 27	H	EbN	J	WbN	Arcturus	7 19	D	ENE	N	WNW
Betelgeuse	6 31	G	EbN	K	WbN	Antares	4 17	P	SEbE	B	SWbW
Sirius	5 00	M	ESE	E	WSW						

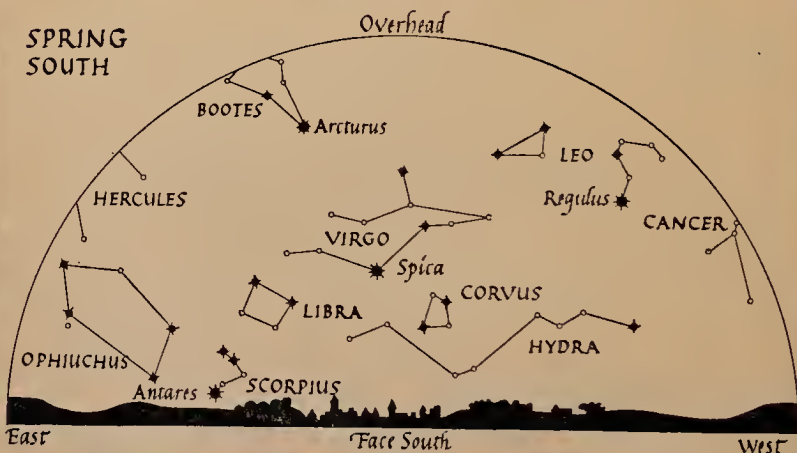
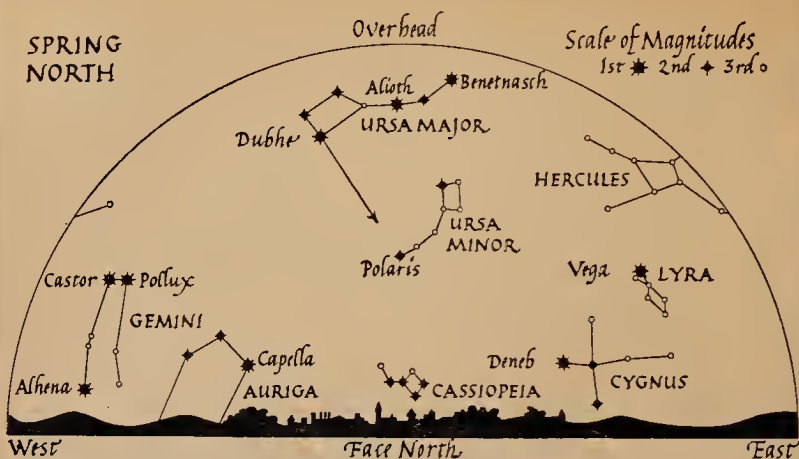
NOTE: The values of key letters are given in the tables within the Regional Forecasts beginning on page 92.



STAR CHART, DEC., JAN., FEB., MAR.

The maps show the night sky as it appears, looking north and south respectively, about 12:40 A.M. on December 21, Midnight on January 1, 10 P.M. on February 1, and 8 P.M. on March 1, standard time. Apply four minutes per day to the time on a date shown to find the time on an intermediate date. For example: February 6's time equals 10.00 (Feb. 1) minus 20 minutes (5×4), or 9:40 P.M.

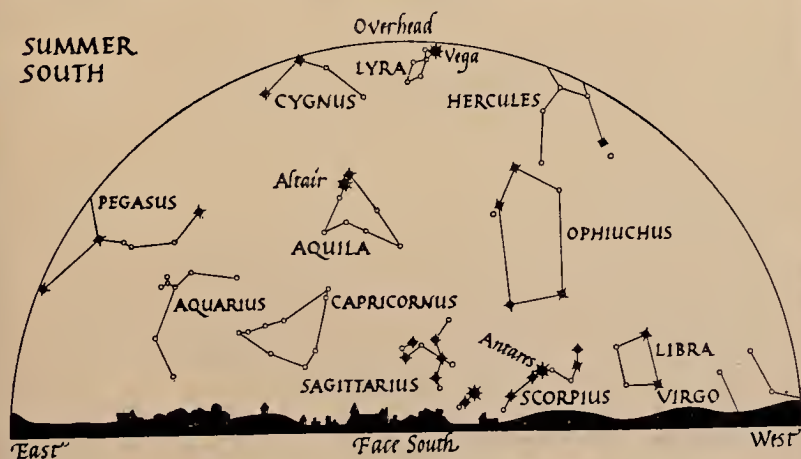
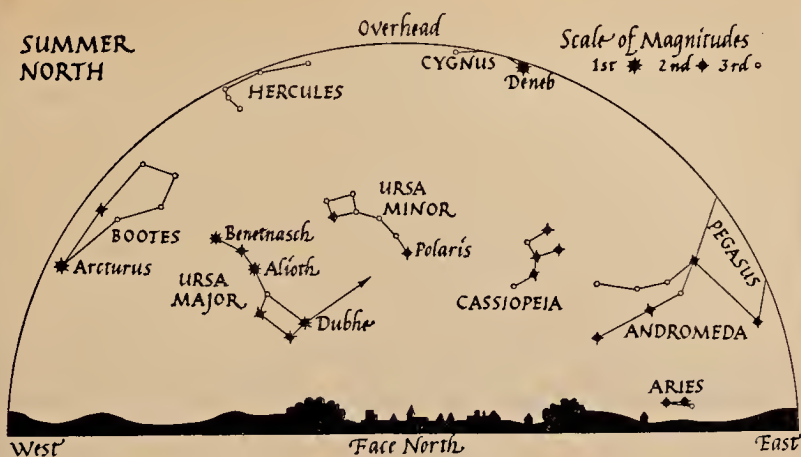
Venus and Saturn are evening stars. Jupiter joins them as it rises earlier each night after a near-midnight rising on December 21. Venus sets latest in late February, the time it comes closest to Saturn. February 20, joined by the crescent moon. Saturn's position below and to the west of Aries changes little. So, too, Jupiter's in Virgo, where it moves eastward until January 21, slowly westward thereafter. Mars, a morning star, rises after midnight until early March. Mercury appears briefly twice: low in the west southwestern sky during the hour and a half after sunset around January 13 and low in the east southeastern sky during the hour before sunrise on and about February 23.



STAR CHART, MAR., APR., MAY, JUNE

The maps show the night sky as it appears, looking north and south respectively, about 12.50 A.M. on March 20, Midnight on April 1, 10 P.M. on May 1, and 8 P.M. on June 1, standard time. Apply four minutes per day to the time on a date shown to find the time on an intermediate date. For example: April 14's time equals 10 P.M. (Apr. 1) minus 56 minutes (14×4), or 9.04 P.M.

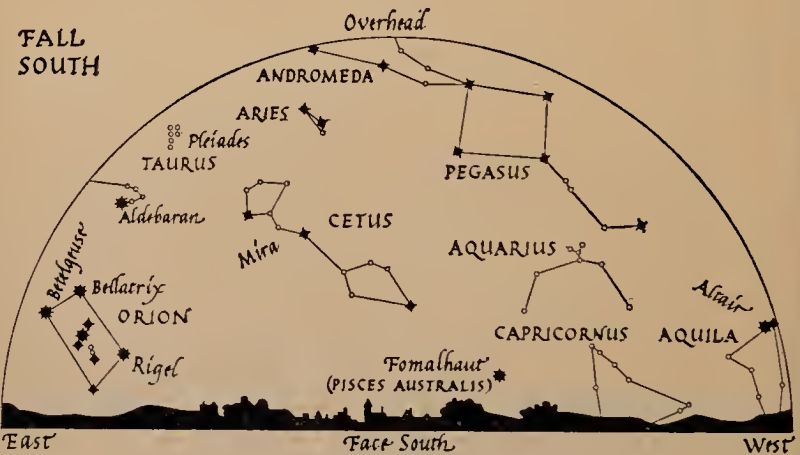
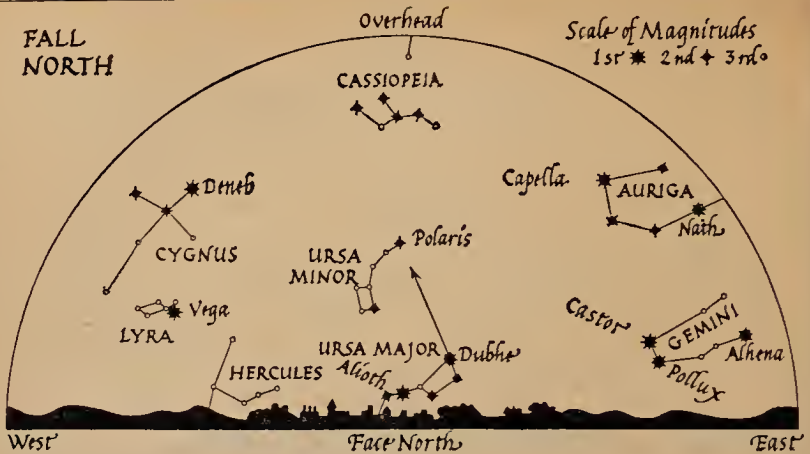
Venus and Saturn, neighboring it on its left, adorn the western sky until they set with the sun on April 8 and 18 respectively. The crescent moon joins them on March 20, Mars and Jupiter grace the evening sky all spring. Mars, close by Antares in Scorpius, twice Antares' brightness in March, steadily brightens to sixteen times it in June. Jupiter is in Virgo northeast of Spica which it greatly outshines. During the two hours after sunset on or about May 5 Mercury may also be spotted, lying low in the west northwestern sky. The crescent moon reappears in the western sky about March 20, April 19, May 19, and June 17.



STAR CHART, JUNE, JULY, AUG., SEPT.

The maps show the night sky as it appears, looking north and south respectively about 12.45 A.M. on June 21, Midnight on July 1, 10 P.M. on August 1, and 8 P.M. on September 1, standard time. Apply four minutes per day to the time on a date shown to find the time on an intermediate date. For example: August 10's time equals 8 P.M. (Aug. 1) minus 36 minutes (9×4), or 7.24 P.M.

Mars, dimming steadily, nears Antares in Scorpius, coming closest in mid-August. The moon joins this pair on June 27, July 25, and August 21. Jupiter continues eastward toward Spica in Virgo. Venus, a morning star rises in the east after midnight. So, too, does Saturn, lying southeast of Aries, until mid-July when it begins rising to the north of east before midnight. Mercury may be glimpsed very low in the west on and about September 2 during the forty-five minutes after sunset. The crescent moon appears in the western sky about July 17, August 16, and September 14. The sun is partially eclipsed on September 11 (see p. 26). A famous shower of meteors, the Perseids, is due on August 11.



STAR CHART, SEPT., OCT., NOV., DEC.

The maps show the night sky as it appears, looking north and south respectively, about 12.35 A.M. on September 23, Midnight on October 1, 10 P.M. on November 1, and 8 P.M. on December 1, standard time. Apply four minutes per day to the time on a date shown to find the time on an intermediate date. For example: October 20's time equals 10.00 (Oct. 1) minus 76 m. (19 x 4), or 8.44 P.M.

The evening stars are Mars and Saturn; so, too, Jupiter until it sets with the sun on October 9. Mars speeds eastward through Sagittarius and Capricornus into Aquarius and its brightness fades to that of the brighter stars. Saturn, situated south of Aries, retrogrades among the stars, that is, moves slightly westward, during the fall. The crescent moon adorns the evening sky on September 14, October 17, November 12, and December 12. Venus is a morning star; so, too, Jupiter after October 9. On November 4 Venus passes a moon's breadth to the north of Jupiter. Mercury also appears in the east for a few days around October 14 during the half hour immediately before sunrise. The Leonids provide a shower of meteors on November 16.

OUTDOOR PLANTING TABLE, 1969

The best time to plant flowers and vegetables which bear crops above the ground is during the LIGHT of the moon; that is, between the day the moon is new to the day it is full. Flowers and vegetables which bear crops below ground should be planted during the DARK of the moon; that is, from the day after it is full to the day before it is new again. These moon days for 1969 are given in the "Moon Most Favorable" columns below. See pages 22-44 for exact times and days of the new and full moons. On these pages you will also find in the "Moon's Place" columns, the Zodiac signs for each day. Those most favorable for planting flowers and vegetables which bear crops above ground are ARI, CNC, LIB, AQR, and PSC. The only sign which is good for flowers or vegetables which bear crops below ground is TAU.

The three columns below are for approximately the 42°, 39°, and 34° Latitude parallels. If the latitude of your town (see pages 95 - 118) is, for example, halfway between 42° and 39°, then you would plant on dates halfway between those given in the 42° column and the 39° column, etc. For every 500 feet above sea level, plant one week later than dates given below.

Above Ground Crops Marked (*) Plant Bet. New and Full Moon— All Others Bet. Full and New E means Early; L means Late.	42° Boston, Chicago, Des Moines, etc.		39° Wash., Cinc., St. Louis, Kan. City		34° Atlanta, Los Angeles	
	Plant Anytime Between Dates Below	Moon Most Favorable Between	Plant Anytime Between Dates Below	Moon Most Favorable Between	Plant Anytime Between Dates Below	Moon Most Favorable Between
*Barley	5-15/6-21	5, 16-30	3-15/4-7	3, 17-31	2-15/3-7	2, 16-28
*Beans (E)	5-7/6-21	5, 16-30	4, 15-30	4, 16-30	3-15/4-7	3, 17-31
(L)	6-15/7-15	6, 15-28	7, 1-21	7, 14-21	8, 7-30	8, 13-27
Beets (E)	5, 1-15	5, 2-15	3-15/4-3	3, 15; 16	2, 7-29	2, 7-15
(L)	7-15/8-15	7, 29-31	8, 15-30	8, 28-30	9, 1-30	9, 1-10
*Broccoli (E)	5, 15-30	5, 16-30	3, 7-30	3, 17-30	2-15/3-15	2, 16-28
(L)	6-15/7-7	6, 15-28	8, 1-20	8, 13-20	9, 7-30	9, 11-24
*Brussels Spr.	5, 15-30	5, 16-30	3-7/4-15	3, 17-31	2-11/3-20	2, 16-28
*Cabbage Pl. (E)	5, 15-30	5, 16-30	3-7/4-15	3, 17-31	2-11/3-20	2, 16-28
(L)	6-7/7-7	6, 14-28	7-1/8-7	7, 14-27	8, 15-30	8, 15-27
Carrots (E)	5, 15-30	5, 15, 31	3, 7-31	3, 7-16	2-15/3-7	2, 15
(L)	6-15/7-21	6, 30	7, 7-30	7, 7-13	8-1/9-7	8, 1-12
*Cauliflower Pl. (E)	5, 15-30	5, 16-30	3-15/4-7	3, 17-31	2-15/3-7	2, 16-28
(L)	6-15/7-21	6, 15-28	7-1/8-7	7, 14-27	8, 7-30	8, 13-27
Celery (E)	5-15/6-30	5, 15, 31	3, 7-30	3, 7-16	2, 15-28	2, 15
(L)	7-15/8-15	7, 29-31	8-15/9-7	8, 28-31	9, 15-30	9, 25-30
*Corn, Sw. (E)	5-10/6-15	5, 16-30	4, 1-15	4, 1	3, 15-29	3, 17-29
(L)	6, 15-30	6, 15-28	7, 7-21	7, 14-27	8, 7-30	8, 13-27
*Cucumber	5-7/6-20	5, 16-30	4-7/5-15	4, 16-30	3-7/4-15	3, 17-31
*Eggplant Pl.	6, 1-30	6, 14-28	4-7/5-15	4, 16-30	3-7/4-15	3, 17-31
Endive (E)	5, 15-30	5, 15, 30	4-7/5-15	4, 7-15	2-15/3-20	2, 15
(L)	6, 7-30	6, 7-13	7-15/8-15	7, 29-31	8-15/9-7	8, 28-31
*Flowers (All)	5-7/6-21	5, 16-30	4, 15-30	4, 16-30	3-15/4-7	3, 17-31
*Kale (E)	5, 15-30	5, 16-30	3-7/4-7	3, 17-31	2-11/3-20	2, 16-28
(L)	7-1/8-7	7, 14-27	8, 15-31	8, 15-27	9, 7-30	9, 11-24
Leek Pl.	5, 15-30	5, 15, 30	3-7/4-7	3, 7-16	2-15/4-15	2, 15
*Lettuce	5-15/6-30	5, 16-30	3, 1-31	3, 1-3	2-15/3-7	2, 16-28
*Melon (Musk)	5-15/6-30	5, 16-30	4-15/5-7	4, 16-30	3-15/4-7	3, 17-31
Onion Pl.	5-15/6-7	5, 15, 31	3, 1-31	3, 4-16	2, 1-28	2, 2-15
*Parsley	5, 15-30	5, 16-30	3, 1-31	3, 1-3	2-20/3-15	2, 20-28
Parsnip	4, 1-30	4, 2-15	3, 7-31	3, 7-16	1-15/2-4	1, 15, 16
*Peas (E)	4-15/5-7	4, 16-30	3, 7-31	3, 17-31	1-15/2-7	1, 17-31
(L)	7, 15-30	7, 14-27	8, 7-31	8, 13-27	9, 15-30	9, 15-24
*Pepper Pl.	5-15/6-30	5, 16-30	4, 1-30	4, 1, 16-30	3, 1-20	3, 1-3
Potato	5, 1-15	5, 2-15	4, 1-15	4, 2-15	2-10/3-1	2, 10-15
*Pumpkin	5, 15-30	5, 16-30	4, 23/5-15	4, 23-30	3, 7-20	3, 17-20
Radish (E)	4, 15-30	4, 15	3, 7-31	3, 7-16	1-21/3-1	2, 2-15
(L)	8, 15-30	8, 28-31	9, 7-30	9, 25-30	10, 1-21	10, 1-10
*Spinach (E)	5, 15-30	5, 16-30	3-15/4-20	3, 17-31	2-7/3-15	2, 16-28
(L)	7-15/9-7	7, 15-27	8-1/9-15	8, 13-27	10, 1-21	10, 11-21
*Summer Squash	5-15/6-15	3, 16-30	4-15/5-1	4, 16-30	3-15/4-15	3, 17-31
*Swiss Chard	5, 1-30	5, 16-30	3-15/4-15	3, 17-31	2-7/3-15	2, 16-28
*Tomato Pl.	5, 15-30	5, 16-30	4, 7-30	4, 16-30	3, 7-20	3, 17-20
Turnip (E)	4, 7-30	4, 7-15	3, 15-30	3, 15, 16	1-20/2-15	2, 2-15
(L)	7-1/8-15	7, 1-13	8, 1-20	8, 1-12	9-1/10-15	9, 1-10
*Wheat (Winter)	8, 11-15	8; 13-15	9-15/10-20	9, 15-24	10-15/12-7	10, 15-24
(Spring)	4, 7-30	4; 16-30	3, 1-20	3, 1-3	2, 15-28	2, 16-28

MOON LORE

■ ON THE PRECEDING page the "Moon Most Favorable" columns are based on the "light" and "dark" of the moon. The "light" — when you should plant vegetables and flowers bearing fruit ABOVE ground — is BETWEEN the new and the full. The "dark," when you plant all others, is AFTER the full to the new.

Plant above-ground crop seeds: Mar. 17-31, Apr. 16-30, May 16-30, June 14-28, July 14-27.

Plant below-ground crop seeds: Mar. 4-16, Apr. 2-15, May 2-15, June 1-13, July 1-13.

Other moon adages follow here-with:

Set or sow all kinds of pulse when moon is in Cancer.

In moist ground choose end of moon's wane, when very near the change.

In dry ground, choose waxing moon and toward the full.

Dress gardens, trim small trees and shrubs when moon is in Libra or Capricorn.

Sow or plant when moon is in Taurus, Virgo, or Scorpio, and in good aspect with Saturn.

Wean a colt only when moon is in Capricornus, Aquarius, or Pisces.

Set eggs so that they hatch during the light of the moon, and in Cancer, Scorpio, or Pisces.

Desex stock when moon is in Capricornus, Aquarius, or Pisces.

Best time to set hens is in February during light of the moon.

Prune vines in full of moon in Taurus, Leo, Scorpio, or Sagittarius.

Don't graft trees when moon is on the wane or not seen.

Set or cut any shrub or tree that you want to have retarded growth in dark of moon in Cancer.

Cut trees you wish to grow quickly again during first quarter of moon.

Two days before the full moon is best time to plant plants which need the full force of the moon — and rain.

To sow at the new moon is better than two days before it.

Plants sown at full moon will be better than those sown at new moon. Corn planted at new moon does not do well.

Nails and hair grow faster if cut during the light of the moon.

If the horns of the moon be sharp on the third day — the whole month will be fine.

If upper horn of moon dusky at setting, it will rain during the wane of that moon.

Continued on page 122

KILLING FROSTS and GROWING SEASONS

Courtesy of U. S. Weather Bureau

City	G.S. (Days)	Last Frost Spring	First Frost Fall
Lander, Wyo.....	123	May 18	Sept. 18
Bismarck, N.D....	133	May 11	Sept. 21
Alpena, Mich.....	141	May 13	Oct. 1
Helena, Mont.....	145	May 7	Sept. 29
Reno, Nev.....	145	May 14	Oct. 6
Marquette, Mich..	149	May 13	Oct. 9
Concord, N.H....	149	May 7	Oct. 3
Duluth, Minn.....	152	May 6	Oct. 5
Green Bay, Wisc..	157	May 5	Oct. 9
Pocatello, Ida....	160	Apr. 29	Oct. 6
Denver, Colo.....	160	May 3	Oct. 10
Pierre, S. Dak....	160	Apr. 30	Oct. 7
Minneapolis.....	166	Apr. 27	Oct. 10
Detroit, Mich....	170	Apr. 28	Oct. 15
Des Moines, Ia....	171	Apr. 21	Oct. 9
Fort Wayne, Ind..	171	Apr. 25	Oct. 13
Ludington, Mich..	172	May 2	Oct. 21
Albany, N.Y.....	174	Apr. 24	Oct. 15
Madison, Wisc....	174	Apr. 26	Oct. 17
Santa Fe, N.M....	177	Apr. 25	Oct. 19
Hartford, Conn...	177	Apr. 20	Oct. 13
Toledo, Ohio.....	179	Apr. 22	Oct. 18
Portland, Maine...	181	Apr. 19	Oct. 17
Spokane, Wash....	182	Apr. 14	Oct. 13
Parkersburg.....	184	Apr. 17	Oct. 18
Omaha, Nebr.....	184	Apr. 14	Oct. 15
Salt Lake City....	185	Apr. 18	Oct. 20
Chicago, Ill.....	186	Apr. 16	Oct. 19
St. Joseph, Mo....	191	Apr. 9	Oct. 17
Trenton, N.J.....	191	Apr. 16	Oct. 24
Springfield, Mo..	193	Apr. 12	Oct. 22
Boston, Mass.....	195	Apr. 14	Oct. 26
Wichita, Kans....	197	Apr. 9	Oct. 23
Cincinnati, Ohio..	198	Apr. 8	Oct. 23
Lewiston, Ida....	201	Apr. 6	Oct. 24
Harrisburg, Pa....	202	Apr. 9	Oct. 28
Evansville, Ind....	207	Apr. 5	Oct. 29
Cairo, Ill.....	212	Mar. 31	Oct. 29
Richmond, Va....	216	Mar. 31	Nov. 2
Roseburg, Ore....	217	Apr. 8	Nov. 11
Oklahoma City....	218	Mar. 30	Nov. 3
Chattanooga.....	220	Mar. 29	Nov. 4
Raleigh, N.C....	223	Mar. 27	Nov. 5
Little Rock, Ark..	241	Mar. 18	Nov. 14
El Paso, Tex.....	242	Mar. 19	Nov. 16
Tucson, Ariz....	243	Mar. 11	Nov. 9
Macon, Ga.....	245	Mar. 14	Nov. 14
Columbia, S.C....	246	Mar. 17	Nov. 18
Montgomery, Ala..	250	Mar. 8	Nov. 13
Shreveport, La....	251	Mar. 6	Nov. 12
Portland, Ore....	251	Mar. 15	Nov. 21
San Bernardino...	259	Mar. 8	Nov. 22
Eureka, Calif....	277	Mar. 16	Dec. 18
Del Rio, Tex.....	277	Feb. 23	Nov. 27
Sacramento.....	283	Feb. 19	Nov. 29
Phoenix, Ariz....	296	Feb. 10	Dec. 3
Yuma, Ariz.....	334	Jan. 20	Dec. 20
San Francisco.....	350	Jan. 13	Dec. 29
Los Angeles.....	*	*	*
Miami, Fla.....	*	*	*
San Diego.....	*	*	*

*Frosts do not occur every year.

MOON WEATHER TABLE,

For foretelling the Weather through all the lunations of each year, forever.

This table, and the accompanying remarks, are the result of many years' actual observation, the whole being constructed on a due consideration of the attraction of the sun and moon, in their several positions respecting the earth, and will, by simple inspection, show the observer what kind of weather will most probably follow the entrance of the moon into any of its quarters, and that so near the truth as to be seldom or never found to fail.

This weather table will answer very well for anywhere in the United States. It is taken from the 1849 issue of The Old Farmer's Almanac and was widely used before the advent of the Weather Bureau. Do not be surprised if the forecasts arrived at by this table do not agree with those on other pages. THE OFA goes by many factors besides the moon.

WEATHER TABLE FOR ANYWHERE

Moon	Time of Change	In Summer	In Winter
If the new moon, 1st quarter, full moon, or last quarter happens.	From Midnight to 2 A.M.	Fair	Hard frost, unless wind be S. or W.
	From 2 A.M. to 4 A.M.	Cold, with frequent showers	Snow and stormy
	From 4 A.M. to 6 A.M.	Rain	Rain
	From 6 A.M. to 8 A.M.	Wind and Rain	Stormy
	From 8 A.M. to 10 A.M.	Changeable	Cold Rain if wind be W.; Snow if E.
	From 10 A.M. to Noon	Frequent Showers	Cold & high wind.
	From Noon to 2 P.M.	Very rainy	Snow or rain.
	From 2 P.M. to 4 P.M.	Changeable	Fair & mild.
	From 4 P.M. to 6 P.M.	Fair	Fair.
	From 6 P.M. to 8 P.M.	Fair — if wind N.W. Rain — if S. or S.W.	Fair & frosty if wind N. or N.E.; Rain or snow if wind S. or S.W.
	From 8 P.M. to 10 P.M.	Same as from 6 P.M. to 8 P.M.	
	From 10 P.M. to Midnight	Fair	Fair & frosty.

Observations. — 1. The nearer the moon's changes, first quarter, full, and last quarter are to *midnight*, the fairer will it be during the next seven days.

2. The space for this calculation occupies from ten at night till two next morning.

3. The nearer to *midday*, or *noon*, the phases of the moon happen, the more foul or wet weather may be expected during the next seven days.

4. The space for this calculation occupies from ten in the forenoon to two in the afternoon. These observations refer principally to the summer, though they affect spring and autumn nearly in the same ratio.

5. The moon's change, first quarter, full and last quarter, happening during six of the afternoon hours, i.e., from four to ten, may be followed by fair weather; but this is mostly dependent on the *wind*, as is noted in the table.

6. Though the weather, from a variety of irregular causes, is more uncertain in the latter part of autumn, the whole of winter, and the beginning of spring, yet, in the main, the above observations will apply to those periods also.

7. To prognosticate correctly, especially in those cases where the *wind* is concerned, the observer should be within sight of a good *vane*, where the four cardinal points of the heavens are correctly placed.

The above table was originally formed by Dr. Herschell, and is now published with some alterations founded on the experience of Dr. Adam Clarke.

TO THE WEATHER-WISE

M. Toalda of Padua (circa 1720) asserted that the weather changes most often (85.8% of the time) when the new moon comes in; 83.4% with the full, and 66.7% with the other two phase changes. Recent studies by scientists with the U.S.W.B. and N.Y.U. show heaviest rainfall comes 3 to 5 days after the new and the full moons.

Many blossoms on plum trees in the Spring, heavy fruit crops in the Fall, oak (and other) leaves remaining on trees in December indicate a severe Winter is coming up. The thickness of Fall fur on most animals, goose bones, pigs' melts, distance between caterpillar stripes also are Winter predictors. Birds, particularly owls, pileated woodpeckers, and swallows are predictors — as is, of course, the woodchuck. When hornets build nests high off the ground, expect deep snows. Bees, spiders, and ants — as well as certain flowers — are useful as short-term predictors. Nature, on the whole, however, is not easily understood and birds and animals, who should know, are often as misled by her as is mankind.

PART TWO

Secrets of the Zodiac & Planets

(Being the interpretation, astrologic, and just for fun,
Of all serious scientific data in Part One.)

FAMOUS DEBOWELLED MAN OF THE SIGNS

- ♈ Aries, head. ARI
Mar. 21-Apr. 19
- ♉ Taurus, neck. TAU
Apr. 20-May 20
- ♊ Gemini, arms. G'M
May 21-June 20
- ♋ Cancer, breast. CNC
June 21-July 22
- ♌ Leo, heart. LEO
July 23-Aug. 22
- ♍ Virgo, belly. VIR
Aug. 23-Sept. 22
- ♎ Libra, reins. LIB
Sept. 23-Oct. 22
- ♏ Scorpio, secrets. SCO
Oct. 23-Nov. 21
- ♐ Sagittarius, thighs. SGR
Nov. 22-Dec. 21
- ♑ Capricornus, knees. CAP
Dec. 22-Jan. 19
- ♒ Aquarius, legs. AQR
Jan. 20-Feb. 18
- ♓ Pisces, feet. PSC
Feb. 19-Mar. 20



Man of the Signs used by Abe Weatherwise, 1784

These signs, abbreviated, appear for each day on pages 22-44. Their meaning is given on pages 56-59. The illustrations, pages 57-59, are the actual patterns as seen in the sky by the ancients (see Hygini, Augusti Liberti, 1570).

The ancients believed (but we do not) that from the knowledge of the location of each planet in the heavens at the exact hour of one's birth one can foresee what kind of a life a child will have, what are the child's inclinations, and what sort of education will best serve the child. The heavens (called the Zodiac) were divided into 12 sections (called Signs) of about 30 days each. There follow on the next three pages brief resumes of the (ancient) meanings of each Sign by which the lives of those born within the period shown are governed. Those using the meanings of these Signs for themselves should also be guided by the Sign for each day of the year which appears in the next to the last column on pages 22 through 44. For example: if you were born on February 12, your ruling Sign is always Aquarius: but on February 12 (see Page 24) each year the Moon's Place will probably be in some other sign. Thus each year you will be "under the influence of" the sign shown here as well as the one given for your birthday on pages 22-44. You should "go by" the sign given here.

The birthstones given under each sign cover respectively, in the order given, the two monthly periods under each sign.

Many readers of this Almanac have asked for information as to which sign is best for the activities listed below. You will note that under each sign (pages 57-59) we have listed the letters pertaining to the activity best carried on under that sign. However, if an activity appears as best under Aries (Mar. 21-Apr. 19), any day(s) against which ARI appears in the next to the last column of pages 22-44 is also good for that activity. Same with Taurus, etc.

- | | |
|--|--|
| A Cutting grass or brush, weeding. | H Weaning. |
| B Cutting and setting posts or timbers. | I Slaughtering. |
| C Cutting hay, pruning. | J Operations, pulling teeth. |
| D Planting above ground crops. | K Hairdos, sheep shearing, buying clothes. |
| E Planting root crops, house painting. | L Business, gambling, taking risks. |
| F Harvesting crops or herbs. | M Fishing. |
| G Breeding, setting hens, creating, baking | N Travel, marriage, romance. |

ARIES

ABBR: "ARI" SIGN: LAMB

Controls the head and face

Belongs to those born Mar. 21-Apr. 19

Ruling Planet, Mars; Birthstone

Jasper, Bloodstone, (Aquamarine);
Colors, Red, Green.

Best for D, L, G, F, I.



Pretty Aries with hair so fair
Of 1969 you must beware.
Your miniskirt with be going down —
The only boy with loeks'll be a clown.

**TAURUS**

ABBR: "TAU" SIGN: BULL

Controls the throat and neck

Belongs to those born Apr. 20-May 20

Ruling Planet, Venus; Birthstone
Diamond, Sapphire; Color, Blue.

Best for E, K, B, I, F, G.

Taurians born this best time of year,
Rise, shine, and give a loud cheer;
Good fishing, good loving, good most everything
This Year of the Monkey to you will bring.

GEMINI

ABBR: "G'M" SIGN: TWINS

Controls shoulders, lungs, arms,
hands, and the nervous system.

Belongs to those born May 21-June 20

Ruling Planet, Mereury; Birthstone,
Emerald; Color, Green.

Best for J, G, L, A, I, F.



How sweet you twins smell!
Of blossoms, buds, and bells you tell.
This year, whatever you may undertake,
For you a fortune and joy will make.

CANCER

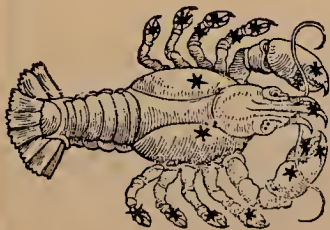
ABBR: "CNC" SIGN: CRAB

Controls breast and stomach

Belongs to those born June 21-July 22

Ruling Planet, Moon; Birthstone,
Agate, (Pearl, Alexandrite, Moonstone)
Color, Blends.

Best for D, M, K, G, I, A, C.



Between showers of good things and bad.
This year you must somehow be glad
That whatever seems ornery or eurst
Probably could be a whole lot worse.

LEO

ABBR: "LEO" SIGN: LION
Controls the heart

Belongs to those born July 23-Aug. 22
Ruling Planet, Sun; Birthstone,
Turquoise, (Ruby); Color, Blue-Red.

Best for K, B, A, F, N.



Being King of the Beasts, my dear.
Doesn't mean you're really that good, I fear.
In sixty-nine, you'll fall on your face —
Once, twice — then you'll slacken your pace.

VIRGO

ABBR: "VIR" SIGN: VIRGIN
Controls the lower intestines

Belongs to those born Aug. 23-Sept. 22
Ruling Planet, Mercury; Birthstone,
Carnelian, (Peridot, Sardonyx);
Colors, Red-Brown, Green-Yellow.

Best for J, K, L, A, I, F.



This year you gals are in for a surprise
From boys (or men) wearing blue neckties.
If you see one, say, "Hi, I want that neckpiece."
He'll reply, "In exchange, I get you on a very
long lease."

LIBRA

ABBR: "LIB" SIGN: SCALES
Controls the loins

Belongs to those born Sept. 23-Oct. 22
Ruling Planet, Venus; Birthstone,
Chrysolite, (Sapphire);
Colors, Green-Blue.

Best for D, N, K, G, I.



Venusias are brainy except when it's rainy,
And then, we are told, become almost zany.
In this year, sixty-nine, you will just adore
Anything, anybody close to the seashore.

SCORPIO

ABBR: "SCO" SIGN: SCORPION
Controls the generative organs

Belongs to those born Oct. 23-Nov. 21
Ruling Planet, Mars; Birthstone,
Beryl, (Opal, Tourmaline);
Color, Blends.

Best for M, G, I, A.



Secretive, persistent, passionate people these —
Couldn't care less if they roast or freeze.
As long as the one they love is near
He or she will be happy all year.

