

HARVESTING RICE.

K · C · S ·

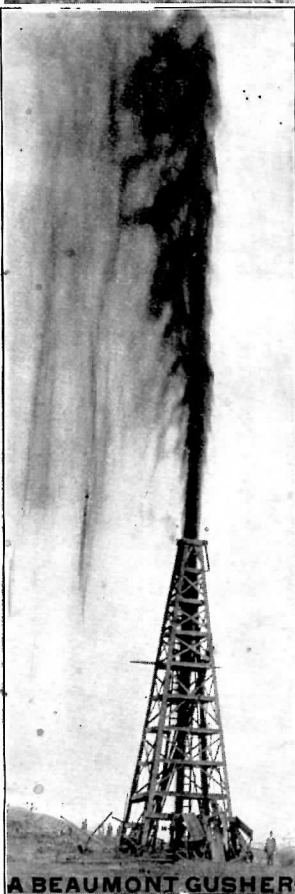
THE KANSAS CITY SOUTHERN RAILWAY

FARMERS' ALMANAC FOR 1902.

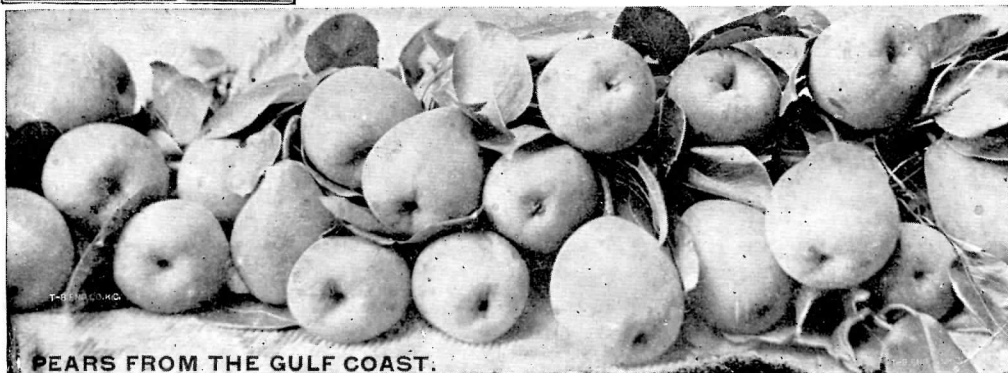
F. E. ROESLER,
TRAV. PAS. AND IMMIG. AGT.

S. G. WARNER,
GEN'L PAS. AND TKT. AGT.

KANSAS CITY, MISSOURI.



A BEAUMONT GUSHER.



PEARS FROM THE GULF COAST.

KANSAS CITY SOUTHERN RAILWAY CO.

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 J. A. EDSON..... General Manager.
 J. A. HANLEY..... Freight Traffic Manager.
 E. E. SMYTHE..... General Freight Agent.
 S. G. WARNER..... General Passenger and Ticket Agent.
 W. COUGHLIN..... Superintendent (Nor. Div.) Pittsburg, Kas.
 D. C. BEVARD..... Superintendent (So. Div.) Texarkana, Tex.
 General Offices, Kansas City, Mo.

TEXARKANA & FORT SMITH RY. CO.

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 W. L. ESTES..... First Vice President.
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The authorized representatives of the Port Arthur Route whose names and addresses are given below will, upon application in person or by letter or telegram, promptly and cheerfully answer any inquiries concerning time of trains, rates of fare and transportation facilities.

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 R. A. MORRIS, (T. & Ft. S. R'y)..... City Ticket Agent

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TEMPLE BLOCK, KANSAS CITY, MO.

Kansas City Southern

Railway Co.'s

ALMANAC

FOR 1902.



**Kansas City, Mo.,
January 1, 1902.**



TO PEOPLE SEEKING NEW HOMES, GOOD HEALTH, AND ENJOYABLE CLIMATE, A FRUITFUL SOIL AND NEW BUSINESS OPPORTUNITIES, THIS ALMANAC IS SPECIALLY DEDICATED.

Free Copies of this Almanac can be Procured by Addressing S. G. Warner, General Passenger and Ticket Agent, Kansas City, Mo.

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- Merwin, Mo.**—R. N. West.
- Joplin, Mo.**—B. F. Wilson.
- Asbury, Mo.**—E. M. Whetsell.
- Neosho, Mo.**—J. V. Fleming Rlty. Co. C. C. Akin.
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- Mooringsport, La.**—H. S. Weston.
- Benson, La.**—I. J. Best.
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- Leesville, La.**—J. W. Dennis.
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- Welsh, La.**—James Ellis.

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- | | |
|-------------------------------------|--|
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The Country Along the Line of the Kansas City Southern Railway.

Very few railroads in the United States have along their lines such a wealth of natural resource, capable of immediate and profitable development, as has the Kansas City Southern Railway. Along the entire length of 786 miles there is not a square mile of ground which cannot be made to yield a revenue of some kind. The variety and abundance of resource is astounding to those who make closer inquiry, and to all it is apparent that this railway affords exceptional facilities for cheap and quick transportation to the most important markets.

Kansas City, Mo., its initial point, is in the heart of the great meat and grain producing region of the United States, and is, by virtue of the Kansas City Southern Railway, 500 miles nearer to tide water than the other great grain centers which ship their products to the Atlantic ports. The millions of bushels of corn, the thousands of bales of cotton and the thousands of tons of flour and packing house products, passing over the route via Port Arthur to purchasers beyond the seas, give evidence of a magnificent trade in that direction.

Wheat and other small grain, corn and hay are produced and shipped at some forty different stations on the line between Kansas City, Mo. and Shreveport, La. Cotton, in immense quantity, is shipped from thirty-four towns between Fort Smith, Ark., and Lake Charles, La.

About one-quarter million acres of land are devoted to rice culture near Beaumont, Port Arthur, Nederland and Lake Charles, La. Fruit growing and truck growing are carried on extensively at some 25 stations on the line. The Missouri peach and berry crop for 1901 is estimated at \$3,000,000 and the apple crop at 3,000,000 barrels worth nearly \$2 per barrel. North Arkansas shipped by rail 1,250,000 bushels, still having great quantities in storage. Poultry, eggs and dairy products are shipped from many towns between Kansas City and Fort Smith; sugar and molasses from Shreveport and Lake Charles, La. Forty towns on the line make extensive shipments of horses, mules, cattle, hogs and sheep, and from several come large consignments of wool. Coal is mined in fourteen places; the output of the mines near Pittsburg, Kansas, is about $2\frac{1}{2}$ million tons. There are some fifty shafts in that vicinity, employing over 5,000 men. Another great coal field is near Fort Smith, Ark., having an output of over 1,000,000 tons per annum and employing 3,900 men. The Indian Territory field produces about 1,900,000 tons and employs 5,200 men. Lead and zinc are mined in twenty or more places near Joplin, Mo. The output for 1901 was 516,612,270 pounds of zinc and 70,530,450 pounds of lead valued at \$7,971,651. In Polk and Sevier counties, Arkansas, are other vast deposits of lead and zinc which are now being rapidly developed. Roofing slate of the finest quality is very abundant in the same counties. Valuable building stones are shipped from a dozen or more places and a very large business is done in the manufacture of cement, lime, brick, tiling, sewer-piping, wall-coping and pottery. Pittsburg, Fort Smith, Texarkana and Shreveport have large clay works. Furniture is manufactured at Kansas City, Fort Smith and Texarkana. Petroleum wells are profitably operated at Chanute, Kansas, Amsterdam and Merwin, Mo., Beaumont, Texas, and Lake Charles, La. One hundred and thirty-two wells were in operation January 1, 1902. The daily shipments of oil by rail then amounted to 125 to 150 carloads. The Kansas City Southern Railway passes through 460 miles of country from which yellow pine timber may be secured. About 126 mills with a daily capacity of 5,741,000 feet are in operation. The annual shipment of lumber in round numbers is about 60,000 carloads.

From the foregoing it may be seen that there are splendid opportunities for such as wish to make a change of location. No other section of country offers such a variety of resource as that traversed by the Kansas City Southern Railway.

Eclipses for 1902.

- In the year 1902 there will be five eclipses, three of the sun and two of the moon.
- I. A partial eclipse of the sun April 8th, invisible here.
- II. A total eclipse of the moon April 22nd, not visible here; but the beginning visible throughout Asia and the eastern portions of Africa and Europe; the ending visible throughout Asia, Europe and Africa.
- III. A partial eclipse of the sun May 7th, invisible here; visible to New Zealand and the South Pacific Ocean.
- IV. A total eclipse of the moon October 16th and 17th, visible here as follows:
- | | Eastern Standard Time. | | |
|---------------------------|------------------------|-------|-------------|
| Moon enters shadow..... | 16 d. | 11 h. | 17 m. P. M. |
| Total eclipse begins..... | 17 d. | 0 h. | 19 m. A. M. |
| Middle of eclipse..... | 17 d. | 1 h. | 3 m. A. M. |
| Total eclipse ends..... | 17 d. | 1 h. | 48 m. A. M. |
| Moon leaves shadow..... | 17 d. | 2 h. | 50 m. A. M. |
- V. A partial eclipse of the sun October 30th, invisible here; visible to the greater part of Europe and nearly all of Asia.

The Seasons for 1902.

Vernal Equinox (spring begins).....	March.....	21 d.	8 h. A. M.
Summer Solstice (summer begins).....	June.....	22 d.	4 h. A. M.
Autumnal Equinox (autumn begins).....	September.....	23 d.	7 h. P. M.
Winter Solstice (winter begins).....	December.....	22 d.	1 h. P. M.



Morning and Evening Stars for 1902.

- The planet Venus (♀) is evening star until February 14th, then morning star until November 28th, after which date she is evening star to the end of the year.
- The planet Mars (♂) will be evening star until March 29th, then morning star the balance of the year.
- The planet Jupiter (♃) is evening star until January 15th, then morning star until August 5th, then evening star the balance of the year.
- The planet Saturn (♄) begins as evening star and continues as such until January 9th, then morning star until July 17th, and then evening star to the end of the year.

Chronological Eras.

- The year 1902 comprises the latter part of the 126th and the beginning of the 127th year of American independence, and corresponds to—
- The year 6615 of the Julian Period.
- The year 5662-5663 of the Jewish Era; the Jewish new year 5663 begins at sunset on October 1st, 1902.
- The year 2655 since the foundation of Rome, according to Varro.
- The year 2562 of the Japanese Era, and to the 35th year of the period entitled "Meiji."
- The first day of January, 1902, is the 2,415,751st day since the commencement of the Julian Period.



JANUARY

1902

MOON'S PHASES.

L. Q. N. M. F. Q. F. M. L. Q.	BOSTON		NEW YORK		CHICAGO	
	D. H. M.	1 11 8 M.	D. H. M.	1 11 8 M.	D. H. M.	1 10 8 M.
	9 4 15 A.	9 4 15 A.	9 3 15 A.			
	17 1 38 M.	17 1 38 M.	17 0 38 M.			
	23 7 6 A.	23 7 6 A.	23 6 6 A.			
	31 8 9 M.	31 8 9 M.	31 7 9 M.			

LATITUDE

Of New York City,
N. England, N.
Jersey, Conn.,
Pa., Ohio, Ind.,
Ill., Neb. and N.
Cal.

LATITUDE

Of Charleston, N.
Car., Miss., Ga.,
Ala., Arkansas,
New Mexico and
S. Cal.

HISTORICAL EVENTS.

D. M.	D. W.	HISTORICAL EVENTS.
1	W	☾ 1st. Circumcision.
2	Th	☾ ☿ ☉. Superior.
3	Fr	1st mowing machines, '81
4	Sa	☾ in apogee.