SAGITTARIUS

ABBR: "SGR" SIGN: ARCHER
Controls the thighs

Belongs to those born Nov. 22-Dec. 21
Ruling Planet, Jupiter; Birthstone,
Topaz; Color, Gold.

Best for J, N, K, F, I, H.



Well, you got by sixty-eight okay;
"Never thought you'd make it!" — I heard some say.
So now in sixty-nine you will celebrate
A most fascinating, wonderful, brand-new mate.

CAPRICORNUS

ABBR: "CAP" SIGN: GOAT
Controls the knees

Belongs to those born Dec. 22-Jan. 19
Ruling Planet, Saturn; Birthstone,
Ruby, (Turquoise, Zircon);
Colors, Red-Blue-Green.

Best for J, G, I, H.



All Winter long you'll be reserved and cool;
Come Spring, then Summer, uninhibited's the rule.
But particularly this year you may get the chance
Your position, your wealth, your friendship(s) to enhance.

AQUARIUS

ABBR: "AQR" SIGN: WATER BOY
Controls the legs

Belongs to those born Jan. 20-Feb. 18
Ruling Planet, Uranus; Birthstone,
Garnet; Color, Dark Red.

Best for D, K, B, I, H, A.



Aquarians, through no faults of their own, are odd.
Their sign was thought up by some ancient Mod;
But believe me, before this year is over,
They'll be having plover in the clover with a lover.



PISCES

ABBR: "PSC" SIGN: FISH
Controls the feet

Belongs to those born Feb. 19-Mar. 20
Ruling Planet, Neptune; Birthstone,
Amethyst; Color, Purple.

Best for D, M, B, G, I, H, C.

In sixty-nine, this is how it is:
Pisceans are in for a year of big biz.
Could be steel or lumber or real estate,
Or something else which makes you great.

WIND CHILL TABLE

Courtesy Army, Navy, Air Force Bulletins
TB MED 81, NAVMED 5052-29,
AFP 161-1-11

When thermometer reads	When the wind blows at the m.p.h. below, it reduces Temperature to								
↓	Calm	5	10	15	20	25	30	35	40
+50	50	48	40	36	32	30	28	27	26
+40	40	37	28	22	18	16	13	11	10
+30	30	27	16	9	4	0	-2	-4	-6
+20	20	16	4	-5	-10	-15	-18	-20	-21
+10	10	6	-9	-18	-25	-29	-33	-35	-37
0	0	-5	-21	-36	-39	-44	-48	-49	-53
-10	-10	-15	-33	-45	-53	-59	-63	-67	-69
-20	-20	-26	-46	-58	-67	-74	-79	-82	-85
-30	-30	-36	-58	-72	-82	-88	-94	-98	-100
-40	-40	-47	-70	-88	-96	-104	-109	-113	-116
-50	-50	-57	-85	-99	-110	-118	-125	-129	-132
-60	-60	-68	-95	-112	-124	-133	-140	-145	-148

To measure speed of wind without instruments: when CALM (smoke rises vertically); 1-12 m.p.h. (just feel wind on face, leaves in motion); 13-24 (raises dust or loose paper, small branches move); 25-30 (large branches move, wires whistle); 30-40 (whole trees in motion, hard to walk against).

For the properly clothed, there is little danger down to -20° but caution should be used with regard to all exposed flesh. At below -20° , take no unnecessary chances.



BEST FISHING DAYS, 1969

There are probably more "fishing calendars" sold each year than all the almanacs put together. It is likely that the more mystifying the ingredients of these calendars are, the more popular they become. Almost all agree, however, that fishing is better when 1) the barometer is rising or high; 2) when the moon is between the new and the full; and 3) when the moon is in the astrological sign of Cancer, Pisces or Scorpio. The days listed below are days during which all three of the above could occur.

Jan. 20, 21, 29, 30; Feb. 17, 18, 26, 27; Mar. 17, 18, 25, 26; Apr. 22, 23; May 19, 20, 28, 29; June 16, 17, 25, 26; July 14, 22, 23; Aug. 18, 19, 20; Sept. 15, 16, 23, 24; Oct. 12, 13, 20, 21; Nov. 10, 11, 18, 19; Dec. 14, 15.

Here are a few observations, taken from a room full of fishing books and clippings, which may or may not prove helpful:

Water temperatures between 55°F and 74°F are best; the clearer the water, the better, preferably with a slight ripple; south and west winds are the best, or any off-shore breeze.

The best times for fishing (or hunting) are one hour before and after high tide, and one hour before and after low tide. The times of high and low tides are given on pages 22-44 and corrected for your locality on page 89. Low tides are halfway between high tides.

WINTER FISH

■ YOU HAVE ALL HEARD, ere this, that France has lately experienced a happy and glorious Revolution — Americans, sensible of the blessings of freedom, have held days of rejoicing with exceeding joy for the emancipation of their Gallic brothers from tyranny. In most of our great-towns, they have had Civic Barbecues, Feasts, Toasts, etc., sacrificing here an ox and there a sheep — there a shad, and here a salmon — LIBERTY and EQUALITY are all the *ton* and "Citizen" the only title allowable in Boston. At the feast in Philadelphia, it is noticed (almost as a miracle) that they had FRESH SHAD, caught in January! in the river Delaware where water runs and fish swim all the year through! At Boston (strange to tell!) they boast loudly of having excelled the Philadelphians — for, instead of shad, they boast of FRESH SALMON at their feast! that were caught in Merrimack river — which was never known to be dry! Some say this salmon was sold to the Civic Citizen Bostonians at the moderate price of four shillings per pound! Some say more, and some less! But (as Boston folks are full of notions) we cannot tell to a penny!

In Concord, we did not meet, and have a feast — we did not barbecue an ox — a sheep — nor dine on shad or salmon to celebrate the Gallic independence. Yet all our countenances are glad, and all our hearts rejoice. But we have a fish story to tell, full equal (we think) with the Bostonians, or Philadelphians, or even the New-Yorkers, who also had fresh salmon exposed for sale in the publick markets of their great city, in January!*

(*We cannot tell what river produced the New York salmon — 'Tis no matter!)

WASHINGTON'S BIRTH-DAY

The 11th instant being the natal day of the Man of the People, Citizen Washington, our political common Father, the dawn of day was announced by the discharge of a cannon. In the evening, a number of Citizens assembled at Citizen Stickney's Bell Tavern, and regaled themselves with a civic supper; at which was served up, A FRESH SALMON TROUT, presented by Citizen Duncan; which was caught in a pond about 20

Continued on page 116

FISH AND GAME SUMMARY

(Format copyrighted — must not be copied.)

Based on latest (mostly 1967-68) available laws courtesy of State Fish & Game Commissioners. For the most part 1969 laws not released until after press date (June, 1968) and so no attempt is made here at accuracy; in fact, only approximations of the months which may include seasons are given. This table useful only for vacation planning considerations and to satisfy curiosity as to what the various states offer in the way of hunting and fishing. Migratory Bird Regulations are available at any post office.

EXACT DATES, LIMITS, ETC. MUST BE VERIFIED LOCALLY.

STATE	SPECIES	ANTELOPE	BEAR	DEER	MT. GOAT SHEEP	ELK	MINK	MUSKRAT	OPOSSUM	RABBIT	RACCOON	SQUIRREL
Alabama			C	11-1			11-2	11-2	10-2	10-2	10-2	10-1
Alaska			9-12	8-12	8-12	8-12	11-1	11-6		O	O	O
Arizona	9		4, 9-1		11-12	9-11	O	O		O	O	9-11
Arkansas				10-1			11-3		11-3	10-2	11-3	10-12
California	C		9-12	8-11	C	C	11-2	11-3	O	9-1	O	10-12
Colorado	P9		4-10	8,10,11	P8	10-11	11-2	10-5	O	10-2	O	
Connecticut				11-12			C	C		10-1	9-1	10-1
Delaware				11			12-3	12-3	O	11-1	9-3	9-10
Florida			11-1	11-1							O	11-2
Georgia			11-1	10-1			11-2	11-2	10-2	11-2	10-2	10-2
Hawaii	S		X	S	O	X	X	X	X	X	X	X
Idaho	S		O	9-12	9	9-12	11-12	11-12		9-2	O	C
Illinois				11, 12P			11-1	11-1	11-1	11-1	11-1	8-10
Indiana				11-12			11-1	11-1	11-1	11-1	11-1	8-10
Iowa				S			11	11-1	11-2	9-2	10-2	9-12
Kansas	C			P12			12-1	12-1	12-1	12-10	O	8-12
Kentucky				11			11-1	11-1	11-1	11-1	2-10	8-12
Louisiana			C	11-1						10-2		10-1
Maine			6-12	10-12			11	11		10-3	8-12	10-11
Maryland			C	9-12			1-3	1-3	9-3	11-1	9-3	10-11
Mass.	X		10-12	11, 12	X	X	11-1	11-12	9-12	10-2	9-12	10-11
Michigan			9-11	10-12		C	10-1	10-1	O	10-2	10-12	10-11
Minnesota			O, S	11			11-12	11-12		10-2	O	10-12
Mississippi			C	11-1			12-1	12-2	12-1	10-2	11-1	10-1
Missouri				S			C	C	11-1	5-2	11-1	5-12
Montana	10-11		10-11	10-11	9-11	10-11	X	X	X	O	O	O
Nebraska	9			11			11-1	11-3	O	O	O	9-1
Nevada	8-9			10-11	11-1	11-12	11-3	11-3		10		
New Hampshire			9-12	11-12			10-2	10-2		10-3	8-12	10
New Jersey			12	12			11-3	11-3		11-12	11-12	11-2
New Mexico	9-10		8-11	10-12	S	10-12	12	11-4		O	O	O
New York			11-12	11-12			10-3	10-4	O	10-2	10-3	10-1
Long Island			C	C			12-3	12-3	O	11-1	11-2	11-1
North Carolina			10-12	10-12			11-2	11-2	10-2	11-2	10-2	10-12
N. Dakota	8-12			8-12	C	C	11-12	11-12	X	O	O	9-12
Ohio			C	11			11-2	11-2	11-2	11-1	11-2	9-12
Oklahoma	9			11		11	11-1	12-1	12-1	9-2	12-1	5-12
Oregon	P8		O	10	P	10-11	11-1	11-2	O	O	O	10
Pennsylvania			11	10-1		C	11-1	11-3	O	10-1	O	10-1
Rhode Island				12						11-1	10-1	11-12
South Carolina			C	9-12			S	S	S	S	S	S
South Dakota	9		X	11	C	S	11-12	11-12	11-4	S	O	O
Tennessee	X		10	10	X	X	10-2	12-2	10-2	11-2	10-2	9-12
Texas	9-10		11-12	11-12	C	12	11-1	11-3	O	O	O	S
Utah	P		11-9	10-11	P	P	10-5	O	X	10-3	X	O
Vermont	X		9-11	10, 11	X	C	10-2	10-4	O	9-2	8-12	9-11
Virginia			11-12	11S		C	12-1	C	10-1	11-1	10-3	9-10
Washington	C		O	10-11	9	11	11-1	11-3	O	10-2	O	C
West Virginia			11, 12	11-12			11-2	11-2	O	11-2	10-1	9-1
Wisconsin			9-11	9-12			10-1	11-12	11-12	10-1	S	10-1
Wyoming	9-11		4-6, 9-11	9-11	9-11	9-11	11-5P	O	O	9-4	O	O

SPECIALS IN CERTAIN STATES:

ALLIGATOR: Ala. (C), Fla. (6-1); Miss. (C) — BUFFALO: Alas. (S), Ariz. (P-10), Minn. (O), S.D. (O), Utah (P). Tex. (C) — CARIBOU: Alas. (8-3) — COUGAR: Ariz. (O), Nev. (O) — IBEX, KUDU, GEMSBOCK: N. Mex. (C) — CHACHALACA: Tex. (12-1) — JAVELINA: Ariz. (1-3), N. Mex. (9), Tex. (11-12) — MOOSE: Alas. (8-11), Ida. (P), Mont. (9-11), Utah (P), Wyo. (9-10) — WILD BOAR: Cal. (10-3), Fla. (S), Haw. (O), N. C. (10-12), Tenn. (10), Tex. (10).

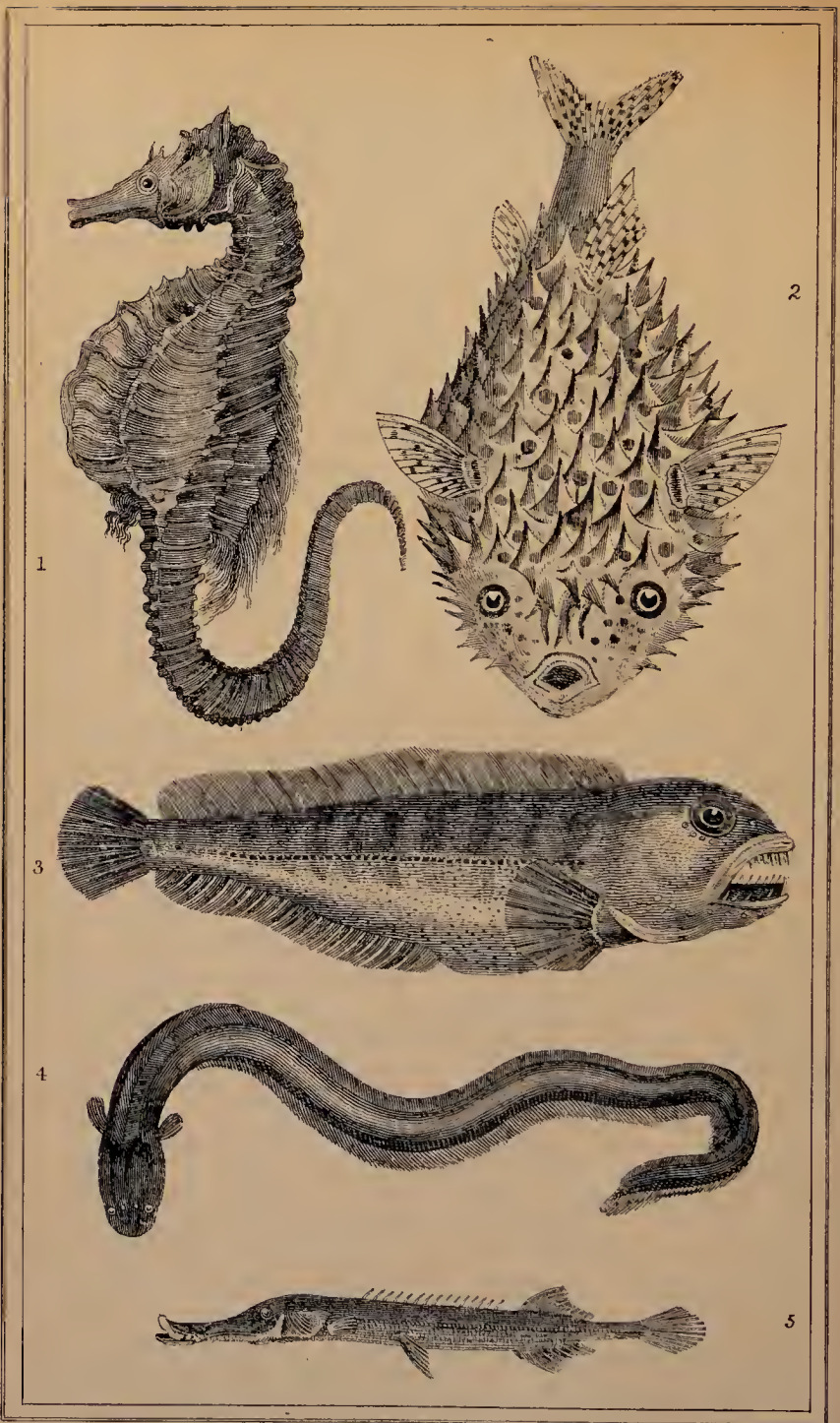
SYMBOLS USED PAGES 62 AND 63

Months: January is represented by the numeral "1" — February by the numeral "2"; etc.
 Seasons: In the columns under the various animals, birds, and fishes you will note numerals. Thus "12-3" means the season opens in December and closes in March. A number alone means the season opens and closes within that month. Thus "12" alone means the season is December. A number followed by a comma denotes two seasons: thus "9, 12" would mean one September and another in December. "O" means no closed season; "X" not available; "S" special seasons; "C" closed; "P" permit only.

VERIFY EXACT OPENING & CLOSING DATES IN EVERY CASE.

PARTRIDGE GROUSE	PHEASANT	QUAIL	TURKEY	STATE	SPECIES	BASS	CATFISH PERCH SUNFISH CRAPPIE	PIKE PICKEREL	SALMON	BROOK TROUT	LAKE TROUT	WHITERFISH
		11-2	9-4, 11, 1	Alabama.....		O	O	O	O	O	O	O
8-5				Alaska.....		O	O	O	O	O	O	O
9-1	P-10	10, 12-1	4, 10	Arizona.....		O	O	O-X	O	O	X	X
C	C	12-2	4	Arkansas.....		O	O	O	O	O	O	O
9, 10-1	11-12	11-12	C	California.....		O	O	O	2-11	4-10	4-10	4-10
9	11-12	11-12	4, 10	Colorado.....		O	O	O	O	O	O	O
10-12	10-12	10	C	Connecticut.....	4-2	O	O	4-2	4-2	4-10	4-10	O
10-12	11-1	11-2		Delaware.....		O	O	O	O	4-11	O	O
		11-2	11-1	Florida.....		O	O	O	O	O	O	O
11-2		11-2	11-2	Georgia.....		O	O	O	C	4-10	O	O
11-1	11-1	11-1	C	Hawaii.....		O	O-X-O-X	X	X	8-9	X	X
9-12	10-12	9-12	S	Idaho.....		O	O	X	S	6-10	4-11	O
11-12C	11-12	11-12	C	Illinois.....		O	O	O	O	O	O	O
11-12	11-12	11-12	C	Indiana.....		O	O	O	O	5-8	O	O
11-9	11-12	10-12		Iowa.....		O	O	4-2	O	O	O	O
11	11-12	11-12	C	Kansas.....		O	O	O	O	O	O	O
12-1	11-1	11-1		Kentucky.....		O	O	O	O	O	O	O
		11-2	4	Louisiana.....		O	O	O	O	O	O	O
10-11	10-11			Maine.....	6-9	4-9	4-9	4-9	4-9	4-9	4-9	4-9
11-1	11-1	11-1	10	Maryland.....		O	O	O	4-3	4-3	4-3	O
10-11	10-11	10-11	C	Massachusetts..	4-2	4-2	4-2	4-10	4-2	4-10	X	X
10-12	10-11	11	S	Michigan.....	6-12	O	5-3	4-11	4-9	O	4-9	O
10-11	10-11	C	C	Minnesota.....	5-2	O	5-2	O	5-9	1-9	O	O
		12-2	4	Mississippi.....		O	O	X	X	X	X	X
		11-12	4	Missouri.....	5-2	O	O	O	O	O	O	O
9-10	10-11	X	9 10, 4, 5	Montana.....		O	O	O	5-11	5-11	5-11	S
9-10	11-1	11-1	11	Nebraska.....		O	O	O	O	O	O	O
10	11	11	10-11	Nevada.....		O	O	S	9	5-9	1-9	1-9
10-12	10	10		New Hampshire..	4-10	O	O	O	C3-4	C3-4	C3-4	O
11-1	11-12	11-2	C	New Jersey.....		O	O	O-X	X	5-11	X	X
9	11-12	11-1	10-11	New Mexico.....		O	O	5-2	4-9	4-9	4-9	4-9
10-1	10-11	10-11	10-11	New York.....	6-11	O	5-2	4-9	4-9	4-9	4-9	4-9
11-12	11-12	C	C	Long Island....	6-11	O	5-2	4-9	4-9	4-9	4-9	4-9
10-2	11-2	11-2	11-2	N. Carolina.....		O	O	11-9	4-9			
9-12	10	11P	11P	N. Dakota.....	5-12	O	5-12	X	5-12			X
10-2	11-1	5S	5S	Ohio.....		O	O	O	O	O	O	O
O	11	11, 4	11, 4	Oklahoma.....		O	O	O	O	O	O	O
10-11	10-11	11P	11P	Oregon.....		O	O	X	O	4-10	4-10	O
10-1	10-11	10-11	10-11	Pennsylvania...	6-3	O	5-3	4-12	4-9	4-9	4-9	O
10-1	10-12		10-12	Rhode Island...	4-2	O	4-2	O	4-2			
S	S	11-2	S	So. Carolina.....		O	O	O	O	O	O	O
9-10	10, 11	11	4, 5, 10, 11	So. Dakota.....	O-S	O-S	O-S	X	O	X	X	X
11-2	C	11-2	4-5	Tennessee.....		O	O	O	X	X	X	X
C	S	11-1	11-12	Texas.....		O	O	C	X	X	X	X
9-12	11	11	P	Utah.....		O	O	O	6-11	6-11	6-11	6-2
10	10	10	10	Vermont.....	6-11	O	5-3	4-9	4-9	4-9	4-9	O
11-1	P	11-1	11	Virginia.....		O	O	O	1-12	4-12	4-12	O
9-12	10-12	10-12	10	Washington....	4-10	4-10	O	O	1-10	4-10	4-10	S
10-2	11-1	11-1	10-11	W. Virginia.....		O	O	O	O	O	O	O
10-11	10-11	S	S	Wisconsin.....	5-2	O	5-2	X	5-9	5-11	O	O
10-11	10-11	10-11	10-11	Wyoming.....		O	O	O	O	O	O	O

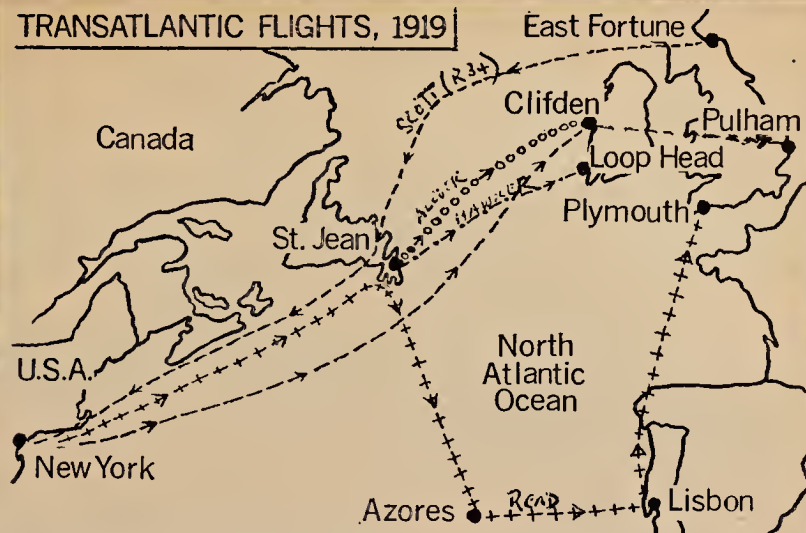
BLUEGILL: Ariz. (O), Ga. (O), Ind. (O), Ia. (O), Mich. (4-9), N. M. (O), S. D. (O), Tenn. (O) —
 BULLFROGS: Ariz. (6-11), Ark. (4-12), Del. (5-12), Haw. (O), Ill. (6-8), Ia. (O),
 Ind. (4, 6-10), Kans. (7-9), La. (4-5), Mi. (O), Mo. (7-11), Neb. (7-10), Nev. (O), N. Mex. (8),
 Ohio (6-4), Ore. (O), Pa. (7-10), Tenn. (O), W. Va. (6-7), Wis. (5-12) — SHAD: Calif. (O),
 Conn. (4-6), Del. (3-6), Fla. (1-4), Ga. (1-4), Ia. (O), Md. (3-9), N. H. (1-8), Ore. (O) —
 STURGEON: Ariz. (C), Ida. (O), Ia. (O), Mich. (O), Ore. (O), S. Dak. (O), Wis. (S) — TER-
 RAPIN: Fla. (X), Pa. (O), Tenn. (O).



Engd. by G. B. Ellis

1. Hippocampus — 2. Sea Porcupine — 3. Wolf Fish
4. Electrical Eel — 5. Pipe Fish

TRANSATLANTIC FLIGHTS, 1919



++++Read (May 16—31)

-----Hawker (May 18—19)

ooooAlcock (June 14—15)

-----Scott (July 2—13)

TRANSATLANTIC AIR RACES, 1969

■ LONDON'S NEWSPAPER THE **DAILY MAIL** has been sponsoring air competitions since 1907. Winston Churchill presented this prize of £10,000 to Alcock and Brown for the completion of their flight of June 14-15, 1919, from Newfoundland to Clifton, Ireland. Actually, there were four successful Atlantic flights in this same year. Read flew from Rockaway Beach, Long Island on May 16, through to Plymouth, England, via the Azores in 15 days. Hawkes went (May 18-19) from St. Jean to Loophead, Ireland. Third was Alcock, and finally the British Dirigible R 34 under Captain Scott, who made (July 2-13) the round trip from East Fortune, England to Mineola, New York, and back to Pelham, England.

Commemorating the successful flight of Britishers Capt. John Alcock and Lt. Arthur W. Brown, the **Daily Mail** is offering prizes for the best time made in 1969 between the top of the Empire State Building in New York, to the top of the General Post Office Building in London . . . in either direction. All forms of ground and air transportation may be used, and some stress is being laid upon improving travel facilities between airports and cities. The contest rules are set by the Royal Aero Club of the United Kingdom in conjunction with the Federation Aeronautique Internationale. The prizes will be \$12,000 to winners in each direction. Aer Lingus offers \$12,000 for the fastest ordinary airline trip, London to New York by way of Shannon. BOA offers another \$12,000 to the traveler who makes the best time over the same route. Half a dozen other companies are also offering prizes, so the total will run well over \$100,000.

COG RAILWAY CENTENNIAL, 1969

. . . On July 4, 1869, railway passenger service was inaugurated up Mount Washington, New Hampshire. Construction of this Cog Railway was begun in April 1866—some five years after the completion of the Carriage Road to the mountain's summit.

At 5:30 P.M. September 17, 1967, the engine and car of the Cog Railway was derailed at the Skyline Switch. Eight were killed, eighty injured. Such an accident could have been prevented by prior examination of all nine sections of the switch. This presumably will be done in the future—and certain other safety precautions more carefully observed. On July 20, 1929 another derailment killed one, injured three. The State of New Hampshire authority has now cleared the railway as presumably safe for operation.

MOTHER GOOSE'S MELODY

SONNETS FOR THE CRADLE

From the 1794 edition of the
printing by Isaiah Thomas in 1796.
Courtesy American Antiquarian Society.

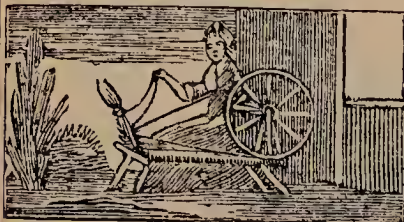


A DIRGE

Little Betty Winckle she
had a Pig,
It was a little Pig not very big;
When he was alive he liv'd in
Clover,
But now he's dead, and that's
all over;
Johnny Winckle, he
Sate down and cry'd,
Betty Winckle she
Laid down and dy'd;
So there was an End of one,
two, and three,
Johnny Winckle He,
Betty Winckle She,
And Piggy Wiggle.

A Dirge is a Song made for the Dead; but whether this was made for Betty Winckle or her Pig, is uncertain; no Notice being taken of it by Cambden, or any of the famous Antiquarians.

Wall's System of Sense



Cross Patch draw the Latch,
Set by the Fire and spin;
Take a cup and drink it up,
Then call your Neighbors in.

A common Case this, to call
in our Neighbours to rejoice when
all the good Liquor is gone.

Pliny



Three wise Men of Gotham
They went to Sea in a Bowl.
And if the Bowl had been stronger
My song had been longer.

It is long enough. Never lament
the loss of what is not worth
having.

Boyle



Se saw, Margery Daw,
Jacky shall have a new Master;
Jacky must have but a Penny a
Day.
Because he can work no faster.

It is a mean and scandalous
Practice in Authours to put Notes
to Things that deserve no Notice.

Grotius



Great A, little a.
Bouncing B;
The Cat's in the Cupboard,
And she can't see.

Yes she can see that you are
naughty, and don't mind your
Book.



Jack and Gill
Went up the Hill,
To fetch a Pail of Water;
Jack fell down
And broke his Crown
And Gill came tumbling after.

Maxim.
The more you think of dying,
the better you will live.



Is John Smith within?
Yes, that he is.
Can he set a Shoe?
Aye, marry two.
Here a Nail, and there a Nail,
Tick, tack, too.

Maxim
Knowledge is a Treasure, but
Practice is the Key to it.



There was an old Woman
Liv'd under a Hill,
She put a mouse in a Bag,
And sent it to Mill.
The Miller did swear
By the point of his Knife,
He never took Toll
Of a Mouse in his Life.

The only instance of a Miller
refusing Toll, and for which the
Cat has just Cause of Complaint
against him.

Coke upon Littleton



Hush a by Baby
On the Tree Top,
When the Wind blows
The Cradle will rock;
When the Bough breaks
The Cradle will fall,
Down tumbles baby,
Cradle and all.

This may serve as a Warning to
the Proud and Ambitious, who
climb so high that they generally
fall at last.

Maxim
Content turns all it touches
into Gold.



High diddle, diddle,
The Cat and the Fiddle,
The Cow jump'd over the Moon;
The little Dog laugh'd
To see such Craft,
And the Dish ran away
with the Spoon.

It must be a little Dog that
laugh'd, for a great Dog would
be ashamed to laugh at such
Nonsense.



Se saw, sacaradown,
Which is the Way to Boston
Town?
One Foot up the Other Foot
down,
This is the Way to Boston Town.

Or to any other Town upon the
Face of the Earth.

Wickliffe



SCIENTIFIC PROGRESS

1967-68

A summary of developments in various fields of endeavor of presumable interest to lay readers. Sources (available on request) are scientific journals published from May 1967 through April 1968.

ABORTION LAWS

Abortion is no longer not being talked about. There are efforts to make new laws, etc. However, it may well be that medical science may render such laws obsolete almost before they are written. The "morning-after" pill, taken up to six days after intercourse, will block implantation. The Swedish "M pill" initiates menstrual flow when taken once a month at the end of the menstrual cycle.

SUPER FISH

Some remarkable accomplishments have been reached at the University of Washington. Rainbow trout two years old have been increased in length some 61%. Their spawning age has been reduced from 4 years to two. Super Chinook salmon have been lengthened one inch to 30 inches; their weight increased 20% and egg production 10%. Dr. L. R. Donaldson is the man behind this encouraging work which aids and abets not only the fish but the "homing" problem too.

SEALAB III

Man's most ambitious effort to penetrate ocean depths will be seen in the U. S. Navy's Sealab III. From experiments at about 500 feet in 1967-68, it is hoped the measuring technology for safe diving to 1000 feet will be accomplished — and by 1970. The average depth of the world's oceans is about 12,000 feet. It is possible but not necessarily probable that man will swim easily one day at this depth.

LIGHT UNDER SEA

Natural daylight penetrates the ocean to 2300 feet. At 1000 feet horizontal visibility is 20 feet — at 600 feet, it is 200 feet.

ARTIFICIAL ATLANTIC ISLANDS

A series of five man-made islands designed to be placed in the Atlantic Ocean to monitor supersonic air transport is being designed in a British shipyard. The project has been going on in secret for two and a half years at Vickers' shipyard in Barrow, according to Defense Minister Roy Mason. The islands would be anchored to the sea floor and spaced as tracking station links across the ocean. Measuring 100 feet in diameter, they will be large enough to serve as oceanographic stations and helicopter landing platforms.

ANTARCTIC ICE

Scientists at the Byrd Station have drilled up some 7,111 feet of ice cores to make a vertical filing cabinet of climate and atmosphere into the distant past. Because the Antarctic snow never melts, the ice cores and air bubbles hold a continuous record — all neatly preserved and ready for study. The last 18 feet of the core held rock fragments of apparently volcanic origin.

THE UFO'S

Dr. J. E. McDonald, Professor of Meteorology, University of Arizona, believes that UFO'S "probably" are to be explained as extra terrestrial surveillance aircraft. He believes (April 1968) many more scientists should be studying the numerous world-wide sightings of these craft. He is convinced there is no other hypothesis, except extra-terrestrial surveillance, which will fit his findings. He has examined some 2000 reports and directly interviewed several hundred witnesses.

DROUGHT

The 1961-66 drought in the East came officially to an end in the Spring of 1967. However, it will still take a few years before stream flow and ground water levels are back to normal. In December, 1967, Quabbin's 412 billion gallon reservoir was still 30 feet below normal.

WEATHER FORECASTS

It takes about one billion elementary numerical operations to compute a 24-hour weather forecast for the whole of the earth, and this takes, in itself, 24 hours to do. Scientists now feel that without daily world-wide coverage of actual world weather — something which cannot be accomplished before 1977 — weather forecasts will not be much better than they are now. The New Global Atmosphere Research Program — a mutual effort by 130 nations to obtain world coverage — will need a backing of 256 computers of the 6600 variety — costing \$5 million each. Present research along such lines is costing close to one billion dollars per year.

ICEBERG CALVES

from Greenland in the Spring of 1968 did not penetrate as far south below Newfoundland as they usually do. Scientists have not as yet determined what effect this calving has on weather. Other factors, perhaps, like a Greenland high which would prevent northeasterly storms from driving cold ocean climates inland, are not easy to separate from the influence of the bergs themselves in any given weather study. The 20-year record does not reveal any meaningful correlation between these bergs and continental climate.

THE WORST DAY

ever on Mt. Washington was January 8, 1968. The temperature averaged 37.5 below zero. The average wind velocity was 92.2 mph. Between 1000 and 1100 the wind averaged 99 mph; the temperature minus 46.2 degrees — a still air equivalent of 150 below zero. Only McKinley or ranges in the Antarctic serve up such extremes of cold and wind as does Mt. Washington.

NUCLEAR POWER PLANTS

operable, building, or planned as of May 1, 1968, number 99. The accumulative cost of all plants to date is \$10.5 billion. Nuclear fuel purchases over plant lifetimes will cost \$20.5 billion. By 1980 U. S. electrical energy requirements will be 2.7 times what they now are — nuclear power will generate 35% of this power. The larger plants are competitive with coal at about 22¢ per million BTU.

THE NEW SUPER-TRANSPORTS

The French Concorde — the U. S.-subsidized Boeing — long as many a football field — will not come into being without serious problems. Two of these problems, noise and length of landing fields, are far from solved at this writing. Further, these planes may be dangerously heavy — and probably uneconomic.

COMMUNITY OF TOMORROW

At Orlando, Florida, Walt Disney Productions is building an Experimental Community for 20,000 people called EPCOT. In its 20 acres residents and visitors can shop or stroll completely protected from rain, heat and cold. The theme building will be a 20-story hotel on top of which is a seven-acre recreation deck with trees, waterfalls, and swimming pools. There will be shopping areas, and the pedestrian will be king. (All cars will be parked at a bottom level.) It will be America's first accident-, noise- and pollution-free city.

CONTINENTAL DRIFT

Controversy grows more heated nowadays between 1) those who believe the world's continents have always been where they are now and 2) those who say they have drifted to their present positions. The latter think all continents were A) once joined together into one called Pangaea or organized B) into a northern Laurasia and southern Gondwana. Fossils indicate that prior to 150 millions of years ago the same kinds of creatures existed on all. India is recognized by the avant garde as part of Gondwana.

FISH SCALE RINGS

Growth periodicity in fish may now be scanned in much the same way as tree growth is seen in tree rings. Scales grow throughout the entire life of a fish. Most fish live about .25 years. However, the little European goby lives for only one year whereas a Canadian lake sturgeon may be around for 152 years. A new simple injection technique brings about visible scale deposits to make age determination easier.

DESALINATION (Fresh water from the sea)

Fresh water from the sea will be produced at a rate of 150 million gallons per day in a plant on a 43-acre island off southern California in 1972. One of the problems in this connection will be the 150 million gallons returned to the sea with double saline content . . . at 10 to 15% increase of temperature. Desalination by atomic power technology is beginning to be economically practical.

TORNADOES

Since January 1, 1964, the National Severe Storms Laboratory at Norman, Oklahoma—a division of the Weather Bureau—has been studying tornadoes. Norman is in the middle of an area that has more tornadoes than any other place in the world. The research is carried on with planes, cameras, radar, gauges, balloons and lightning sensors. The field work usually begins each year about April first. Budget is \$860,000 per year.

SOURCES OF STATISTICS

For continuing runs of figures—Economic and Sociological U. S. 1789-1945—see **Historical Statistics of the U. S.** Likewise **Statistical Abstract of the U. S.** (published by years); **Survey of Current Business** to January, 1923 (monthly) to 1913 (annual). For highspot monthly figures on world conditions, see **Monthly Bulletin of Statistics** published by the U. S. Dept. of Commerce. **World Weather Records** are available from the Smithsonian, 1921-40. (Later years from U. S. Dept. of Commerce.) Tree ring series from Smithsonian (1544-1934). **Wholesale Commodity Prices (1700-1861)** from U. S. Bureau of Labor Statistics.

COMMUNICATIONS SATELLITES

operated by ICSC (owned 53.5% by U.S., 7.4% by U.R., 5.35% by France and Germany each, 3.29% by Canada, 2.4% by Australia, 2% by 60 other nations) are now four. Two are over the Atlantic; two over the Pacific. There are 15 earth stations. It is expected that by 1970 there will be 50 of the latter. This is a field which few if any people truly visualize—especially on how it may affect international communications a few years hence. Military satellites will soon permit communications between field units anywhere within U.S. limits.

THE FIRST GOOD FULL COLOR

photograph of the whole disc of the earth from outer space was taken by an AT3 Satellite, November 10, 1967 over the Amazon's mouth.

THE MAINE LOBSTER

does best in waters no cooler than 47.5°F. or warmer to about 49°F. In 1967 Maine waters dropped to about 45°. Some experiments

are planned, but no funds have been provided to try to heat these waters where the lobsters are. Curiously enough no one has ever suggested heating them for the human ocean bather. Who's more important — the lobster or the man?

LUNAR HOTEL

Much to the surprise of Barron Hilton, President, Hilton Hotels Corporation, a group of Cornell students had already designed for him his projected Lunar Hilton. It will have three levels, public rooms at top, power equipment at bottom. Two 400-foot corridors with 100 rooms will be in between. All rooms will be large with drapes, carpets, etc. Most of the hotel, for reasons of temperature, will be below the lunar surface.

SHIPWRECKS RAISED

Carl Drogen, a Danish scientist, has invented a new way to raise sunken hulks from the bottom of the sea. He pumps tons of tiny polystyrene spheres about the size of a grain of sugar into the hull. These spheres are heated by steam, swell in size, and give the hull sufficient buoyancy to raise it. As of May, 1968, the method had been used off the Persian Gulf and Greenland.

OLDEST MAN

In a canyon beneath 13 feet of rockfall, 1.5 miles from the junction of Polouse and Snake Rivers in the State of Washington, pieces of bone were found in 1967 which are believed to be the oldest remains of man yet found in the western hemisphere. The bones belonged to a pre-Indian nomad whose fellow tribesmen may have had him for dinner between 11,000 and 13,500 years ago.

HOME UNDER THE SEA

During 1969 four aquanauts will live for at least 60 days on the ocean floor, fifty feet below the surface. Their dwelling will be twin-chamber and their only contact with the surface will be voice communications. Address: Greater Lameshur Bay, off St. John's Island, Virgin Islands National Park.

EGGSHELL STRENGTH

can now be determined from the AEC-USDA's new non-destructive beta-radiation back scatter gauge. It is hoped some of the present \$25 million egg breakage loss will be avoided, and design of egg handling equipment will be improved. Research into the age of eggs, influence of temperature and humidity, diet of the hens, and age, as well as rate of production, should benefit.

SAO'S NEW OBSERVATORY

on Mt. Hopkins, Arizona went into operation in May, 1968. A Baker Nunn Camera has been synchronized there with a laser. There is a gamma-ray reflection mount with a 35-foot dish. By the time you read this, its 60-inch telescope should be in position for observation of the stars.

THE SOVIET UNION

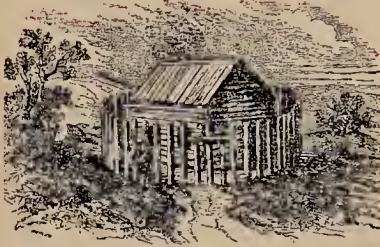
"could still efficiently destroy the United States even after absorbing the full weight of an American first strike," Mr. McNamara stated as he left office in May 1968. Programs which may or may not overcome such an eventuality, presently in the works, are the MOL (Manned Orbiting Laboratory of the Air Force), Nike Zeus, Nike X, the F106 (provisional), the F12, AWACS, FAA radars, AMSA (manned bombers), MIRV, ICMS, DBM, Midas (to double space-borne missile warning to about 6 minutes), etc.

THE WEATHER MAKERS

now (May 1968) believe they can stretch the snowfall at Buffalo, New York some 30 miles to the East. This they will do by seeding Lake Erie snow clouds with a chemical which will reduce the size of the snowflakes. Whether or not the residents to the East of Buffalo desire this extra snow remains to be seen.

Anecdotes and Pleasantries

ECHO VERSE



One of the first meeting houses in America was built in Middletown, Conn. in 1668. It was 20' square and surrounded by palisades. At the time, the congregation consisted of nine men and a minister, just enough to cover the law that eight men and a sergeant be kept on guard during services. The congregation was called to meeting by a drum. A new meeting house 32'x15' was constructed in 1679 as by then the "flock" had grown to more than 50.

ANYONE KNOW

the old ballad — the first verse of which went like this?

"Fair Charlotte dwelt on the mountain side/A wild and lonely spot/No dwelling was for miles around/Except her father's eot."

The verses went on to tell of her being driven in an open sleigh to a village ball on a bitter cold night and when they arrived "her escort bore a frozen corpse into the gay party."

BIBLICAL MEASURES

Some uncertainty exists, even among authorities such as Arbuthnot, Horne, Brown, etc., with regard to weights, measures, and money mentioned in the Bible. A digit is 9/10 of an inch; 4 digits equal one palm; one cubit equals one foot 9.8 inches. A furlong is 145 paces and 4.6 feet. A Sabbath Day's journey, 729 paces and 3 feet; a parasang, four miles, 153 paces and 3 feet. A day's journey ran 33 miles, 172 paces, and four feet.

Echoes are fun — especially when used to answer a question by echoing the last word of the question — thus: What are they who pay three guineas/ To hear a tune of Paganinie's?

The echo will seem to answer — "Pack o' ninnies."

Or, how about Dean Swift's "What must we do our Passion to express? (Echo — "press") Say what can keep her chaste whom I adore? (Echo — "a door") Is there no way to moderate her anger? (Echo — "hang her")

SUB ROSA

But when we with caution a secret disclose,
We cry, "Be it spoken, sir, under the rose."

Since 'tis known that the rose was an emblem of old,
Whose leaves by their closeness taught secrets to hold.

British Apollo, 1708.

The phrase *sub rosa* originated in BC 477 during an intrigue between Pausanias and Xerxes over Greece which was carried on under a bower of roses. Pausanias was betrayed and walled up in the temple of Minerva to die of starvation. Afterwards, Athenians wore roses in their hair when they wished to communicate a secret.



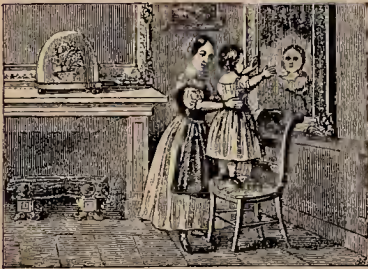
NXXDXD VXYR MUCH!

Xvxn though my typxwritxr is an old modxl, it works quitx wxll xxcpt for onx kxy. Thxrx arx 46 kxys that function wxll xnough, but just onx kxy not working makxs thx diffxrxnex.

Somxtimxs it sxxms to mx that our group is somxwht lhx my typxwritxr, not all thx kxys arx working proprly. You may say, "Wxll, I am only onx pxrson. It won't makx much diffxrxnex." But, you sxx, thx group to bx xffctivx nxxds thx activx participation of vxxy pxrson.

So thx nxxt timx you think you arx only onx pxrson and that your xffort is not nxxdx, rx-mxmbxr my typxwritxr and say to yoursxlf, "I am a kxy pxrson and nxxdx vxry much!"

Courtesy of G. P. Libbey



WEDNESDAY, JULY 6, 1960 marks the day when a careful reader of the front page of the **N.Y. Herald Tribune** might have foretold the changing history of these United States.

1. On this day was announced the conviction of Bernard Goldfine and sentencing to 90 days at Danbury, Conn. Out of Goldfine's conduct grew the downfall of the Eisenhower Republican administration.
2. The U.S. backed away from doing anything about Cuba's arbitrary seizure of American-owned Texaco and Esso refineries. Out of such weak-kneed protests grew Castro's affiliation with Russia — and negation of the Monroe Doctrine.
3. Maj. Gen. William Childs Westmoreland was named superintendent of the U.S. Military Academy at West Point. This "man to watch" came to lead our forces in Vietnam.

4. Sen. Lyndon B. Johnson announced his candidacy for President. Before an audience of 600 in the Senate theatre, he took issue with Sen. John F. Kennedy, declaring himself the Democrat of "responsibility" — the one who could "make our system work" in the cold war with communism.

NOSE ON HER FACE

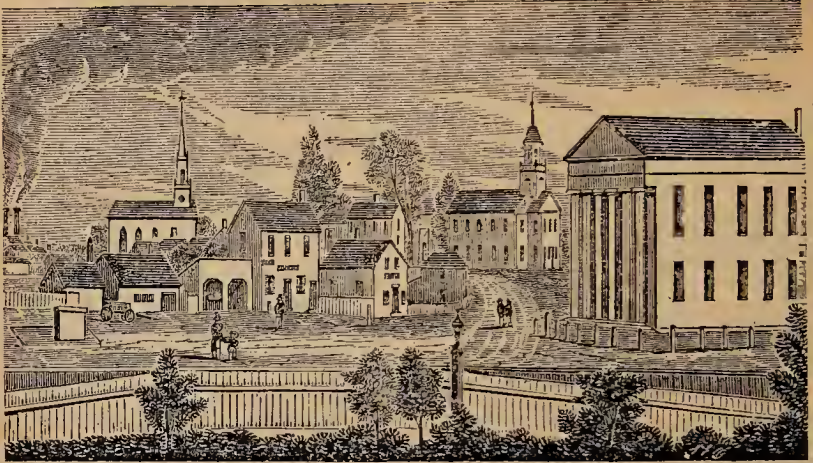
I was raised on a farm near Orange, Mass. I made \$12 a 60-hour week. My cousin John Whitman founded Minute Tapioca because my Grandma Spear used to forget to set her tapioca soaking the night before and I had to roll it out with a rolling pin. Why do so many wives have so much mother-in-law trouble? My oldest has been married 34 years — never no trouble, youngest 14 years — no trouble nowhere. My children have told me "Because Ma you keep your nose on your face."

Mrs. Luler M. Barber

THE FLAMINGO

is one of the world's most curious birds. Its upper beak, about 5" long, is "broken" in the middle and meets the lower on an angle with saw teeth. These are used as strainers.





Western view of central part of Sandwich

CAPE COD RECIPES

It isn't often that one has access to old Cape Cod recipes of a family that has made good in the food business. Through the courtesy of Albert E. Snow of Orleans, Massachusetts, who shares a common ancestor with Fred H. Snow of the F. H. Snow Canning Company, Pine Point, Maine (purveyors of Snow's Clam Chowder, Clam Cakes, Minced Clams, etc.), we present a dozen Snow family favorites — "genuine, straight-old recipes" — to readers "who are easily satisfied with the very best."

■ BY CUSTOM, FOOD of the first English settlers at Plymouth and on Cape Cod was intended not to differ much from that of Old England's meats, fish, and produce. But Squanto, a native Plymouth Indian and last survivor of a 1617 smallpox plague that decimated the Indian coastal population from Narragansett, Rhode Island to Maine's Pemaquid, introduced changes. After attaching himself, in 1620, to Plymouth Colony, Squanto adapted the English — somewhat! — to his Indian way of life and wilderness survival techniques.

It is high history that Squanto showed how to plant Indian corn, how to fish, how to dig for shellfish along tidal shorelines, where to find lobsters, how to procure and prepare, Indian-fashion, other local foodstuffs.

Crop failures and famines plagued the Colonists during 1621 and 1622, but the 1623 bumper harvest provided enough corn, pumpkins, beans, root vegetables, and salad herbs to sustain all throughout that year. Never again were the Colonists to be in dire food need.

Since then, the Cape's developing orchards, the wild fowl and game, the shell and ocean fish have stood the population in good stead. Eventually the West Indies traders introduced molasses, raw sugar, ginger and other spices until many savory dishes peculiar to the Cape were concocted and have survived, almost unchanged.

CAPE COD TURKEY

1 cod or haddock	or pinch of sage
2 tbsp. butter	1 hardboiled egg, chopped fine
1 c. coarse bread crumbs	1 slice salt pork, or 4 slices bacon
2 tsp. finely chopped celery	Salt and pepper
½ tsp. marjoram, summer savory	Chopped onions to taste

Brush fish inside and out with melted butter or olive oil. Melt some butter, add chopped onions and bread crumbs. Brown slightly. Moisten with water, stock, or bouillon cube dissolved in water. Add the celery, salt, pepper, chopped egg, and herbs. Stuff mixture into the fish and sew up. Lay slices of salt pork or bacon in pan and the fish upon them. Sprinkle with salt and pepper. Bake in moderate oven, basting frequently with the drippings. Serve with egg sauce.

SCALLOPED OYSTERS

1½ c. cracker crumbs	2 tbsp. chopped chives
¾ c. bread crumbs	1½ pints oysters
¾ c. butter, melted	⅓ c. oyster liquor
2 tbsp. finely chopped parsley	3 tbsp. heavy cream
Salt and freshly ground pepper	

Preheat oven to 425°. Mix cracker and bread crumbs with butter, parsley, and chives. Pick over oysters. Drain but reserve liquor. Butter shallow six-cup baking dish, then spread thin coat of crumb mixture over the bottom. Arrange half the oysters over crumbs and season to taste with salt and pepper. Mix oyster liquor with cream and sprinkle half over the oysters. Cover with half the remaining crumbs. Repeat layer of oysters, seasonings, liquor, and crumbs. (No more than two layers should be attempted.) Bake until top is brown — 25-30 minutes

QUAHAUG LOAF

1 lb. ground quahaugs (squeeze out "blacks" and discard)	½ tsp. ground celery
2 large ground onions	2 tbsp. ketchup
4 slices bread ground up	2 eggs
	¼ c. cracker crumbs

Mix same as a Hamburg Loaf, and bake. This recipe does not require salt.

STEAMED MUSSELS

3 qts. mussels (choose small- or medium-sized ones)	1 bay leaf
½ c. white wine	A sprig of thyme or ¼ tsp. powdered thyme
1 carrot, cut in rounds	1 clove garlic
1 onion, chopped fine	3 tbsp. butter
3 tbsp. chopped parsley	Salt and pepper

Scrub mussels. Wash in several waters. Place in large pan with wine, carrot, onion, parsley, bay leaf, thyme, garlic, salt, pepper, and butter. Cover pan. Place over high flame until all mussels are open. Remove mussels from pan, take top shell off each one. Place them in a deep, heated platter. Strain the pan liquor and pour over the mussels.

BAKED SEA CLAMS

Provide 2 sea clams per person	Onions
Keep their liquor	Celery
Cracker and/or bread crumbs	Bacon strips

Shuck clams and cut off heads. Remove black parts from stomachs. Grind clams fine in food chopper. Into a bowl with the meats stir cracker and bread crumbs, chopped onion, chopped celery, and moisten the batch with clam liquor. Press the mix into cleaned shells. Lay a strip of bacon atop each. Oven cook at 450° for 15 minutes, or until done rather brown.

**CAPE COD EEL STIFLE
(or Harwich Punkhorn Stew)**

2 lbs. split eels	¼ lb. fat salt pork
	2 qts. potatoes

Try out 3 thick slices of fat pork. Don't crisp them. Leave in kettle. Add 2 qts. thickly sliced potatoes. Scald eels (cut near 2" long) by pouring boiling water on them. Squeeze until almost dry. Put in layer of potatoes atop pork slices, then a layer of eel. Salt and pepper each layer. Add hot water to barely cover. Cook eels until they come away from the bone easily. (An iron spider or kettle is best to cook them in. Don't stir when cooking. Use a snug-fit cover and enough water to keep from burning.) When ready, turn out on a platter. There should be a cup of gravy to pour on the mix, a little for each serving. Steamed squash and pepper relish make this a delectable meal.

BOILED DINNER — CAPE COD FASHION

3 to 4 lbs. corned beef	6 carrots, cut in half lengthwise
1 medium cabbage	6 potatoes, cut the same
6 medium onions	6 turnips, cut in quarters

Place corned beef in cold water. Bring to boiling point to take out excess salt. Drain and cover meat again with 4 qts. of water. Let simmer until tender (3-4 hours). If liquid is still too salty, pour off

part of it and add more water to make at least 3 pts. of broth. Add onions, carrots, potatoes, and turnip. Lastly, add head of cabbage, cut in sections through center so pieces will keep their shape. Cook until all vegetables are tender. Serve dinner in large platter with meat in center and drained vegetables around it. Grated horse-radish suits some as extra seasoning.

FRIED HERRING

Pour boiling water over herring. Drain, after allowing to stand 5 minutes. Put small piece of butter in hot skillet. Place kipper in this and cook 8-10 minutes, turning frequently. Serve with shirred eggs.

WHALE STEAKS

Cut and trim away every bit of fat. (All fat must be removed to eliminate an otherwise unpleasant oily flavor.) Season and broil steaks over a charcoal fire, gas, or electric broiler, in same way as broiled beefsteaks. Serve hot, with fried onions.

ONE DOZEN DOUGHNUTS

1½ c. bread flour	1 tbsp. butter or substitute
½ tsp. salt	½ c. sugar
2 tsp. baking powder	1 egg
¼ tsp. cinnamon	½ c. milk

Sift flour with salt, baking powder, cinnamon. Mix butter, sugar, beaten egg in mixing bowl. Stir in the sifted dry ingredients and the milk, alternately. Turn the mix onto a floured board. Shape lightly with the hands to form a smooth mound. Roll ½" thick with floured rolling pin. Cut with floured cutter. Drop into deep fat. Cook until brown.

CRANBERRY PUNCH

1 pint cranberry juice	Juice of 2 lemons
Juice of 2 oranges	½ c. crushed pineapple

Mix ingredients. Add water and powdered sugar to taste. Serve with crushed ice or ice cubes.

STEAMED BLUEBERRY PUDDING

1 c. flour	½ c. butter
½ c. stale bread crumbs	¾ c. milk
1½ c. blueberries	1 egg, well beaten
½ c. sugar	1½ tsp. baking powder
	½ tsp. salt

Combine flour, salt, baking powder, and sift together. Cut in the shortening. Add bread crumbs and sugar. Mix in blueberries and add the egg and milk. Pour into a closely covered mold and steam for 2 hours. Serve with hard sauce — or any sweet pudding sauce.



Northwestern view of Barnstable Court-House

TABLE OF MEASURES

Apothecaries

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

Avoirdupois

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

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

Dry Measure

- 2 pints =1 quart (qt.)
4 quarts =1 gallon (gal.)
2 gallons or } =1 peck
8 quarts }
4 pecks =1 struck bushel

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 U. S. nautical mile=6076.1033
feet
1 knot=1 nautical mile per hour
1 furlong=¼ 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. feet
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

Troy

- (Used in weighing gold, silver,
jewels)
1 pennyweight=24 grains
1 ounce=20 pennyweight
1 pound=12 ounces



Household Measures

- 120 drops water=1 teaspoon
60 drops thick fluid=1 teaspoon
2 teaspoons=1 dessertspoon
3 teaspoons=1 tablespoon
16 tablespoons=1 cup
1 cup=½ pt.
1 cup water=½ lb.
3 tablespoons flour=1 oz.
2 tablespoons butter=1 oz.
3 teaspoons soda=½ oz.
4 teaspoons baking powder=
½ oz.
2 cups granulated sugar=1 lb.
¾ cups confectioners' sugar=
1 lb.
2½ cups wheat flour=1 lb.
¾ cups whole wheat flour=
1 lb.
2½ cups buckwheat flour=1 lb.
5½ cups coffee=1 lb.
6½ cups tea=1 lb.
2 cups lard=1 lb.
2 cups butter=1 lb.
2 cups corn meal=1 lb.
2 cups powdered sugar=1 lb.
2¾ cups brown sugar=1 lb.
2¾ cups raisins=1 lb.
2¾ cups currants=1 lb.
9 eggs=1 lb.

Liquid Measure

- 4 gills=1 pint (O.)
2 pints=1 quart (qt.)
4 quarts=1 gallon (gal.)
63 gallons=1 hogshead (hhd.)
2 hogsheads=1 pipe or butt
2 pipes=1 tun

Metric

- 1 inch=2.54 centimeters
1 meter=39.37 inches
1 yard=0.914 meters
1 mile=1609.344 meters=
1.61 kilometers
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
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
1 metric ton=1000 kilograms
1 kilogram=2.20 pounds
1 pound avoirdupois=
0.45 kilograms



OLD-FASHIONED PUZZLES

(For answers, see page 126)

I

How can number 45 be divided into four such parts that, if to the first part you add 2, from the second part you subtract 2, to the third part you multiply by 2, and the fourth part you divide by 2, the sum of the addition, the remainder of the subtraction, the product of the multiplication, and the quotient of the division be all equal?

II

Lay 10 matches out vertically in a row. Now cross one match over another so that you have 5 Xs. The hitch: You must pass over 2 matches every time you pick up one match to lay over another. Cross an X and it counts as 2 matches. While you have your matches out, here's another one: Arrange 24 matches so that you have 9 squares. Then remove 8 matches so that you have 2 squares. (Courtesy of Steve Avery)

III

If one side of the bottom layer of a triangular pyramid of bowling balls has 12 balls, how many are there in the whole pyramid?

IV

With a lever 12 feet long, at what distance from a weight of 800 lbs. must the fulcrum be placed in order that the weight may be raised by a power of 160 lbs.?

V

In calm water, the tip of a stiff rush is 9 inches above the surface of a lake. As a steady wind rises, it is gradually blown aslant until, at the distance of a yard, it is submerged. What is the depth of the water in which the rush grows?

VI

In what year of the present century will a man be able to say that his age is the square root of the year in which he was born?

VII

A car is 3 times as old as its tires were when it was as old as its tires are now. When its tires are as old as the car is now, the car will be a year older than the tires are now. What are the present ages of car and tires?

VIII

How may \$1000 be stored in 10 sealed bags so that any number of dollars from one to a thousand can be paid without breaking a seal?

IX

In a room 30 feet long, 13 feet wide, and 11 feet high, a fly one foot down from the ceiling on the middle of a 13-foot wall has to walk to a point one foot up from the floor on the middle of the opposite wall. What is the shortest distance he can travel?

X

Two watches are together at 12 o'clock. If one gains 75 seconds each hour, and the other loses 45 seconds each hour, when will they be together again at 12

* * * * *

DEAR READER: We invite you to contribute to this and/or the opposite page. It is essential that all submissions be original, unpublished material. We will pay \$5 for each puzzle, riddle, enigma, etc. used. Closing date for the 1970 edition is April 1, 1969. Entries become the property of YANKEE, INC. and cannot be returned or acknowledged. Send to OFA Puzzles, Yankee, Inc. Dublin, N. H.

03444.

THE DABOLL ALMANAC 1773 -

In the early part of 1968, the Daboll family of New London, Conn. decided it no longer was in a position to carry on the family almanac founded by Nathan Daboll (1750-1818) in 1773 and, with several changes in title, published every year since.

Arrangements were therefore made with the publishers of THE OLD FARMER'S ALMANAC to bring out a token 1968 edition and to continue the name of the Daboll Almanac in a separate section of the OFA. Therein, it seemed appropriate to include subjects nautical—the Daboll Almanac having long been a favorite with the whaling captains, and people living around Long Island Sound.

From time to time, it is hoped also there can be reprints of some of the material from old Daboll issues.

It seems fitting and appropriate that the Daboll Almanac join the OFA family at this time and not be discontinued after such a long and splendid run.

NUMBER ONE HUNDRED AND NINETY-SEVEN

THE NEW ENGLAND ALMANAC

AND FARMERS' FRIEND
FOR THE YEAR OF OUR LORD CHRIST

1969

Being the Third after Bissextile or Leap Year

—AND THE—

One Hundred and Ninety-first of American Independence

Calculated for the Meridian of New London, Latitude
41° 21' N., Longitude 72° 05' W.

By Ernest C. Daboll
GROTON, CONN.

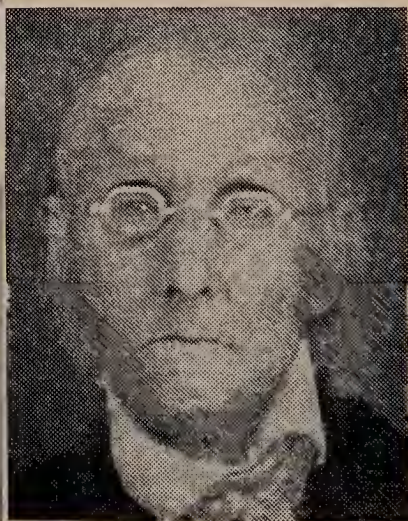
Containing besides the Astronomical Calculations, a
Variety of Matter both Useful and Entertaining

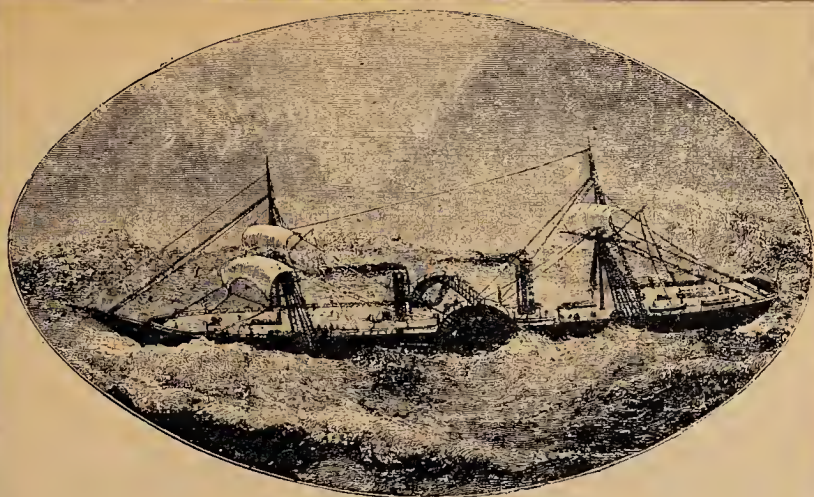
"Ocean or river, tiny raindrop or rill,
Each has its place in God's purpose to fill;
Though some are so great and the others so small
Yet in His wise plan He has work for them all"

NEW LONDON:

Address All Correspondence to
THE OLD FARMER'S ALMANAC
DUBLIN, N. H. 03444, U.S.A.

Lower left, Nathan Daboll, son of the Founder. Beside him, Mrs. Nathan Daboll (Betsey). Above, cut of Daboll Almanac cover as it would appear in 1969.





Original drawing of the Royal Mail-Steamer Scotia in which C. L. Daboll and his brother Nathan sailed to Liverpool in September, 1863.

JOHN BULL BUYS DABOLL'S TRUMPET

■ **CELADON LEEDS DABOLL** (1818-1866), fifth editor of the Daboll Almanac, was the inventor of America's first truly successful foghorn. It was called variously Daboll's Fog Trumpet or Air Whistle or Life Saving Marine Signal or Fog Alarm. In the Fall of 1859, Mr. Daboll introduced his apparatus at the New London Light House, off Long Island Sound. At this location a committee from the Light House Board in Washington endorsed the invention as: 1) Having a peculiar sound which could not be mistaken for any other; 2) Directing agitation of the air to that point of the horizon in which the sound should be heard; 3) Having an excellent, easy-to-operate, caloric engine; 4) Being capable of an almost indefinite increase in the intensity of its sound.

The Fog Trumpet having been approved in this country and having brought some \$6,000 at the New London location, Celadon and his brother Nathan set off for England to establish it there. The following notes are transcribed from C. L. Daboll's diary, hand written during his crossing of the Atlantic on the Steamship Scotia (September 22-October 3, 1863), his stay in England (October 4-December 4, 1863), and his voyage home (December 5-19, 1863).

On Board the Steamship Scotia

Sept. 22, 1863

We have just passed Sandy Hook. The weather is delightfully pleasant, and I have every indication of a most propitious voyage across the Atlantic.

Sept. 23rd

Our steamer is going off with a slight wind ahead at the rate of 12 or 13 miles per hour, and the officers inform me that as we proceed on our voyage, and the ship gets lightened, we shall continue to increase our speed. It may well be imagined that with fifteen hundred long tons of coals on board, which I am informed by one of the officers is the quantity consumed in making a passage across the Atlantic, the ship must be very deep in the water when she starts, fully five feet deeper than when she gets to her journey's end. The cost of the coal comes to around \$15,000.

Sept. 25th

We have just passed a full-rigged ship going westward, and from the fact that she had all sails on it, it was evident that the wind was not very brisk.

Sept. 26th

We have now sails set, and that will no doubt increase our rate of speed. As the moon fills tomorrow, we may get a change of weather, though I am not a believer in the philosophy that the moon has any exclusive control over the weather on this, our sublunary sphere.

Sept. 27th

This is a very large ship, 5000 tons, and has two very powerful engines . . . equal to 1200 horsepower.

It is quite foggy. Every five minutes the steam whistle is blown. This whistle is ten inches in diameter, and twelve inches deep. It does not sound as well as many of our Sound steamers, but this is owing to a fault in the manner of its construction. The English cannot compete with us Americans in many things, and in the steam whistle they do not seem to understand the principle upon which the sound is made. In air whistles or trumpets, they have yet got to take some lessons.

Sept. 28th

One of the Daboll's Almanacs is before me and I notice that it says fine weather for today and tomorrow, but then, the Almanac was not written as a weather guide on the ocean but only upon the land. Somebody has just stepped up to the Captain and asked, "Is it always foggy here, sir?" "How do I know?" said the Captain. "I don't live here."

I do not believe I should make a sailor, I would not attempt to go aloft for all the wealth that earth or ocean covers.

Sept. 29th

I had a long conversation with Captain Judkins about fog signals. He invited me to have my fog apparatus hoisted out and set up on deck, and made to blow its unmusical blast; but after explaining to him how difficult it would be to repack it, he has agreed with me that it was not so judicious. He told me that at 10 o'clock last Saturday night, his ship was within two miles of Cape Race and said that a fog trumpet would have been of immense aid to him. I pity the firemen who have to live down in the hold, as it comes nearer to being roasted alive than anything else I could think of. The engineer informed me that he has made 3000 passages across the Atlantic. That is more than forty times around the world.

In passing forward today, I noticed one of the rooms or doors marked "Cow Room." I was fully aware that we had a cow on board, for we have had milk for breakfast and tea regularly but I did not notice before that the old cow's quarters were labelled as all the passengers are on board ship.

Oct. 2nd

Our voyage is nearly ended. In a few hours we shall see no more of that majestic ocean—the broad deep singing Atlantic, whose voice is like its thunder, and whose "Sleep is like a giant's slumber, loud and deep!"

Oct. 11th

Here we are at the Castle & Falcon Hotel in Aldersgate Street near St. Paul's Cathedral.

My machine arrived at Liverpool Wednesday, and Thursday we commenced placing it at Trinity Building. We inteed to make an exhibition for the Trinity Corporation next Tuesday. I think I shall be able to give them such a blast as will wake up the sleepers around the building, but I don't know that I will be able to make as much noise with the trumpets here in London as I could in the United States.

Nov. 15th

We came here to the Dungeness Lighthouse on the north side of the English Channel, about twenty miles from Dover, last Tuesday, myself, Nathan, and a machinist, Mr. Adamson. At this site, they have the celebrated Holmes' patent Electric Light, and Holmes' Steam Fog Horn. The steam is kept up both day and night by two engineers and two lighthouse keepers. It is a very costly affair, and any accident to the apparatus would at once prevent the manufacturing of the requisite electric light to be sent up to the lantern.

I have got my fog machinery erected on the beach about 100 feet from the lighthouse. I am not afraid of any fog signals they have got here. I am confident I can beat them all. The engineers at the lighthouse say that my signal is the best, though they have not heard it yet.

Nov. 22nd

I left the Dungeness Lighthouse last Tuesday after blowing the trumpets 12 P.M. to 3 P.M. The Committee came from Trinity last Tuesday morning in the Royal Steam Yacht and some of the Committee came on shore to examine my fog apparatus. I blew my signals for three minutes, then the lighthouse fog bell was rung for three minutes. The fog bell stopped, and the lighthouse steam fog horn was blown three minutes; then all three signals were sounded for two

minutes. Then I commenced again to blow my signals alone for three minutes, etc. This kept up for an hour until 3 o'clock, at which time I ceased to blow the signals, and took the fire out of the engine, and soon after left for London. Thus ended the trials of the Fog Signals. The result was satisfactory to the Committee.

Nov. 29th

I am informed by the Trinity Corporation that the Daboll Signals were so satisfactory that they would not require further experiments, and that I should go to Dungeness with their civil engineer, and when he was satisfied that he fully understood my fog apparatus, they would recommend it to the Board of Trade, who represents the Government when payments have to be made.

Accordingly I went with Mr. Douglass to the Dungeness Lighthouse last Friday morning, and remained with Mr. Douglass there until Saturday morning.

I have taken out a provisional patent for the rights of my invention here in England, and I am intending to make application for a patent in France. The cost of making application for provisional protection here in England is ten pounds of sterling for each.

On Board the Royal Steamship *Australasian*

Dec. 6th

Last Friday I left London, after having settled my affairs, and am now aboard the *Australasian* bound for New York. The weather has been cold and windy through the night, and is clear and cloudy by turns.