MOON'S SIGNS.

Sun rises. sets. Moon rises.

SUN SLOW.

Sun rises. sets. Moon rises.

1. 2nd Sunday after Christmas. Luke 2. 9h. 23m. Day's length 10h. 5m

5	Su	Dr. W. A. Hammond d. '90	☾	7 25	4 43	3 40	5	7 31	5 8	3 22
6	M	Epiphany. ☿ ☿ ♃.	☾	7 25	4 48	4 35	6	7 4	5 9	4 15
7	Tu	☿ ☿ ☾.	☾	7 25	4 49	5 27	6	7 4	5 10	5 5
8	W	Bat. of New Orleans, 1815	☿	7 25	4 50	6 14	7	7 4	5 10	5 54
9	Th	☾ 9th. ♀ gr. brilliancy.	☿	7 24	4 51	6 58	7	7 4	5 11	6 39
10	Fr	☿ gr. hel. lat. S.	☿	7 24	4 52	sets	7	7 4	5 12	sets
11	Sa	☿ ☿ ☾.	☿	7 24	4 53	7 0	8	7 4	5 13	7 11

2. 1st Sunday after Epiphany. Luke 2. 9h. 30m. Day's length, 10h. 11m.

12	Su	John Hancock b., 1737.	☿	7 24	4 54	8 4	8	7 3	5 14	8 12
13	M	☿ gr. hel. lat. S.	☿	7 23	4 55	9 10	9	7 3	5 15	9 13
14	Tu	Gen. G. H. Sharpe d., 1900	☿	7 23	4 56	10 14	9	7 3	5 16	10 12
15	W	☿ ☾ ☉. Superior.	☿	7 23	4 57	11 20	9	7 3	5 16	11 14
16	Th	Gibbon died, 1794.	☿	7 22	4 58	morn	10	7 3	5 17	morn
17	Fr	17th. Bat. Cowpens,	☿	7 22	4 59	0 29	10	7 3	5 18	0 18
18	Sa	☾ Bulwer d., 1873 [1781	☿	7 21	5 1	1 39	10	7 2	5 19	1 24

3. 2nd Sunday after Epiphany. John 2. 9h. 41m. Day's length, 10h. 18m.

19	Su	Gt. Erup. Mt. Ves., 1776	☿	7 21	5 2	2 47	11	7 2	5 20	2 29
20	M	John Ruskin died, 1900.	☿	7 20	5 3	3 55	11	7 2	5 21	3 34
21	Tu	☿ ☽ ☾. ☾ in perigee.	☿	7 20	5 4	4 57	11	7 1	5 22	4 36
22	W	☿ stationary.	☾	7 19	5 5	5 52	12	7 1	5 23	5 32
23	Th	☾ 23d. ☿ ☿ ☽.	☾	7 18	5 7	rises	12	7 1	5 24	rises
24	Fr	☾ Swedenborg b., 1688.	☾	7 18	5 8	6 16	12	7 0	5 25	6 27
25	Sa	Conver. St. Paul.	☾	7 17	5 9	7 23	12	7 0	5 26	7 31

4. Septuagesima Sunday. Matt. 20. 9h. 54m. Day's length, 10h. 28m.

26	Su	Income tax repealed, '71	☾	7 16	5 10	8 30	13	6 59	5 27	8 32
27	M	Burr's conspiracy, 1807.	☾	7 16	5 11	9 30	13	6 59	5 28	9 28
28	Tu	Wm. H. Prescott d., 1859	☾	7 15	5 13	10 33	13	6 58	5 29	10 26
29	W	1st "fat test" of milk, '88	☾	7 14	5 14	11 33	13	6 58	5 30	11 23
30	Th	Wm. Goebel ass., 1900	☾	7 13	5 15	morn	13	6 57	5 31	morn
31	Fr	☾ 31st. J. G. Blaine b. '30	☾	7 12	5 16	0 33	14	6 56	5 32	0 19



MOON'S PHASES.

	BOSTON	NEW YORK	CHICAGO
	D. H. M.	D. H. M.	D. H. M.
N.M.	8 8 21 M.	8 8 21 M.	8 7 21 M.
F.Q.	15 9 57 M.	15 9 57 M.	15 8 57 M.
F.M.	22 8 3 M.	22 8 3 M.	22 7 3 M.

LATITUDE

Of New York City, N. England, N. Jersey, Conn., Pa., Ohio, Ind., Ill., Neb. and N. Cal.

LATITUDE

Of Charleston, N. Car., Miss., Ga., Ala., Arkansas, New Mexico and S. Cal.

D.	D.	HISTORICAL EVENTS.
M.	W.	

MOON'S SIGNS.

Sun rises.	Sun sets.	Moon rises.
H. M.	H. M.	H. M.

SUN SLOW.

Sun rises.	Sun sets.	Moon rises.
H. M.	H. M.	H. M.

1 | Sa | ☾ in ♍. ☾ in apogee. ☾ | 7 10 | 5 17 | 1 30 | 14 | 6 56 | 5 33 | 1 13

5. *Sexagesima Sunday. Luke 8. 10h. 7m. Day's Length, 10h 39m.*

2Su	Purification; Candlemas.	♈	7 11	5 18	2 25	14	6 55	5 34	2 6
3M	♄ ☽ ☾. ☽ in perihelion.	♈	7 9	5 20	3 18	14	6 54	5 34	2 57
4Tu	Electro-magnet. dis., 1819.	♈	7 8	5 21	4 9	14	6 54	5 35	3 47
5W	♄ ♀ ☽. ♀ in perihelion.	♈	7 7	5 22	4 53	14	6 53	5 36	4 33
6Th	♄ ♃ ☾. ☽ ♃ ☾.	♈	7 6	5 24	5 35	14	6 52	5 37	5 17
7Fr	☾ First use of gas, 1822.	♈	7 5	5 25	6 13	14	6 51	5 38	5 58
8Sa	☾ 8th. Dis. bacilli, 1850.	♈	7 4	5 26	sets	14	6 50	5 39	sets

6. *Quinquagesima Sunday. Luke 18. 10h. 25m. Day's Length, 10h. 50m.*

9Su	♄ ♀ ☽. ☽ stationary.	♈	7 2	5 27	7 0	14	6 50	5 40	7 4
10M	Gen. D. H. Maury d. 1900.	♈	7 1	5 28	8 5	14	6 49	5 41	8 5
11Tu	T. A. Edison born, 1847.	♈	7 0	5 29	9 10	14	6 48	5 42	9 6
12W	Ash Wednesday. ♄ ♃ ☽.	♈	6 59	5 31	10 20	14	6 47	5 43	10 12
13Th	Admiral Porter died, 1891.	♈	6 57	5 32	11 31	14	6 46	5 44	11 17
14Fr	♄ ♀ ☾. Inf. St. Valen.	♈	6 56	5 33	morn	14	6 45	5 44	morn
15Sa	☾ 15th. 1st tel. poles, '43	♈	6 55	5 35	0 39	14	6 44	5 45	0 21

7. *Quadragesima Sunday. Matt. 4. 10h. 43m. Day's Length, 11h. 3m.*

16Su	☾ in perigee.	♈	6 53	5 36	1 45	14	6 43	5 46	1 25
17M	♄ ♃ ☾.	♈	6 52	5 37	2 48	14	6 42	5 47	2 27
18Tu	♄ ♃ ☾. Inferior.	♈	6 51	5 38	3 44	14	6 41	5 48	3 23
19W	Ember Day.	♈	6 50	5 39	4 34	14	6 40	5 49	4 15
20Th	1st public telephones, '77.	♈	6 49	5 40	5 17	14	6 39	5 50	5 1
21Fr	☾ Ember Day.	♈	6 48	5 41	5 55	14	6 38	5 50	5 45
22Sa	☾ 22d. Ember Day	♈	6 47	5 44	rises	14	6 37	5 51	rises

8. *2nd Sunday in Lent. Matt. 15. 11h. 0m. Day's Length, 11h. 16m.*

23Su	Incandescent light pat. '79	♈	6 45	5 45	7 14	14	6 36	5 52	7 14
24M	St. Matthias.	♈	6 44	5 46	8 15	14	6 35	5 53	8 11
25Tu	Battle of Trenton, 1776.	♈	6 43	5 48	9 19	13	6 34	5 51	9 10
26W	Niag. Falls pow. start'd '96	♈	6 42	5 49	10 19	13	6 32	5 55	10 7
27Th	♀ gr. hel. lat. N. [med. '00	♈	6 40	5 50	11 18	13	6 31	5 55	11 2
28Fr	Liquid air used in surg. &	♈	6 37	5 51	morn	13	6 30	5 56	11 55

Cooks and Kitchens.

What the poets and epicures have said about the kitchen and the cooks would no doubt fill a big book, but of all, the one who got nearest to the subject is the late lamented Josh Billings, who with earnestness and enthusiasm makes the following remarks:

“Mighty pleasant music. The dinner horn is the oldest and most sakred horn thare iz. It iz set tew musik and plays “Home Sweet Home,” about noon. It has been listened tew with more rapturous delite than ever any band haz. You can hear it further than yu kan one of Rodman’s guns. It will arrest a man and bring him in quicker than a sheriff’s warrant. It kan out-foot any other noise. It kauses the deaf to hear and the dumb to shout for joy. Glorious old instrument! Long may yure lungs last!”—*Josh Billings.*

BREAD, CAKE, PIES and PASTRY.

PERPETUAL YEAST.—Boil six medium sized potatoes, mash fine and cool—add one tablespoonful each of salt and white sugar. One quart of lukewarm water and half teacupful of good yeast. Set away in a stone crock to ferment. Will be ready for use in six hours. Take out one cup of this mixture and set away for starting the next yeast. With the remainder mix flour enough to mold into a soft loaf; when light form into loaves and bake.

TWICE RAISED BREAD.—Four quarts flour, one pint milk, one pint water, one tablespoon sugar, one tablespoon salt, one tablespoon lard, one cup yeast. Take three quarts of the flour in bread pan and make well in the middle, into which put sugar, salt and yeast; then mix in the milk, warm with hot water; beat well with heavy spoon, add lard, knead for 20 to 30 minutes and let rise over night. Next morning knead again, make into loaves and let them rise one hour and then bake fifty minutes. Water may be used in place of milk. In such case double the quantity of lard.

GRAHAM BREAD.—One pint graham flour, one pint wheat flour, one pint bread sponge, one teaspoon salt, mix in warm water. Mix soft, put in deep, round tins, well buttered, and when light, bake slowly.

BAKING POWDER BISCUIT.—One quart flour, one tablespoon lard, one teaspoon salt, milk, three teaspoons baking powder. Let the oven be very hot and pans greased before mixing dough. Into the flour sift salt and baking powder. Stir in milk to make a soft dough, knead quickly; roll one inch thick and cut to proper size. Bake twenty minutes. If cream is used, lard is unnecessary.

BREAKFAST ROLLS.—One cup sweet milk, two-thirds cup butter, half cup yeast, whites of two eggs, one teaspoon salt, two tablespoons sugar, flour for

Cooks and Kitchens.

thick batter. Let rise over night, adding the eggs beaten to a foam and the sugar next morning. Mould quickly, let rise slightly and bake.

BUCKWHEAT CAKES.—Three pints buckwheat flour, three cups warm milk, one and one-half cups warm water, three tablespoons wheat flour, one teaspoon salt, two cups yeast. Mix in the evening, the flour, yeast and salt with warm milk and water, mix thoroughly, cover and let rise over night. Next morning the top of mixture should be full of bubbles. The griddle should be medium hot, so as to bake slow enough to bake through. With sour batter add some soda, if too thick, add a little warm water.

DOUGHNUTS.—(Mrs. Arnold). One coffee cupful of sour milk, one coffee cupful of sugar, one tablespoonful of butter, two eggs, one teaspoonful of soda, dissolve in a little of the milk; add nutmeg and salt; mix soft. Fry in hot lard.

SOFT GINGER BREAD.—(Mrs. Arnold). One cupful of sugar, one of molasses, one of butter, one of sour milk, three eggs, two teaspoonfuls of soda, and one and one half tablespoonfuls of ginger, four cups full of flour. Bake in a moderate oven.

SPONGE CAKE.—Six eggs, weight of the eggs in sugar, one half the weight of the eggs in flour, juice and rind of one lemon, beat the yolks and sugar light. Add rind and juice of lemon and add one half the flour and beaten whites of eggs, beat five minutes, then add remainder of flour and eggs. Bake forty five minutes.

ANGEL FOOD.—Whites of eleven eggs beaten very light. One tumbler of flour sifted seven times before it is measured; one and one half tumblers of granulated sugar sifted seven times; one teaspoonful of cream of Tartar, one teaspoonful of vanilla. To the beaten whites, add the sifted sugar and stir in gently; then add vanilla and then sift in together the flour and cream of Tartar. Bake forty-five minutes in an ungreased pan in a very moderate oven. The oven should not be opened for fifteen minutes. With this cake baking is making.

DEVILS FOOD.—One quarter pound of Bakers' chocolate shaved fine, and melt in dish of boiling water. One and one half cups of light brown sugar, one half cup of butter, yolks of eight eggs, or four whole eggs, one cupful of sweet milk, two cups of flour; one teaspoonful of soda. Add chocolate and bake in four layers. Put together with white icing.

CHOCOLATE FILLING FOR CAKE.—Two ounces of grated chocolate, five tablespoonfuls of powdered sugar; three tablespoonfuls of boiling water; stir over a moderate fire until smooth and glossy.

RICE BREAD.—Boil half a pound of rice in five quarts of water until tender, then beat the whole to a smooth paste. When luke warm add two quarts of flour and a cupful of yeast. Set near the fire to raise. When raised mould into loaves and bake.

BOSTON BROWN BREAD.—Three cups of corn meal, two of graham flour, one of molasses, one and one half teaspoonsful of soda; one quart of water or milk. Salt. Bake two and one half hours in a covered dish.

COTTAGE PUDDING.—One tablespoonful of butter, one cup of sugar, one half cup of milk, two eggs, whites and yolks beaten separately, one large teaspoonful of yeast powder, one and one half cups of flour, flavor to taste. serve with any liquid sauce.



MOON'S PHASES.				LATITUDE			LATITUDE				
L. Q.	BOSTON	NEW YORK	CHICAGO	Of New York City, N. England, N. Jersey, Conn. Pa., Ohio, Ind., Ill., Neb. and N. Cal.			Of Charleston, N. Car., Miss., Ga., Ala., Arkansas, New Mexico and S. Cal.				
	D. H. M.	D. H. M.	D. H. M.	Sun rises.	Sun sets.	Moon rises.	Sun rises.	Sun sets.	Moon rises.		
N. M.	2 5 39 M.	2 5 39 M.	2 4 39 M.	H. M. <td>H. M. <td>H. M. <td>H. M. <td>H. M. <td>H. M. </td></td></td></td></td>	H. M. <td>H. M. <td>H. M. <td>H. M. <td>H. M. </td></td></td></td>	H. M. <td>H. M. <td>H. M. <td>H. M. </td></td></td>	H. M. <td>H. M. <td>H. M. </td></td>	H. M. <td>H. M. </td>	H. M.		
F. Q.	9 9 50 A.	9 9 50 A.	9 8 50 A.	SUN SLOW.							
F. M.	16 5 13 A.	16 5 13 A.	16 4 13 A.								
D. W.	23 10 21 A.	23 10 21 A.	23 9 21 A.								
M. W.	HISTORICAL EVENTS.										
1 Sa	☾ in apogee. St. David.			μ	6 35	5 52	0 14	13	6 29	5 57	morn
9. 3d Sunday in Lent. Luke 11.				11h. 20m.			Day's Length, 11h. 30m.				
2 Su	☾ 2d.	♄ stationary.	μ	6 33	5 53	1 8	12	6 28	5 58	0 48	
3 M	☾	♄ ♄ C.	μ	6 31	5 54	1 59	12	6 27	5 59	1 38	
4 Tu	Chicago chartered, 1837.			μ	6 29	5 55	2 45	12	6 25	5 59	2 25
5 W	♄	♃ C.	μ	6 28	5 56	3 28	12	6 24	6 0	3 10	
6 Th	♄	♃ ♃ C.	♃ ♀ stationary.	μ	6 26	5 58	4 8	12	6 23	6 1	3 52
7 Fr	♄	♃ C.	μ	6 25	5 59	4 43	11	6 22	6 2	4 31	
8 Sa	♄	♃ C.	μ	6 23	6 0	5 16	11	6 20	6 2	5 8	
10. 4th Sunday in Lent. John 6.				11h. 40m.			Day's Length, 11h. 40m.				
9 Su	☾ 9th.	♁ Vera C., 47.	μ	6 21	6 1	7 47	11	6 19	6 3	5 43	
10 M	☾	♁ ♁ C. ♁ stationary.	μ	6 19	6 2	sets	11	6 18	6 4	sets	
11 Tu	♁	♁ in ☽.	μ	6 18	6 3	8 6	10	6 16	6 5	7 59	
12 W	♁	♁ ☽.	μ	6 16	6 4	9 18	10	6 15	6 5	9 7	
13 Th	☾ in perigee. [1900.			μ	6 15	6 5	10 29	10	6 14	6 6	10 13
14 Fr	Rev. Thos. K. Beecher d.,			μ	6 13	6 7	11 36	10	6 13	6 7	11 18
15 Sa	Maine admitted, 1850.			μ	6 11	6 8	morn	9	6 11	6 8	morn
11. 5th Sunday in Lent. John 8.				11h. 59m.			Day's Length, 11h. 58m.				
16 Su	☾ 16th.	♁ ♁ C.	μ	6 10	6 9	0 41	9	6 10	6 8	0 20	
17 M	St. Patrick.			μ	6 8	6 10	1 39	9	6 9	6 9	1 18
18 Tu	Calhoun born, 1782.			μ	6 6	6 11	2 31	8	6 7	6 10	2 12
19 W	John A. Bingham d., 1900.			μ	6 5	6 12	3 15	8	6 6	6 11	2 59
20 Th	♁ ♁ C.			μ	6 3	6 13	3 55	8	6 5	6 11	3 42
21 Fr	☽ ent. ♁. Spring begins.			μ	6 1	6 14	4 27	8	6 4	6 12	4 20
22 Sa	♁ in aphelion.			μ	6 0	6 15	4 59	7	6 2	6 13	4 55
12 Palm Sunday. Matt. 27.				12h. 18m.			Day's Length, 12h. 12m.				
23 Su	☾ 23d.	♁ Bat. Winch'er, '62	μ	5 58	6 16	rises	7	6 1	6 13	rises	
24 M	Bat. Kernstown, '62.			μ	5 56	6 17	7 5	7	6 0	6 14	6 57
25 Tu	Annunciation.			μ	5 55	6 18	8 5	6	5 58	6 15	7 55
26 W	♁ stationary. [1829.			μ	5 53	6 19	9 6	6	5 57	6 15	8 51
27 Th	Galvanized iron invented,			μ	5 51	6 20	10 4	6	5 56	6 16	9 46
28 Fr	Good Friday.			μ	5 50	6 21	10 58	5	5 54	6 17	10 39
29 Sa	☾ in apogee.			μ	5 48	6 22	11 49	5	5 53	6 18	11 29
13. Easter Sunday John 20.				12h. 37m.			Day's Length, 12h. 26m.				
30 Su	♁ ♁ C. [hurricane, 1899.			μ	5 46	6 23	morn	5	5 52	6 18	morn
31 M	2,000 killed in Porto Rico			μ	5 45	6 24	0 37	4	5 50	6 19	0 17



MOON'S PHASES.

	BOSTON	NEW YORK	CHICAGO
L. Q.	D. H. M.	D. H. M.	D. H. M.
N. M.	1 1 24 M.	1 1 24 M.	1 0 24 M.
F. Q.	8 8 50 M.	8 8 50 M.	8 7 50 M.
F. M.	15 0 26 M.	15 0 26 M.	14 11 26 A.
L. Q.	22 1 50 A.	22 1 50 A.	22 0 50 A.
L. Q.	30 5 58 A.	30 5 58 A.	30 4 58 A.

MOON'S SIGNS.

LATITUDE

Of New York City,
N. England, N.
Jersey, Conn.
Pa., Ohio, Ind.,
Ill., Neb. and N.
Cal.

LATITUDE

Of Charleston, N.
Car., Miss., Ga.,
Ala., Arkansas,
New Mexico and
S. Cal.

HISTORICAL EVENTS.

D. M.	D. W.	HISTORICAL EVENTS.
1	Tu	☾ 1st. Tamerlane d. 1405
2	W	☽ ♃ C.
3	Th	☽ ♃ D.
4	Fr	W. H. Harrison d., 1841.
5	Sa	☽ ♀ C.

Sun rises.	Sun sets.	Moon rises.
H. M.	H. M.	H. M.
5 43	6 25	1 21
5 41	6 26	2 2
5 40	6 27	2 39
5 38	6 28	3 11
5 36	6 29	3 44

SUN SLOW.

Sun rises.	Sun sets.	Moon rises.
H. M.	H. M.	H. M.
5 49	6 20	1 2
5 48	6 20	1 45
5 46	6 21	2 24
5 45	6 22	3 2
5 44	6 22	3 37

14. Low Sunday. John 20. 12h. 55m. Day's Length, 12h. 41m.

6	Su	☽ Bat. of Shiloh, 1862.	☾ 5 35	6 30	4 15	3	5 42	6 23	4 14
7	M	☽ ♃ C.	☾ 5 33	6 31	4 53	2	5 41	6 24	4 55
8	Tu	☽ 8th. Gen. ♂ C.	☾ 5 32	6 32	sets	2	5 40	6 25	sets
9	W	☽ Gen. Lee sur., 1865.	☽ 5 30	6 33	8 11	2	5 39	6 25	7 56
10	Th	☾ in perigee.	☽ 5 28	6 35	9 21	2	5 37	6 26	9 4
11	Fr	♃ gr. hel. lat. S.	☽ 5 27	6 36	10 30	1	5 36	6 27	10 10
12	Sa	Henry Clay born, 1777.	☽ 5 25	6 37	11 33	1	5 35	6 27	11 12

15. 2d Sunday after Easter John 10. 13h. 14m. Day's Length 12h. 54m.

13	Su	☽ ♃ D.	☾ 5 24	6 38	morn	1	5 34	6 28	morn
14	M	Lincoln assassinated, 1865	☾ 5 22	6 39	0 26	0	5 32	6 29	0 7
15	Tu	☽ 15th. Johnson in au. '65	☽ 5 21	6 40	1 14	0	5 31	6 29	0 57
16	W	☽ Thiers born, 1797.	☽ 5 19	6 41	1 55	ft	5 30	6 30	1 42
17	Th	☽ Bat. of Culloden, 1746.	☽ 5 18	6 42	2 30	0	5 29	6 31	2 21
18	Fr	☽ ♃ C.	☽ 5 16	6 43	3 1	0	5 28	6 32	2 56
19	Sa	Beaconsfield died, 1881.	☽ 5 15	6 44	3 30	1	5 26	6 32	3 29

16. 3d Sunday after Easter. John 16. 13h. 32m. Day's Length, 13h. 8m.