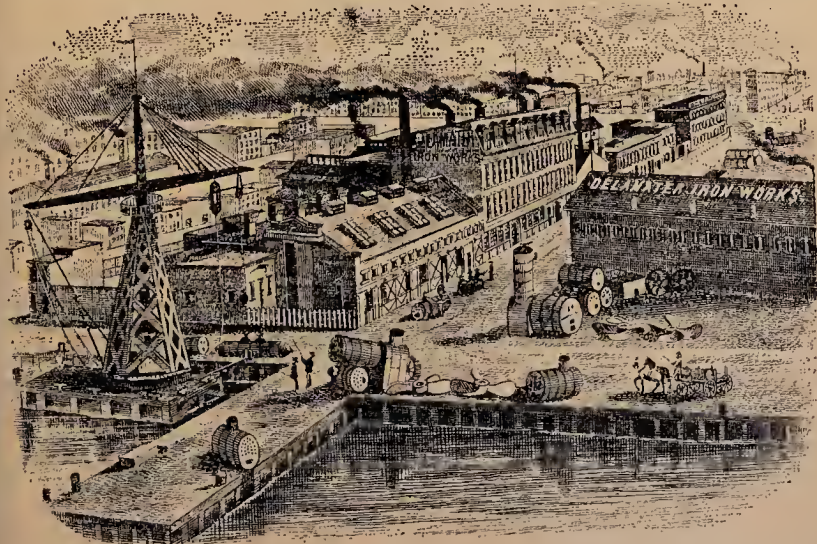
Dec. 11th

A very heavy sea is running, and has been ever since we passed the Fastuett Lighthouse. We passed the Steamship *Persia* going eastward last Wednesday evening. It was quite dark at the time, and both ships set off several rockets which looked very beautiful as the blaze of light proceeding from them illuminated the otherwise dark and mountainous waves, which rolled up fearfully and majestically between us and the *Persia*.

Dec. 14th

We have just passed through a most severe and terrible gale. It was cold moreover, and besides the rain and snow, the sea broke over the ship in a most fearful manner. The night shrouded everything in darkness, and the sea became so boisterous that it became very difficult to stand up or even to get about. The crockery could only be kept upon the table by tying it down. At midnight, when the lights were extinguished in the state rooms, the passengers had retired, but not to sleep. Some of the passengers were thrown from their bunks.

Continued on page 84



The above cut shows the factory in New York where Daboll contracted for the manufacture of his fog trumpet.

SMALL CRAFT, GALE, STORM WARNINGS AND HURRICANE WARNINGS

DAYTIME SIGNALS

SMALL CRAFT



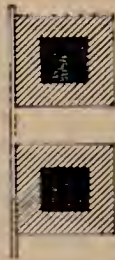
GALE



STORM



HURRICANE



NIGHT SIGNALS

SMALL CRAFT



GALE



STORM



HURRICANE



LEGENDS:



-RED



-WHITE



-BLACK

■ **AS OF MARCH 1, 1968**, the Coast Guard began using new coastal storm warning terms as set forth by the United States Weather Bureau. Those presently in use are shown above.

Small Craft Warning indicates winds as high as 33 knots and conditions dangerous for small craft operations.

Gale Warning indicates winds from 34 to 47 knots.

Storm Warning indicates winds of 48 knots or more — perhaps up to 63 knots.

Hurricane Warning indicates winds of 63 knots or over.

Continued from page 83

Dec. 15th

We have been making between 195 and 275 miles per day since December 6th. Heavy seas are still running, and it is with the utmost difficulty that I am writing this diary.

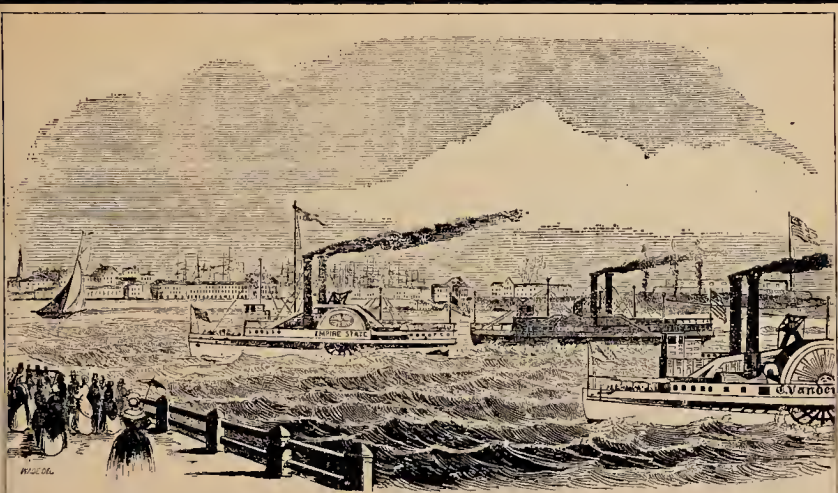
At present, we are making only four knots per hour. This weather seems to depress the spirits of the passengers. We have still 700 miles to go, but we must not complain, for although the passage has been a rough one, the ship has fully demonstrated its capacity for heavy weather, and has ploughed through these angry billows steadily and safely.

Dec. 17th

Last night the moon shone forth at occasional intervals and the stars peered through the dreary and forth flying clouds which came up from the west looking like so many diamond eclipses in rapid succession. This gave to the night a most glorious and deeply interesting phase of beauty. I shall not soon again witness so grand a sight as I have witnessed during this crossing. I do not intend to make another Winter crossing again.

Dec. 18th

Thus ends a thirteen-day passage from Liverpool to New York, my first and last trip to Europe.



NAUTICAL RULES OF THE ROAD

Some of these are taken from back issues of the Daboll Almanac, others from our own knowledge. Reader suggestions for the 1970 Almanac for this page will be welcomed.

Unlighted red buoys, with even numbers, must be left to starboard returning to port (Red Right Return).

Black buoys, with odd numbers, must be left to port entering from seaward.

Buoys with black and white vertical stripes are placed in mid-channel and may be passed close to on either hand.

Buoys with red and black horizontal stripes indicate obstructions on either side of them. If the top band is red, go to port of the buoy; when the top band is black, leave it to starboard.

LIGHTED BUOYS

Red lights, whether steady or flashing, are on the starboard side of the channel only.

Green lights, steady or flashing, are only on the port side.

White lights are on mid-channel black and white striped buoys and will flash long and then short 6 or 8 times per minute.

RULES FOR VESSELS

MEETING

STEAM VESSELS PASSING

One short blast: I intend to go to starboard.

Two short blasts: I intend to go to port.

Three short blasts: My engines are astern.

STEAM VESSELS MEETING AT RIGHT ANGLE

One short blast, the ship to starboard stops, waits and lets the port vessel go under her stern.

Two blasts means the opposite.

LIGHTED VESSELS PASSING AT NIGHT

1. Starboard light is Green. Port light is Red.

2. Vessels approaching head-on leave each to Port — or Red to Red

or

vessels approaching can go by each to Starboard — Green to Green.

3. But if a Red light appears to Starboard or a Green light to Port, stop and, if needed, go ASTERN until the danger of collision is averted.

SAILBOATS

Sailboats, as a rule, have right of way over all steam or water boats. Exceptions to this rule occur when sailboats are in places they obviously should not be, etc.

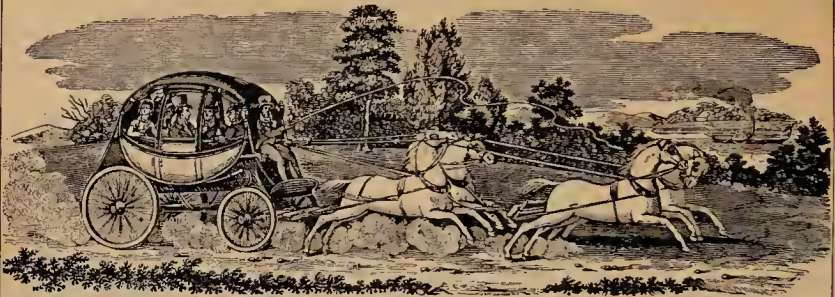
A sailboat on starboard tide has the right of way.

A sailboat approaching a buoy must leave room for another sailboat to round it if this other boat is close enough to have and ask for buoy room.

One sailboat overtaking another down wind may take the latter's wind but if passing to windward will have to luff if the overtaken boat causes it to do so.

Sailboats as well as motorboats are required to carry life preservers for each occupant. The latter must also be licensed and carry fire extinguishers.

Sailboat racing requires a highly professional knowledge of racing rules. These are by and large far more complicated than just general rules of the road.



From the Daboll Almanac, 1773 — Vol. 1, No. 1.

**Distances of the principal Towns on the
Continent from New London, with the most noted
Houses of Entertainment on the Roads.**

<i>Road to Boston by Providence</i>			<i>Road to Quebec through the Eastern Country by Providence and Boston</i>				
<i>Taverns</i>	<i>Towns</i>	<i>Miles</i>	<i>Taverns</i>	<i>Towns</i>	<i>Miles</i>		
Houghton,	—	7	7	Greenleaf	Boston	105	105
Leffingwell,	Norwich	7	14	Jones,	Medford	5	110
Burnham,	Newant	7	21	Porter,	Malden	2	112
Eaton,	Plainfield	8	29	Martin,	Lynn	4	116
Durance,	Volentown	4	33	Jones,	Danvers	5	121
—	Coventry	4	37	Goodhue,	Salem	3	124
Taylor,	Scituate	4	41	Waters,	Beverly	1	125
Angel,	—	6	47	Porter,	Wenham	6	131
Fiske,	Johnson	4	51	Treadwell,	Ipswich	6	137
Olney,	Providence	8	59	Payson,	Rowley	3	140
Daggett,	Attleboro	9	68	Pierce,	Newbury	7	147
Maxcey,	—	4	72	Davenport,	Newburyport	1	148
Mann,	Wrentham	5	77	Knowlton,	Seabrook	5	153
Harris,	Walpole	6	83	Davidson,	Hampton-falls	3	156
Robbins,	—	2	85	Lovet,	Hampton	2	158
Dean,	Dedham	7	92	Lovet,	Northhill	3	161
Ames or Gay,	—	2	94	Clark,	Greenland	4	165
Greenleaf,	Boston	11	105	Stavers,	Portsmouth	5	170
<i>Road to Boston by Worcester</i>			<i>Road to Quebec through the Eastern Country by Providence and Boston</i>				
Houghton,	—	7	7	Ingraham,	Old-York	9	179
Lathrop, Peck,	Norwich	7	14	Clark,	—	4	183
Burnham,	Newant	7	21	Wing,	Wells	6	189
Backus,	Canterbury	5	26	Littlefield,	—	3	192
Cleveland,	—	3	29	Jefferds,	—	4	196
Abbot,	Brooklin	4	33	Kimbal,	Kenebunk	5	201
Grosvenor,	Pomfret	7	40	Paterson,	Arundel	2	203
Green,	Woodstock	4	44	Ladd,	Saco	6	209
Carter,	Dudley	8	52	Milliken,	Scrborough	7	216
Bellows,	Oxford	6	58	Marsh,	—	4	220
Cutler,	—	1	59	Skillings,	Falmouth	3	223
Stearns,	Worcester	11	70	Toms,	—	3	226
Furnas,	Shrewsbury	5	75	Bucknam,	New-Casco	7	233
Martyn,	Northboro'	6	81	Loring,	N. Yarmouth	6	239
Williams,	Marlboro'	5	86	Mitchel,	—	2	241
Bryant,	Sudbury	12	98	Coffin,	Woods	6	247
Smith,	Weston	4	102	Ross,	Brunswick	10	257
Saltmarsh,	Watertown	6	108	Thomson,	—	4	261
Greenleaf,	Boston	9	117				

<i>Taverns</i>	<i>Towns</i>	<i>Miles</i>
Springer,	Georgetown	8 269
Harden's Ferry,	Woolwich	1 270
Read,	—	4 274
Lovejoy,	Pownalboro'	6 280
Goodwin,	Court-house	2 282
Smith,	Cobeseconte	8 290
Fort Western,	—	6 296
Fort Halifax,	—	18 314
Norridgewalk,	—	27 341
Great Carrying-place Quebec	—	30 371

Road to Newport

Billings,	Groton	5 5
Russel,	Stonington	7 12
Thomson,	Westerly	7 19
Bleavin,	—	2 21
Champlin,	Charlestown	6 27
Hawkins,	S. Kingston	10 37
Case,	Tower-Hill	4 41
Martin,	Naraganset Ferry	4 45
Ferry and Conanicut Island	—	4 49
Nichols,	Newport	3 52

Road to N. Haven & N. York

Gorton,	Rope-Ferry	5 5
Anderson,	Lyme	8 13
Parsons,	—	2 15
Whittlesy	Say-Brook Ferry	1 16
Shipman,	Say-Brook	4 20
Leigh,	—	5 25
Merrill,	Killingworth	4 29
Ward, Stone,	Guilford	9 38
Baldwin,	Branford	10 48
Lathrop, } Lyman, } Bears, }	New Haven	9 57
Laws,	Milford	6 63
Olcott,	Stratford	8 71
Taylor,	Fairfield	7 78
Ketchum,	Norwalk	12 90
Fitch,	Stamford	10 100
Marvel,	Rye	10 110
Sutton,	Merineck	7 117
Bailey,	New Rochel	3 120
Butler,	East Chester	4 124
Stoot,	New York	21 145

*Road to Albany & Quebec, by
New-York.*

New-York	145 145
Kingsbridge	15 160
Conklin's	12 172
Croton's River	12 184
Peekskill	10 194
Rogers,	9 203
Fishkills	11 214

<i>Taverns</i>	<i>Towns</i>	<i>Miles</i>
Poughkeepsie,	—	14 228
Staatsborough,	—	11 239
Rynbeck,	—	6 245
Schermerhorn's,	—	10 255
Kingsbridge,	—	6 261
Claverack,	—	12 273
Keadarhook,	—	14 287
Half-Way-House,	—	10 297
Albany,	—	10 307
Saraghtoga	—	36 343
Fort Edward,	—	14 357
Lake George,	—	14 371
Ticonderoga,	—	44 415
Crown-Point Fort,	—	15 430
E. End L. Champlain,	—	112 542
Le Prair,	—	16 558
Montreal,	—	6 564
Trois Riviers,	—	90 654
Quebec,	—	80 734

*Middle Road from New London
to Boston*

Grosvenor,	Pomfret	40 40
Convers	Thomson	6 46
Jacobs,	—	5 51
Killingley,	Parker	5 56
Hill,	Douglas	3 59
Wood,	Uxbridge	4 63
Keith,	Mendon	6 69
Amadon,	—	1 70
Hill,	Holiston	7 77
Clark,	Medway	3 80
Clark,	Medfield	6 86
Ellis,	Dedham	6 92
Ames,	—	3 95
Greenleaf,	Boston	11 106

Road to Hartford

Wheeler,	—	2 2
Allen,	—	5 7
Darrow,	—	2 9
Fitch,	Colchester	5 14
Welles,	—	4 18
Wright, Tainter,	—	3 21
Chamberlin,	—	1 22
Houseford,	Hebron	6 28
Buell,	—	5 33
Alverd,	Bolton	3 36
Rust,	East Hartford	4 40
Pitkin,	—	1 41
Benjamin,	—	8 49
Bull, } Butler, }	Hartford,	1 50
Holkins,	Wintenburg	7 57
Humphry,	Simsbury	4 61
Humphry,	W. Simsbury	5 66
Smith,	N. Hartford	5 71

DR. TRUFLE'S WEATHER SAYINGS

From the Daboll Almanac, 1796



1. A thick, dark sky, lasting for some time without either sun or rain, always becomes first fair, then foul; that is, changes to a fair clear sky, before it turns to rain.

2. A change in the warmth of the weather is generally followed by a change in the wind: thus, the northerly and southerly winds, commonly esteemed the cause of cold and warm weather, are in reality the effects of the cold or warmth of the atmosphere.

3. Most vegetables expand their flowers and down, in sunshining weather; and towards the evening, and against rain, close them again, especially at the beginning of their flowering, when their seeds are tender and sensible: that is visible in the down of dandelion, and the flowers of Pimpernel. If the flowers be close shut up, it foretells rain and foul weather; if spread open, fair weather. The stalk of trefoil swells against rain and grows more upright.

4. All wood, even the hardest and most solid, swells in moist weather, and foretells rain.

5. Stones and waincoats, when they sweat, portend rainy weather.



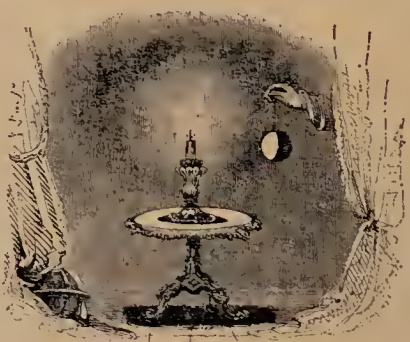
6. Close weather with a southerly wind presages rain.

7. A red sky at sun set indicates wind.

8. When the wind suddenly shifts and blows in a different course to the sun's apparent motion in the heavens, which is from east to west, it foretells wet and blowing weather.

9. A circle round the moon, at some distance, is generally followed with rain the next day.

10. Sheep will feed early in the morning, and cattle, deer and rabbits feed hard against rain; and a heifer will put up her nose and snuff in the air, before wet.



11. Flame is more susceptible of air than we are; thus the trembling of the flame of a candle foretells wind, as does the bending flame of a fire, and their throwing more ashes than usual.

12. The obscuring of the small stars indicates a tempest.

13. Seaweed hung up in a dry place will give, or grow damp before rain.

The Rev. Dr. Trufler, Almanack Maker, however, informs his readers that there is more knowledge to be derived from a good weather glass or barometer, they being more to be depended upon, and therefore recommends to Farmers and other persons (that can afford to lay out two or three guineas) to provide themselves with one.

TIDE CORRECTIONS

To obtain the time and height of high water at any place, apply the differences below as they appear on pages 22-44 to the daily predictions for Boston (Commonwealth Pier). Where a value in the "height difference" column is preceded by an *, height at Boston should be multiplied by this ratio. The daily *times* of high tide at Boston are in the "Full Sea" column, pages 22-44. Daily heights are on pages 23-45.

	<i>Time</i> <i>Differ-</i> <i>ence</i> h.m.	<i>Height</i> <i>Differ-</i> <i>ence</i> Ft.		<i>Time</i> <i>Differ-</i> <i>ence</i> h.m.	<i>Height</i> <i>Differ-</i> <i>ence</i> Ft.
MAINE			PENNSYLVANIA		
Augusta	+3 50	*0.4	Philadelphia	+2 29	*0.5
Bangor	-0 05	+3.6	DELAWARE		
Bar Harbor	-0 33	+1.1	Reboboth	-3 37	*0.4
Boothbay Harbor	-0 20	-0.8	MARYLAND		
Eastport	-0 28	*1.9	Baltimore	-4 25	*0.1
Old Orchard	-0 10	-0.7	Ocean City	-3 57	*0.4
Portland	-0 10	-0.6	DISTRICT OF COLUMBIA		
Stonington	-0 30	+0.2	Washington	-3 08	*0.3
NEW HAMPSHIRE			VIRGINIA		
Hampton	+0 15	-1.2	Norfolk	-1 54	*0.3
MASSACHUSETTS			Virginia Beach	-3 14	*0.3
Fall River	-3 16	*0.5	NORTH CAROLINA		
Falmouth	-0 40	*0.1	Beaufort	-2 59	*0.3
Hyannisport	+0 45	*0.3	Carolina Beach	-3 30	*0.4
Lynn	+0 05	-0.2	SOUTH CAROLINA		
Marblehead	-0 05	-0.3	Myrtle Beach	-3 45	*0.5
Marion	-3 16	*0.4	Charleston	-3 15	*0.5
Monument Beach	-3 06	*0.4	GEORGIA		
Nantasket	+0 10	+0.1	St. Simon's Island	-2 51	*0.7
Nantucket	+0 50	*0.3	Savannah	-2 40	*0.8
New Bedford	-3 21	*0.4	Tybee Beach	-3 26	*0.8
Oak Bluffs	+0 05	*0.2	FLORIDA		
Onset	-3 06	*0.5	Daytona	-3 20	*0.4
Plymouth	0 00	+0.1	Fort Lauderdale	-2 15	*0.3
Provincetown	+0 15	-0.3	Jacksonville	-0 40	*0.1
Scituate	-0 05	-0.5	Miami	-3 00	*0.3
Wellfleet	+0 20	+0.6	Palm Beach	-3 20	*0.3
Woods Hole	-3 01	*0.2	Port Everglades	-2 15	*0.3
RHODE ISLAND			St. Augustine	-2 20	*0.5
Block Island	-3 21	*0.3	St. Petersburg	+3 58	*0.2
Narragansett Pier	-3 31	*0.4	WASHINGTON		
Newport	-3 31	*0.4	Ilwaco	+1 44	-3.5
Providence	-3 11	*0.5	Port Townsend	+5 04	*0.5
Watch Hill	-2 06	*0.3	Seattle	+5 37	-2.0
CONNECTICUT			OREGON		
Long Island Sound	-0 02	*0.7	Astoria	+1 37	-3.3
New London	-1 47	*0.3	Cape Arago	+1 19	-4.8
NEW YORK			Yaquina Head	+1 12	-3.7
Coney Island	-3 00	*0.5	CALIFORNIA		
Long Beach	-3 57	*0.5	Catalina Island	-1 33	-5.9
Long Island Sound	+0 08	*0.7	Crescent City	+0 56	-5.0
New York City	-2 50	*0.5	Eureka	+1 20	-5.0
Ocean Beach	-3 57	*0.4	Long Beach	-1 37	-5.5
Southampton	-3 22	*0.3	Monterey	-0 03	*0.4
NEW JERSEY			Point Mendocino	+0 24	*0.4
Atlantic City	-3 57	*0.5	San Diego	-1 35	-5.9
Bayside	-0 24	*0.6	San Francisco	+0 59	*0.4
Cape May	-3 37	*0.5	Santa Barbara	-1 19	-6.0
Ocean City	-3 17	*0.4	Santa Cruz	+0 08	*0.4
Seabright					
to	-3 44	*0.5			
Seaside Park					

Example: The figures for Full Sea in Columns 10 and 11 of the left hand Calendar pages 22-44 are the times of high tide at Commonwealth Pier in Boston Harbor. The heights of these tides are given on the right hand pages 23-45. The heights are reckoned from Mean Low Water; each day has a set of figures—upper for the morning—and lower for the evening. The conversion of the times of the tides at Boston to those of Miami is given by way of illustration.

Example: Apr. 18. See page 28, column 11, for time; page 29 for height.

BOSTON		MIAMI	
High Tide (from page 28)	12.15 P.M.E.S.T.	High tide (Boston)	12.15 P.M.E.S.T.
April 18		Correction above	-3.00
		High tide (Miami)	9.15 A.M.E.S.T.
Height (from page 29)	9.4 feet	Height (Miami)	
		(9.4 x 0.3)	2.82 feet



CHICK! CHICK! CHICK!

GESTATION AND REPRODUCTION TABLE

	Proper age for first mating	Period of power of reproduction in years	No. of females for one male	Period of gestation and incubation		
				Shortest days	Mean days	Longest days
Mare.....	3 yrs.	10 to 12	20 to 30	325	336	352
Stallion.....	4 "	12 to 15		235	282	300
Cow.....	18-24 mos.	10 to 14	30 to 40	145	147	152
Bull.....	12-18 "	10 to 12		110	114	120
Ewe.....	18 "	6	35 to 45	147	151	155
Ram.....	12-14 "	7		356	367	378
Sow.....	9 "	6	8 to 12	309	315	325
Boar.....	9 "	6		58	63	67
She Goat.....	18 "	6	20 to 30	58	60	64
He Goat.....	18 "	5		25	30	35
Ass.....	3 yrs.	10 to 12	6 to 8	19	21	24
Jack.....	4 "	12 to 15		24	26	30
She Buffalo.....	18-24 mos.	8	30	28	30	32
Bitch.....	16-18 "	8		27	30	33
Dog.....	12-16 "	6	12 to 18	16	18	20
She Cat.....	12 mos.	8		25	28	30
He Cat.....	12 "	10	5 to 6	20	23	25
Doe Rabbit.....	6 "	5 to 6		40	42	45
Buck Rabbit.....	6 "	5 to 6	5 to 6	22	30	34
Cock.....	6 "	5 to 6		13	16	19
Hen.....						
Turkey.....						
Duck.....						
Goose.....						
Pigeon.....						
Pea Hen.....						
Guinea Hen.....						
Swan.....						
Hen or Duck's Eggs.....						
Robin's Eggs.....						

REPRODUCTIVE CYCLE IN FARM ANIMALS

Courtesy F. N. Andrews — Purdue University

	Reoccurs if not Bred (Days)	Estrual Cycle incl. Heat Period (Days)		In Heat for		Usual Time of Ovulation
		Ave.	Range	Ave.	Range	
Mare	16	21	10-37	5-6 days	1-37 days	24-48 hours before end of estrus
Sow	19	21	18-24	2-3 days	1-5 days	Usually second day of estrus
Ewe	15	16	14-20	30 hours	20-42 hours	1 hour before end of estrus
Goat	19	20	12-25	36-48 hours	20-80 hours	Near end of estrus
Cow	20	19-20	16-24	16-20 hours	8-30 hours	14 hours after end of estrus
Bitch	180	24		21-28 days		
Cat	120			3-12 days		

PART THREE

Regional Forecasts

Thus far all the calculations (except for Page 17) in this Almanac have been for Boston. The following pages in this Part III will enable readers to adjust these calculations and weather forecasts for anywhere in the United States.

1. Boston — See Page 94.
2. Northern New England — See Page 95-96.
3. Southern New England — See Page 95, 97.
4. East — Except New England — See Page 100-101.
5. Midwest — See Page 104-105.
6. Great Plains — See Page 110-111.
7. Pacific Northwest — See Page 110, 114.
8. South — See Page 118-119.

DIRECTIONS FOR USING REGIONAL FORECAST PAGES

Simple and easy directions for using the regional forecast pages which follow appear at the top of each of these pages. However, the following additional information which also applies to these pages should be carefully noted.

Weather Forecasts

The OFA has long been known for its "accurate" weather forecasts. In previous editions these have been made for Boston and New England only, with the proviso these could be used elsewhere by considering the weather as forecast would arrive one day earlier for each Time Zone west of Boston. The versified forecasts in italics next to the Farm Calendars on pages 23-45 are so calculated. In reading the regional forecasts listed above please remember it is impossible today to predict (successfully) the weather for more than a day or two in advance. Every known scientific source for making these 18-months-in-advance forecasts (we go to press in June) has been used. We suggest they will be more useful as weather trends than for the pinpointing of any particular day's weather.

Sun Dials

The column headed "Sun Fast" (pages 22-44) is of primary use to sun dial enthusiasts. The figures therein tell how fast on each day the time indicated by a *properly adjusted and graduated* sun dial will be of the time indicated by a clock. On April 11 sun dial time in Boston will be 15 min. (+15) FAST of Eastern Standard Time (see page 28). The time difference between clock and sun dial time in other cities (see pages 95-118) will be found by subtracting the value of Key Letter I for that city from the Sun Fast time for Boston (given on pages 22-44). The value of Key Letter I for Pittsburgh (see page 100) is +35 min., so sun dial time in Pittsburgh on April 11 will be 20 min. (+15 minus 35) SLOW of clock time.

Length of Day

The "Length of Day" for Boston (pages 22-44) tells how long the sun will be above the horizon. It is found by subtracting the time of sunrise from that of sunset for each locality. For other cities, see pages 95-118. For these, after you have determined sunrise and sunset times, subtract the one from the other and you have the length of day.

Moonrise and Moonset

For greater accuracy, include the Constant Additional Correction below.

Longitude of Place	58°-77°	77°-90°	90°-103°	103°-116°	116°-128°	128°-142°	142°-155°
Correction	m 0	m +1	m +2	m +3	m +4	m +5	m +6

BOSTON

Moonrise (Apr. 11) 2.57 A.M., E.S.T.
Key Letter N

Moonset 12.47 P.M., E.S.T.
Key Letter E

PITTSBURGH

(Longitude 80° 00' W.)

Moonrise (Boston) 2.57 A.M.

Correction (N from page 100) +.29

Constant Additional Correction +.01

Moonrise (Pittsburgh) 3.27 A.M., E.S.T.

Moonset (Boston) 12.47 P.M.

Correction (E from page 100) +.38

Constant Additional Correction +.01

Moonset (Pittsburgh) 1.26 P.M., E.S.T.

Moon's Place and Age

The moon's place and age is contained on the left-hand Calendar Pages (22-44). This information applies without correction throughout the United States.

Risings and Settings of the Planets

The times of rising and setting of naked-eye planets, with the exception of Mercury, are given for Boston on pages 46-47. To convert these times to those of other localities (pages 95-118), follow the same procedure as that given on those pages for finding the times of sunrise and sunset.

Dawn and Dark

The approximate times dawn will break and dark descend are found by applying the length of twilight taken from the table below to the times of sunrise and sunset at any specific place. The latitude of the place (see pages 95-118) determines the column of the table below from which the length of twilight is to be selected.

BOSTON (Latitude 42° 22' N.)		PITTSBURGH (Latitude 40° 26' N.)	
Sunrise (Apr. 11)	5.10 A.M.	Sunrise (see page 100)	5.48 A.M.
Length of Twilight (Col. 3 of table)	1.33	Length of Twilight (Col. 3 of table)	1.33
Dawn breaks	3.37 A.M., E.S.T.	Dawn breaks	4.15 A.M., E.S.T.
Sunset	6.22 P.M.	Sunset (see page 100)	6.55 P.M.
Length of Twilight	1.33	Length of Twilight	1.33
Dark descends	7.55 P.M., E.S.T.	Dark descends	8.28 P.M., E.S.T.

LENGTH OF TWILIGHT

Subtract from time of sunrise for dawn.

Add to time of sunset for dark.

Latitude	25°N	31°N	37°N	43°N	48°N
	to 30°N	to 36°N	to 42°N	to 47°N	to 49°N
	h m	h m	h m	h m	h m
Jan. 1 to Apr. 11	1 20	1 26	1 33	1 42	1 50
Apr. 11 to May 3	1 23	1 28	1 39	1 51	2 04
May 3 to May 15	1 26	1 34	1 47	2 02	2 22
May 15 to May 26	1 29	1 38	1 52	2 13	2 42
May 26 to July 23	1 32	1 43	1 59	2 27	—
July 23 to Aug. 4	1 29	1 38	1 52	2 13	2 42
Aug. 4 to Aug. 15	1 26	1 34	1 47	2 02	2 22
Aug. 15 to Sept. 6	1 23	1 28	1 39	1 51	2 04
Sept. 6 to Dec. 31	1 20	1 26	1 33	1 42	1 50

DETERMINATION OF EARTHQUAKES

Note, in this Almanac, on right hand pages, 23-45, the dates when the moon [$\text{C}_{\text{high}}^{\text{runs}}$] or [$\text{C}_{\text{low}}^{\text{rides}}$]. Beginning with the date of the high is the most likely five-day earthquake period in the northern hemisphere, with the low in the southern hemisphere. You will also find on these pages a moon on the Equator notation [$\text{C}_{\text{Eq.}}^{\text{on}}$], twice each month. At this time, in both hemispheres, is a two-day quake period.

HOW THE OFA FORECASTS ARE MADE

All the astronomical forecasts — sunrise, sunset, planets, moonset, moonrise, et al — are made by astronomer Loring B. Andrews. The weather forecasts are made by "Abe Weatherwise" by means of a long-standing formula which goes back to 1792 when this Almanac was founded. In this formula are many factors: Sunspots, Long Range Cycles, Ocean Temperatures, Averages, etc. The factors are weighted in accord with the year intended for calculation — and based, as nearly as possible, on scientific facts and findings. It is well known, however, that science has yet to devise a way to forecast weather successfully, more than a day or two ahead.

1. BOSTON WEATHER FORECAST

Verification Base: U.S.W.B. at Blue Hill, Mass.

THE YEAR (JAN. 1969 - DEC. 1969)

For the year as a whole the temperature 50.2° will average 1.8° higher than average (48.4°). Precipitation will be down some 13" to 33.7" from the average of 46.7". The storms to watch are in bold in the monthly summaries below — particularly those of Jan. 26-31, Mar. 11-14, Apr. 27-30, Sept. 4-7, Oct. 22-31, and Dec. 24-27.

THE WINTER (NOV. 1968 - APR. 1969)

The Winter will be 3° cooler than average — snowfall will be average (about 57"), with normal precipitation. The storms to watch out for are in bold below.

Nov. 1968: Temp. 41.2° (ave.). Precip. 3.8" (.3" below ave.), snow 3". 1-3, 1" rain. 4-5, clear. 6-7, .5" rain. 8-11, overcast. 12-15, mild, haze. 16-19, 1" rain, warm. 20-21, clear, cool. 22-24, .3" prec., 1" snow. 25, nice. 26-30, 1" prec., 2" snow.

Dec. 1968: Temp. 31.4° (1.6° above ave.). Precip. 5" (1" above ave.), snow 11". 1-4, clear. 5-9, 1" rain. 10-14, clear. 15-21, 2" prec., 6" snow. 22-25, clear. 26-31, 2" prec., 3" snow.

Jan. 1969: Temp. 31.0° (3.6° above ave.). Prec. 4.2" (ave.), snow 10". 1-3, clear. 4-7, 1.0" prec., 3" snow. 8-12, clear. 13-15, .35" prec., 2" snow. 16-18, clear. 19-22, 1" prec., 2" snow. 23-25, clear. 26-31, 1.85" rain, 3" snow.

Feb. 1969: Temp. 29.2° (3° above ave.). Prec. 2.8" (1.1" below ave.), snow 10". 1-3, clear. 4-7, .75" prec. 5" snow. 8-9, clear. 10-12, .25" rain. 13-14, clear. 15-16, .5" prec., 1" snow. 17-19, clear. 20-24, 1.0" prec., 2" snow. 25-26 clear. 27-28, .6" rain.

March 1969: Temp. 33.5° (1.2° below ave.). Prec. 3.5", .7" below ave. Snow 15", 1-5, clear. 6-8, 1.0" rain. 9-10, clear. 11-14, 1.0" prec., 5" snow. 15-17, clear. 18-20, .50" prec., 7" snow. 21-23, clear. 24-27, 1.0" prec., 3" snow. 28-31, clear.

April, 1969: Temp. 46.0° (4° above ave.). Prec. 4.5" (.6" above ave.), snow 2". 1-2, clear. 3-6, rain 1". 7-10, clear. 11-12, .25" prec., 2" snow. 13-15, clear. 16-19, 1.0" rain. 20-21, clear. 22-24, .45" rain. 25-26, clear. 27-30, 1.3" rain.

May 1969: Temp. 56.6° (ave.) Precip. 3.6" (ave.). 1-2, clear. 3-5, 1.0" rain. 6-8, clear. 9-11, .50" rain. 12-13, clear. 14-18, 1.0" rain. 19-22, clear. 23-24, .50" rain. 25-26, clear. 27-31, .50" rain.

June 1969: Temp. 65.7° (.3° above ave.). Prec. 2.7" (.7" below ave.). 1-4, clear. 5-6, .25" rain. 7-8, clear. 9-11, .5" rain. 12-14, clear. 15-17, .9" rain. 18-21, clear. 22-25, 1.0" rain. 26-28, clear. 29-30, .25" rain.

July 1969: Temp. 71.3° (.3° above ave.). Precip. 2.0" (1.6" below ave.). 1-2, clear. 3-7, .25" rain. 8-10, clear. 11-12, .25" rain. 13-14, clear. 15-17, .75" rain. 18-21, clear. 22-26, .25" rain. 27-28, clear. 29-31, 1.0" rain.