20	Su	☽ Bulwer-Clayton tr'y, 1850	☽ 5 13	6 45	4 4	1	5 25	6 33	4 6
21	M	☽ Rev. Charles Beecher d. '00	☽ 5 12	6 46	4 32	1	5 24	6 34	4 39
22	Tu	☽ 22d. Cortez in Mexico.	☽ 5 10	6 47	rises	1	5 23	6 35	rises
23	W	☽ ♂ ♃ ♂. St. George.	☽ 5 9	6 48	7 54	2	5 22	6 35	7 37
24	Th	☽ ♀ in ♃.	☽ 5 8	6 49	8 50	2	5 21	6 36	8 31
25	Fr	☽ St. Mark.	☽ 5 6	6 50	9 43	2	5 20	6 36	9 23
26	Sa	☽ ♃ C. ☾ in apogee.	☽ 5 5	6 51	10 32	2	5 19	6 37	10 12

17. 4th Sunday after Easter. John 16. 13h. 49m. Day's Length, 13h. 20m.

27	Su	☽ Emmerson died, 1882	☽ 5 3	6 52	11 17	2	5 18	6 38	10 58
28	M	☽ ♃ ☽ superior.	☽ 5 2	6 53	11 58	2	5 17	6 39	11 40
29	Tu	☽ ♂ ♃ C.	☽ 5 1	6 54	morn	3	5 16	6 40	morn
30	W	☽ 30th. ♀ in ♃.	☽ 4 59	6 55	0 36	3	5 15	6 41	0 21

FREE HOMESTEADS ON THE LINE OF THE KANSAS CITY SOUTHERN RAILWAY

IN MISSOURI.

The lands nearest the line of the Kansas City Southern Railway are in charge of the United States Government Land Office at Springfield, Mo., of which Mr. G. A. Raney, Springfield, Mo., is receiver. The lands within this district comprise 244,217 acres and are located in the counties of Barry, Dallas, Laclede, Ozark, Stone, Texas, Wright, Christian, Douglas, McDonald, Pulaski, Taney and Webster. Most of the lands are remote from railway transportation. McDonald county is traversed by the Kansas City Southern Railway and has about 10,000 acres of government land still open for settlement or open to purchase.

Missouri is the only state containing government lands which are subject to cash entry. All of these lands can be purchased at \$1.25 per acre, except such as were embraced in homestead entries and reverted to the government, these can only be secured by homestead entries. One person can acquire title to only 320 acres of government land. Homestead entries can only be made for 160 acres, but purchase may be made of an additional 160 acres.

The lands still vacant are the following:

Township 23, Range 34, W. Sections 22, 24, and 25.....	400 acres
Township 23, Range 33, W. Sections 4, 5, and 18.....	160 acres
Township 21, Range 33, W. Sections 8, 12, 18, 28.....	200 acres
Township 23, Range 32, W. Section 36 ..	80 acres
Township 22, Range 32, W. Section 4, 10, 20, 36	440 acres
Township 21, Range, 32, W. Sections 1, 6, 22, 28, 34, 36..	840 acres
Township 22, Range 31, W. Sections 2, 6, 8, 10, 12, 18; 20, 24, 26, 28, 30, 32, 36	2,800 acres
Township 21, Range 31, Sections 2, 4, 6, 24, 26, 30, 32 ..	2,360 acres
Township 23, Range 30, Section 32,	240 acres
Township 22, Range 30, Section 2, 6, 12, 14, 20, 30, 34,	1,000 acres

Township 21, Range 30, Sections 6, 8, 20, 30, 32, 36.....	1,040 acres
Township 23, Range 29, Sections 6, 18, 22, 30, 32.....	520 acres
Township 21, Range 29, W. Sections 4, 8, 22, 28	400 acres

IN ARKANSAS.

Some of the lands in charge of the U. S. land office at Harrison, Ark., Mr. F. S. Baker, receiver, are situated in counties traversed by or very convenient to the Kansas City Southern Railway. Within this district are located 1,149,853 acres, situate in Johnson, Baxter, Boone, Carroll, Franklin, Fulton, Independence, Izard, Madison, Marion, Newton, Searcy, Stone, Van Buren, Washington and Crawford counties. The railway traverses Benton County, Ark., in which there are open for settlement 40,020 acres, and is within easy reach of Crawford County, with 800 acres, and Washington County with 28,270 acres, subject to settlement under the United States Homestead Laws. Much of the land in this district is hilly but very fertile, and much of it is remote from railway transportation.

In the U. S. Land District of Camden, Ark., Mr. E. A. Shicker, receiver, there are 784,374 acres still open for settlement. These lands are situated in Ashley, Calhoun, Cleveland, Dallas, Garland, Hot Springs, Lafayette, Miller, Nevada, Pike, Saline, Sevier, Bradley, Clark, Columbia, Drew, Hempstead, Howard, Little River, Montgomery, Ouachita, Polk, Scott and Union counties, some quite distant from railway transportation and others quite convenient thereto. The vacant lands in the counties on or near the Kansas City Southern Railway are the following:

Polk County—Range 32, township 1, 9,304 acres; township 2, 4,715 acres; township 3, 204 acres; township 4, 80 acres; township 5, 4,134 acres; township 6, 5,370 acres. Range 31, township 1, 13,375 acres; township 2, 1,426 acres; township 3, 4,233 acres; township 4, 3,587 acres; township 5, 3,500 acres; township 6, 1,091 acres. Range 30, township 1, 7,438 acres;
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township 2, 122 acres; township 3, 15,987 acres; township 4, 17,936 acres.

Sevier County—Range 32, township 7, 5,149 acres; township 8, 639 acres; township 9, 120 acres; township 10, 80 acres. Range 31, township 7, 2,273 acres; township 8, 641 acres; township 9, 247 acres; township 10, 231 acres. Range 30, township 7, 6,976 acres; township 8, 1,316 acres; township 9, 520 acres; township 10, 120 acres.

Howard County—Range 30, township 5, 14,920 acres; township 6, 7,038 acres; township 7, 6,976 acres; township 8, 1,316 acres. Range 29, township 5, 9,455 acres; township 6, 6,308 acres; township 7, 12,045 acres; township 8, 723 acres.

Little River County—Range 31, township 11, 127 acres. Range 30, township 11, 922 acres; township 12, 160 acres.

Miller County—Range 28, township 14, 40 acres; township 16, 320 acres; township 17, 79 acres; township 18, 1,920 acres; township 19, 40 acres; township 20, 120 acres. Range 27, township 14, 251 acres; township 15, 40 acres; township 16, 40 acres; township 17, 210 acres; township 18, 40 acres; township 20, 70 acres. Range 26, township 14, 130 acres; township 16, 40 acres; township 17, 200 acres; township 18, 40 acres; township 20, 438 acres.

Among the counties within twenty to thirty miles from the railroad having free homestead lands are Hempstead County with 2,450 acres; Montgomery County with 261,658 acres; Pike County with 75,688 acres and Lafayette County with 6,767 acres.

The greater proportion of these lands are fertile, and as new lines of communication are opened up, will prove very valuable. Every citizen of the United States, who is the head of the family or 21 years of age, is entitled to one entry of 160 acres under the homestead act. The leading provisions of such act are as follows:

A person desiring to enter a tract of land upon which he has not established a residence nor made improvements, must appear personally at the district land office and make his application before the register and receiver, after having seen the land.

He must then establish actual bona fide residence (in a house) upon the

land within six months from date of entry, and must reside upon it continuously for five years.

The period of actual inhabitancy, improvement and cultivation required under the homestead law is five years.

In case of the death of a homestead settler, before making proof, the widow succeeds to the homestead right, but she must continue to cultivate the land until final proof is made and accepted. In case of the death of both father and mother, the right and fee inure to the minor children, if any.

A homestead right cannot be devised away from the widow and minor children.

GOVERNMENT LANDS IN LOUISIANA.

The unappropriated and unreserved acreage of public lands in Louisiana on July 1, 1900, amounted to 442,224 acres and is situated in most of the Parishes of Louisiana, excepting only ten Parishes in which there is no public land. The following mentioned lands are open to settlement in the

Natchitoches Land District:

Bossier Parish, 19,630 acres; Caddo Parish, 19,219 acres; De Soto Parish, 10,866 acres; Sabine Parish, 51,139 acres; Vernon Parish, 13,410 acres.

The lands in this district consist in the main of sandy and clay soils, changing into heavier black soils near the water courses. Most of the country is now or has been covered with fine pine timber.

New Orleans Land District.

Calcasien Parish, 7,556 acres; Cameron Parish, 341 acres.

These Parishes are on and near the Gulf of Mexico and consist in the main of pine woods and fertile prairie lands suited excellently for growing rice and raising live stock. Some of the land in Cameron Parish is sea marsh to a limited extent.

TEXAS STATE SCHOOL AND ASYLUM LANDS.

When the Republic of Texas became a state in the Union, all the lands within the state were retained and remained property of the state. The U. S. government from time to time secured small holdings for its forts, but otherwise gained no title to any lands. A very large part of the land was by the state donated to its state



MOON'S PHASES.

	BOSTON	NEW YORK	CHICAGO
N.M.	7 5 45 A.	7 5 45 A.	7 4 45 A.
F.Q.	14 8 40 M.	14 8 40 M.	14 7 40 M.
F.M.	22 5 46 M.	22 5 46 M.	23 4 46 M.
L.Q.	30 7 0 M.	30 7 0 M.	30 6 0 M.

LATITUDE

Of New York City, N. England, N. Jersey, Conn., Pa., Ohio, Ind., Ill., Neb. and N. Cal.

LATITUDE

Of Charleston, N. Car., Miss., Ga., Ala., Arkansas, New Mexico and S. Cal.

HISTORICAL EVENTS.

D. M.	D. W.	EVENT
1	Th	♄ ♃ ♄. SS. Philip & James
2	Fr	T. J. Jackson woun'd, '63.
3	Sa	Perry's victory, 1813.

MOON'S SIGNS.

Sun rises.	Sun sets.	Moon rises.
H. M.	H. M.	H. M.
4 58	6 56	1 9
4 56	6 57	1 42
4 55	6 58	2 12

SUN EAST.