Aug. 1969: Temp. 71.2° (2° above ave.). Prec. 3.7" (.3" below ave.). 1-5, .25" rain. 6-8, clear. 9-12, .25" rain. 13-14, clear. 15-18, 1.0" rain. 19-20, clear. 21-24, 1.0" rain. 25-26, clear. 27-31, .75" rain.

Sept. 1969: Temp. 60.5° (2.0° below ave.). Prec. 4.5" (.5" above ave.). 1-3, clear. 4-7, rain, 1.25". 8-10, clear. 11-13, 1.0" rain. 14-18, clear. 19-20, 1.0" rain. 21-24, clear. 25-30, 1.25" rain.

Oct. 1969: Temp. 49.9° (2.4° below ave.). Prec. 3.6" (.2" below ave.). 1-3, clear. 4-7, .25" rain. 8-10, clear. 11-12, .25" rain. 13-15, clear. 16-18, 1.1" rain. 19-21, clear. 22-31, 2" rain.

Nov. 1969: Temp. 40.3° (.9° below ave.). Prec. 4.6" (.4" above ave.), snow 6". 1-2, clear. 3-7, 2" rain. 8-9, clear. 10-14, 1" rain. 15-21, clear. 22-26, 1" prec., 6" snow. 27-28, clear. 29-30, .6" rain.

Dec. 1969: Temp. 30.7° (.9° above ave.). Prec. 3.7" (.3" below ave.), snow 12". 1, clear. 2-5, .5" prec., 2" snow. 6-7, clear. 8-10, .25" prec., 2" snow. 11-12, clear. 13-16, .55" prec., 2" snow. 17-18, clear. 19-20, .20" prec., 2" snow. 21-23, clear. 24-27, 2.0" prec., 2" snow. 28, clear. 29-31, 2" prec., 2" snow.

Table for Adjusting Sun, Moon, Planet Times on Pages 22-44, 46 2.-3. NEW ENGLAND (EXCEPT BOSTON)

The times of sunrise, sunset, moonrise, moonset (pages 22-44) and the planets (page 46) are for Boston only. The table below gives the corrections to be used for anywhere in New England except Boston. Note the Key Letter for any given day (pages 22-44, 46). Then find the column below in which that Key Letter falls. The figure in that column for the city you seek is the minutes to add or subtract for accuracy of within 5 min. for that city. Example: Jan. 12, sunrise (p. 22) is 7:12 A.M. Key Letter N. Key Letter N for Presque Isle (last col. below) shows +4. So sunrise at Presque Isle will be 7:16 A.M. If a city is not listed, interpolate between nearest two cities. (Further explanations appear on pages 92 and 93.)

City	State	Latitude	Time Used	Key Letters				
				A-D m	E-H m	I m	J-M m	N-Q m
Bridgeport	Conn.	41 10	EST	+13	+10	+9	+7	+4
Hartford-New Britain	Conn.	41 46	EST	+9	+7	+7	+6	+5
New Haven	Conn.	41 18	EST	+11	+9	+7	+6	+4
New London	Conn.	41 21	EST	+11	+9	+7	+6	+4
Norwalk-Stamford	Conn.	41 03	EST	+14	+11	+10	+8	+5
Waterbury-Meriden	Conn.	41 33	EST	+10	+8	+7	+6	+4
Augusta	Maine	44 19	EST	-12	-7	-5	-3	+2
Bangor	Maine	44 48	EST	-18	-12	-6	-6	0
Eastport	Maine	44 56	EST	-26	-19	-16	-13	-7
Ellsworth	Maine	44 30	EST	-19	-13	-16	-13	-2
Portland	Maine	43 39	EST	-8	-5	-3	-2	+2
Presque Isle	Maine	46 40	EST	-29	-17	-13	-7	+4
Brockton	Mass.	42 05	EST	+1	0	0	-1	-1
Fall River-N. Bedford	Mass.	41 42	EST	+3	+1	0	0	-2
Lawrence-Lowell	Mass.	42 42	EST	-1	0	+1	+1	+2
Pittsfield	Mass.	42 27	EST	+8	+9	+9	+9	+9
Springfield-Holyoke	Mass.	42 06	EST	+7	+6	+6	+6	+5
Worcester	Mass.	42 16	EST	+3	+3	+3	+3	+3
Berlin	N. H.	43 58	EST	-8	-3	0	+2	+8
Keene	N. H.	42 50	EST	+5	+6	+7	+8	+9
Manchester-Concord	N. H.	42 59	EST	-1	+1	+2	+3	+4
Portsmouth	N. H.	43 10	EST	-4	-2	-1	0	+1
Providence	R. I.	41 50	EST	+3	+3	+1	+1	0
Brattleboro	Vt.	42 50	EST	+3	+5	0	+1	+5
Burlington	Vt.	44 28	EST	+1	+6	+9	+11	+17
Rutland	Vt.	43 35	EST	+3	+6	+8	+9	+12
St. Johnsbury	Vt.	44 25	EST	-4	+1	+4	+6	+12

2. NORTHERN NEW ENGLAND WEATHER FORECAST

Verification Bases: Portland, Maine and Burlington, Vermont. However this forecast has general reference to Maine, New Hampshire, and Vermont and should be adjusted to higher altitudes for the ski resorts.

THE YEAR (JAN. 1969 - DEC. 1969)

MAINE. Temperature will average 47.1°, which is 1.6° above average (45.5°). Precipitation will be only 36.6" or 4.2" below average (40.8"). The storms to watch follow in bold below—especially those of Jan. 26-31, Mar. 11-14, Apr. 27-30, May 22-31, Sept. 4-7, Oct. 16-18, Oct. 22-31, Nov. 3-7, Dec. 24-28.

VERMONT. Temperature will average 47.7°, which is 3.1° above average (44.6°). Precipitation will be only 28.2", which is 4.1" below ave. (32.3"). Storms to watch are in bold below—especially those of May 22-31, July 3-9, Aug. 15-18, Sept. 25-30, Oct. 16-17, Dec. 24-28.

In both Maine and Vermont, the Winter (Nov. '68-April '69) will be definitely milder than normal and considerably less snow than last winter. The storms to watch are in bold.

Maine — Nov. 1968: Temp. 52.3° (3° above ave.). Prec. 4.0" (2" above ave.), snow 4". 1-3, overcast. 4-7, 1.5" rain. 8-9, clear. 10-11, 1" rain. 12-15, mild, foggy. 16-19, .5" prec., 2" snow. 20-21, fine. 22-23, .5" rain. 24-25, fine. 26-30, .5" prec., 2" snow.

Vermont — Nov. 1968: Temp. 37.4° (.7° above ave.). Prec. 3.4" (.7" above ave.), snow 12". 1-3, overcast. 4-7, 1" prec., 9" snow. 8-11, clear. 12-15, mild, hazy. 16-19, .5" prec., 3" snow. 20-21,

cool, clear. 22-23, .9" rain. 24-25, fine. 26-30, 1" rain.

Maine — Dec. 1968: Temp. 29.2° (2.3° above ave.). Prec. 5.2" (1.4" above ave.), 13" snow. 1-4, clear. 5-9, 1" rain. 10-11, clear. 12-13, .25" rain. 14-15, clear. 16-19, .25" prec., 1" snow. 20-22, clear. 23-25, 1.7" prec., 4" snow. 26-27, clear. 28-31, 2" prec., 6" snow.

Vermont — Dec. 1968: Temp. 25.9° (2.5° above ave.). Prec. 2.2" (.2"

Continued on next page

- above ave.), snow 9". 1-4, clear. 5-9, .25" rain. 10-11, clear. 12-13, .10" prec., 1" snow. 14-16, clear. 17-19, .50" prec., 4" snow. 20-22, clear. 23-25, 1" prec., 2" snow. 26-27, clear. 28-31, .35" prec., 2" snow.
- Maine — Jan. 1969:** Temp. 24.9° (2.3° above ave.). Precip. 4.4" (.5" above ave.), snow 15". 1-3, clear. 4-7, 1.0" prec., 5" snow. 8-12, clear. 13-15, .40" prec., 2.5" snow. 16-18, clear. 19-22, 1.0" prec., 6" snow. 23-25, clear. 26-31, 2" prec., 1.5" snow.
- Vermont — Jan. 1969:** Temp. 23.6° (5.3° above ave.). Precip. 1.9" (.1" above ave.). 1-2, clear. 3-5, .50" prec., 5" snow. 6-8, clear. 9-11, .25" rain. 12-13, clear. 14-16, .4" rain. 17-18, clear. 19-22, .5" prec., 5" snow. 23-26, clear. 27-31, .25" prec., 5" snow.
- Maine — Feb. 1969:** Temp. 25.4° (1.9° above ave.). Prec. 3.3" (.5" below ave.), snow 8". 1-3, clear. 4-7, 1.0" prec., 3" snow. 8-9, clear. 10-11, .5" rain. 12-13, clear. 14-16, .5" prec., 1" snow. 17-19, clear. 20-23, .80" rain. 24-25, clear. 26-28, .5" prec., 4" snow.
- Vermont — Feb. 1969:** Temp. 22.7° (4.1° above ave.). Prec. 3.1" (1.7° above ave.), snow 8". 1-3, clear. 4-7, .5" prec., 3" snow. 8-12, clear. 13-17, 1.0" prec., 3" snow. 18-19, clear. 20-24, 1.0" prec., 2" snow. 25-26, clear. 27-28, .6" rain.
- Maine — March 1969:** Temp. 32.7° (1.6° below ave.). Prec. 3.8" (.3" above ave.), 10" snow. 1-4, clear. 5-8, 1.0" rain. 9-10, clear. 11-14, 1.0" prec., 5" snow. 15-17, clear. 18-20, .80" prec., 2" snow. 21-22, clear. 23-27, 1.0" prec., 3" snow. 28-31, clear.
- Vermont — March 1969:** Temp. 27.4° (ave.). Prec. 2.4" (.3" above ave.), snow 20". 1-2, clear. 3-4, .10" prec., .1" snow. 5-6, clear. 7-8, .25" prec., 3" snow. 9-10, clear. 11-13, .75" prec., 5" snow. 14-15, clear. 16-20, .50" prec., 8" snow. 21-22, clear. 23-24, .25" prec., 3" snow. 25-26, clear. 27-31, .55" rain.
- Maine — April 1969:** Temp. 44.3° (1.5° above ave.). Prec. 4.3" (.8" above ave.), snow 3". 1-2, clear. 3-6, 1.0" rain. 7-10, clear. 11-12, .25" prec., 3" snow. 13-15, clear. 16-19, 1.0" rain. 20-21, clear. 22-24, .25" rain. 25-26, clear. 27-30, 1.3" rain.
- Vermont — April, 1969:** Temp. 43.1° (.4° above ave.). Prec. 2.7" (.3" above ave.), snow 2". 1-2, clear. 3-7, 1" rain. 8-10, clear. 11-14, .5" prec., 2" snow. 15-16, clear. 17-19, .25" rain. 20-21, clear. 22-24, .25" rain. 25-27, clear. 28-30, .70" rain.
- Maine — May 1969:** Temp. 53.2° (ave.). Precip. 3.6" (.2" above ave.). 1-2, clear. 3-5, 1.0" rain. 6-8, clear. 9-11, .26" rain. 12-18, .5" rain. 19-21, clear. 22-31, 1.85" rain.
- Vermont — May 1969:** Temp. 57° (1.7° above ave.). Precip. 3.0" (ave.). 1-2, clear. 3-5, .8" rain. 6-8, clear. 9-11, .25" rain. 12-13, clear. 14-18, .5" rain. 19-21, clear. 22-31, 1.45" rain.
- Maine — June 1969:** Temp. 60.8° (7.6° above ave.). Prec. 2.1" (1.3" below ave.). 1-4, clear. 5-6, .25" rain. 7-8, clear. 9-11, .50" rain. 12-14, clear. 15-17, .9" rain. 18-20, clear. 21-25, .5" rain. 26-28, clear. 29-30, clear.
- Vermont — June 1969:** Temp. 67.1° (2.2° above ave.). Prec. 2.9" (.6" below ave.). 1-2, .5" rain. 3-4, clear. 5-6, .25" rain. 7-8, clear. 9-11, .5" rain. 12-14, clear. 15-17, .9" rain. 18-20, clear. 21-25, .5" rain. 26-28, clear. 29-30, .25" rain.
- Maine — July 1969:** Temp. 69.1° (1.0° above ave.). Prec. 2.9" (.2" above ave.). 1-2, clear. 3-7, .25" rain. 8-10, clear. 11-12, .5" rain. 13-14, clear. 15-19, .85" rain. 20-21, clear. 22-27, .5" rain. 28-31, clear.
- Vermont — July 1969:** Temp. 71.5° (.8° above ave.). Precip. 3.8" (.2" above ave.). 1-2, clear. 3-9, 1.5" rain. 10-11, clear. 12-13, .5" rain. 14-15, clear. 16-22, .80" rain. 23-24, clear. 25-27, 1.0" rain. 28-31, clear.
- Maine — August 1969:** Temp. 68.8° (2.3° above ave.). Prec. 2.7" (.3" below ave.). 1-4, .4" rain. 5-8, clear. 9-12, .15" rain. 13-14, clear. 15-18, .75" rain. 19-20, clear. 21-25, .75" rain. 26-27, clear. 28-31, .65" rain.
- Vermont — August 1969:** Temp. 70.0° (2.7° above ave.). Prec. 4.0" (.6" above ave.). 1-5, .25" rain. 6-8, clear. 9-12, .25" rain. 13-14, clear. 15-18, 1.3" rain. 19-20, clear. 21-24, 1.0" rain. 25-26, clear. 27-31, .75" rain.
- Maine — Sept. 1969:** Temp. 58.5° (1° below ave.). Prec. 4.9" (1.7" above ave.). 1-3, clear. 4-7, 1.25" rain. 8-10, clear. 11-13, 1.0" rain. 14-18, clear. 19-20, 1.0" rain. 21-24, clear. 25-30, 1.0" rain.
- Vermont — Sept. 1969:** Temp: 59.4° (.2° below ave.). Prec. 2.9" (.4" below ave.). 1-3, clear. 4-7, .9" rain. 8-10, clear. 11-13, .50" rain. 14-18, clear. 19-20, .50" rain. 21-24, clear. 25-30, 1.65" rain.
- Maine — Oct. 1969:** Temp. 51.5° (.9° above ave.). Prec. 4.0" (1.4" above ave.). 1-3, clear. 4-7, .25" rain. 8-11, clear. 12-13, .25" rain.

3. SOUTHERN NEW ENGLAND WEATHER FORECAST

Verification Base: Providence, R. I. However, this forecast is meant to cover Cape Cod, most of Connecticut, and New York City — and even down to Washington, D. C. This area is affected by northeasterly storms, and some from the Carolinas or the Ohio "channel."

THE YEAR (JAN. 1969 - DEC. 1969)

The temperature will average 54.4° or 3.9° above ave. (50.5°). Precipitation will be 33.6" which is 6.6" below ave. (40.2"). Storms to watch are in bold — especially those of Apr. 27-30, and Nov. 3-7.

The winter in Southern New England will be decidedly mild with snowfall way below ave. The larger storms are in bold below.

Nov. 1968: Temp. 44.3° (.9° above ave.). Precip. 3.2" (.4" below ave.), 2" snow. 1-3, 1" rain. 4-5, clear. 6-7, .5" rain. 8-11, foggy. 13-15, mild. 16-19, .75" rain. 20-21, clear. 22-24, .25" prec., 1" snow. 25-26, nice. 27-30, .70" prec., 1" snow.

Dec. 1968: Temp. 34.9° (2.3° above ave.). Precip. 3.6" (ave.). 1-4, clear. 5-9, 1" rain. 10-15, clear. 16-21, 1.6" prec., 7" snow. 22-25, clear. 26-31, .9" prec., 6" snow.

Jan. 1969: Temp. 34.3° (4.9° above ave.). Precip. 4.2" (.5" above ave.), snow 7". 1-3, clear. 4-7, 1" prec., 2" snow. 8-12, clear. 13-15, .20" prec., 1" snow. 16-18, clear. 19-22, 1" prec., 2" snow. 23-25, clear. 26-31, 1" prec., 2" snow.

Feb.: Temp. 31.3° (2° above ave.). Precip. 3.0" (.2" below ave.), snow 6". 1-3, clear. 4-7, .75" prec., 2" snow. 8-9 clear. 10-11, .25" rain. 12-13, clear. 14-15, .5" prec., 1" snow. 16-19, clear. 20-23, .75" rain. 24-25, clear. 26-28, .75" prec., 3" snow.

March: Temp. 37.2° (.4° above ave.). Precip. 3.2" (.4" below ave.), snow 10". 1-5, clear. 6-8, .70" rain. 9-10, clear. 11-14, 1.0" prec., 5" snow. 15-17, clear. 18-20, .50" prec., 2" snow. 21-23, clear. 24-27, 1.0" prec., 3" snow. 28-31, clear.

April: Temp. 48.6° (1.2° above ave.). Precip. 4.7" (1.1" above ave.). 1-2, clear. 3-6, 1.0" rain. 7-10, clear. 11-12, .45" rain. 13-15, clear. 16-19, 1.0" rain. 20-21, clear. 22-24, .45" rain. 25-26, clear. 27-30, 1.3" rain.

May: Temp. 59.5° (1.7° above ave.). Precip. 3.2" (1" above ave.). 1-2, clear. 3-5, 1.0" rain. 6-8, clear. 9-11, .50" rain. 12-13, clear. 14-18, .70" rain. 19-22, clear. 23-24, .50" rain. 25-26, clear. 27-31, .50" rain.

June: Temp. 67.2° (.3° above ave.). Precip. 2.6" (1" below ave.). 1-4, clear. 5-6, .25" rain. 7-8, clear. 9-11, .50" rain. 12-14, clear. 15-17, .5" rain. 18-20, clear. 21-25, 1.0" rain. 26-28, clear. 29-30, .25" rain.

July: Temp. 74.4° (1.8° above ave.). Precip. 2.0" (1.1" below ave.). 1-2, clear. 3-7, .25" rain. 8-10, clear. 11-12, .25" rain. 13-14, clear. 15-17, .75" rain. 18-21, clear. 22-27, .25" rain. 28-31, clear.

August: Temp. 73.4° (2.6° above ave.). Precip. 3.4" (.2" below ave.). 1-5, .25" rain. 6-8, clear. 9-13, .25" rain. 14-15, clear. 16-18, .75" rain. 19-20, clear. 21-24, 1" rain. 25-26, clear. 27-31, .70" rain.

Sept.: Temp. 63.2° (.6° above ave.). Precip. 2.3" (1.0" below ave.). 1-3, clear. 4-7, .75" rain. 8-10, clear. 11-13, .5" rain. 14-18, clear. 19-20, .5" rain. 21-24, clear. 25-30, .55" rain.

Oct.: Temp. 55.1° (1.1° above ave.). Precip. 2.0" (1.6" below ave.). 1-3, clear. 4-7, .25" rain. 8-10, clear. 11-13, .25" rain. 14-15, clear. 16-18, .5" rain. 16-21, clear. 22-31, 1" rain.

Nov.: Temp. 43.6° (.2° above ave.). Precip. 3.5" (1" below ave.), snow 3". 1-2, clear. 3-7, 2" rain. 8-9, clear. 10-14, .7" rain. 15-21, clear. 22-26, .5" prec., 3" snow. 27-28, clear. 29-30, .3" rain.

Dec.: Temp. 33.0° (.4° above ave.). Precip. 2.8" (.8" below ave.), snow 6". 1, clear. 2-5, .5" prec., 2" snow. 6-7, clear. 8-10, .25" rain. 11-12, clear. 13-16, .25" rain. 17-18, clear. 19-20, .20" rain. 21-23, clear. 24-28, .5" prec., 2" snow. 29, clear. 30-31, .1" prec., 2" snow.

NEW ENGLAND WEATHER

(except Boston)

Continued from page 96

14-15, clear. 16-18, 1.4" rain. 19-21, clear. 22-31, 2" rain.

Vermont — Oct. 1969: Temp. 48° (.9° below ave.). Prec. 2.4" (.5" below ave.). 1-3, clear. 4-7, .25" rain. 8-10, clear. 11-13, .25" rain. 14-15, clear. 16-17, 1.5" rain. 18-25, clear. 26-31, .4" rain.

Maine — Nov.: Temp. 38.9° (.3° above ave.). Prec. 4.1" (.3" above ave.), snow 2". 1-2, clear. 3-7, 2" rain. 8-9, clear. 10-14, 1" rain. 15-21, clear. 22-26, .25" prec., 2" snow. 27-28, clear. 29-30, .85" rain.

Vermont — Nov.: Temp. 36.7° (ave.). Prec. 2.7" (ave.). snow 9". 1-2, clear. 3-7, 1.0" rain. 8-9, clear. 10-14, .5" prec., 4" snow. 15-21, clear. 22-26, .6" prec., 5" snow. 27-28, clear. 29-30, .6" rain.

Maine — Dec.: Temp. 29.2° (3.2° above ave.). Prec. 3.6" (.9" below ave.), snow 20". 1-4, .4" prec., 4" snow. 5-7, clear. 8-10, .25" prec., 2" snow. 11-12, clear. 13-16, .25" prec., 2" snow. 17-18, clear. 19-20, .2" prec., 2" snow. 21-23, clear. 24-28, 1.5" prec., 10" snow. 29, clear. 30-31, .2" rain.

Vermont — Dec.: Temp. 24.5° (1.1° above ave.). Prec. 3.0" (1.0" above ave.), snow 12". 1-3, .4" snow. 4-7, clear. 8-10, .5" prec., 2" snow. 11-12, clear. 13-16, .6" prec., 2" snow. 17-18, clear. 19-20, 1.2" prec., 2" snow. 21-23, clear. 24-28, 1.1" rain. 29, clear. 30-31, .2" rain.

MIDWEST WEATHER

Continued from page 105

Aug. 1969: Temp. 74.1° (1.7° above ave.). Prec. 2.4" (.8" below ave.). 1-5, .5" rain. 6-8, clear. 9-12, .25" rain. 13-14, clear. 15-18, .50" rain. 19-20, clear. 21-24, .35" rain. 25-26, clear. 27-31, .50" rain.

Sept.: Temp. 63.1° (2.5° below ave.). Prec. 2.3" (1.3" below ave.). 1-3, clear. 4-7, .3" rain. 8-11, clear. 12-14, .2" rain. 15-17, clear. 18-20, .5" rain. 21-24, clear. 25-30, 1.3" rain.

Oct.: Temp. 56.8° (2.3° above ave.). Prec. 2.8" (.2" above ave.). 1-2, clear. 3-6, 1.5" rain. 7-10, clear. 11-13, .25" rain. 14-15, clear. 16-17, .25" rain. 18-21, clear. 22-26, .8" rain. 27-31, clear.

Nov.: Temp. 41.4° (1° above ave.). Prec. 1.5" (.8" below ave.), snow 4". 1-2, clear. 3-7, .10" rain. 8-11, clear. 12-15, .10" rain. 16-19, clear. 20-21, .4" rain. 22-23, clear. 24-30, .5" prec., 5" snow.

Dec.: Temp. 30.1° (.8° above ave.). Prec. 3.3" (1.3" above ave.), snow 6". 1, clear. 2-3, .2" prec., 2" snow. 4-7, clear. 8-10, .3" rain. 11-12, clear. 13-16, .3" rain. 17-18, clear. 19-20, .7" prec., 7" snow. 21-22, clear. 23-28, .5" prec., 8" snow. 29-31, clear.

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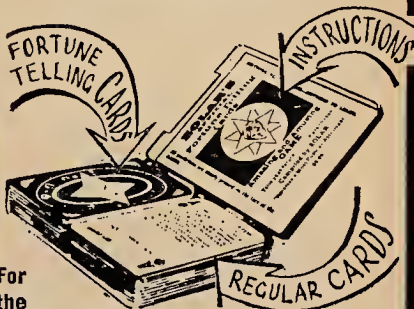
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4. EASTERN STATES (EXCEPT NEW ENGLAND)

The times of sunrise, sunset, moonrise, moonset (pages 22-44) and the planets (page 46) are for Boston only. The table below gives the corrections to be used for cities in the Eastern States, except New England. Note the Key Letter for any given day (pages 22-44, 46). Then find the column below in which that Key Letter falls. The figure in that column for the city you seek is the minutes to add or subtract for accuracy of within 5 min. for that city. Example: Jan. 12, sunrise (p. 22) is 7:12 A.M., Key Letter N, Key Letter N for New York City (last col. below) shows +6. So sunrise New York City would be 7:18 A.M. If a city is not listed, interpolate between nearest two cities. (Further explanations appear on pages 92 and 93.)

City	State	Latitude	Time Used	Key Letters				
				A-D m	E-H m	I m	J-M m	N-Q m
Wilmington.....	Del.	39 45	EST	+27	+21	+18	+15	+ 9
Washington.....	D. C.	38 54	EST	+35	+28	+24	+20	+12
Baltimore.....	Md.	39 17	EST	+32	+26	+22	+19	+12
Hagerstown.....	Md.	39 40	EST	+36	+30	+27	+24	+17
Salisbury.....	Md.	38 25	EST	+31	+22	+18	+14	+ 5
Albany.....	N. Y.	42 39	EST	+10	+10	+11	+11	+12
Binghamton.....	N. Y.	42 06	EST	+20	+20	+19	+19	+18
Buffalo.....	N. Y.	43 00	EST	+26	+29	+31	+33	+37
New York.....	N. Y.	40 45	EST	+17	+13	+12	+10	+ 6
Ogdensburg.....	N. Y.	44 45	EST	+ 8	+15	+18	+21	+27
Syracuse.....	N. Y.	43 03	EST	+18	+20	+20	+21	+23
Atlantic City.....	N. J.	39 22	EST	+24	+17	+13	+10	+ 3
Camden.....	N. J.	39 57	EST	+24	+19	+16	+13	+ 8
Cape May.....	N. J.	39 05	EST	+27	+19	+15	+12	+ 4
Newark-Irvington- E. Orange.....	N. J.	40 44	EST	+18	+14	+12	+11	+ 7
Paterson.....	N. J.	40 55	EST	+17	+14	+12	+11	+ 7
Trenton.....	N. J.	40 13	EST	+21	+17	+15	+12	+ 7
Allentown-Bethlehem.	Pa.	40 36	EST	+23	+19	+17	+15	+11
Erie.....	Pa.	42 07	EST	+37	+36	+36	+36	+35
Harrisburg.....	Pa.	40 16	EST	+30	+26	+23	+21	+16
Lancaster.....	Pa.	40 02	EST	+29	+24	+21	+18	+13
Philadelphia-Chester..	Pa.	39 57	EST	+25	+20	+17	+14	+ 9
Pittsburgh- McKeesport.....	Pa.	40 26	EST	+42	+38	+35	+33	+28
Reading.....	Pa.	40 20	EST	+26	+22	+19	+17	+12
Scranton-Wilkes Barre	Pa.	41 25	EST	+23	+20	+19	+18	+15
York.....	Pa.	39 58	EST	+31	+25	+23	+20	+14
Charlottesville.....	Va.	38 02	EST	+43	+34	+30	+25	+16
Danville.....	Va.	36 31	EST	+49	+38	+32	+26	+15
Norfolk.....	Va.	36 51	EST	+37	+27	+21	+15	+ 5
Richmond.....	Va.	37 32	EST	+40	+31	+25	+20	+11
Roanoke.....	Va.	37 16	EST	+51	+41	+35	+30	+20
Winchester.....	Va.	39 13	EST	+38	+32	+28	+25	+19
Charleston.....	W. Va.	38 21	EST	+54	+46	+42	+38	+30
Parkersburg.....	W. Va.	39 21	EST	+52	+45	+42	+38	+32

THE FLYING DUTCHMAN

A ship is said by mariners to be seen about the Cape of Good Hope in blowing weather, under the following extraordinary circumstances: She is never known to get into port, and is seen at uncertain periods sailing at an immense rate before the wind, under full press of canvas, in the most violent gales.

The story attached to this appearance is that she was a merchant ship from Holland, and that the captain, having sworn a tremendous oath in consequence of not being able to make the port, was condemned as punishment, together with all the rest of the crew, to beat about the sea till the Day of Judgment. From the corroborated accounts of many navigators, there seems to be no doubt but that something is seen which they take for a distant sailing vessel. It may be some atmospherical phenomenon that they see, and the imaginations of spectators may supply the rest; but there must be something actually seen, as many different persons have testified to it.

from *The Perennial Calendar, 1824*

4. EASTERN STATES (EXCEPT NEW ENGLAND) WEATHER FORECAST

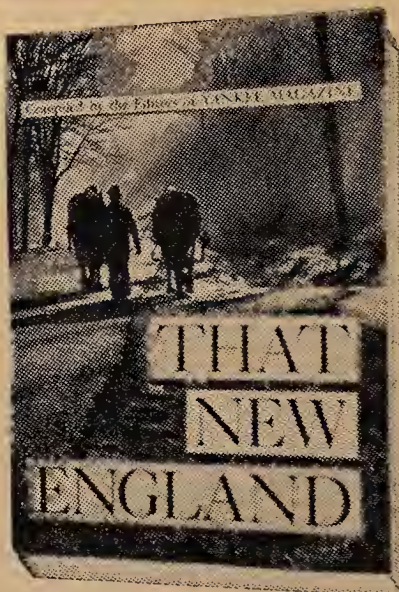
Verification Base: Pittsburgh, Pa. However, this forecast goes for upper New York, northern Pennsylvania, Ohio, northern New Jersey, and overlaps with that of southern New England for Washington, D. C., Virginia, Delaware, and West Virginia when the storms are from the west rather than south.

THE YEAR (JAN. 1969 - DEC. 1969)

The average temperature will be 54.2° which is 1.4° above average (52.8°). The precipitation will be 33.8", which is 2.3" below ave. (36.1"). The storms to watch are in bold below, especially those of Jan. 15-16, Jan. 24-28, Feb. 13-16, Feb. 19-22, Mar. 10-12, Apr. 3-7, Apr. 28-30, May 20-22, May 26-28, June 9-10, June 13-17, July 3-9, July 25-27, Sept. 25-30, Oct. 3-6, Nov. 24-30.

The winter (Nov. '68-Apr. '69) will be colder than usual, but the snowfall will be a lot less than average. The larger storms are noted in bold below.

- Nov. 1968:** Temp. 43.3° (ave.). Prec. 2.4" (ave.), snow 1". 1-3, .5" rain. 4-5, clear. 6-7, .25" rain. 8-9, clear. 10-12, .25" rain. 13-16, mild, hazy. 17-20, .25" prec., 1" snow. 21-22, clear. 23-24, .25" rain. 25-27, clear. 28-30, 1" rain.
- Dec. 1968:** Temp. 34.9° (1.2° above ave.), Prec. 3.1" (.4" above ave.), snow 6". 1-4, clear. 5-9, .5" rain. 10-11, clear. 12-17, 1.5" rain. 18-19, clear. 20-23, .6" prec., .3" snow. 24-26, clear. 27-31, .5" prec., 3" snow.
- Jan. 1969:** Temp. 35.3° (4.4° above ave.). Prec. 4.6" (1.8" above ave.). 1-2, clear. 3-5, 1" rain. 6-8, clear. 9-11, .60" prec., 2" snow. 12-14, clear. 15-16, 1.0" rain. 17, clear. 18-21, 1.0" prec., 2" snow. 22-23, clear. 24-28, 1.0" prec., 1" snow. 29-31, clear.
- Feb:** Temp. 33.3° (1.7° above ave.). Prec. 2.7" (.2" above ave.), snow 4". 1-2, clear. 3-7, .20" prec., 1" snow. 8-12, clear. 13-16, 1" prec., 1" snow. 17-18, clear. 19-22, 1.0" rain. 23-24, clear. 25-28, .5" prec., 2" snow.
- March:** Temp. 38.3° (1.8° below ave.). Prec. 3.3" (ave.), snow 6". 1-3, .3" prec., 1" snow. 4-5, clear. 6-7, .45" rain. 8-9, clear. 10-12, 1.0" prec., 2" snow. 13-14, clear. 15-19, .80" prec., 1" snow. 20-24, clear. 25-28, .50" prec., 2" snow. 29-30, clear. 31, .25" rain.
- April:** Temp. 48.9° (2.3° below ave.). Prec. 3.1" (ave.), snow 2". 1-2, clear. 3-7, 1" rain. 8-10, clear. 11-14, .5" prec., 2" snow. 15-16, clear. 17-19, .35" rain. 20-21, clear. 22-24, .25" rain. 25-27, clear. 28-30, 1.0" rain.
- May:** Temp. 62.0° (.2° below ave.). Prec. 3.2" (.1" below ave.). 1-4, .50" rain. 5-7, clear. 8-10, .50" rain. 11-13, clear. 14-16, .40" rain. 17-19, clear. 20-22, 1.0" rain. 23-25, clear. 26-28, 1.0" rain. 29-31, clear.
- June:** Temp. 71.3° (.5° above ave.). Prec. 3.6" (.1" below ave.). 1-2, .35" rain. 3-4, clear. 5-6, .25" rain. 7-8, clear. 9-10, 1.0" rain. 11-12, clear. 13-17, 1.0" rain. 18-20, clear. 21-23, .3" rain. 24-25, clear. 26-27, .25" rain. 28, clear. 29-30, .5" rain.
- July:** Temp. 73.7° (1° below ave.). Prec. 3.7" (.3" below ave.). 1-2, clear. 3-9, 1.5" rain. 10-11, clear. 12-13, .40" rain. 14-15, clear. 16-22, .80" rain. 23-24, clear. 25-27, 1.0" rain. 28-31, clear.
- August:** Temp. 73.8° (.9° above ave.). Prec. 2.8" (.4" below ave.). 1-5, .25" rain. 6-8, clear. 9-12, .25" rain. 13-14, clear. 15-18, .50" rain. 19-20, clear. 21-24, .75" rain. 25-26, clear. 27-31, .50" rain.
- Sept.:** Temp. 63.5° (3.3° below ave.). Prec. 2.9" (.3" above ave.). 1-3, clear. 4-7, .5" rain. 8-11, clear. 12-14, .5" rain. 15-17, clear. 18-20, .50" rain. 21-24, clear. 25-30, 1.4" rain.
- Oct.** Temp. 55.0° (.4° below ave.). Prec. 1.8" (.7" below ave.). 1-2, clear. 3-6, 1.0" rain. 7-10, clear. 11-13, .25" rain. 14-15, clear. 16-17, .25" rain. 18-21, clear. 22-26, .3" rain. 27-31, clear.
- Nov.:** Temp. 41.6° (1.7° below ave.). Prec. 2.4" (ave.), snow 2". 1-2, clear. 3-7, .30" rain. 8-11, clear. 12-15, .50" rain. 16-19, clear. 20-21, .20" rain. 22-23, clear. 24-30, 1.3" prec., 2" snow.
- Dec.:** Temp. 33.2° (.2° above ave.). Prec. 2.4" (.3" below ave.), snow 10". 1, clear. 2-3, .2" prec., 2" snow. 4-7, clear. 8-10, .5" prec., 2" snow. 11-12, clear. 13-16, .6" prec., 2" snow. 17-18, clear. 19-20, .2" prec., 2" snow. 21-23, clear. 24-28, .7" rain. 29, clear. 30-31, .2" prec., 2" snow.