Sun rises.	Sun sets.	Moon rises.
H. M.	H. M.	H. M.
5 14	6 41	0 58
5 13	6 42	1 33
5 12	6 42	2 8

18. Rogation Sunday. John 16. 14h. 5m. Day's Length, 13h. 32m.

4	Su	♄ ♀ ♄.	♍	4 54	6 59	2 47	3	5 11	6 43	2 47
5	M	♄ ♀ in perihelion.	♋	4 53	7 0	3 21	3	5 10	6 44	3 26
6	Tu	Battle of Wilderness, '63.	♋	4 52	7 2	3 56	3	5 9	6 45	4 5
7	W	♄ ♀ 7th. ♄ ♀ ♄. ♀ ♃ ♄.	♍	4 51	7 3	4 37	4	5 8	6 45	4 51
8	Th	♄ ♀ ♄ in perigee. Asc'n	♍	4 50	7 4	sets	4	5 7	6 46	sets
9	Fr	Stonewall Jackson d., '63.	♌	4 49	7 5	9 18	4	5 6	6 47	8 57
10	Sa	♄ ♀ ♄.	♌	4 47	7 6	10 17	4	5 5	6 47	9 57

19. Sunday after Ascension. John 15-16. 14h. 21m. Day's Length, 13h. 44m.

11	Su	Herschel died, 1871.	♀	4 46	7 7	11 9	4	5 4	6 48	10 51
12	M	Bat. Spotsylv'nia C.H., '64	♀	4 45	7 8	11 54	4	5 4	6 49	11 39
13	Tu	Vienna taken, 1809.	♁	4 44	7 8	morn	4	5 3	6 50	morn
14	W	♄ ♀ 14th. Arctic lost, 1854.	♁	4 43	7 9	0 32	4	5 2	6 50	0 21
15	Th	♄ ♀ gr. hel. lat. N.	♌	4 42	7 10	1 5	4	5 1	6 51	0 58
16	Fr	Mrs. Hemans died, 1835.	♌	4 41	7 11	1 34	4	5 1	6 52	1 32
17	Sa	Napoleon Emperor, 1804.	♌	4 41	7 12	2 6	4	5 0	6 53	2 8

20. Whit Sunday. John 14. 14h. 33m. Day's Length 13h. 54m

18	Su	Kearsage sks. Alabama '64	♌	4 40	7 13	2 35	4	4 59	6 53	2 41
19	M	Hawthorn died, 1864.	♌	4 39	7 14	3 4	4	4 59	6 54	3 13
20	Tu	Lafayette died, 1834.	♌	4 38	7 15	3 35	4	4 58	6 55	3 48
21	W	Ember Day.	♌	4 37	7 15	4 8	4	4 58	6 55	4 24
22	Th	♄ ♀ 22d. Pope died, 1688.	♌	4 37	7 16	rises	4	4 57	6 56	rises
23	Fr	♄ ♀ in apogee. Em. Day	♌	4 36	7 17	8 29	4	4 56	6 57	8 9
24	Sa	♄ ♀ in ♄ Ember Day.	♌	4 35	7 18	9 16	3	4 56	6 57	8 56

21. Trinity Sunday. John 3. 14h. 44m. Day's Length, 14h. 3m.

25	Su	Dr. Paley died, 1805.	♄	4 35	7 19	9 58	3	4 55	6 58	9 39
26	M	Calvin died, 1564	♄	4 34	7 20	10 37	3	4 55	6 59	10 20
27	Tu	♄ ♀ ♄.	♌	4 34	7 21	11 11	3	4 55	6 59	10 57
28	W	♄ ♀ ♄. ♀ in apnelion.	♌	4 33	7 21	11 42	3	4 54	7 0	11 33
29	Th	♄ ♀ ♄. Corpus Christi.	♌	4 33	7 22	morn	3	4 54	7 1	morn
30	Fr	♄ ♀ 30th. Decoration Day.	♌	4 32	7 23	0 12	3	4 54	7 1	0 6
31	Sa	♄ ♀ Cr. Charleston lost, '99.	♌	4 32	7 24	0 42	3	4 53	7 2	0 41



MOON'S PHASES.

	BOSTON		NEW YORK		CHICAGO	
	D.	H. M.	D.	H. M.	D.	H. M.
N.M.	6	1 11 M.	6	1 11 M.	6	0 11 M.
F.Q.	12	6 54 A.	12	6 54 A.	12	5 54 A.
F.M.	20	9 17 A.	20	9 17 A.	20	8 17 A.
L.Q.	28	4 52 A.	28	4 52 A.	28	3 52 A.

MOON'S SIGNS.

LATITUDE

Of New York City, N. England, N. Jersey, Conn., Pa., Ohio, Ind., Ill., Neb. and N. Cal.

LATITUDE

Of Charleston, N. Car., Miss., Ga., Ala., Arkansas, New Mexico and S. Cal.

Sun rises.	Sun sets.	Moon rises.
H. M.	H. M.	H. M.

SUN EAST.

Sun rises.	Sun sets.	Moon rises.
H. M.	H. M.	H. M.

HISTORICAL EVENTS.

22 1st Sunday after Trinity. Luke 16. 14h. 54m. Day's Length, 14h. 9m.

1 Su	Gen. Shields died, 1879.	☾	4 31	7 25	1 18	3	4 53	7 2	1 20
2 M	Treaty of Paris, 1814.	☾	4 31	7 25	1 51	2	4 53	7 3	1 57
3 Tu	♂ ♀ ☾.	☿	4 30	7 26	2 28	2	4 52	7 3	2 39
4 W	♂ ☿ ☾. [died, 1900	☿	4 30	7 27	3 11	3	4 52	7 4	3 26
5 Th	Rev. Dr. Richard S. Storrs	♄	4 29	7 27	4 0	2	4 52	7 4	4 19
6 Fr	♁ 6th. ♃ sta. ☾ in perigee	♄	4 29	7 28	sets	2	4 52	7 5	sets
7 Sa	♁ ♂ ♀ ☾. ☿ in ☿.	♁	4 29	7 28	8 57	2	4 52	7 5	8 37

23. 2d Sunday after Trinity. Luke 14. 15h. 1m. Day's Length, 14h. 15m.

8 Su	Bat. Port Republic, 1862.	♁	4 28	7 29	9 46	1	4 51	7 6	9 30
9 M	Dickens died, 1870.	♁	4 28	7 29	10 29	1	4 51	7 6	10 16
10 Tu	♂ ☿ ☾. ♀ stationary.	♁	4 28	7 30	11 5	1	4 51	7 7	10 57
11 W	Mutiny in India, 1857.	♁	4 28	7 30	11 37	1	4 51	7 7	11 33
12 Th	♁ 12th. Belle Boyd d., '00	♁	4 28	7 31	morn	1	4 51	7 8	morn
13 Fr	Gen. Scott born, 1786.	♁	4 28	7 31	0 10	0	4 51	7 8	0 10
14 Sa	Benedict Arnold d., 1801.	♁	4 28	7 32	0 40	0	4 51	7 8	0 44

24. 3d Sunday after Trinity. Luke 15. 15h. 4m. Day's Length, 14h. 8m.

15 Su	Arkansas admitted, 1836.	♁	4 28	7 32	1 18	sl	4 51	7 9	1 17
16 M	Iron plows first used, 1797	♁	4 28	7 32	1 38	0	4 51	7 9	1 49
17 Tu	♄ in aphelion.	♁	4 28	7 33	2 10	0	4 51	7 10	2 26
18 W	Battle of Bull Run, 1861.	♁	4 28	7 33	2 47	1	4 51	7 10	3 4
19 Th	☾ in apogee.	♁	4 28	7 33	3 27	1	4 51	7 10	3 46
20 Fr	♁ 20th. ♀ gr. hel. lat. S.	♁	4 28	7 34	rises	1	4 52	7 11	rises
21 Sa	♁ Count Muravieff d., '00	♁	4 29	7 34	7 57	1	4 52	7 11	7 38

25. 4th Sunday after Trinity. Luke 6. 15h 5m. Day's Length, 14h. 19m.

22 Su	☾ enters ♁. Sum. begins.	♁	4 29	7 34	8 38	2	4 52	7 11	8 21
23 M	♁ ♀ ☾. ♂ ☿ ☾ Inferior.	♁	4 29	7 35	9 13	2	4 52	7 11	8 59
24 Tu	♁ ☿ ☾. St. John Baptist.	♁	4 29	7 35	9 46	2	4 53	7 11	9 35
25 W	Custer defeated, 1878.	♁	4 30	7 35	10 16	2	4 53	7 11	10, 8
26 Th	Seven days' fight beg., '62.	♁	4 30	7 35	10 45	2	4 53	7 11	10 42
27 Fr	♁ Bat. of Pultowa, 1709.	♁	4 30	7 35	11 17	3	4 53	7 12	11 19
28 Sa	♁ 28th. Plague locusts, '73	☾	4 31	7 35	11 50	3	4 54	7 12	11 55

26. 5th Sunday after Trinity. Luke 5. 15h. 4m. Day's Length, 14h. 18m.

29 Su	St. Peter and St. Paul.	☾	4 31	7 35	morn	3	4 54	7 12	morn
30 M	Guiteau hung, 1882.	☾	4 32	7 35	0 23	3	4 54	7 12	0 33

school system, its universities and various other institutions, such as the Deaf and Dumb Asylum, Blind Asylum, etc. Nearly all these lands are situated in the extreme western part of the state. The few unsold tracts still remaining in eastern Texas are listed below.

They are generally sold at very low prices and very long credit terms unless they are covered with choice merchantable timber in which cases the state demands cash payment.

State School Lands in Cass County, Texas.

D. & S. E. Ry. Co.'s Surveys, 640 acres; B. B. B. & C. R. R. Co.'s surveys, 160 acres; S. F. Iron Works surveys, 320 acres; W. H. H. Harvey surveys, 172 2-5 acres. Total, 1,292 2-5 acres.

Information concerning these lands can be had by addressing J. G. King, County Clerk, Linden, Cass County, Texas

State School Lands in Newton County, Texas.

The unsold school and asylum lands in Newton County amount to 8,864 acres. The number of acres of such land, upon which the timber has been sold, the state still holding the land, is 62,960 acres. The time allowed by virtue of the leases, for cutting this timber varies from five to seven years, and they do not all expire at the same dates. Mr. John M. Harger, County

Clerk, Newton, Newton County, Texas, can give more information on the subject.

State School Lands in Bowie County, Texas.

Most of the state school lands in this county have been taken up. The lands still in market are mostly fractional sections. Mr. Frank A. King, County Clerk, Boston, Bowie County, Texas, can give information concerning the same.

State School Lands in Orange County, Texas.

Cert. No. 556, T. & N. O. R. R. surveys, 649 acres, value \$5.00 per acre, cash; cert. No. 689, Lizzie Higginbotham surveys (part in conflict), value, \$1.50 per acre, 40 years; cert. No. 464, R. M. Sanders surveys, timbered, value, \$2.00 for land, \$5.00 for timber; cert. No. 1,489, Mary Hall surveys, W $\frac{1}{2}$, 667 acres, water, grass, \$1.00 per acre, 40 years; cert. No. 3,694, Sarah Luce surveys, E $\frac{1}{2}$, 640 acres, water, grass, \$1.00 per acre, 40 years; cert. No. 341, Jno. S. Norris, 1,280 acres, water, grass, \$1.00 per acre, 40 years.

Leased 200 acres to Geo. W. Adcock five years from December 19th, 1897.

Mr. N. Burton, County Clerk, Orange County, Texas, can advise further.

There are no unsold state school lands in Jefferson County, Texas.



Cooks and Kitchens.

HYGIENIC PUDDING.—(Mrs. H. C. Jones.) One cup of sour milk or cream, one half cup molasses, two cups sifted graham flour, one teaspoon salt, one scant teaspoonful of soda, one cup of seeded raisins. Steam two and one half hours, sauce for same: Grate rind of one fresh lemon into one pint of hot water; add one cup of sugar and piece of butter the size of a walnut. Thicken with one tablespoonful of corn starch. Boil fifteen minutes.

APPLE FRITTERS.—(Mrs. Rorer.) Three tart apples, two eggs, one cup milk, one teaspoonful of salt, about one and one half cups of flour; one teaspoonful of baking powder. Pare and core the apples; cut into rings; dust with sugar and cinnamon. Beat eggs without separating until light, add milk, salt and sufficient flour to make a soft batter; beat well and add the baking powder; dip each ring in batter and fry in hot grease. Dust with powdered sugar and serve hot.