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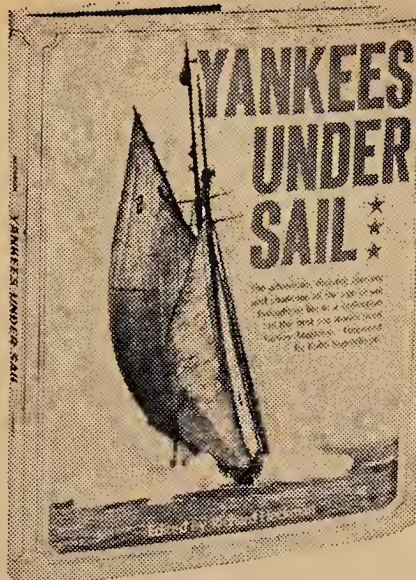
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5. MIDWESTERN STATES

The times of sunrise, sunset, moonrise, moonset (pages 22-44) and the planets (page 46) are for Boston only. The table below gives the corrections to be used for cities in the Midwest. Note the Key Letter for any given day (pages 22-44, 46). Then find the column below in which that Key Letter falls. The figure in that column for the city you seek is the minutes to add or subtract for accuracy of within 5 min. for that city. Example: Jan. 12, sunrise (p. 22) is 7:12 A.M., Key Letter N. Key Letter N for Chicago (last col. below) shows +4. So sunrise at Chicago will be 7:16 A.M., CST. If a city is not listed, interpolate between nearest two cities. (Further explanations appear on pages 92 and 93).

City	State	Latitude	Time Used	Key Letters				
				A-D	E-H	I	J-M	N-Q
Cairo	Ill.	37 05	CST	+30	+18	+12	+7	-5
Chicago-Oak Park	Ill.	41 52	CST	+7	+6	+5	+5	+4
Danville	Ill.	40 07	CST	+13	+8	+5	+3	-2
Decatur	Ill.	39 51	CST	+20	+14	+12	+9	+3
E. St. Louis	Ill.	38 38	CST	+29	+21	+17	+12	+4
Peoria	Ill.	40 42	CST	+20	+16	+14	+12	+7
Rockford	Ill.	42 17	CST	+12	+12	+12	+12	+12
Springfield	Ill.	39 48	CST	+23	+17	+14	+12	+6
Fort Wayne	Ind.	41 04	EST	+61	+58	+56	+55	+52
Gary	Ind.	41 36	CST	+7	+6	+5	+4	+2
Indianapolis	Ind.	39 46	EST	+69	+63	+60	+57	+52
Muncie	Ind.	40 11	EST	+65	+60	+57	+55	+50
South Bend	Ind.	41 41	CST	+3	+2	+1	0	-2
Terre Haute	Ind.	39 28	CST	+15	+8	+5	+2	-5
Council Bluffs	Iowa	41 16	CST	+43	+40	+39	+38	+35
Davenport	Iowa	41 31	CST	+21	+19	+18	+17	+15
Des Moines	Iowa	41 35	CST	+33	+31	+30	+29	+27
Dubuque	Iowa	42 30	CST	+18	+18	+18	+19	+19
Sioux City	Iowa	42 30	CST	+41	+41	+41	+41	+42
Waterloo	Iowa	42 29	CST	+25	+25	+25	+25	+26
Fort Scott	Kans.	37 55	CST	+49	+39	+34	+30	+20
Liberal	Kans.	37 03	CST	+77	+65	+60	+54	+42
Oakley	Kans.	39 07	MST	+10	+3	-1	-4	-12
Salina	Kans.	38 53	CST	+58	+50	+46	+42	+34
Topeka	Kans.	39 03	CST	+49	+42	+38	+35	+27
Wichita	Kans.	37 42	CST	+60	+50	+45	+40	+30
Cheboygan	Mich.	45 40	EST	+41	+50	+54	+57	+66
Detroit-Dearborn	Mich.	42 20	EST	+48	+48	+48	+48	+48
Flint	Mich.	43 01	EST	+48	+50	+51	+51	+53
Grand Rapids	Mich.	42 58	EST	+56	+58	+58	+59	+61
Ironwood	Mich.	46 40	CST	0	+11	+16	+21	+32
Jackson	Mich.	42 15	EST	+54	+53	+53	+53	+53
Kalamazoo	Mich.	42 17	EST	+58	+58	+58	+58	+58
Lansing	Mich.	42 44	EST	+53	+54	+54	+54	+55
Pontiac	Mich.	42 40	EST	+48	+49	+49	+49	+50
Traverse City	Mich.	44 50	EST	+49	+55	+58	+61	+67
Albert Lea	Minn.	43 40	CST	+25	+28	+29	+31	+34
Benidji	Minn.	47 30	CST	+15	+29	+35	+42	+56
Duluth	Minn.	46 47	CST	+7	+19	+24	+30	+42
Minneapolis-St. Paul	Minn.	44 57	CST	+19	+26	+29	+32	+39
Ortonville	Minn.	45 20	CST	+30	+38	+41	+45	+53
Jefferson City	Mo.	38 32	CST	+37	+29	+25	+20	+12
Joplin	Mo.	37 04	CST	+51	+39	+34	+28	+17
Kansas City	Mo.	39 05	CST	+45	+38	+34	+30	+23
Poplar Bluff	Mo.	36 40	CST	+35	+23	+17	+11	-1
St. Joseph	Mo.	39 46	CST	+14	+38	+35	+32	+26
St. Louis	Mo.	38 38	CST	+29	+21	+17	+12	+4
Springfield	Mo.	37 13	CST	+46	+34	+29	+23	+12
Chadron	Neb.	42 50	CST	+66	+67	+68	+68	+70
Grand Island	Neb.	40 52	CST	+54	+51	+49	+48	+44
Lincoln	Neb.	40 49	CST	+48	+44	+43	+41	+37
Norfolk	Neb.	42 01	CST	+47	+46	+45	+45	+44
North Platte	Neb.	41 10	CST	+63	+60	+59	+57	+55
Omaha	Neb.	41 16	CST	+43	+41	+40	+38	+36
Sidney	Neb.	41 08	CST	+72	+69	+67	+66	+63
Bismarek	N. D.	46 48	CST	+42	+53	+59	+64	+77
Fargo	N. D.	46 52	CST	+25	+37	+43	+49	+61
Grand Forks	N. D.	47 56	CST	+22	+37	+44	+51	+67
Minot	N. D.	48 15	CST	+37	+54	+61	+68	+85
Williston	N. D.	48 10	CST	+47	+63	+70	+78	+94
Akron	Ohio	41 05	EST	+46	+43	+42	+40	+37
Canton	Ohio	40 48	EST	+47	+43	+41	+39	+36
Cincinnati-Hamilton	Ohio	39 06	EST	+64	+57	+54	+50	+43
Cleveland-Lakewood	Ohio	41 30	EST	+46	+43	+42	+42	+40
Columbus	Ohio	39 58	EST	+56	+50	+48	+45	+40
Dayton-Springfield	Ohio	39 46	EST	+58	+55	+52	+49	+43
Lima	Ohio	40 45	EST	+58	+54	+52	+50	+47
Toledo	Ohio	41 39	EST	+52	+51	+50	+49	+47
Youngstown	Ohio	41 06	EST	+43	+40	+38	+37	+34
Aberdeen	S. D.	45 30	CST	+38	+46	+50	+54	+62

Continued on next page

MIDWESTERN STATES (Continued)

City	State	Latitude	Time Used	Key Letters				
				A-D m	E-H m	I m	J-M m	N-Q m
Murdo.....	S. D.	43 53	CST	+53	+57	+59	+60	+65
Pierre.....	S. D.	44 21	CST	+50	+55	+57	+59	+65
Rapid City.....	S. D.	44 05	CST	+62	+67	+69	+71	+75
Sioux Falls.....	S. D.	43 33	CST	+38	+41	+43	+44	+47
Eau Claire.....	Wis.	44 51	CST	+13	+19	+22	+25	+31
Green Bay.....	Wis.	44 30	CST	0	+5	+8	+10	+16
LaCrosse.....	Wis.	43 40	CST	-15	-19	+21	+22	+26
Madison.....	Wis.	43 04	CST	+11	+12	+13	+14	+16
Milwaukee.....	Wis.	43 02	CST	+5	+7	+7	+8	+10
Oshkosh.....	Wis.	44 01	CST	+2	+6	+8	+10	+15
Wausau.....	Wis.	44 56	CST	+5	+12	+15	+18	+25
Montreal.....	Que.	45 30	EST	-4	+5	+10	+15	+23
Quebec.....	Que.	46 45	EST	-19	-6	+1	+8	+20
Toronto.....	Ont.	43 45	EST	+29	+31	+33	+36	+38

5. MIDWEST WEATHER FORECAST

Verification Base: Chicago. However, this is to serve for Minnesota, Wisconsin, and Michigan (remembering these states are slightly colder) and Indiana, Iowa (slightly warmer).

THE YEAR (JAN. 1969 - DEC. 1969)

The temperature will average 51.6° or 1.7° above average (49.9°). The precipitation will be average (33.1"). The storms to watch follow in bold especially those of Feb. 12-15, Mar. 26-31, Apr. 3-5, May 16-19, June 13-17, July 22-27, Sept. 25-30, Oct. 3-6, Dec. 19-20, Dec. 23-28.

The Winter (Nov. '68-Apr. '69) will be average for Chicago. However, there will be at least 20" more snow than last year. The larger storms are in bold below.

Nov. 1968: Temp. 40.4° (ave.). Prec. 1.9" (.4" below ave.), 2" snow. 1-3, .5" rain. 4, clear. 5-6, .5" rain. 7-8, clear. 9-11, .40" rain. 12-16, mild, hazy. 17-20, .15" rain. 1" snow. 21-26, clear, fine. 27-30, .35" rain, 1" snow.

Dec. 1968: Temp. 31.2° (1.9° above ave.). Prec. 2.5" (.5" above ave.), snow 5". 1-4, clear. 5-9, .5" rain. 10-11, clear. 12-17, 1.2" rain. 18-19, clear. 20-23, .6" prec., 3" snow. 24-26, clear. 27-31, .9" prec., 2" snow.

Jan. 1969: Temp. 26.7° (1.9° above ave.). Prec. 2.5" (.6" above ave.), 3" snow. 1-2, clear. 3-5, .25" rain. 6-8, clear. 9-11, .25" prec., 1" snow. 12-14, clear. 15-16, .5" rain. 17, clear. 18-20, .75" prec., 2" snow. 21-23, clear. 24-28, .75" prec., 1" snow. 29-31, clear.

Feb.: Temp. 27.0° (ave.). Prec. 1.8" (ave.), 5" snow. 1-2, clear. 3-4, .20" rain. 5-11, clear. 12-15, 1.0" prec., 3" snow. 16-20, clear. 21-24, .3" rain. 25-26, clear. 27-28, .3" rain.

March: Temp. 35.5° (.8° below ave.). Prec. 2.4" (.3" below ave.), snow 6". 1-4, clear. 5-9, .50" prec., 1" snow. 10-13, clear. 14-

16, .50" prec., 1" snow. 17-18, clear. 19-22, .40" prec., 1" snow. 23-25, clear. 26-31, 1.0" prec., 3" snow.

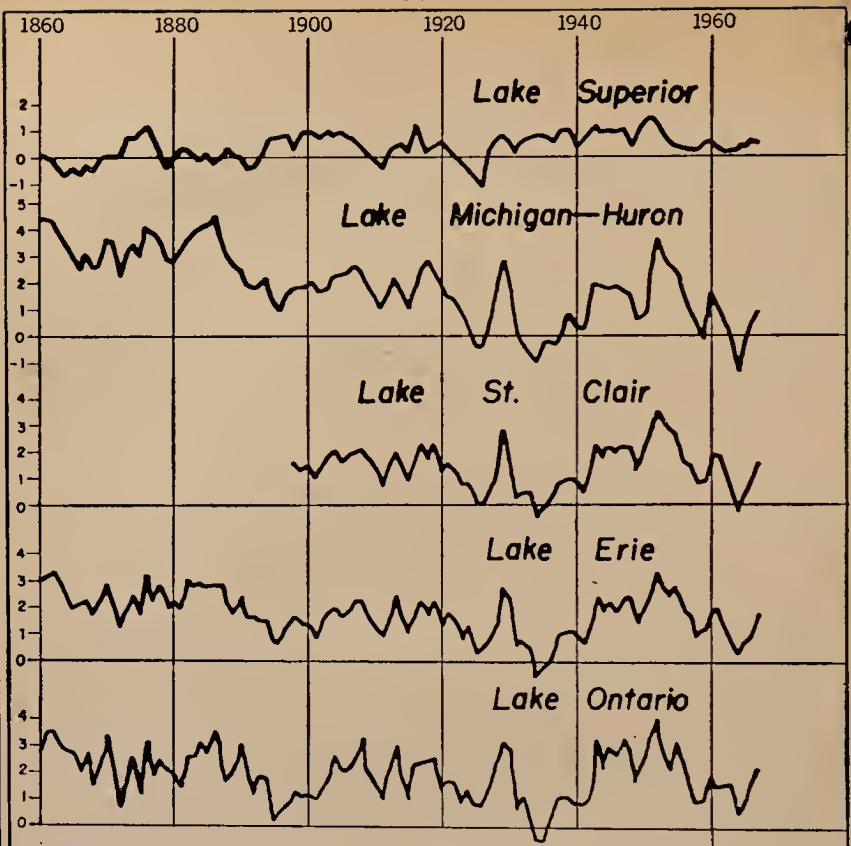
April: Temp. 47.3° (.4° below ave.). Prec. 3.2" (.2" above ave.), snow 1". 1-2, clear. 3-5, 1.0" prec., 1" snow. 6-8, clear. 9-11, .50" rain. 12-13, clear. 14-15, .50" rain. 16-17, clear. 18-19, .50" rain. 20-21, clear. 22-24, .30" rain. 25-26, clear. 27-30, .50" rain.

May: Temp. 57.2° (.9° below ave.). Prec. 2.5" (1.0" below ave.). 1-4, .25" rain. 5-7, clear. 8-10, .25" rain. 11-15, clear. 16-19, 1.6" rain. 20-22, clear. 23-28, .40" rain. 29-31, clear.

June: Temp. 69.4° (1.2° above ave.). Prec. 4.1" (.5" above ave.). 1-2, .45" rain. 3-4, clear. 5-6, .25" rain. 7-8, clear. 9-10, .40" rain. 11-12, clear. 13-17, 2" rain. 18-20, clear. 21-23, .5" rain. 24-27, clear. 28-30, .5" rain.

July: Temp. 75.3° (1.6° above ave.). Prec. 2.8" (.6" below ave.). 1-2, clear. 3-9, 1.5" rain. 10-15, clear. 16-17, .30" rain. 18-21, clear. 22-27, 1.0" rain. 28-31, clear.

Continued on page 98



WATER LEVELS OF THE GREAT LAKES

by JOHN E. HANNA, U.S. Lake Survey

■ CAN YOU IMAGINE A LAKE the size of the United States? This is what we'd have if all the water in the Great Lakes were dumped on the nation. Such a lake would be nine feet deep. For those statistically minded, there are 5,458 cubic miles of water in the Great Lakes, and the surface covers nearly 100,000 square miles.

Where does the water come from?

Where does it go?

Hydrologists, the people who study water, tell us that the amount of water in the world doesn't change. The total remains constant, although it may be in any one of its many forms. Water can exist as ice, snow, rain, hail, sleet, dew, vapor-clouds, fog, steam etc. — or in its more familiar form as either fresh or salt water. Leave the teakettle on the stove too long, and what happens? Besides the other problems that will result, the water disappears. It has been turned to steam by heat, and the steam has been absorbed into the air. This is an example of one step in the cycle that water is constantly going through.

To follow this Great Lakes water cycle, we have to start somewhere. So, let's begin with the part where rain, snow, sleet, etc. fall on the Lakes themselves and onto their drainage basins. Water falling outside the combined basins, of course, flows away and into other systems. Part of the rain falling west of Chicago will end up flowing into the Mississippi River system, whereas rain falling on lower Michigan (which is sort of a peninsula between Lakes Michigan and Huron), for example, will eventually end up in the Great Lakes unless lost before it reaches that system. Actually, most of the water

falling on the land never reaches the Lakes. Trees, plants and other growing vegetation use a large amount and some is used to replenish soil moisture. It depends to some degree on the time of year. More rain in early spring and late fall reaches the Lakes because most plant life is relatively dormant during these periods. Water that does get to the Lakes gets there in several ways. Flow from rivers and streams is the most obvious; other ways include flow from the lake above (Lake Ontario gets part of its water from Lake Erie via the Niagara River and the Welland Canal), runoff from adjacent land area, and man-made diversions into the Lakes, like the Long Lake-Ogoki project which has reversed nature's intentions and caused water to flow into northern Lake Superior. The Canadians have done this to compensate for the water they use for operating the Welland Canal and for Niagara River power purposes. A direct "plus" comes, of course, from the rain or snow that falls directly on the Lakes. This, surprisingly, differs from that falling on the land. In summer the Lakes tend to cool the warm air mass above them, causing it to rain more on the Lakes than on the land. The reverse is true in winter. The Lakes tend to warm the air mass above them, and this permits the air mass to hold its moisture while over the Lakes, but as soon as it gets over a cold land mass—skiers' delight! Underground springs and rivers fed by rain which soaks into the land may also contribute to the water supply. We have seen that all the Lakes' water comes from the rain or snow falling on them or in their basins.

Now that we know where the Lakes get their water, and how it gets there, let's take a look at how it leaves the system. Taking the system as a whole, the two major ways are through the St. Lawrence River which flows out of Lake Ontario to the Atlantic Ocean at the rate of about 240,000 cubic feet per second, and through evaporation. The latter, evaporation, is the reason our teakettle lost its water and the reason Monday's wash gets dry. We have almost completed the cycle at this point. Hydrologists have estimated that almost two and one-half feet of water evaporates from the surface of the Great Lakes each year. This is equal to over 42 trillion gallons of water. If it weren't for evaporation we would need two more St. Lawrence Rivers to carry off the excess water, and if we didn't have them the present Great Lakes shoreline would look a lot different. Man-made diversions out of the Lake are also a "loss" but rather insignificant when compared with the major losses. The evaporated water from the Lakes, of course, rises to form clouds which, when conditions are right, complete the cycle by then returning this water to the land and lake surface in the form of rain or snow.

The levels of the Great Lakes are changing almost constantly. Up one hour—down the next; up one month—down the next; up one year—down the next; these changes fall into one of three categories, according to hydraulic engineers at the U.S. Lake Survey—short, annual and long-term.

Short-period changes are those lasting from a few minutes to several hours. They are usually caused by strong winds which are frequently accompanied by rapid changes in barometric pressure. These conditions cause a lake's surface to tilt, lowering levels on one shore and raising them on the other. Once in a while, particularly when conditions change suddenly, a seiche is developed. A seiche, pronounced "saysh," is defined as an abrupt change or oscillation in a lake's level after causative forces have stopped. Imagine rocking back and forth a shallow pan filled with water: the "sloshing" effect illustrates what happens during a seiche. Lake Erie is very susceptible to seiches because of its shallowness and general southwest-northeast alignment that roughly parallels the prevailing wind direction. Seiches which occasionally cause severe damage are being studied by Lake Survey's Great Lakes Research Center and the U.S. Weather Bureau with the goal of being able to forecast them. Advance notice like tornado warnings could save lives and property.

Annual changes in the lake levels are definitely predictable, since they are cyclic in nature: high in summer and low in winter. The levels begin to rise in late winter with the melting of snow and ice, and with the arrival of early season rainstorms, until they reach their peaks sometime in mid-summer. From then on, levels slowly decline, reaching low points during mid-winter.

Long-term changes in lake levels have received considerable attention by the U.S. Lake Survey. Experts in hydraulics and hydrology have carefully studied lake level records which date back to 1860 and

Continued on page 127

LIGHTNING CAN KILL YOU

Condensed from a Survey (1959-65) of *Lightning Deaths in the USA*, by F. H. Zegel, N.E.S.C., Suitland, Md.

■ TODAY IN THE UNITED STATES lightning is the greatest cause of direct weather-connected deaths. In the seven-year period, 1959-1965, lightning killed at least 960. Tornadoes for the same period killed 587. Snowstorms cause more indirect deaths, tornadoes more property damage.

LIGHTNING DEATHS IN THE CONTINENTAL U. S.

Year	Lightning
1959	157
1960	105
1961	121
1962	126
1963	216
1964	109
1965	126
Total	960
Average per year	137

Seventy per cent of all lightning casualties are single deaths due to a single discharge—only 15% occur in groups of two—15% in groups of three or more. From 75% to 85% of these deaths are male—due to their work out-of-doors. About 70% occur in the afternoon, 20% between 6 P.M. and midnight, 10% in the morning—only 1% between midnight and six A.M.

Two hundred and fifty eight of the deaths came in July, 190 in June, 171 in August, 100 in May, 81 in December, 63 in September, 67 in the rest of the months combined.

Almost all of the States suffer lightning deaths each year. However, Vermont, Maryland, Arkansas, New Mexico, Wyoming, and Virginia have the highest fatalities per 1,000,000 population per year.

Lightning deaths are most likely to occur on (1) open water—that is, on beaches, on piers, on levies, in small boats, etc.; (2) near farm tractors, construction equipment, near cars or



trucks (inside a car is safest place to be); (3) under trees; and (4) on the telephone.

A majority of lightning deaths would not happen if people would learn to stay out of these four locations during a storm. Categorically, we might also remind you there are each year just about as many individuals injured as killed.

Another precaution during a thunderstorm is that of keeping away from kitchen sinks and appliances plugged into a house's wiring system. Lightning will actually seek you out there!

Lightning-caused catastrophes (five or more deaths) are happening all the time. The most notable was the explosion of a jet liner over Elkton, Maryland in December, 1963, killing all 81 on board. (Lightning is believed to have exploded the residual fuel vapor in one of its outboard wing tanks.)

Another instance was the death of eight people leaning against the heating system of a tobacco farm during a 1961 thunderstorm in Clinton, N.Car.

In 1964, in Forrest City, Tenn., seven perished in a house struck by lightning in the evening.

Lightning can be real capricious, too. In 1960 separate bolts killed a young couple while crossing a street in Bay City, Michigan.

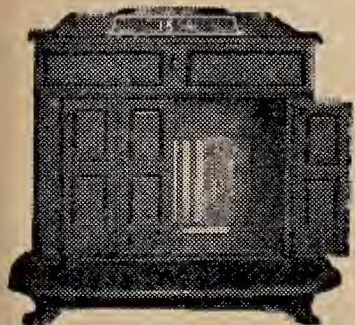
On April 6, 1961, one was killed, 11 injured, when lightning set off 5 lbs. of dynamite in a water tunnel 300 feet below the surface.

Extreme fright, caused by lightning, also is often a cause of death.

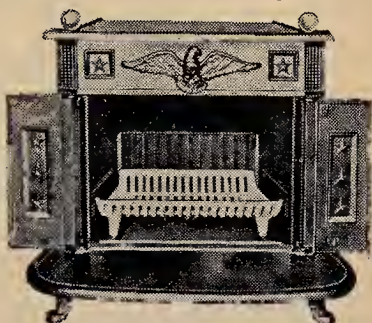
1959 THROUGH 1965 INCLUSIVE (CONTINENTAL UNITED STATES ONLY)

Year	Under Trees		Open Water		Tractors		Golf		Telephone	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
1959	19	16	14	17	14	10	8	11	—	9
1960	11	25	8	7	10	9	6	27	—	2
1961	18	16	10	8	9	5	4	6	1	10
1962	12	15	11	13	8	17	4	11	1	5
1963	17	19	15	9	12	15	6	2	—	2
1964	12	10	9	7	8	2	3	5	—	6
1965	13	19	11	9	8	2	5	6	2	2
Total	102	120	78	70	69	60	36	68	4	36

WHEN THINKING OF FRANKLIN STOVES . . . CONSULT PRESTON Distributing Co.



VARIOUS
STYLES
& SIZES
IN STOCK



The best models, domestic and imported, from the oldest and most reliable foundries in the world. Alive with atmosphere, these units have something to offer to every home. As a heater, they far surpass a fireplace and are easier to control. Ideal for added on space, cabin, guest house or rumpus room. A friend indeed when power fails, the welcome heat it generates is complemented by its usefulness in the preparation of food. Barbecue fans can enjoy out-of-door cooking, in any weather, the year around. In many instances, one of our Franklins can replace, at the same location, an inefficient or dilapidated fireplace. In all cases, the units offered have been chosen thru our confidence in the manufacturer. Repair or replacement parts will be available into the foreseeable future.

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6.-7. WESTERN AND MOUNTAIN STATES

The times of sunrise, sunset, moonrise, moonset (pages 22-44) and the planets (page 46) are for Boston only. The table below gives the corrections to be used for both the Northern and Southern States of the Far West. Note the Key Letter for any given day (pages 22-44, 46). Then find the column below in which that Key Letter falls. The figure in that column for the city you seek is the minutes to add or subtract for that city. Example: Jan. 12, sunrise (page 22) is 7:12 A.M. Key Letter N, Key Letter N for San Francisco (last col. below) shows +9. So sunrise at San Francisco will be 7:21 A.M., PST. If a city is not listed, interpolate between nearest two cities. (Further explanations appear on pages 92 and 93).

NORTHERN TIER

The adjusted times found for these cities will be accurate generally to within 5 min.

City	State	Latitude	Time Used	Key Letters				
				A-D m	E-H m	I m	J-M m	N-Q m
Fresno.....	Cal.	36 44	PST	+33	+21	+15	+ 9	- 3
Redding.....	Cal.	40 30	PST	+31	+27	+25	+23	+19
Sacramento.....	Cal.	38 35	PST	+34	+26	+22	+18	+ 9
San Francisco incl.								
Oakland & San Jose.	Cal.	37 47	PST	+40	+29	+25	+20	+ 9
Stockton.....	Cal.	37 57	PST	+35	+26	+21	+16	+ 6
Craig.....	Cal.	40 30	MST	+32	+28	+26	+24	+19
Denver-Boulder.....	Colo.	39 45	MST	+25	+19	+16	+13	+ 8
Grand Junction.....	Colo.	39 03	MST	+41	+33	+30	+26	+19
Pueblo.....	Colo.	38 16	MST	+28	+18	+14	+10	+ 1
Trinidad.....	Colo.	37 08	MST	+31	+19	+14	+ 8	- 3
Boise.....	Idaho	43 37	MST	+56	+59	+61	+62	+65
Lewiston.....	Idaho	46 25	PST	-12	- 1	- 4	+ 9	+20
Pocatello.....	Idaho	42 55	MST	+44	+45	+45	+46	+47
Billings.....	Mont.	45 47	MST	+16	+25	+29	+33	+43
Butte.....	Mont.	46 01	MST	+32	+41	+46	+50	+60
Glasgow.....	Mont.	48 10	MST	0	+15	+22	+30	+46
Great Falls.....	Mont.	47 30	MST	+21	+34	+41	+47	+61
Helena.....	Mont.	46 36	MST	+27	+39	+44	+49	+61
Miles City.....	Mont.	46 30	MST	+ 3	+14	+19	+24	+35
Carson City-Reno.....	Nev.	39 31	PST	+25	+18	+15	+11	+ 7
Elko.....	Nev.	40 50	PST	+ 4	+ 1	- 1	- 3	- 7
Las Vegas.....	Nev.	36 10	PST	+16	+ 3	- 4	-10	-24
Eugene.....	Ore.	44 03	PST	+22	+26	+28	+30	+34
Pendleton.....	Ore.	45 35	PST	- 2	+ 7	+11	+15	+24
Portland.....	Ore.	45 31	PST	+14	+23	+26	+30	+39
Kanab.....	Utah	37 03	MST	+63	+52	+46	+40	+29
Moab.....	Utah	38 35	MST	+47	+38	+34	+30	+21
Ogden.....	Utah	41 14	MST	+48	+45	+44	+42	+40
Salt Lake City.....	Utah	40 45	MST	+49	+45	+43	+41	+38
Vernal.....	Utah	40 30	MST	+40	+36	+34	+32	+27
Bellingham.....	Wash.	48 54	PST	+ 4	+19	+26	+32	+48
Seattle-Tacoma-								
Olympia.....	Wash.	47 37	PST	+ 6	+20	+26	+32	+46
Spokane.....	Wash.	47 40	PST	-16	- 1	+ 5	+12	+27
Walla Walla.....	Wash.	46 04	PST	- 5	+ 5	+ 9	+14	+24
Casper.....	Wyo.	42 50	MST	+20	+21	+22	+22	+24
Cheyenne.....	Wyo.	41 08	MST	+17	+14	+13	+11	+ 9
Rawlins.....	Wyo.	41 45	MST	+27	+25	+25	+24	+23
Rock Springs.....	Wyo.	41 35	MST	+35	+33	+33	+32	+30
Sheridan.....	Wyo.	44 50	MST	+14	+20	+23	+26	+33

SOUTHERN TIER

The adjusted times found for these cities will be accurate generally to within 10 mins.

Flagstaff.....	Ariz.	35 08	MST	+62	+50	+42	+35	+22
Phoenix.....	Ariz.	33 27	MST	+69	+53	+44	+35	+19
Tucson.....	Ariz.	32 13	MST	+68	+50	+40	+29	+11
Yuma.....	Ariz.	32 40	MST	+81	+64	+54	+44	+27
Fort Smith.....	Ark.	35 25	CST	+54	+41	+33	+26	+13
Bakersfield.....	Cal.	35 30	PST	+32	+19	+12	+ 4	- 8
Barstow.....	Cal.	34 55	PST	+25	+12	+ 4	- 4	-18
Los Angeles incl. Pasa-								
dena & Santa Monica	Cal.	34 03	PST	+32	+17	+ 9	0	-14
San Diego.....	Cal.	32 43	PST	+31	+14	+ 4	- 5	-23
Albuquerque.....	N. M.	35 05	MST	+43	+30	+22	+15	+ 1
Gallup.....	N. M.	35 30	MST	+50	+38	+31	+24	+11
Las Cruces.....	N. M.	32 20	MST	+51	+34	+23	+12	- 5
Roswell.....	N. M.	33 20	MST	+39	+23	+14	+ 5	+11
Santa Fe.....	N. M.	35 41	MST	+39	+26	+19	+12	0
Ardmore.....	Okla.	34 05	CST	+67	+53	+44	+36	+21
Oklahoma City.....	Okla.	35 28	CST	+66	+53	+46	+38	+26
Tulsa.....	Okla.	36 09	CST	+58	+46	+40	+33	+21

6. THE GREAT PLAINS WEATHER FORECAST

For weather forecast of the Pacific Northwest — see page 114.

Verification Base: Denver, Colorado. However, this forecast is meant to indicate something about the weather for the Dakotas, Nebraska, Missouri, Kentucky, as well as Montana and Wyoming. As the "worst weather in the world" is at Medicine Hat, Fargo, and Bismarck (with parts of it seeping into Minnesota), for these points it should be much colder, wilder, and more severe — but the storm dates should be okay.

THE YEAR (JAN. 1969-DEC. 1969)

The average temperature (unlike all other locations in the USA except the West Coast) will be below average. It will be 49.6° which is .3° below ave. (49.9°). Storms to watch follow in bold especially those of Mar. 6-9, 23-31, April 1-4, May 3-6, May 12-18, June 5-9.

The Winter (Nov. '68-Apr. '69) in Denver, will be slightly milder than usual — with average snowfall. The larger storms are in bold below. Note the cold January.

Nov. 1968: Temp. 38.8° (1° below ave.). Prec. .46" (.18" below ave.), snow 4". 1-4, clear. 5-11, .10" prec., 1" snow. 12-13, clear. 14-16, .10" prec., 1" snow. 17-20, clear. 21-23, .20" prec., 2" snow. 24-26, clear. 27-30, .06" rain.

Dec. 1968: Temp. 32.1° (.3° below ave.). Prec. .42" (.19" below ave.), snow 6". 1-4, clear. 5-9, .20" prec., 3" snow. 10-21, clear. 22-31, .22" prec., 3" snow.

Jan. 1969: Temp. 20.9° (9.1° below ave.). Prec. .66" (.18" above ave.). snow 12". 1-4, .20" prec., 3" snow. 5-7, clear. 8-10, .10" prec., 3" snow. 11-14, clear. 15-19, prec. .20", snow 3". 20-22, clear. 23-28, .26" prec., snow 3". 29-31, clear.

Feb.: Temp. 31.8° (.8° below ave.). Prec. .36" (.23" below ave.), snow 5". 1-2, clear. 3-8, .10" prec., 2" snow. 9-12, clear. 13-18, .10" prec., 1" snow. 19-21, clear. 22-25, .10" prec., 1" snow. 26, clear. 27-28, .05" prec., 1" snow.

March: Temp. 38.4° (.3° below ave.). Prec. 1.4" (.3" above ave.), snow 10". 1-2, .10" prec., 1" snow. 3-5, clear. 6-9, .50" prec., 4" snow. 10-16, clear. 17-19, .15" prec., 1" snow. 20-22, clear. 23-31, .65" prec., 4" snow.

April: Temp. 47.5° (ave.). Prec. 1.6" (.4" below ave.), snow 10". 1-4, .5" prec., 6" snow. 5-7, clear. 8-10, .25" prec., 2" snow. 11-12, clear. 13-14, .25" prec., 2" snow. 15-16, clear. 17-18, .25" rain. 19-20, clear. 21-23, .15" rain. 24-25, clear. 26-29, .25" rain. 30, clear.

May: Temp. 57.1° (.4° above ave.). Prec. 2.9" (.5" above ave.). 1-2, clear. 3-6, 1.0" rain. 7-8,

clear. 9-11, .25" rain. 12-18, 1.0" rain. 19-22, clear. 23-28, .45" rain. 29-31, clear.

June: Temp. 66.1° (.5° below ave.). Prec. 3.7" (1.2" above ave.). 1-2, .35" rain. 3-4, clear. 5-9, 2.5" rain. 10-11, clear. 12-17, .6" rain. 18-27, clear. 28-30, .25" rain.

July: Temp. 72.3° (.3° below ave.). Prec. 1.4" (.3" below ave.). 1-2, clear. 3-8, .50" rain. 9-13, clear. 14-17, .50" rain. 18-21, clear. 22-27, .40" rain. 28-31, clear.

Aug.: Temp. 72.6° (1.3° above ave.). Prec. 1.2" (.2" below ave.). 1-2, clear. 3-5, .10" rain. 6-7, clear. 8-11, .20" rain. 12-14, clear. 15-19, .40" rain. 20-21, clear. 22-23, .20" rain. 24-26, clear. 27-31, .30" rain.

Sept.: Temp. 63.5° (.7° above ave.). Prec. 1.0" (.1" below ave.). 1-3, clear. 4-7, .25" rain. 8-10, clear. 11-13, .15" rain. 14-17, clear. 18-20, .30" rain. 21-24, clear. 25-30, .30" rain.

Oct.: Temp. 51.1° (.6° below ave.). Prec. 1.0" (ave.). 1-3, clear. 4-5, .10" rain. 6-10, clear. 11-13, .2" rain. 14-15, clear. 16-18, .10" rain. 19-21, clear. 22-27, .4" rain. 28-29, clear. 30-31, .2" rain.

Nov.: Temp. 41.9° (2.1° above ave.). Prec. .3" (.3" below ave.), 5" snow. 1-2, clear. 3-7, .05" rain. 8-11, clear. 12-15, .05" rain. 16-19, clear. 20-21, .1" rain. 22-23, clear. 24-30, .1" prec., 5" snow.

Dec.: Temp. 32° (.4° below ave.). Prec. .7" (.1" above ave.), snow 15". 1-10, clear. 11-16, .2" prec., .7" snow. 17-22, clear. 23-28, .5" prec., 8" snow. 29-31, clear.

A SHORT
TRIP ON THE
UNION
PACIFIC
RAILROAD

1884

from
The Pacific Tourist
of that year



"Good-Bye"



↓ Deer Race Train (U.P.R.R.)

↑ Alexis kills buffalo



At the time of the excitement in gold at Pike's Peak, two pioneers painted the slogan "Pike's Peak or Bust" on their wagon. The expression became widely known but unfortunately, in their hurry to reach the peak, they fell into a Sioux Indian trap and were slaughtered.



These snowsheds ran for 40 miles between Strong's Canon Station and Emigrant Gap.

The pioneers considered the coyote the meanest animal of all. At darkness their howls were thought second to none.



Grand Duke Alexis of Russia, General Custer, Buffalo Bill, with Indian guides, had quite a hunting party 'way back then.

Back in '84, the deer would attempt to cross in front of or race the train, much as squirrels or birds will do with autos today.



7. PACIFIC NORTHWEST WEATHER FORECAST

Verification Base: Portland, Oregon. However, this forecast should be useful if you reduce the amounts of rain as you go south all down the coast to San Francisco. No attempt is made herewith for Southern California or the desert states as the variations, except around coastal Southern California, are too small to be meaningful. Nor have we summarized the winter, as snow (normally 7.9") for the six winter months is not a problem. However, we have included November and December 1968 — just in case.

THE YEAR (JAN. 1969 - DEC. 1969)

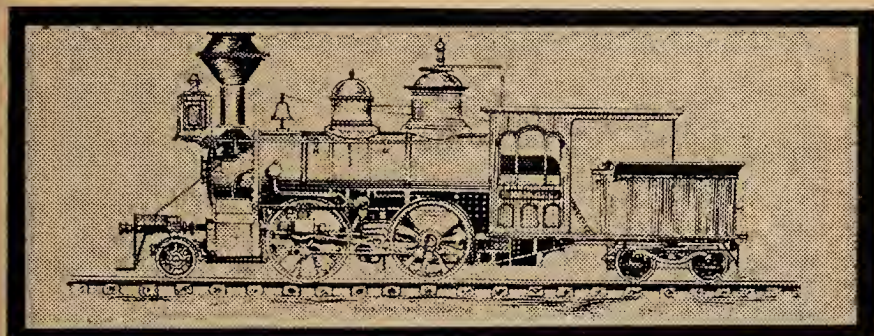
The average temperature, unlike those of all other locations except Denver, will be below average. It will be 51.7° which is .5° below ave. (52.2°). Precipitation will be 32.4" which is 4.6" below ave. (37.0"). The storms to watch follow in bold — especially those of Mar. 11-22, May 1-4, July 22-27, Oct. 4-6, Nov. 22-30, Dec. 1-3, Dec. 16-20, Dec. 24-29.

The winter (Nov. '68-Apr. '69) in Portland will be a lot colder than last, and at least a foot more snow will fall. The larger storms are in bold below.

- Nov. 1968:** Temp. 44.6° (.9° below ave.). Prec. 6.3" (.6" above ave.), 1-5, 1" rain. 6-8, clear. 9-10, .5" rain. 11-13, clear. 14-19, 3" rain. 20-21, clear. 22-25, 1.3" rain. 26-27, clear. 28-30, .5" rain.
- Dec. 1968:** Temp. 39.5° (1.5° below ave.). Prec. 6.8" (1.1" above ave.). 1-2, 1.71" rain. 3-4, clear. 5-8, 1.56" rain. 9-15, 3.43" rain. 16-18, clear. 19-22, .92" rain. 23-27, clear. 28-31, 2.23" rain.
- Jan. 1969:** Temp. 33° (5.5° below ave.). Prec. 3.2" (2.5" below ave.), snow 10". 1-2, .60" prec., 1" snow. 3, clear. 4-6, .7" prec., 1" snow. 7-8, clear. 9-11, .6" prec., 1" snow. 12-15, clear. 16-21, .65" prec., 3" snow. 22-23, clear. 24-25, .4" prec., 2" snow. 26-27, clear. 28-31, .25" prec., 2" snow.
- Feb.:** Temp. 40.9° (1.9° below ave.). Prec. 6.7" (2.7" above ave.), snow 15". 1-2, clear. 3-22, rains every day and snows (5.0", 3-4, 2.0", 6-7, 3", 10-13, 5". 18-22), 23-28, clear.
- March:** Temp. 45.7° (ave.). Prec. 3.3" (.5" below ave.). 1-5, clear. 6-9, rain, .27", 10, clear. 11-22, 2.62" rain. 23-24, clear. 25-27, 41" rain. 28-31, clear.
- April:** Temp. 51.6° (.9° above ave.). Prec. 1.6" (.6" below ave.). 1-2, clear. 3-6, .20" rain. 7-10, clear. 11-12, .20" rain. 13-15, clear. 16-17, .20" rain. 18-19, clear. 20-25, .50" rain. 26-27, clear. 28-30, .50" rain.
- May:** Temp. 57.9° (.9° above ave.). Prec. (ave.) (2.1"). 1-4, 1.0" rain. 5-16, clear. 17-20, .35" rain. 21-23, clear. 24-27, .50" rain. 28-29, clear. 30-31, .25" rain.
- June:** Temp. 60.5° (1.3° above ave.). Prec. 1.3" (.3" below ave.). 1-8, clear. 9-11, .35" rain. 12-15, clear. 16-17, .20" rain. 18-19, clear. 20-23, .25" rain. 24-27, clear. 28-30, .50" rain.
- July:** Temp. 65.2° (.4° above ave.). Prec. 1.3" (.2" below ave.). 1-2, clear. 3-7, .20" rain. 8-14, clear. 15-17, .10" rain. 18-21, clear. 22-27, 1.0" rain. 28-31, clear.
- Aug.** Temp. 65.5° (1° above ave.). Prec. .5" (.2" below ave.). 1-6, .20" rain. 7-8, clear. 9-12, .10" rain. 13-14, clear. 15-19, .10" rain. 20-26, clear. 27-31, .10" rain.
- Sept.:** Temp. 62.9° (.3° below ave.). Prec. 1.6" (.1" above ave.). 1-3, clear. 4-7, .40" rain. 8-11, clear. 12-13, .4" rain. 14-17, clear. 18-20, .4" rain. 21-24, clear. 25-30, .4" rain.
- Oct.:** Temp. 51.3° (2.8° below ave.). Prec. 3.0" (.6" below ave.). 1-3, clear. 4-6, 1.0" rain. 7-10, clear. 11-13, .3" rain. 14-15, clear. 16-18, .20" rain. 19-22, clear. 23-28, .5" rain. 29-31, clear.
- Nov.:** Temp. 47.7° (2.2° above ave.). Prec. 5.7" (ave.), snow 2". 1-3, clear. 4-6, .5" rain. 7-9, clear. 10-14, .5" rain. 15-16, clear. 17-18, .25" rain. 19-21, clear. 22-30, 3.5" prec., 2" snow.
- Dec.:** Temp. 41.2° (.2° above ave.). Prec. 5.3" (.4" below ave.), snow 12". 1-3, 1.0" prec., 4" snow. 4-7, clear. 8-9, .4" prec., 2" snow. 10-11, clear. 12-13, .4" prec., 2" snow. 14-15, clear. 16-20, 1.5" prec., 3" snow. 21-23, clear. 24-29, 2.0" prec., 1" snow. 30-31, clear.

FABULOUS 50c OFFER!

First Edition! Limited Edition!



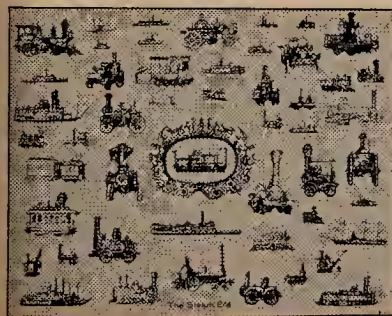
4 Exquisite American Heritage Giant Art Prints

COLORFUL STEAM ERA 50c ea.

Fabulously beautiful ink drawings of early steam locomotives by American artist Logan on heavy parchment paper ready to frame and hang. Unusual "wide" shape so good for home or office! Never offered publicly before. Limited edition, will not be sold through stores. 4 different prints, ideal for grouping in pairs or in a row. Each 26" wide, 9" high.

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Giant Antique Mural of 50 American Steamboats and Locomotives in color (17"x21") on parchment. Regular \$10 value **YOURS FREE!**



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NORAD

THE NORTH AMERICAN AIR DEFENSE

■ DEEP IN THE HEART OF Cheyenne Mountain, 8 miles south of Colorado Springs, within three miles of tunnels and chambers, all elements of the aerospace defense structure of NORAD are tied together by an automated command and control system which is controlled from the NORAD Combat Operations Center. The world's largest communications system, some 16 million circuit miles, terminates in the COC where data are constantly displayed and analyzed by the NORAD Battle Staff. It is from the COC that CINCNORAD and his staff would direct the air defense of North America. It should be noted that human beings and not computers will exercise the final decisive judgment. Also in the COC is the National Warning Center manned by civilian duty officers of the U.S. Army Strategic Communications Command. This ensures that the civil populace of the two nations would get warning of an impending attack as soon as possible.

NORAD was established in September 1957. On May 12, 1958, the official agreement was signed by the governments of Canada and the United States to establish mutual defense.

Operational control is invested in NORAD for the air defense forces of both countries: USADC, USAFDC, CAFAD, and USN. ADC also contributes the Nike and Hawk surface-to-air missiles. There are more than 110 AFDC defense batteries equipped with nuclear-capable Hercules. U.S. Navy contributes space surveillance, detection, and tracking. USAFC, the largest component command in NORAD, provides fighter-interceptor squadrons, Bomarc missiles, radar squadrons, and airborne radars. There is also a Ballistic Missile Early Warning System and, too, the CF-101B Voodoo squadrons. Alaska likewise comes under NORAD command.

In general, with NORAD in operation, it may be said we have about a 15-minute warning of a missile attack from anywhere in the world. This would allow three counter-attacks before such a missile would arrive at its destination: interceptor aircraft, Bomarc interceptors, and finally by missiles. However, there is not as yet any active defense against an ICBM or SLBM.

NORAD reports that 95% of all UFOs have been identified as natural phenomena or objects—and none as saucers. It sees no threat to the North American continent from this source.

NORAD's chief concern is to prevent mass missile or bomber raids. However, it is possible for a low-flying enemy aircraft to penetrate continental air space without detection. So—gap-filler radars and radar-equipped aircraft are also in use off our east, west, and gulf coasts.

Continued from page 61

miles north of this town, and the 8th inst. and weighed 14 pounds. After supper a number of republican toasts were drank: Joy was seated on every face, and every heart glow'd love and unity; the occasion of their meeting inspired each bosom with the gratitude of noble freemen; and the evening past in friendly mirth.

(From a Correspondent)

Philadelphians strut, and almost burst,
To think they had a shad* the first;
New-York uneasy (as is common)
Did boldly write about a salmon†
Bostonians' pride now took a stride,
And salmon‡ had they three;
Besides an OX, that caus'd a Box,
And many a repartee.

But Concord will be Concord still,
Who§ fix'd great George's fame;
And, without rout, sup on a trout,**
To celebrate his Name.

Notes:

*A shad at the civic feast in Philadelphia, 1793.

†Account in a New-York paper of a salmon offered for sale there in January; but no account of its being purchased.

‡Three salmon, taken from Merrimack river in New Hampshire, and sold in Boston, in January 1793, at 4s. per pound.

§The ratification of the Federal Constitution, the ninth State, in 1787, which fixed the Federal edifice.

**A salmon trout, taken from the Bay in Sanbornton (New Hampshire) which weighed fourteen pounds.

The Diary; or, Loudon's Register.
March 7, 1793

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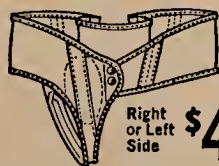


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8. SOUTHERN STATES

The times of sunrise, sunset, moonrise, moonset (pages 22-44) and the planets (page 46) are for Boston only. The table below gives the corrections to be used for anywhere in the Southern States. Note the Key Letters for any given day (pages 22-44, 46). Then find the column below in which that Key Letter falls. The figure in that column for the city you seek is the minutes to add or subtract for that city. Example: Jan. 12, sunrise (page 22) is 7:12 A.M. Key Letter N. Key Letter N for Atlanta is +29. So sunrise at Atlanta will be 7:41 A.M., EST. Accuracy will be within 15 min. for Lat. 25-30°, 10 min. for Lat. 30-35°, and 5 min. for Lat. north of 35°. If a city is not listed, interpolate between nearest two cities. (Further explanations appear on pages 92 and 93.)

City	State	Latitude		Time Used	Key Letters				
					A-E m	F-H m	I m	J-L m	M-Q m
Birmingham.....	Ala.	33	31	CST	+28	+12	+3	-6	-22
Decatur.....	Ala.	34	30	CST	+26	+12	+4	-4	-19
Mobile.....	Ala.	30	42	CST	+39	+19	+8	-4	-24
Montgomery.....	Ala.	32	22	CST	+29	+11	+1	-9	-26
Little Rock.....	Ark.	34	45	CST	+47	+33	+25	+17	+3
Texarkana.....	Ark.	33	30	CST	+57	+41	+32	+23	+7
Jacksonville.....	Fla.	30	20	EST	+75	+54	+42	+30	-10
Miami.....	Fla.	25	47	EST	+79	+52	+37	+21	-6
Pensacola.....	Fla.	30	25	EST	+97	+77	+65	+53	+33
St. Petersburg.....	Fla.	27	46	EST	+84	+60	+46	+32	+8
Tallahassee.....	Fla.	30	30	EST	+85	+65	+53	+41	+21
Tampa.....	Fla.	27	57	EST	+83	+59	+46	+32	+8
W. Palm Beach.....	Fla.	26	46	EST	+76	+50	+36	+21	-5
Atlanta.....	Ga.	33	45	EST	+78	+62	+53	+44	+29
Augusta.....	Ga.	33	28	EST	+69	+52	+44	+35	+17
Columbus.....	Ga.	32	28	EST	+83	+67	+56	+44	+28
Macon.....	Ga.	32	50	EST	+77	+62	+50	+39	+24
Savannah.....	Ga.	32	05	EST	+68	+50	+40	+30	+12
Covington.....	Ky.	39	07	EST	+64	+57	+54	+50	+44
Lexington-Frankfort..	Ky.	38	03	EST	+67	+59	+54	+50	+41
Louisville.....	Ky.	38	15	EST	+17	+63	+59	+54	+46
Alexandria.....	La.	31	16	CST	+66	+36	+26	+14	-5
Baton Rouge.....	La.	30	27	CST	+53	+32	+20	+9	-12
Lake Charles.....	La.	30	15	CST	+61	+40	+28	+17	-4
Monroe.....	La.	32	30	CST	+51	+34	+24	+14	-3
New Orleans.....	La.	29	57	CST	+49	+28	+16	+4	-17
Shreveport.....	La.	32	31	CST	+58	+41	+31	+21	+3
Biloxi.....	Miss.	30	15	CST	+44	+23	+12	0	-20
Jackson.....	Miss.	32	18	CST	+44	+26	+16	+6	-11
Meridian.....	Miss.	32	28	CST	+38	+20	+11	0	-17
Tupelo.....	Miss.	34	18	CST	+34	+19	+10	-2	-13
Asheville.....	N. C.	35	36	EST	+66	+53	+46	+39	+26
Charlotte.....	N. C.	35	13	EST	+60	+46	+39	+32	+18
Durham.....	N. C.	36	00	EST	+50	+38	+31	+25	+13
Greensboro.....	N. C.	36	04	EST	+53	+41	+35	+28	+16
Raleigh.....	N. C.	35	47	EST	+50	+37	+30	+23	+11
Wilmington.....	N. C.	34	12	EST	+51	+36	+27	+19	+4
Charleston.....	S. C.	32	47	EST	+62	+45	+35	+26	+9
Columbia.....	S. C.	34	00	EST	+64	+48	+40	+31	+16
Spartanburg.....	S. C.	34	57	EST	+65	+51	+43	+36	+22
Chattanooga.....	Tenn.	35	03	EST	+78	+65	+57	+49	+36
Knoxville.....	Tenn.	35	58	EST	+70	+58	+51	+45	+33
Memphis.....	Tenn.	35	09	CST	+37	+23	+16	+8	-5
Nashville.....	Tenn.	36	10	CST	+21	+9	+3	-4	-15
Amarillo.....	Tex.	35	12	CST	+84	+70	+63	+56	+42
Austin.....	Tex.	30	16	CST	+79	+58	+47	+35	+14
Beaumont.....	Tex.	30	05	CST	+65	+44	+32	+20	-1
Corpus Christi.....	Tex.	27	48	CST	+83	+59	+45	+31	+7
Dallas-Fort Worth.....	Tex.	32	47	CST	+72	+55	+45	+35	+18
El Paso.....	Tex.	31	46	CST	+111	+92	+82	+71	+52
Galveston.....	Tex.	29	18	CST	+70	+48	+35	+22	0
Houston.....	Tex.	29	45	CST	+71	+49	+37	+25	+3

HURRICANE EXPECTANCY

Over a 41-year average, the statistics reveal that at sunspot maximum a Gulf of Mexico hurricane will come in just about every two years — whereas in years of sunspot minimum, once about every nine years. This year, 1969, is just beyond the maximum. For Florida the expectancy is, for a severe storm, once every two years — for Georgia once every four.

In Texas, the expectancy is one hurricane every 1.4 years during sunspot maximums and every 9 years during minimums. The year of 1969 is beyond the maximum of sunspots by about nine months.

It looks as if both Florida and Texas will not be hit this year.

8. SOUTHERN STATES WEATHER FORECAST

Verification Base: Atlanta, Georgia. However, this forecast should quite generally cover the Southern States, except possibly Florida and Northern Texas which have special climates all their own. The Winter is not summarized here as it doesn't mean too much in the South, except for migrant tourists who go there to enjoy reading about the storms going on up North. However, November and December, 1968 are included — just in case.

THE YEAR (JAN. 1969 - DEC. 1969)

The temperature will average 54.4° which is above ave. (51.8°) by 2.6°. The precipitation will be 45.6" which is 2.9" below ave. (48.5"). Storms to watch are in bold — especially those of Jan. 3-5, Jan. 28-31, Feb. 22-28, Mar. 5-9, Apr. 10-14, Apr. 27-30, June 21-25, Aug. 15-18, Aug. 21-24, Aug. 27-31, Oct. 15-17, Oct. 22-31, Nov. 24-27, and Dec. 24-28.

The Winter (Nov. '68-Apr. '69) in Atlanta will be several degrees cooler than average and the rainfall will be perhaps 30% higher than last year. The larger storms follow in bold.

Nov. 1968: Temp. 52.3° (.3° above ave.). Prec. 7.0" (3.9" above ave.). 1-3, 1" rain. 4-5, clear. 6-7, .5" rain. 8-10, clear. 11-13, .5" rain. 14-17, hot. 18-20, clear. 21-23, 1" rain. 24-25, clear. 26-30, 4" rain.

Dec. 1968: Temp. 46.3° (1.7° above ave.). Prec. 5.5" (1" above ave.). 1-6, 1" rain. 7-8, clear. 9-12, .5" rain. 13-15, clear. 16-18, 1" rain. 19-20, clear. 21-24, 1" rain. 25-26, clear. 27-31, 2" rain.

Jan. 1969: Temp. 49.4° (5.9° above ave.). Prec. 6.1" (2.4" above ave.). 1-2, clear. 3-5, 2" rain. 6-7, clear. 8-9, .6" rain. 10-11, clear. 12-13, .25" rain. 14-17, clear. 18-21, .25" rain. 22-23, clear. 24-26, .5" rain. 27, clear. 28-31, 2.5" rain.

Feb.: Temp: 47.3° (1.5° above ave.). Prec. 4.5" (.3" below ave.). 1-4, 1.0" rain. 5-6, clear. 7-10, 1.0" rain. 11-13, clear. 14-16, .75" rain. 17-18, clear. 19-20, .45" rain. 21, clear. 22-28, 1.50" rain.

March: Temp. 52.1° (.5° below ave.). Prec. 4.2" (1.4" below ave.). 1-4, clear. 5-9, 2" rain. 10-13, clear. 14-15, .30" rain. 16-17, clear. 18-19, .15" rain. 20-21, clear. 22-26, 1.0" rain. 27-28, clear. 29-31, .75" rain.

April: Temp. 60.0° (1.3° below ave.). Prec. 6.5" (2.5" above ave.). 1-5, .90" rain. 6-9, clear. 10-14, 1.50" rain. 15-16, clear. 17-18, .5" rain. 19-20, clear. 21-23, .5" rain. 24-26, clear. 27-30, 3.0" rain.

May: Temp. 70.8° (1.1° above ave.). Prec. 3.1" (.4" below ave.). 1-4, 1.0" rain. 5-7, clear. 8-10, .5" rain. 11-15, clear. 16-18, .60" rain. 19-22, clear. 23-24, .5" rain. 25, clear. 26-31, .50" rain.

June: Temp. 76.3° (.2° below ave.). Prec. 4.5" (.6" above ave.). 1-3, clear. 4-6, .50" rain. 7-8, clear. 9-11, 1.0" rain. 12-14, clear. 15-17, 1.0" rain. 18-20, clear. 21-25, 1.5" rain. 26-28, clear. 29-30, .5" rain.

July: Temp. 75.8° (2.7° below ave.). Prec. 3.3" (1.6" below ave.). 1-2, clear. 3-7, .5" rain. 8-10, clear. 11-12, .50" rain. 13-14, clear. 15-19, 1.0" rain. 20-21, clear. 22-27, 1.0" rain. 28-29, clear. 30-31, .8" rain.

August: Temp. 78.4° (.6° above ave.). Prec. 5.3" (1.3" above ave.). 1-5, .5" rain. 6-8, clear. 9-12, .5" rain. 13-14, clear. 15-18, 1.5" rain. 19-20, clear. 21-24, 1.5" rain. 25-26, clear. 27-31, 1.3" rain.

Sept.: Temp. 71.7° (1.4° below ave.). Prec. 2.0" (1.2" below ave.). 1-3, clear. 4-7, 1.0" rain. 8-10, clear. 11-13, .10" rain. 14-18, clear. 19-20, .2" rain. 21-24, clear. 25-30, .70" rain.

Oct.: Temp. 62.8° (ave.). Prec. 4.0" (1.4" above ave.). 1-2, clear. 3-6, .25" rain. 7-10, clear. 11-12, .25" rain. 13-14, clear. 15-17, 1.5" rain. 18-21, clear. 22-31, 2" rain.

Nov.: Temp. 50.2° (1.8° below ave.). Prec. 2.0" (1.8" below ave.). 1-4, clear. 5-7, .20" rain. 8-11, clear. 12-15, .40" rain. 16-19, clear. 20-21, .10" rain. 22-23, clear. 24-27, 1.3" rain. 28-30, clear.

Dec. Temp. 45.0° (.4° above ave.). Prec. 3.6" (.9" below ave.). 1, clear. 2-3, .20" rain. 4-7, clear. 8-10, .5" rain. 11-12, clear. 13-16, .6" rain. 17-18, clear. 19-20, .2" rain. 21-23, clear. 24-28, 1.6" rain. 29, clear. 30-31, .5" rain.



Lambert Lilly, Schoolmaster, telling his pupils in 1833 of
**THE EARLY HISTORY OF VIRGINIA,
 NORTH AND SOUTH CAROLINA, AND GEORGIA**



On May 13, 1607 a new expedition founded Jamestown, Virginia — the first permanent white settlement in North America. Capt. John Smith was instrumental in the survival of this colony. But life was not easy for him or his colonists.

Sir Walter Raleigh at one time owned all the land from 32° to 45° N.Lat. in North America. He discovered tobacco, potatoes, and hominy. He never did settle the land. A colonist on his land gave birth, August 13, 1587, to Virginia Dare, the first white child born in North America. Raleigh sold out April 10, 1606.





Smith, captured by the Indians at Werowocomoco, was about to be put to death by King Powhatan. However, the King's daughter, Pocahontas, interceded and saved his life.



As late as 1715, the Carolina Indians prevented settlers from much expansion. From Charleston, fifty miles inland was as far as anyone cared to go.



Thereafter Smith was treated well by the Indians, especially the females.



But he did have to subdue the King of Paspahey, a giant savage, and carry him to Jamestown.

Savannah, Georgia was settled by James Edward Oglethorpe from Charleston on February 10, 1733.



Continued from page 54

If lower horn dusky, will rain before the full moon.

If center is dusky, will rain at the full.

If shadows are not visible when moon is four days old, expect bad weather.

Trees cut down during light of moon will not keep.

Wine made during two moons is not good . . . moonlight promotes putrefaction.

In Europe, oysters' peak spawning time is two days after the new or after the full moon.

If a tree be cut at full moon, it will split immediately as if torn asunder by a great force. (1838)

Trees to be used for durable purposes should be cut only during the first and last quarters of the moon. (1838)

Mental patients are more easily disturbed during the new and the full moon phases.

Chestnut or black ash timber for fence rails is four times better if cut in the last quarter of the moon (Feb. or Mar.) than in the first quarter. Chestnut, for firewood, snaps more when burning if cut in first quarter. Hemlock burns better if cut in last quarter. (1833)

The ancients advised felling timber within four days after the new moon. Pliny said to do it on the shortest day of the year. Columella said 20th to 28th day; Cato, four days after the full; Vegetius, 15th to 25th day for ship timber. But never cut timber during light of the moon.

Jared Elliott believed best time to cut brush was in June, July,

or August in the dark of the moon — during sign of Leo.

Bridge timbers should be felled during the light of the moon.

Birch bark comes off easiest during the first quarter of the moon of June and July.

Timber cut during last quarter of moon will last 3 or 4 times as long as that cut during new of the moon.

FROM 1745 OR BEFORE

Plant during Taurus or Aquarius during light of moon.

Plant trees during Taurus, Leo, or Aquarius.

Fell timber during dark of moon in Aquarius or Pisces.

Trim hedges or bushes in light of moon during Aries or Libra.

Cut or prune trees in March or April when moon is in Taurus, Virgo, or Capricorn.

Gather fruit at full of the moon in the afternoon.

Cut hay right after the full moon.

Shear sheep during light of moon.

Kill fat swine near the full.

Geld cattle during dark of the moon.

EDITOR'S NOTE

You will find on the left hand Calendar Pages (22, 24, 26, etc.), in the next to last column of each page, the sign in which the moon is on each day. Also, note that when one says the "old" of the moon or the "decrease" of the moon — that is the same thing as the "dark." Thus, too, the "increase" or "new" is the same as what we call the "light." (Also see Zodiac Pages 56-59.)

FULL MOON DAYS

	1969	1970	1971	1972	1973		1969	1970	1971	1972	1973
Jan.	3	22	11	30	18	July	28	18	8	26	15
Feb.	2	21	10	28	17	Aug.	27	16	6	24	13
Mar.	4	22	11	29	18	Sept.	25	15	4	22	12
Apr.	2	21	10	28	17	Oct.	25	14	4	22	11
May	2-31	20	10	27	16	Nov.	23	13	2	20	10
June	29	19	8	26	15	Dec.	23	12	2-31	20	9

NODES OF THE MOON

The "moon runs high" and "moon rides low" symbols (see pages 23-45) are useful as weather predictors. When it runs high, look out for a cool spell or frost—when riding low, there is often a mild spell; in summer, a heat wave.

A few years ago, a prominent bookseller offered for sale an almanack which was said to have been used by George Washington at Mount Vernon. Its calendar pages were covered with "hieroglyphics" in our first President's handwriting. These "hieroglyphics" marked the nodes of the moon each month. In Washington's time, the nodes of the moon were widely used as planting guides.

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Courtesy
American Automobile
Association

Auto Laws

1968

State	Max. Speed Open Hwy. (R-Reasonable)	Date Regis. Expires (Incl. Grace)	Driving License Minimum Age	Gasoline Tax	Per Cent Sales Tax	Non-R. Days of Stay ¹ (R-Reciprocal)	Min. Cost of Regis. (3M lbs.-100 HP)	Cost Term Driver's License	Chem. Test Law
Ala.....	60-50N	11/15	16h	\$.07	1½	30	\$13.75	\$4.25-2Y	B
Alaska...	50	5/31	16a	.08	—	90	30.00	5.00-3Y	B
Ariz.....	50-45N	12/31	18a	.07	3	180 ⁴	6.25	2.50-3Y	A
Ark.....	60	1/31	14ac	.075	3	90 ⁵	12.00	2.00-1Y	A
Cal.....	65	2/4	16f	.07	4†	3	11.00†	3.00-3Y	C
Colo.....	60	2/28	21e	.06	3	30	7.10	2.25-3Y	A
Conn.....	60	2	16eft	.07	3½	60	10.00	6.00-2Y	C
Del.....	60	2	16	.07	—	90	20.00	4.00-2Y	A
D.C.....	R	3/31	16a	.07	—	R1	22.50	3.00-3Y	A
Fla.....	65-55N	6/20	16aj	.07	2	R	22.22	3.00-2Y	A
Ga.....	60-50N	4/1	16h	.065	3	30	5.00†	2.50-2Y	A
Haw.....	45	3/31	15i	.085-11	—	10 or ³	22.50†	3.00	A
Ida.....	60-55N	12/31	16g	.07	3	—	17.50	6.00-3Y	C
Ill.....	65	3/1	16k	.05	4¼	R	24.00	5.00-3Y	A
Ind.....	65	2/28	16†	.06	2	60	12.00	1.50-2Y	A
Iowa.....	70-60N	1/31	16g	.07	3	R	12.00†	5.00-2Y	C
Kan.....	70-60N	2/15	16g	.05	3	R	10.00	3.00†	C
Ky.....	60-50N	3/1	16a	.07	3	R	5.00	2.00-2Y	A
La.....	60	2	15	.07	2	R	6.00-2Y	2.50-2Y	B
Me.....	45	2/28	15h-17	.07	4	R	15.00	5.00-2Y	A
Md.....	55	3/31	16fk	.07	3	30	15.00	7.00-2Y	A
Mass....	R	12/31	16½fa	.065	3	R	6.00	5.00-2Y	A
Mich.....	65-55N	2/28	16afg	.07	4	90	10.50	6.00-3Y	A
Minn....	65-55N	3/1	16ef	.07	—	R	5.25†	3.00-4Y	C
Miss....	65	10/31	15	.07	2	30	12.00	2.50-1Y	B
Mo.....	65-60N	2	16j	.05	3	—	37.50	2.00-3Y	C
Mont....	R-55N	2/15	15ae	.065	1½†	60	10.50	4.00-2Y	A
Nebr....	65-60N	2/28	16gm	.075	2½	R	9.00	6.00-4Y	C
Nev.....	R	12/31	16n	.06	2	3	5.50	3.00-5Y	A
N.H.....	60	3/31	18f	.07	—	R	15.00	10.00-2Y	C
N.J.....	50	2	17o	.06	3	60	15.00	3.00-1Y	C
N.M.....	70-60N	3/2	18jq	.07	—	30	30.00†	3.25-2Y	B
N.Y.....	50	2	18bp	.06	2	30	22.50	5.00-3Y	C
N.C.....	65	2/15	16af	.07	1½	R	10.00	3.75-4Y	D
N.D.....	60	12/31	16u	.06	—	R	32.00	3.00-1Y	C
Ohio....	60-50N	4/15	16e	.07	4	R	10.00	4.00-3Y	C
Okla....	65-55N	3/2	16d	.065	2	60	21.15†	4.00-2Y	C
Ore.....	55	2	16g	.07	—	3	10.00	3.00-2Y	C
Pa.....	55	3/31	18b	.07	5	R	10.00	4.00-2Y	A
R.I.....	50-45N	3/31	16	.07	5	R	11.00	8.00-2Y	C
S.C.....	60-55N	10/31	16h	.07	3	—	5.30	2.00-4Y	A
S.D.....	70-60N	3/31	16g	.06	—	60	17.00	3.00-4Y	C
Tenn....	65-55N	3/31	16g	.073	3†	30	18.50	4.00-2Y	C
Tex.....	70-65N	4/1	16g	.05	2	R	12.30	3.00-2Y	B
Utah....	R	2/28	16	.06	3½	—	6.00	5.00-4Y	C
Vt.....	50	2/28	18b	.065	3	R	32.00	3.00-1Y	C
Va.....	55	4/15	18ad	.07	2	60	15.00	6.00-3Y	C
Wash....	60	1/30	16df	.09	4.5	60	8.60†	4.00-2Y	A
W. Va....	55	6/30	16as	.07	3	30	20.00	5.00-4Y	A
Wis.....	65-55N	2	16g	.07	3	R	18.15†	2.50-2Y	A
Wyo....	65	3/1	16kt	.06	3	120	7.50	2.50-3Y	A

¹Applies to non-residents. "Reciprocal" means same as home state. Those intending permanent residence must buy new plates and secure new driving license at once. Employment or placing children in public school is to reside permanently. ²Staggered. ³Until expiration of home registration. ⁴Visitor's permit req. after 10 days. ⁵Visitor's permit after 30 days.

(A). State has drunken driving test law. (B). State does not. (C). Law with imp. cons. prov. (D). Same but refusal doesn't auth. license susp.

(a) Under 18 must have consent of par or guard; (b) Jr. p'mt 16; (c) 14-16 need accompaniment by lic. op.; (d) Instruction p'mt 15½; (e) Provisional license to 21; (f) 16-18 app. must have completed driver course; (g) Jr. p'mt 14; (h) Learner's p'mt 15; (i) Under 20 need par./guard consent; (j) Jr. P'mt 15; (k) Under 21 need par./guard consent & proof of fin. responsibility; (l) Visitor's permit req. if stay exc. 14 days; (m) 14-16 accomp. by lic. driver over 21; (n) With consent of par./guard.; (o) 16 for agric. pursuits; (p) Exc. some cities; (q) Provisional lic. 16-18; (r) 15½ if drive course comp.; (s) Under 21 birth certif. or par. sig. req.; (t) Learner's permit not req.; (u) Jr. permit 13-15. †Plus various adj.

Stud tires now (1968) disallowed in Ariz., Ga., La., Miss., Okla., S.C., Tex., Va. In 13 states, use limited from 10/1-5/1.

HOW MUCH IS SIX PER CENT?

The Consumer Credit Protection Act, signed May 29, 1968, goes into effect July 1, 1969. The new law requires lenders to inform borrowers, in writing, of finance charges — in percentages as well as dollars. "This bill is," said President Johnson as he signed it, "a triumph for truth." You should know — as an individual, housewife, car owner, or whoever — what the real rate of interest is you are about to pay on the loan you are about to obligate yourself for. Here is the formula which will do this for you.

$$R = \frac{2 M I}{P (N + 1)}$$

To find R (the true rate of interest) put in for M the number of payments per year. For I, insert the interest charge in dollars. In place of P insert the amount borrowed, and for N, again the number of payments.