A QUICK DESSERT.—The following dessert is easily made and is so light and delicate that it fairly melts in the mouth: Separate four eggs, beat the yolks until creamy, then add three tablespoonfuls of fine granulated sugar and beat the same length of time again. Next mix three even tablespoonfuls of flour with two of milk, add a quarter of a teaspoonful of salt, stir in the yolks and strain. Grease a baking dish, see that the oven is evenly hot (brisk, but not scorching), then add the juice and carefully grated rind of a lemon; beat briskly into the whole the stiffened whites, dust the top thickly with powdered sugar and bake fifteen minutes. Eat with hard sauce or fruit juice, thickened slightly.

GRAPE WATER ICE.—One quart of water, one pint of grape juice, one pound of sugar. Boil sugar and water five minutes and add grape juice when cool. Freeze as other ices.

MEATS AND SOUPS.

BROILED BEEFSTEAK.—Place the steak on a well greased gridiron. Turn often so that the outside may be seared at once, when done, which should be in 5 or 10 minutes, lay on hot platter, season with salt and pepper, some butter, cover to keep warm and serve at once.

TO BROIL STEAK WITHOUT GRIDIRON.—Put frying pan or skillet over a hot fire and sprinkle salt over bottom; when thoroughly hot, put on the steak and cook three minutes without turning; then turn and cook three minutes on the other side. Place on a hot platter and sprinkle with salt, adding generous lumps of butter; then place in hot oven for three minutes. Serve immediately. Salt in the pan prevents sticking.

BEEF LOAF.—Three pounds of lean beef of the round, chopped or ground fine; add eight soda crackers, rolled fine, four eggs, one cup of milk, half cup of butter, teaspoonful of onion chopped very fine; add pepper and salt. Form into a loaf and place in baking pan with a little hot water; bake two hours, basting often.

CHICKEN BAKED WITH RICE.—Cut the chicken in small pieces and stew until tender. Line the bottom of a deep dish with slices of bacon, place the stewed chicken on top and over it sprinkle two onions chopped. Fill the dish with boiled rice and pour over it a cupful of the stock in which the chicken was stewed. Cover and bake for an hour.



MOON'S PHASES.

	BOSTON		NEW YORK		CHICAGO	
	D. H. M.	D. H. M.	D. H. M.	D. H. M.	D. H. M.	D. H. M.
N.M.	5 7 59 M.	5 7 59 M.	5 6 59 M.			
F.Q.	12 7 47 M.	12 7 47 M.	13 6 47 M.			
F.M.	20 11 45 M.	20 11 45 M.	20 10 45 M.			
L.Q.	28 0 15 M.	28 0 15 M.	27 11 15 A.			

LATITUDE

Of New York City, N. England, N. Jersey, Conn., Pa., Ohio, Ind., Ill., Neb. and N. Cal.

LATITUDE

Of Charleston, N. Car., Miss., Ga., Ala., Arkansas, New Mexico and S. Cal.

MOON'S SIGNS.

Sun rises. H. M. sets. H. M. Moon rises. H. M.

SUN SLOW.

Sun rises. H. M. sets. H. M. Moon rises. H. M.

HISTORICAL EVENTS.

D. M.	D. W.	HISTORICAL EVENTS.	MOON'S SIGNS.	Sun rises. H. M.	Sun sets. H. M.	Moon rises. H. M.	SUN SLOW.	Sun rises. H. M.	Sun sets. H. M.	Moon rises. H. M.
1	Tu	Perry's expd. sailed, '93.	♄	4 32	7 35	1 2	3	4 55	7 12	1 16
2	W	♄ ♀ C. Robt. Peel d., 1850	♄	4 33	7 34	1 47	4	4 55	7 12	2 4
3	Th	♄ ♂ C. [perigee.]	♄	4 33	7 34	2 40	4	4 56	7 12	3 0
4	Fr	♄ ⊕ in aphelion. ♄ in	♄	4 34	7 34	3 38	4	4 56	7 12	3 59
5	Sa	♄ 5th. ♄ stationary.	♄	4 34	7 34	sets	4	4 57	7 11	sets

27. 6th Sunday after Trinity. Matt. 5. 14h. 58m. Day's Length, 14h. 14m.

6	Su	Labor riot Homestead '92.	♄	4 35	7 33	8 21	4	4 57	7 11	8 6
7	M	Paul Hayne died, 1886.	♄	4 36	7 33	9 1	5	4 58	7 11	8 52
8	Tu	♄ gr. hel. lat. S.	♄	4 36	7 33	9 36	5	4 58	7 11	9 29
9	W	Braddock's defeat, 1755.	♄	4 37	7 32	10 7	5	4 58	7 11	10 6
10	Th	Wyoming admitted, 1890.	♄	4 38	7 32	10 43	5	4 59	7 10	10 45
11	Fr	J. Q. Adams b., 1767.	♄	4 38	7 32	11 11	5	4 59	7 10	11 18
12	Sa	♄ 12th. C.W. Field d., '92	♄	4 39	7 31	11 41	5	5 0	7 10	11 51

28. 7th Sunday after Trinity. Mark 8. 14h. 52m. Day's Length, 14h. 8m.

13	Su	Draft riots, 1863.	♄	4 39	7 31	morn	5	5 1	7 9	morn
14	M	Krupp died, 1887.	♄	4 40	7 30	0 13	6	5 1	7 9	0 27
15	Tu	♄ gr. elong. W. 20° 35'.	♄	4 40	7 30	0 47	6	5 2	7 9	1 4
16	W	♄ in apogee.	♄	4 41	7 29	1 26	6	5 2	7 8	1 45
17	Th	♄ ♀ C. ♂ ♂ C.	♄	4 42	7 29	2 9	6	5 3	7 8	2 29
18	Fr	Battle Bull Run, 1861.	♄	4 42	7 28	2 56	6	5 4	7 8	3 17
19	Sa	French inv. Germany, '70.	♄	4 43	7 27	3 48	6	5 4	7 7	4 7

29. 8th Sunday after Trinity. Matt. 7. 14h. 43m. Day's Length, 14h. 2m.

20	Su	♄ 20th. ♂ ♀ C.	♄	4 44	7 27	rises	6	5 5	7 7	rises
21	M	♄ Robt. Burns d., 1796.	♄	4 45	7 26	7 49	6	5 6	7 6	7 37
22	Tu	♄ ♀ C.	♄	4 45	7 25	8 21	6	5 6	7 6	8 12
23	W	♄ ♂ ♀ ♀.	♄	4 46	7 24	8 49	6	5 7	7 5	8 45
24	Th	Van Buren died, 1862.	♄	4 47	7 23	9 19	6	5 8	7 4	9 19
25	Fr	St. James.	♄	4 48	7 22	9 54	6	5 8	7 4	9 57
26	Sa	Robert Fulton born, 1765	♄	4 49	7 21	10 26	6	5 9	7 3	10 33

30. 9th Sunday after Trinity. Luke 16. 14h. 29m. Day's Length, 13h. 52m.

27	Su	♄ ♀ ♀. ♄ in ♄. [1883.	♄	4 50	7 19	11 1	6	5 10	7 2	11 13
28	M	♄ 28th. E'th' q'ke Ischia	♄	4 51	7 18	11 42	6	5 10	7 2	11 58
29	Tu	♄ Wilberforce d., 1833.	♄	4 52	7 18	morn	6	5 11	7 1	morn
30	W	Chambersburg burned, '64	♄	4 54	7 17	0 30	6	5 11	7 0	0 48
31	Th	♄ in perihelion.	♄	4 55	7 16	1 23	6	5 12	7 0	1 44



MOON'S PHASES.

	BOSTON	NEW YORK	CHICAGO
	D. H. M.	D. H. M.	D. H. M.
N.M.	3 8 17 A.	3 8 17 A.	3 8 17 A.
F.Q.	10 11 24 A.	10 11 24 A.	10 10 24 A.
F.M.	19 1 3 M.	19 1 3 M.	19 0 3 M.
L.Q.	26 6 4 M.	26 6 4 M.	26 5 4 M.

MOON'S SIGNS.	LATITUDE		
	Sun rises.	Sun sets.	Moon rises.
	H. M.	H. M.	H. M.

Of New York City, N. England, N. Jersey, Conn., Pa., Ohio, Ind., Ill., Neb. and N. Cal.

SUN SLOW.	LATITUDE		
	Sun rises.	Sun sets.	Moon rises.
	H. M.	H. M.	H. M.

Of Charleston, N. Car., Miss., Ga., Ala., Arkansas, New Mexico and S. Cal.

D. M.	D. W.	HISTORICAL EVENTS.
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1	Fr	♄ ♀ ☾. ☾ in perigee.
2	Sa	Napoleon Consul, 1802.

II	4 56	7 15	2 25	6	5 13	6 59	2 46
II	4 57	7 14	3 33	6	5 14	6 58	3 51

M.	6	5 13	6 59	2 46
M.	6	5 14	6 58	3 51

31. 10th Sunday after Trinity. Luke 19. 14h. 15m. Day's Length, 13h. 43 m.

3	Su	♁ 3d. ♄ ♀ ☾.	♁	4 58	7 13	4 43	6	5 14	6 57	4 57
4	M	♁ S. J. Tilden died, 1886.	♁	4 59	7 12	sets	6	5 15	6 56	sets
5	Tu	♄ ♃ ☉.	♁	5 0	7 11	8 5	6	5 16	6 55	8 2
6	W	Tennyson born, 1809.	♁	5 1	7 9	8 41	8	5 16	6 55	8 41
7	Th	Queen Caroline died, 1821.	♁	5 2	7 8	9 12	6	5 17	6 54	9 16
8	Fr	Napoleon banished, 1815.	♁	5 3	7 7	9 42	6	5 18	6 53	9 51
9	Sa	Adoniram Judson b., 1788.	♁	5 4	7 5	10 13	5	5 18	6 52	10 25

32. 11th Sunday after Trinity. Luke 18. 14h. 0m. Day's Length, 13h. 32m.

10	Su	♁ 10th. Mo. adm'ted, '21.	♁	5 5	7 4	10 47	5	5 19	6 51	11 2
11	M	♄ ♀ ☉ Superior.	♁	5 6	7 3	11 25	5	5 20	6 50	11 43
12	Tu	Gallatin died, 1849.	♁	5 7	7 1	morn	5	5 21	6 49	morn
13	W	♄ ♀ ☾. ☾ in apogee.	♁	5 8	7 0	0 6	5	5 21	6 48	0 25
14	Th	Farragut died, 1870.	♁	5 9	6 59	0 52	5	5 22	6 47	1 12
15	Fr	♀ in ♁.	♁	5 10	6 58	1 42	4	5 23	6 46	2 1
16	Sa	♄ ♃ ☾.	♁	5 11	6 56	2 35	4	5 23	6 45	2 53

33. 12th Sunday after Trinity. Mark 7. 13h. 42m. Day's Length, 13h. 19m.

17	Su	Riot at Freetown, La., '88.	♁	5 12	6 54	3 32	4	5 24	6 43	3 48
18	M	♀ ♃ ☾.	♁	5 13	6 53	4 33	4	5 25	6 42	4 44
19	Tu	19th. J. S. Black d., '83	♁	5 14	6 52	rises	4	5 25	6 41	rises
20	W	♁ Atlantic sunk, 1852.	♁	5 15	6 51	7 22	3	5 26	6 40	7 21
21	Th	Lafayette taken, 1792.	♁	5 16	6 49	7 58	3	5 26	6 39	8 0
22	Fr	Bat. Catlett's Station, '62.	♁	5 17	6 47	8 30	3	5 27	6 38	8 37
23	Sa	Bat. Rappahannock, 1862.	♁	5 18	6 46	9 4	3	5 28	6 37	9 14

34. 13th Sunday after Trinity. Luke 10. 13h. 25m. Day's Length, 13h. 6m.