Thus if you are about to borrow \$1000 and the dealer quotes you 6% for a total of \$1060 payable in 12 equal monthly payments:

$$R = \frac{2 (12 \times 60)}{\$1000 (12 + 1)} \quad \text{or} \quad \frac{1440}{13000} = \text{just over } 11\%$$

GLOSSARY OF ASTRONOMICAL TERMS, ETC.

- Aph.** — **Aphelion** . . . Planet revolving about Sun reaches point in its orbit farthest away from the Sun.
- Apo.** — **Apogee** . . . Moon reaches point in its orbit farthest from Earth.
- Conj.** — **conjunction** . . . moment of closest approach to each other of any two heavenly bodies.
- Declination** (see top left hand calendar pages) . . . measure of angular distance any celestial object lies perpendicularly north or south of celestial equator. Exactly analogous to terrestrial latitude. OFA gives declination at time each day the Sun is due South.
- El.** — **elongation** . . . apparent angular distance of a member of the solar system from the Sun as seen from the Earth.
- Inf.** — **Inferior** . . . Inferior conjunction is when the Planet is between the Sun and the Earth.
- Moon Runs High or Low** . . . day of month Moon Souths highest or lowest above the horizon.
- Occluded** . . . hidden from view.
- Opposition** . . . time when Sun, and Moon or Planet appear on opposite sides of the sky (elongation 180 degrees).
- Peri.** — **Perigee** . . . Moon reaches point in its orbit closest to Earth.
- Peri.** — **Perihelion** . . . Planet revolving about the Sun reaches point in its orbit closest to Sun.
- R.A.** — **Right Ascension** . . . the measure Eastward along the celestial equator of any celestial body from the vernal equinox to the point where the circle which passes through the object perpendicular to the celestial equator intersects the latter.
- Stat.** — **stationary** . . . when the apparent movement of a Planet against the background of Stars stops — just before same comes to opposition.
- Sunrise and Sunset** . . . visible rising and setting of Sun's upper limb across the unobstructed horizon of an observer whose eyes are 15 feet above ground level.
- Sun Fast** . . . the times given in this column must be subtracted from your Sun Dial to arrive at the correct time.
- Sup.** — **Superior** . . . Superior Conjunction is when the Sun is between the Planet and the Earth.
- Twilight** . . . begins or ends when stars of the sixth magnitude disappear or appear at the Zenith — or the Sun is appr. 18 degrees below the horizon.
- Underground Moon** . . . one which changes its phases between 12 M. and 1 A.M.

WINNING ESSAYS OF THE 1968 ESSAY CONTEST

"How I Protect My Garden from Bugs and Predators"

1st PRIZE

That's easy: I DON'T spray, and I DO systematize. I set the bugs back by sowing seeds of repulsive marigolds, nasturtiums, and petunias, and I stifle 'em with tansy, bee balm, and garlic. I smear 'em with flour, and I snatch 'em and squash 'em. I saturate 'em in kerosene, and I snare 'em with boards. I scare the predators with water jugs and breezy banners, and I stop 'em with broad barriers. I shock 'em with an electric fence, and I slug 'em with stones. Sometimes I even scream bloody-murder and sick the neighbor's dog on 'em — and I SUCCEED.

Mrs. George E. McGeoch, Cambridge, N.Y.

2nd PRIZE

The first thing I did to protect my garden was to put a six-foot field fencing around it to keep the deer out. Then I had to put a four-foot chicken wire fence around that to keep the woodchucks out.

When I planted the cucumber and melon seeds, I covered the beds with boxes six inches tall, to which I had tacked a cheese-

cloth roof. The rest of the garden I mulched about four inches deep with ground-up tree bark from one of our local paper mills.

The bark is the thing! It keeps the moisture in, bugs out.

Clayton F. McDougall, Jr., Fort Edward, N.Y.

3rd PRIZE

Keeping my garden protected from bugs and predators is quite easy for me, with a little help: seven "tools."

The seven tools are used after the garden has been fertilized and planted. They are one pair of geese, one pair of ducks, and our three hounds. I must not forget the tin items, rags, string, and sticks, but these are not to be counted as some of my tools.

The role the geese play is keeping the garden weeded and helping the ducks once in a while. The ducks take care of the bugs, and the three dogs take care of any animal predators coming near. They mainly only scare them off.

With the other items, a fence is made. This will usually keep the deer and wild birds away. Jane Carpenter, Enfield Center, N.H.

1969 ESSAY CONTEST

For 1969, the money will go (1st, \$25.00 — 2nd, \$15.00 — 3rd, \$5.00) for the best 100-word essay on "How I Start My Garden Indoors Without a Greenhouse." Contest closes May 1, 1969.

No entries returned; all become property of Yankee, Inc., which reserves all rights in the material submitted. In case of tie, place money lumped and divided. Staff of YANKEE, final judge. Winners announced 1970 OFA.

Address: Essay Contest, Yankee, Inc., Dublin, N. H. 03444.

ANSWERS TO OLD-FASHIONED PUZZLES ON PAGE 78

(I) The 1st is 8, to which add 2, the sum is 10; the 2nd is 12, subtract 2, the remainder is 10; the 3rd is 5, multiplied by 2, the product is 10; the 4th is 20, divided by 2, the quotient is 10.

(II) Consider each match being numbered 1-10 from left to right. Match 6 to match 9; match 4 to match 1; match 8 to match 3; match 2 to match 5; match 10 to match 7. Now you can figure the second match puzzle on your own. (III) 364. (IV) Two feet. (V) 5 feet 7½ inches. (VI) 1980. (VII) Car is 18 months; tires 12 months. (VIII) Put the following amounts in each of the 10 bags: \$1, \$2, \$4, \$8, \$16, \$32, \$64, \$128, \$256 and \$489. (IX) 40 feet. (X) In 120 days.

ANSWERS TO CHARADES, ETC. ON PAGE 79

(I) Hubert Humphrey (1. huc; 2. Bert; 3. The Hump; 4. free). (II) In astronauts (they have reached a fine height). (III) Draft-raft-aft. (IV) "Slow and steady wins the race." (V) Richard Nixon. (VI) "D" (It makes "in" "din"). (VII) Because he is a Truro man (true Roman). (VIII) A bed. (IX) Whippoorwill. (X) A doorknocker. (XI) Eugene McCarthy (1. you; 2. gene; 3 "Mac;" 4. car; 5. thy). (XII) The letter "C" (it turns an ape into a cape). (XIII) "A vessel that sets out with all sails set and no ballast, is sure to turn over."

WEDDING GIFTS

Anniversaries and types of gifts that mark their observance are listed below. The first is a traditional list recommended by social authorities. The second list was adopted in 1948 by the Jewelry Industry Council in cooperation with the Retail Jewelers of America, Inc., and the National Wholesale Jewelers.

TRADITIONAL-LIST	JEWELERS-LIST
YEAR	YEAR
1st Paper	1st Clocks
2nd Cotton	2nd China
3rd Leather	3rd Crystal, Glass
4th Fruit and Flowers, Silk	4th Electrical Gifts
5th Wooden	5th Silverware
6th Sugar and Candy, Iron	6th Wood
7th Woolen or Copper	7th Desk and Pen and Pencil Sets
8th Bronze or Copper	8th Linens, Laces
9th Willow or Pottery	9th Leather
10th Tin or Aluminum	10th Diamond Jewelry
11th Steel	11th Fashion Jewelry and Accessories
12th Silk or Linen	12th Pearls or Colored Gems
14th Ivory	13th Textiles and Furs
15th Crystal	14th Gold Jewelry
20th China	15th Watches
25th Silver	16th Silver Holloware
30th Pearl	17th Furniture
35th Coral	18th Porcelain
40th Ruby	19th Bronze
45th Sapphire	20th Platinum
50th Golden	25th Silver Jubilee
55th Emerald	30th Diamond
60th Diamond	35th Jade
75th Diamond	40th Ruby
	45th Sapphire
	50th Golden Jubilee
	55th Emerald
	60th Diamond Jubilee

Continued from page 107

can find no evidence of any cycle or cycles. The popular beliefs of a 7- or 11-year cycle are unsubstantiated. Precipitation, rain and snow, is the deciding factor for long-term changes. An excess raises levels and too little tends to lower levels. It is interesting to note that the effects of above-normal precipitation are readily observed, but the effects of below-normal precipitation may take some time before they are noticed. Comparatively narrow, restricted outflow channels tend to hold lake levels up during low precipitation and, on the other hand, because of their limited capacity cannot pass sufficient amounts of water during high periods, causing lake levels to rise rather dramatically.

Present Great Lakes levels, in general, are at or near their 10-year averages. Lakes Erie and Ontario (and St. Clair) are above their long-term averages. Lakes Superior, Michigan and Huron are slightly below their long-term averages. Lake levels, then, can be considered "normal" and according to Lake Survey's 6-month forecast should remain that way at least through September 1968.

The phenomena discussed are under constant study by hydrologists, hydraulic engineers and scientists at the U.S. Lake Survey, a District in the U.S. Army Corps of Engineers. Such studies will improve forecasts of lake levels which are a boon to commercial shipping, hydroelectric power and shoreline property owners, and will likely provide the basic data needed for man to someday regulate the levels of all the Great Lakes the way two of the five are now — Lake Superior is regulated by the world-famous "Soo" locks and associated control structures, and Lake Ontario is regulated by the equally famous St. Lawrence Seaway.

Postal Laws

AS OF MAY 1, 1968

First-Class Matter weighing 13 ozs. or less 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.

Letters and Written and Sealed Matter, 6 cents for each ounce, local and non-local.
 Postcards and Private Mailing Cards (max. 4 1/4" x 6"; min. 3" x 4 1/4")05
 Government Postal Cards, each..... .05
 Stamped 6-cent Envelopes No. 10—\$34.20, 500—\$68.40, 1000.

Business Reply Cards 7 cents, Business Reply 1 oz. letters 8 cents.

NEWSPAPERS AND PERIODICALS. — SECOND-CLASS.

Entire Newspapers or Magazines containing notice of second class entry when mailed by public unsealed, 5 cents for 1st two ounces, 1 cent each added 1 oz. Fourth Class Rate applies when it is lower than Second Class.

MERCHANDISE AND MISCELLANEOUS. — THIRD-CLASS.

(Limit of weight up to but not including 16 ounces)

Merchandise, incomplete copies of newspapers, printed and other mailable matter unsealed, 5 cents for first two ounces, 2 cents each add'l ounce—limit 16.

Identical pieces of third-class matter may be mailed under permit in bulk lots of not less than either 50 pounds or 200 pieces, at the rate of 22 cents a pound, or fraction thereof in case of circulars, miscellaneous printed matter, and merchandise, and 16 cents a pound, or fraction thereof, in the case of books or catalogs having 24 pages or more, seeds, plants, etc., with a minimum charge of 3.6c a piece in either case. Apply to postmaster for permit. The bulk mailing fee is \$30 per calendar year.

Books, catalogs (must be of 24 or more pages and substantially bound, with at least 24 pages printed, seeds, cuttings, bulbs, roots, scions and plants, 2 ounces or fraction 2 cents, each added ounce 2 cents.)

Circulars and other miscellaneous printed matter, also merchandise, 5 cents for the first 2 ounces and 2 cents for each additional oz.

PARCEL POST. — FOURTH-CLASS.

(16 oz. or over, incl. books, ptd. matter, except 1st class and second class papers mailed by publishers)

Catalogs and Similar Printed Advertising Matter, in bound form having 24 or more pages, weighing 16 ounces but not exceeding 10 pounds. (See Postmaster)

ZONES, Wgt. 1 lb.	Local	1st & 2nd	3rd	4th	5th	6th	7th	8th
And not over 1.5 lbs.	23c	29c	30c	31c	33c	35c	38c	41c
And not over 10 lbs.	39c	54c	60c	69c	81c	95c	1.12	1.29

Books: 12 cents for the first pound or fraction thereof and 6 cents for each additional pound or fraction thereof—24 or more pages permanently bound, not to exceed 70 lbs. Also incl. sound recordings. Also incl., when marked "Special Fourth-Class Rate," ptd. music, 16 mm. films and 16 mm. film catalogs (Exc. to commercial theatres), objective test material, sound recordings and mss. for books, periodical articles and music.

Library Books: 5 cents for the first pound or fraction thereof and 2 cents for each additional pound or fraction thereof—limit of weight 70 pounds—when sent by public libraries, organizations, or associations not organized for profit.

Weight Limits: 70 lbs. and 100 inches combined length and girth—except between First Class Post Offices (Postmaster has list) where limits are: In zones 1 and 2, 40 lbs. with 72 inch combined length and girth, other zones 30 lbs. until 7/1/69, (40 lbs. thereafter) and 72 inch combined length and girth. Parcels over 84 but under 100 inches combined length and girth charged as 10 pounds.

Wt. 1 lb. but not over	LOCAL	1-2		3		4		5		6		7		8	
		Up to 150 miles	150 to 300 miles	150 to 300 miles	300 to 600 miles	600 to 1000 miles	1000 to 1400 miles	1400 to 1800 miles	1800 to 2200 miles	2200 to 2600 miles	2600 to 3000 miles	3000 to 3400 miles	3400 to 3800 miles	3800 to 4200 miles	4200 to 4600 miles
2	\$0.40	\$0.50	\$0.50	\$0.55	\$0.60	\$0.65	\$0.70	\$0.75	\$0.80	\$0.85	\$0.90	\$0.95	\$1.00	\$1.05	\$1.10
3	.40	.55	.60	.65	.70	.75	.80	.85	.90	.95	1.00	1.05	1.10	1.15	1.20
4	.45	.60	.65	.70	.75	.80	.85	.90	.95	1.00	1.05	1.10	1.15	1.20	1.25
5	.45	.65	.70	.75	.80	.85	.90	.95	1.00	1.05	1.10	1.15	1.20	1.25	1.30
6	.45	.70	.80	.90	1.00	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50
7	.50	.80	.85	1.00	1.15	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20
8	.50	.85	.90	1.05	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30
9	.55	.90	.95	1.15	1.40	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40
10	.55	.95	1.05	1.20	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50
11	.55	1.00	1.10	1.30	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60
12	.60	1.05	1.15	1.35	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70
13	.60	1.10	1.20	1.45	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80
14	.65	1.15	1.30	1.50	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90
15	.65	1.20	1.35	1.60	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
16	.65	1.25	1.40	1.65	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10
17	.70	1.30	1.45	1.75	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20
18	.70	1.35	1.50	1.80	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30
19	.75	1.40	1.60	1.90	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40
20	.75	1.40	1.65	1.95	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50
50	1.30	2.60	3.05	3.90	5.05	6.25	7.80	9.15							

SPECIAL CLASSES. — DOMESTIC MAIL.

Special Delivery: First-class Mail: Each piece under 2 lbs.—30c, over 2 up to 10—45c, over 10 lbs.—60c. Same for air, incl. air p.p.

Parcel Post: Up to 2 lbs.—55c; over 2 up to 10—65c; over 10 lbs.—80c.

Special Handling, Third-class and Parcel Post only: Up to 2 lbs.—25c, over 2 lbs. up to 10—35c, over 10 lbs.—50c. (This service expedites mail but does not include special delivery.)

Registered Mail: Up to \$100—75c; over \$100 up to \$200—\$1.00; over \$200 up to \$400—\$1.25; over \$400 up to \$600—\$1.50; over \$600 up to \$800—\$1.75; over \$800 up to \$1000—\$2.00. There are special surcharges when declared values exceed indemnities—see local Postmaster about these.

Insured Mail: Third- and Fourth-class Only: Indemnity up to \$15—20c; over \$15 up to \$50—30c; over \$50 up to \$100—40c; over \$100 up to \$150—50c; over \$150 to \$200—60c.

C.O.D.: Indemnities up to \$10—60c; over \$10 up to \$25—70c; over \$25 up to \$50—80c; over \$50 up to \$100—90c; over \$100 up to \$200—\$1.00. Registered C.O.D., 60c fee plus registration fee based on value of article.

Money Orders: Limit for each is \$100. If amount of money order is from 1c to \$10 the fee is 25c, from \$10.01 to \$50 the fee is 35c, from \$50.01 to \$100 the fee is 40c.

Certified Mail: First class only having no value, add 30c to postage plus (a) 10c for return receipt showing to whom and when delivered; (b) 35c for whom, when, and address where delivered; (c) 25c for request after mailing showing to whom and when delivered. Obtain blank coupons from Postmaster.

POSTAL RATES: International

SURFACE RATES

Letters: To Canada and Mexico, 6c per oz. To all other countries, 13c for the first oz. and 8c each additional oz.

Postcards: To Canada and Mexico, 5c each; 10c reply-paid. To all other countries, 8c each, 16c reply-paid. Maximum size 6 x 4 $\frac{1}{4}$ inches, minimum size 4 $\frac{1}{4}$ x 3 inches.

Printed Matter: In general, to Canada and Mexico, 6c first 2 oz. 2c each additional oz.; all other, 6c first 2 oz. 4c each additional 2 oz. Books and sheet music, to countries of the Postal Union of the Americas and Spain, exc. Spain and Spanish possessions, 3c first 2 oz.; 1c each additional 2 oz.; all other (inc. Spain and poss.) 4c first 2 oz.; 1 $\frac{1}{2}$ ¢ each additional 2 oz. Publishers' second class, P.U.A.S. countries, 3c first 2 oz., 1c each additional 2 oz., all other, 4c first 2 oz.; 1 $\frac{1}{2}$ ¢ each additional 2 oz.

Samples of Merchandise: To Canada and Mexico, 4c first 2 oz.; 2c each additional oz. Minimum charge 10c. All other, 6c first 2 oz.; 4c each additional 2 oz. Minimum charge 13c.

Matter for the Blind: All countries, domestic rates apply with certain exceptions.

Small Packets: All countries, 6c each 2 oz. Minimum charge, 26c.

Merchandise Packages to Canada: Packages of 8 ounces or less, 10c for 5 oz., 12c for 6 oz., 14c for 7 oz. and 16c for 8 oz.

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Zone 1: N. America, C. America, Caribbean Is. — \$1.00 first 2 lbs., 30c each additional lb.

Zone 2: All other countries — \$1.10 first 2 lbs.; 35c each additional lb.

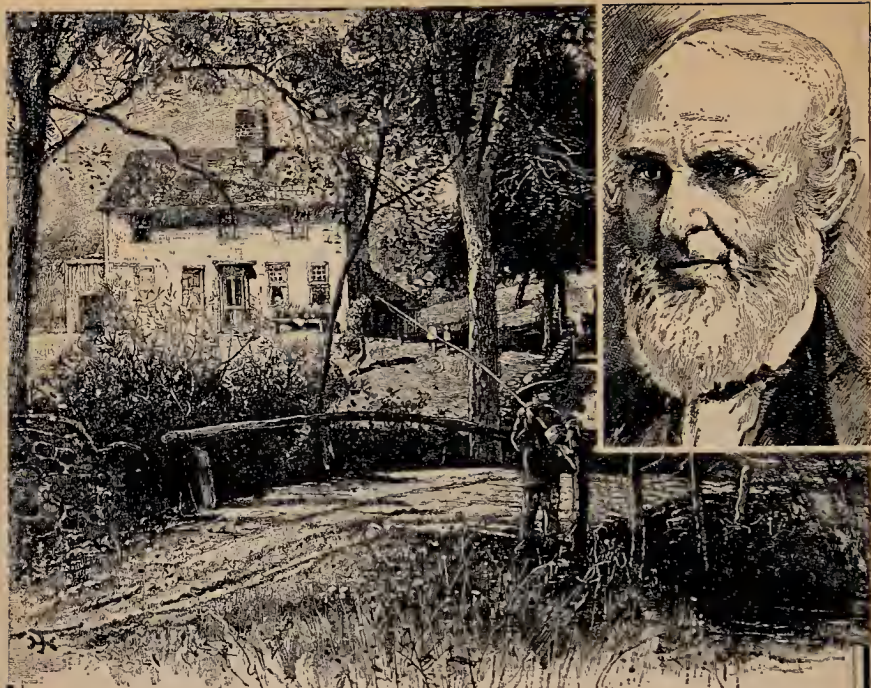
AIR MAIL RATES: Domestic and International

Air Mail Letters: United States, Canada, Mexico, 10c per oz. Central America, South America, the Caribbean Islands, Bahamas, Bermuda, and St. Pierre and Miquelon, 15 cents per HALF oz.; Europe (except Estonia, Latvia, Lithuania, and U.S.S.R.) and Mediterranean Africa, 20 cents HALF oz.; other countries, 25 cents HALF oz.

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Post Cards and Aerogrammes (air letter sheets): Cards, United States, Canada and Mexico, 8c each (single); all other, 13c each (single). Aerogrammes, 13c each.

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*The old Whittier homestead — drawn by Harry Fenn, 1883
(Whittier head by Schoff — Courtesy Houghton, Mifflin and Co.)*

BALLADS OF NEW ENGLAND

(WITH ILLUSTRATIONS
ACTUALLY APPROVED BY
THE AUTHOR)

JOHN GREENLEAF WHITTIER

Whittier was born December 17, 1807, at Haverhill,
Massachusetts — Died September 7, 1892, at Hampden
Falls, New Hampshire.

TELLING THE BEES.



S. Eyttinge, Jr.

HERE is the place; right over
the hill
Runs the path I took;
You can see the gap in the old
wall still,
And the stepping-stones in the
shallow brook.

There is the house, with the gate
red-barred,
And the poplars tall:
And the barn's brown length,
and the cattle-yard,
And the white horns tossing
above the wall.

There are the beehives ranged
in the sun;
And down by the brink
Of the brook are her poor flowers,
weed-o'errun,
Pansy and daffodil, rose and pink.

A year has gone, as the tortoise goes,
Heavy and slow;
And the same rose blows, and the
same sun glows,
And the same brook sings of a
year ago.

There's the same sweet clover-smell
in the breeze;
And the June sun warm
Tangles his wings of fire in the trees,
Setting, as then, over Fernside farm.

I mind me how with a lover's care
From my Sunday coat
I brushed off the burrs, and
smoothed my hair,
And cooled at the brookside
my brow and throat.

Since we parted, a month had passed,
To love, a year;
Down through the beeches I looked
at last
On the little red gate and the
well-sweep near.

I can see it all now, — the
slantwise rain
Of light through the leaves,
The sundown's blaze on her
window-pane,
The bloom of her roses under
the eaves.

Just the same as a month before, —
The house and the trees,
The barn's brown gable, the vine
by the door, —
Nothing changed but the hives
of bees.

Before them, under the garden wall,
Forward and back,
Went drearly singing the chore-girl
small,
Draping each hive with a shred
of black.

Trembling, I listened: the summer sun
Had the chill of snow;
For I knew she was telling the
bees of one
Gone on the journey we all must go!

Then I said to myself, "My Mary
weeps
For the dead to-day:
Haply her blind old grandsire sleeps
The fret and the pain of his age
away."

But her dog whined low; in the
doorway sill,
With his cane to his chin,
The old man sat; and chore-girl still
Sung to the bees stealing out and in.

And the song she was singing ever since
In my ear sounds on: —
"Stay at home, pretty bees, fly not
hence!
Mistress Mary is dead and gone!"



Alfred Fredericks

SKIPPER IRESON'S RIDE.

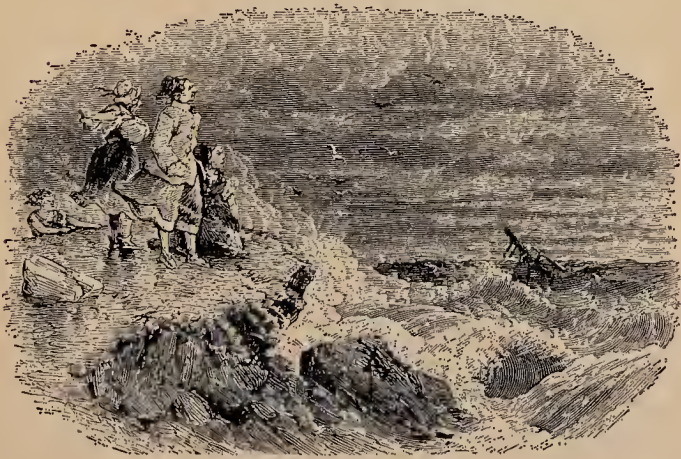
OF all the rides since the birth of time,
 Told in story or sung in rhyme, —
 On Apuleius's Golden Ass,
 Or one-eyed Calendar's horse of brass,
 Witch astride of a human hack,
 Islam's prophet on Al-Borák, —
 The strangest ride that ever was sped
 Was Ireson's, out from Marblehead!
 Old Floyd Ireson, for his hard heart,
 Tarred and feathered and carried in a cart
 By the women of Marblehead!

Body of turkey, head of owl,
 Wings a-droop like a rained-on fowl.
 Feathered and ruffled in every part,
 Skipper Ireson stood in the cart.
 Scores of women, old and young,
 Strong of muscle, and glib of tongue,
 Pushed and pulled up the rocky lane,
 Shouting and singing the shrill refrain:
 "Here's Flud Oirson, fur his horrd horrt,
 Torr'd an' futherr'd an' corr'd in a corrt
 By the women o' Morble'ead!"

Wrinkled scolds with hands on hips,
 Girls in bloom of cheek and lips,
 Wild-eyed, free-limbed, such as chase
 Bacchus round some antique vase,
 Brief of skirt, with ankles bare,
 Loose of kerchief and loose of hair,

With conch-shells blowing and fish-horns' twang,
 Over and over the Mænads sang:
 "Here's Flud Oirson, fur his horrd horrt,
 Torr'd an' futherr'd an' corr'd in a corrt
 By the women o' Morble'ead!"

Small pity for him! — He sailed away
 From a leaking ship, in Chaleur Bay, —
 Sailed away from a sinking wreck,
 With his own towns-people on her deck!
 "Lay by! lay by!" they called to him.
 Back he answered, "Sink or swim!
 Brag of your catch of fish again!"
 And off he sailed through the fog and rain!
 Old Floyd Ireson, for his hard heart,
 Tarred and feathered and carried in a cart
 By the women of Marblehead!



Fathoms deep in dark Chaleur
 That wreck shall lie forevermore.
 Mother and sister, wife and maid,
 Looked from the rocks of Marblehead
 Over the moaning and rainy sea, —
 Looked for the coming that might not be!
 What did the winds and the sea-birds say
 Of the cruel captain who sailed away? —
 Old Floyd Ireson, for his hard heart,
 Tarred and feathered and carried in a cart
 By the women of Marblehead!

Through the street, on either side,
 Up flew windows, doors swung wide;
 Sharp-tongued spinsters, old wives gray,
 Treble lent the fish-horn's bray.
 Sea-worn grandsires, cripple-bound,
 Hulks of old sailors run aground,
 Shook head, and fist, and hat, and cane,
 And cracked with curses the hoarse refrain:
 "Here's Flud Oirson, fur his horrd horrt,
 Torr'd an' futherr'd an' corr'd in a corrt
 By the women o' Morble'ead!"

Sweetly along the Salem road
 Bloom of orchard and lilac showed.
 Little the wicked skipper knew
 Of the fields so green and the sky so blue.
 Riding there in his sorry trim,
 Like an Indian idol glum and grim,
 Scarcely he seemed the sound to hear
 Of voices shouting, far and near:
 "Heres Flud Oirson, fur his horrd horrt,
 Torr'd an' futherr'd an' corr'd in a corrt
 By the women o' Morble'ead!"

"Hear me; neighbors!" at last he cried, —
 "What to me is this noisy ride?
 What is the shame that clothes the skin
 To the nameless horror that lives within?
 Waking or sleeping, I see a wreck.
 And hear a cry from a reeling deck!
 Hate me and curse me, — I only dread
 The hand of God and the face of the dead!"
 Said old Floyd Ireson, for his hard heart,
 Tarred and feathered and carried in a cart
 By the women of Marblehead!

Then the wife of the skipper lost at sea
 Said, "God has touched him! — why should we?"
 Said an old wife mourning her only son,
 "Cut the rogue's tether and let him run!"
 So with soft relentings and rude excuse,
 Half scorn, half pity, they cut him loose,
 And gave him a cloak to hide him in,
 And left him alone with his shame and sin.
 Poor Floyd Ireson, for his hard heart,
 Tarred and feathered and carried in a cart
 By the women of Marblehead!



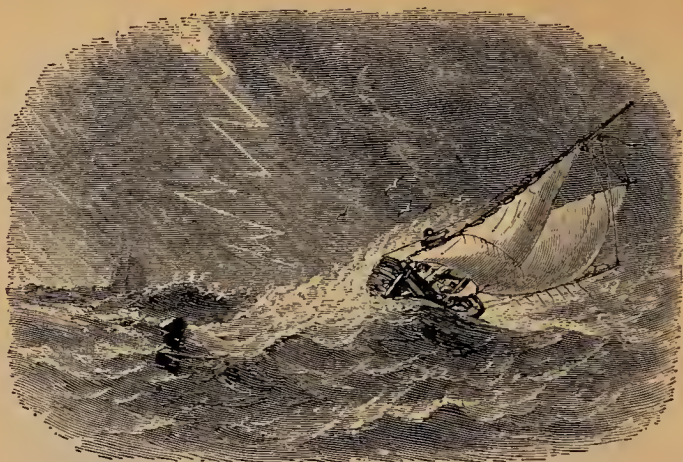
Alfred Fredericks

THE WRECK OF RIVERMOUTH.

RIVERMOUTH ROCKS are fair to see,
 By dawn or sunset shone across,
 When the ebb of the sea has left them free,
 To dry their fringes of gold-green moss:
 For there the river comes winding down
 From salt sea-meadows and uplands brown,
 And waves on the outer rocks afoam
 Shout to its waters, "Welcome home!"

And fair are the sunny isles in view
 East of the grisly Head of the Boar,
 And Agamenticus lifts its blue
 Disk of a cloud the woodlands o'er;
 And southerly, when the tide is down,
 'Twixt white sea-waves and sand-hills brown,
 The beach-birds dance and the gray gulls wheel
 Over a floor of burnished steel.

Once, in the old Colonial days,
 Two hundred years ago and more,
 A boat sailed down through the winding ways
 Of Hampton River to that low shore,
 Full of a goodly company
 Sailing out on the summer sea,
 Veering to catch the land-breeze light,
 With the Boar to left and the Rocks to right.

*Granville Perkins*

In Hampton meadows, where mowers laid
 Their scythes to the swaths of salted grass,
 "Ah, well-a-day! our hay must be made!"
 A young man sighed, who saw them pass.
 Loud laughed his fellows to see him stand
 Whetting his scythe with a listless hand,
 Hearing a voice in a far-off song,
 Watching a white hand beckoning long.

"Fie on the witch!" cried a merry girl,
 As they rounded the point where Goody Cole
 Sat by her door with her wheel atwirl,
 A bent and blear-eyed poor old soul.
 "Oho!" she muttered, "ye 're brave to-day!
 But I hear the little waves laugh and say,
 'The broth will be cold that waits at home;
 For it 's one to go, but another to come!'"

"She's cursed," said the skipper; "speak her fair:
 I'm scary always to see her shake
 Her wicked head, with its wild gray hair,
 And nose like a hawk, and eyes like a snake."
 But merrily still, with laugh and shout,
 From Hampton River the boat sailed out,
 Till the huts and the flakes on Star seemed nigh,
 And they lost the scent of the pines of Rye.

They dropped their lines in the lazy tide,
 Drawing up haddock and mottled cod;
 They saw not the Shadow that walked beside,
 They heard not the feet with silence shod.
 But thicker and thicker a hot mist grew,
 Shot by the lightnings through and through:
 And muffled growls, like the growl of a beast,
 Ran along the sky from west to east.

Then the skipper looked from the darkening sea
 Up to the dimmed and wading sun ;
 But he spake like a brave man cheerily,
 "Yet there is time for our homeward run."
 Veering and tacking, they backward wore ;
 And just as a breath from the woods ashore
 Blew out to whisper of danger past,
 The wrath of the storm came down at last !

The skipper hauled at the heavy sail :
 "God be our help !" he only cried,
 As the roaring gale, like the stroke of a flail,
 Smote the boat on its starboard side.
 The Shoalsmen looked, but saw alone
 Dark films of rain-cloud slantwise blown,
 Wild rocks lit up by the lightning's glare,
 The strife and torment of sea and air.

Goody Cole looked out from her door :
 The Isles of Shoals were drowned and gone,
 Scarcely she saw the Head of the Boar
 Toss the foam from tusks of stone.
 She clasped her hands with a grip of pain,
 The tear on her cheek was not of rain :
 "They are lost," she muttered, "boat and crew !
 Lord, forgive me ! my words were true !"

Suddenly seaward swept the squall ;
 The low sun smote through cloudy rack ;



Alfred Fredericks

The Shoals stood clear in the light, and all
 The trend of the coast lay hard and black.
 But far and wide as eye could reach,
 No life was seen upon wave or beach;
 The boat that went out at morning never
 Sailed back again into Hampton River.

O mower, lean on thy bended snath,
 Look from the meadows green and low:
 The wind of the sea is a waft of death,
 The waves are singing a song of woe!
 By silent river, by moaning sea,
 Long and vain shall thy watching be:
 Never again shall the sweet voice call,
 Never the white hand rise and fall!

O Rivermouth Rocks, how sad a sight
 Ye saw in the light of breaking day!
 Dead faces looking up cold and white
 From sand and sea-weed where they lay.
 The mad old witch-wife wailed and wept,
 And cursed the tide as it backward crept:
 "Crawl back, crawl back, blue water-snake!
 Leave your dead for the hearts that break!"

Solemn it was in that old day
 In Hampton town and its log-built church,
 Where side by side the coffins lay
 And the mourners stood in aisle and porch.
 In the singing-seats young eyes were dim,
 The voices faltered that raised the hymn,
 And Father Dalton, grave and stern,
 Sobbed through his prayer and wept in turn.

But his ancient colleague did not pray,
 Because of his sin at fourscore years:
 He stood apart, with the iron-gray
 Of his strong brows knitted to hide his tears.
 And a wretched woman, holding her breath
 In the awful presence of sin and death,
 Cowered and shrank, while her neighbors thronged
 To look on the dead her shame had wronged.

Apart with them, like them forbid,
 Old Goody Cole looked drearily round,
 As, two by two, with their faces hid,
 The mourners walked to the burying-ground.
 She let the staff from her clasped hands fall:
 "Lord, forgive us! we 're sinners all!"
 And the voice of the old man answered her:
 "Amen!" said Father Bachiler.

So, as I sat upon Appledore
 In the calm of a closing summer day,
 And the broken lines of Hampton shore
 In purple mist of cloud-land lay,
 The Rivermouth Rocks their story told;
 And waves aglow with sunset gold,
 Rising and breaking in steady chime,
 Beat the rhythm and kept the time.

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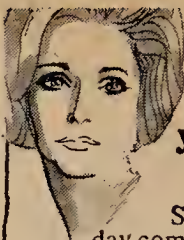
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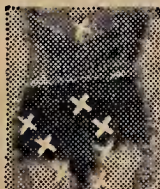
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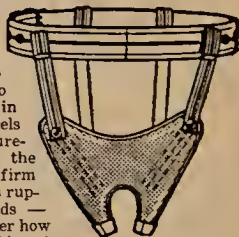
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