24	Su	St. Bartholomew.	♁	5 19	6 44	9 42	2	5 29	6 35	9 57
25	M	Herschel died, 1822.	♁	5 20	6 43	10 27	2	5 29	6 34	10 44
26	Tu	26th. Bat. Dresden, '13	♁	5 21	6 41	11 17	2	5 30	6 33	11 37
27	W	♄ ☽ stationary.	♁	5 22	6 40	morn	2	5 31	6 32	morn
28	Th	♄ ♀ ☾.	♁	5 23	6 39	0 13	1	5 31	6 31	0 37
29	Fr	☾ in perigee.	♁	5 24	6 37	1 18	1	5 32	6 29	1 34
30	Sa	♄ ♀ ☾.	♁	5 25	6 35	2 27	1	5 33	6 28	2 41

35. 14th Sunday after Trinity. Luke 17. 13h. 7m. Day's Length, 12h. 54m.

31	Su	♄ ♀ ☾. Char'l'n earth, '86.	♁	5 26	6 33	3 33	0	5 33	6 27	3 46
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Cooks and Kitchens.

TO CHOOSE A TURKEY.—A turkey cock if young has smooth black legs, with a short spur, the eyes full and bright, and the feet limber and moist. Observe that the spurs are not cut or scraped, an operation often performed to deceive the unwary. A hen turkey is known to be fresh by the same rules; if old the legs will be red and rough.

OYSTER PATTIES.—(Mrs. Rorer.) One half pint cream or milk, one half tablespoonful corn starch, one half tablespoonful of butter, salt and pepper to taste. Heat one dozen large oysters in their own liquor and drain; boil milk and add flour and butter rubbed smooth; stir until it boils and add oysters. Put two oysters in each pattie. For the patties take rich puff paste and have two sizes of biscuit cutters. Cut out with the larger and with the smaller cut about half way through and put in the oven and bake. Remove from the fire and with a sharp knife remove the inner circle which will be partly raw as the cut acts as a non-conductor of heat. Place these pieces in a hot oven where they will quickly brown. When done add the prepared oysters and serve at once.

CHICKEN SANDWICHES FOR PICNICS.—Mince the meat from a cold roast fowl, add a little ham, also minced; add the yolk of 4 hard boiled eggs, 1 tablespoonful of oil, a little mustard and vinegar, salt and pepper to taste; stir all well together, spread the mixtures between slices of thin bread and butter.

DELICIOUS CHICKEN PIE.—Take a pair of chickens, not too young, that have been carefully dressed; remove all the fat and skin and the tendons from the drum sticks. Place in a saucepan, cover with boiling water and allow them to simmer gently for about two hours, keeping them tightly covered during the entire time. Remove the chickens from the fire and add to the liquor in the sauce pan a pint of milk; thicken with two tablespoonsful of flour creamed with one of butter, season with a very little cayenne pepper, some onion juice and salt, and when thoroughly cooked and just before removing from the fire add the well beaten yolk of two eggs. Pour over the chicken, which should previously have been cut into pieces and placed in a deep earthenware pie dish. When both sauce and chicken are quite cold place over all a rich cover of good paste, making an incision in the center for the steam to escape: ornament prettily, brush over with the white of an egg and bake in a moderately hot oven. When the paste is cooked the pie will be done.

SOUPS.

BEEF SOUP.—One shin bone, one each of carrot, turnip, onion, tomato, celery, two potatoes, five quarts soft water, parsley, salt and pepper. Bone should be well cracked and put in cold water. Boil slowly two hours and then add salt and pepper. Boil another hour and add carrot, turnip and celery; cut small and 15 minutes later slice onion and potatoes. Twenty minutes after add tomato cut up and two tablespoons flour mixed with cold water and shredded parsley. Take the bones from the soup, cut up some of the meat and return to soup. Ten minutes later soup is ready for the table.

CELERY SOUP.—Take two small stalks of celery, outside pieces left from dinner will do; cut in fine pieces and place in sauce pan; pound fine with potato masher; add one quart of new milk; boil about fifteen minutes; take two tablespoonsfuls of flour and one of butter; mix thoroughly and add to the boiling milk and celery; add pepper and salt to taste. Remove from the fire and strain; serve hot with cubes of toasted bread, browned in butter.

Cooks and Kitchens.

POTATO SOUP.—Three good-sized potatoes, one pint milk, one teaspoonful chopped onion, one stalk celery, one teaspoon salt, half teaspoon celery salt, half saltspoon of white pepper, pinch of cayenne pepper, half teaspoon of flour, one tablespoonful of butter. Boil potatoes and mash; cook onion and celery with milk in double boiler; add to potatoes and rub through strainer. Put on to boil again. Mix butter and flour and add to boiling soup. Boil five minutes and serve very hot. One tablespoonful of chopped parsley improves it.

SPLIT PEA SOUP.—One cup of dried split peas, three pints of cold water, one tablespoonful each of butter and flour, one half teaspoonful of sugar, one teaspoonful of salt, one saltspoonful of white pepper. Soak peas over night, cook until soft, rub through a strainer and put on to boil again. Add either water, soup stock, milk or cream, rub one large tablespoonful of butter and one of flour together and add to the boiling soup. Add salt and pepper and simmer ten minutes. Serve hot with fried dice of bread.

RICE AND TOMATOES.—Boil a cupful of rice in sufficient hot water to cover it. When almost done add two cupfuls of stewed or canned tomatoes, teaspoonful of salt, half a teaspoonful of pepper, a large onion chopped fine and a half cupful of butter. Cook for five minutes and serve hot.

MISCELLANEOUS RECIPES.

CANNING FRUIT.—It is generally known that heating injures the flavor of fruit more or less. It has been demonstrated by experiment that good, sound, clean fruit, carefully packed in cans and covered with pure cold water left to stand until all the air has escaped, will keep a long time and lose none of its original flavor. The old method by the use of heat is however the safest, as the sealing is not always perfect.

BOSTON BAKED BEANS.—One quart of navy beans soaked over night. Next morning boil until they begin to wrinkle; just before taking from the fire add one half teaspoonful of soda; remove from the fire and drain; place in a bean jar and add a quarter pound of pickled pork, scored on top; add pinch of mustard, salt and pepper to taste and two tablespoonfuls of New Orleans molasses. Cover with hot water and bake in a slow oven all day. As water boils away, replenish from teakettle. When done each bean should be whole and reddish brown in color.

PREMIUM TOMATO CATSUP.—One gallon of scalded and peeled ripe tomatoes, or four cans of tomatoes; add one half cup of sugar, four tablespoonfuls of salt and a scant tablespoonful of black pepper; one red pepper pod; three tablespoonfuls of mustard; one half tablespoonful of allspice, one pint of good vinegar. Simmer slowly three or four hours. Strain and bottle.

Melted butter will not make a good cake.

The colder eggs are the quicker they will froth.

Mutton should be deep red and close-grained.

Nutmegs should be grated at the blossom-end first.

To make good pastry the ingredients must be very cold.

Lemons will keep for weeks if covered with cold water.

The best beef is moderately fat and the flesh of a bright red color.

Pork should be fine, close-grained and the rind smooth and thin.



MOON'S PHASES.

	BOSTON	NEW YORK	CHICAGO
N.M.	D. H. M. 2 0 19 M.	D. H. M. 2 0 19 M.	D. H. M. 1 11 19 A.
F.Q.	9 5 15 A.	9 5 15 A.	9 4 15 A.
F.M.	17 1 23 A.	17 1 23 A.	17 0 23 A.
L.Q.	24 11 31 M.	24 11 31 M.	24 10 31 M.

LATITUDE
Of New York City, N. England, N. Jersey, Conn., Pa., Ohio, Ind., Ill., Neb. and N. Cal.

LATITUDE
Of Charleston, N. Car., Miss., Ga., Ala., Arkansas, New Mexico and S. Cal.

D. M.	D. W.	HISTORICAL EVENTS.	MOON'S SIGNS.	MOON'S SIGNS.			SUN EAST.			
				Sun rises.	Sun sets.	Moon rises.	M.	Sun rises.	Sun sets.	Moon rises.
H.	M.	H.	M.	H.	M.	H.	M.	H.	M.	
1	M	Battle of Sedan, 1870.	♄	5 27	6 31	4 43	0	5 34	6 26	4 51
2	Tu	2d. Gt. fire Lond'n, 1666	♄	5 28	6 30	sets	0	5 35	6 24	sets
3	W	♄ ♃ C. ♃ in ♃.	♄	5 29	6 28	7 11	0	5 35	6 23	7 13
4	Th	Forest fires Michigan, '81.	♃	5 30	6 27	7 41	1	5 36	6 22	7 48
5	Fr	Senator Daniel born, 1842.	♃	5 31	6 25	8 12	1	5 36	6 20	8 22
6	Sa	Lafayette born, 1757.	♄	5 32	6 24	8 45	1	5 37	6 19	9 0

36. 15th Sunday after Trinity. Matt. 6. 12h. 49m. Day's Length, 12h 40m.

7	Su	Hamilton Fish died, 1893.	♄	5 33	6 22	9 22	2	5 38	6 18	9 39
8	M	Pat. Eutaw Springs, 1781.	♃	5 34	6 20	10 2	2	5 38	6 16	10 21
9	Tu	♃ ♃ C. ♃ in ♃.	♃	5 35	6 18	10 46	2	5 39	6 15	11 6
10	W	♃ in apogee.	♃	5 36	6 17	11 35	3	5 39	6 14	11 54
11	Th	Battle Brandywine, 1777.	♃	5 37	6 15	morn	3	5 40	6 12	morn
12	Fr	♃ ♃ C.	♃	5 38	6 14	0 26	3	5 41	6 11	0 44
13	Sa	♃ in aphelion.	♃	5 39	6 12	1 22	4	5 42	6 10	1 38

37. 16th Sunday after Trinity. Luke 7. 12h. 30m. Day's Length, 12h. 26m.

14	Su	♃ ♃ C.	♃	5 40	6 10	2 19	4	5 42	6 8	2 33
15	M	N. York city taken, 1776.	♃	5 41	6 9	3 21	5	5 43	6 7	3 31
16	Tu	Moscow burned, 1812.	♃	5 42	6 7	4 25	5	5 44	6 6	4 31
17	W	17th. ♀ in perihelion.	♃	5 43	6 5	rises	5	5 44	6 4	rises
18	Th	Jay Cooke & Co. failed	♃	5 44	6 4	6 31	6	5 45	6 3	6 36
19	Fr	Ember Day. [1873.]	♃	5 45	6 2	7 5	6	5 46	6 2	7 14
20	Sa	Ember Day.	♃	5 46	6 0	7 43	6	5 46	6 0	7 56

38. 17th Sunday after Trinity. Luke 14. 12h. 12m. Day's Length, 12h. 12m.

21	Su	St. Matthew.	♃	5 47	5 59	8 26	7	5 47	5 59	8 43
22	M	Mormonism founded, 1827	♃	5 48	5 57	9 16	7	5 48	5 58	9 35
23	Tu	♃ ent. ♄. Autumn begins.	♃	5 49	5 55	10 9	7	5 48	5 56	10 30
24	W	♃ 24th. ♃ gr. el. E. 26° 11'	♃	5 50	5 54	11 10	8	5 49	5 55	11 30
25	Th	♃ Philad'a taken, 1777.	♃	5 51	5 52	morn	8	5 49	5 54	morn
26	Fr	♃ stationary.	♃	5 52	5 50	0 14	8	5 50	5 52	0 31
27	Sa	♃ ♃ C.	♃	5 53	5 48	1 20	9	5 51	5 51	1 34

39. 18th Sunday after Trinity. Matt. 22. 11h. 53m. Day's Length, 11h. 59m.

28	Su	Pasteur died, 1895.	♃	5 54	5 47	2 28	9	5 51	5 50	2 38
29	M	Michaelmas.	♃	5 55	5 45	3 36	9	5 52	5 48	3 43
30	Tu	♃ ♃ C.	♃	5 56	5 43	4 44	10	5 53	5 47	4 45



MOON'S PHASES.				LATITUDE			LATITUDE							
BOSTON			NEW YORK			CHICAGO			Of New York City, N. England, N. Jersey, Conn. Pa., Ohio, Ind., Ill., Neb. and N. Cal.			Of Charleston, N. Car., Miss., Ga., Ala., Arkansas, New Mexico and S. Cal.		
N.M.	D. H. M.		D. H. M.	D. H. M.	D. H. M.	Sun rises.	Sun sets.	Moon rises.	Sun rises.	Sun sets.	Moon rises.	Sun rises.	Sun sets.	Moon rises.
M.	W.		M.	W.		H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	W	☾	1st. 2c. post. est. U.S. '83	☾	5 57	5 42	5 44	10	5 54	5 46	5 42			
2	Th		Maj. Andre hung, 1780	☾	5 58	5 40	sets	10	5 54	5 44	sets			
3	Fr	♂ ☽ ☾		☾	5 59	5 38	6 44	11	5 55	5 43	6 56			
4	Sa	☾	stationary.	☾	6 0	5 37	7 18	11	5 56	5 42	7 34			
40. 19th Sunday after Trinity. Matt. 9. 11h. 34m. Day's Length, 11h. 44m.														
5	Su		Chester A. Arthur b., 1830	☾	6 1	5 35	7 58	11	5 56	5 40	8 16			
6	M		Parnell died, 1891.	☾	6 2	5 33	8 41	12	5 57	5 39	9 0			
7	Tu	☾	stationary.	☾	6 3	5 32	9 26	12	5 58	5 38	9 46			
8	W	☾	in apogee.	☾	6 4	5 30	10 17	12	5 58	5 36	10 36			
9	Th	☾	9th. Lewis Cass b., 1782	☾	6 5	5 29	11 10	12	5 59	5 35	11 28			
10	Fr	☾	♀ gr. hel. lat. N.	☾	6 6	5 28	morn	13	6 0	5 34	morn			
11	Sa	♂ ☾ ☾		☾	6 7	5 26	0 7	13	6 1	5 33	0 22			
41. 20th Sunday after Trinity. Matt. 22. 11h. 16m. Day's Length, 11h. 31m.														
12	Su		Gen. R. E. Lee died, 1870.	☾	6 8	5 24	1 6	13	6 1	5 32	1 18			
13	M		Bat. Queenstown, 1812.	☾	6 9	5 22	2 7	14	6 2	5 30	2 16			
14	Tu		Bat. of Jena, 1806.	☾	6 11	5 21	3 13	14	6 3	5 29	3 16			
15	W	☾ ☽ ☾		☾	6 12	5 19	4 15	14	6 4	5 28	4 15			
16	Th		Kosciusko died, 1817.	☾	6 13	5 18	5 22	14	6 4	5 27	5 16			
17	Fr	☾	17th. C.A. Dana d., '96	☾	6 14	5 16	rises	14	6 5	5 26	rises			
18	Sa	☾	St. Luke Evang.	☾	6 15	5 15	6 22	15	6 6	5 24	6 37			
42. 21st Sunday after Trinity. John 4. 10h. 57m. Day's Length, 11h. 16m.														
19	Su	☾	☾ in perigee.	☾	6 16	5 13	7 10	15	6 7	5 23	7 29			
20	M		Turkish fleet des'y'd, 1827	☾	6 17	5 12	8 3	15	6 7	5 22	8 23			
21	Tu	♂ ☽ ☾		☾	6 18	5 11	9 3	15	6 8	5 21	9 23			
22	W		E. B. Washburne d., 1887	☾	6 20	5 10	10 8	15	6 9	5 20	10 26			
23	Th	☾	23rd. ♂ ☽ ☾. ☽ in ☽	☾	6 21	5 8	11 13	15	6 10	5 19	11 28			
24	Fr	☾	Daniel Webster d., '52	☾	6 22	5 6	morn	16	6 10	5 18	morn			
25	Sa	☾	Bat. Balaklava, 1854.	☾	6 23	5 5	0 20	16	6 11	5 17	0 31			
43. 22d Sunday after Trinity. Matt. 18. 10h. 40m. Day's Length, 11h. 4m.														
26	Su	♂ ☽ ☾		☾	6 24	5 4	1 27	16	6 12	5 16	1 33			
27	M	☽	☽ in perihelion.	☾	6 25	5 2	2 33	16	6 13	5 15	2 35			
28	Tu		St. Simon and St. Jude.	☾	6 26	5 1	3 35	16	6 14	5 14	3 33			
29	W	♂ ☽ ☾		☾	6 27	5 0	4 37	16	6 15	5 13	4 31			
30	Th	☾ ☽ ☾ ☾		☾	6 29	4 59	5 41	16	6 15	5 12	5 31			
31	Fr	☾	31st. Halloween.	☾	6 30	4 57	sets	16	6 16	5 11	sets			

THE COUNTIES ON THE KANSAS CITY SOUTHERN AND THEIR LAND VALUES.

The railway company has no lands to sell and has nothing whatever to do with the sale of lands, prices of lands or terms of sale. Real estate agents located in various places attend to the sale of private lands for land owners, but do not in any sense represent the railway company. The railway company is only interested in having the country contiguous to its line well settled so as to secure the traffic incident to a well populated country. Parts of the country along the line have a fairly dense population and in such, land values are naturally high, but in the more thinly settled localities ample opportunities are presented to the seeker of a new cheap home. The information given below has been carefully compiled from the reports of many reliable men and is believed to be substantially correct.

Jackson County, Mo.

Densely settled; rolling prairie with timber along the streams. Nearly all improved except a few small areas of broken land. A fine grain and corn country and well suited for blue grass pastures. Much live stock raised and a good fruit and dairy country, very convenient to an excellent market. Building material and fuel cheap. Land values, \$35.00 to \$100 per acre, usually sold 1-3 or 1-2 cash, balance on 2, 3 and 4 years time. Interest $5\frac{1}{2}$ to 6 per cent.

Jackson County, on the Kansas border, area 607 square miles; population 195,193. Stations on the line, Kansas City, population 163,752; Grandview population 52

Cass County, Mo.

Rather densely settled. More land in cultivation than in Jackson county and crops about the same, with perhaps more corn, hogs and cattle. There is much level prairie land, no

merchantable timber, but plenty for home consumption. Lumber costs about \$20 per thousand; bricks about \$7 per thousand. Near Archie and Everett postoffices there are indications of oil. Land values run from \$35 to \$100 per acre, varying with location and improvement. Fruit growing and dairying are carried on extensively. Average altitude about 1,000 feet above sea level.

Cass County, on the Kansas border; area 712 square miles; population 23,636. Stations on the line, Cleveland, Drexel, Jaudon, Lisle and Westline.

Bates County, Mo.

A fine prairie county with surface more level than either Cass or Jackson counties. Limestone soil, very fertile but not so deep as in the counties further north. Corn, oats, small grain grown extensively. A good fruit county and noted for its exports of live stock. The south half of the county is underlaid with coal, which is being mined more or less extensively at Rich Hill, Worland and Foster. Oil is being bored for at Merwin, Amsterdam, Amoret and other places with good indications of success. Lands, mostly improved, can be had at \$20 to \$50 per acre and are generally sold at 1-3 or 1-2 cash, balance in 2, 3 or 4 years.

Bates County, on the Kansas border; area 874 square miles; population 30,141; average altitude about 900 feet. Stations on the line, Amoret, population 215; Amsterdam, population 142; Hume, population 540; Merwin, population 250, and Worland, population 113.

Vernon County, Mo.

Resembles Bates county in its general characteristics, more land tillable, some small areas subject to overflow. County very well watered. Producing about the same as in the adjoining counties and very little, if any, unoccupied land. There are several creameries and the fruit and poultry shipments are large. Coal is found in some places and oil is being prospected for at others. Lumber costs about \$20 per thousand, brick about \$7 per thousand. Stone for home use is plentiful. Lands, nearly all improved.

vary in price from \$15 to \$40 per acre, and are usually sold part cash, balance on time at 6 to 7 per cent interest.

Vernon County, on the Kansas border; area 839 square miles; population 31,619; average altitude 830 feet. Stations on the line, Amos, Katy, Richards, Stotesbury and Swarts.

Barton County, Mo.

More rough land than in the counties above mentioned. About two-thirds of the county is under tillage, being very fertile and producing fine crops of corn, wheat, hay and fruits. Stock raising and dairying and the raising of poultry are important local industries. There is plenty of timber for home use and some building stone. Water good and plentiful. No minerals of importance but oil is being drilled for at several places. Coal lands are valued at about \$40 to \$45 per acre. Farm lands run in value from \$15 to \$30 according to location and improvements, the holdings varying from 80 to 600 acres. Terms of sale generally to suit the buyer.

Barton County, on the Kansas border; area 590 square miles; population 18,253. Stations on the line, Oskaloosa and Burgess.

Jasper County, Mo.

This county is more famous for its mineral than for its agricultural resources. The mineral output, mainly lead and zinc, approximates eleven and one-half million dollars per annum. While the mining of ore is the engrossing pursuit of the greater part of the population, there is, nevertheless, a large agricultural interest in the county. The county is rolling prairie, much of it covered with good soil though there are large areas of gravelly land too shallow for profitable cultivation. Corn and small grain are extensively grown, but there is also a large business done in commercial truck growing, fruit growing, dairying, poultry raising and stock raising. Joplin and Pittsburg, both within easy reach, are excellent markets for this class of products, as both places have large manufacturing and mining populations. Fuel is very cheap and building material very moderate in price. Improved lands vary in price from \$15 to \$40 per acre according to location and improvements, and are usually sold 1-3 or 1-2 cash, balance on time. The prices men-

tioned apply to agricultural lands only, the mineral lands having much higher valuations.

Jasper County, on the Kansas border; area 632 square miles; population 84,018; altitude 1,000 feet. Towns on the line, Joplin, population 26,023; Asbury, population 157.

Newton County, Mo.

This county lies on the western slope of the Ozark Range and about two-thirds of the surface was originally heavily timbered. About one-third of the county is hilly, the remainder being level lands lying between more hilly areas. It is exceptionally well watered with fine running streams and has hundreds of excellent springs. The yearly rainfall is between 40 and 50 inches, being well distributed. There is considerable variety in the soils, but most of them are highly fertile. About one-fifth of the county is still covered with timber. The principal grain crops are wheat and corn. Hay is extensively grown and stock raising is a very important business in the county. Vast quantities of fruits are annually shipped from this county, a large part being strawberries, peaches and apples. Land ranges in price from \$15 to \$100 and more per acre, according to distance from railroad shipping point and improvements. Fully sixty-six per cent of the county is in cultivation and nearly every farm has an orchard attached. Land sales are generally made on a basis of one-half cash, 6 to 7 per cent interest on deferred payments.

Newton County, on the Kansas border; area 629 square miles; population 27,001; average altitude about 1,100 feet. Towns on the line, Neosho, county seat, population 2,725, and the stations of McElhany, Saginaw and Tipton Ford.

McDonald County, Mo.

This county is more hilly than any of those lying north of it, about one-third being excellent level farm land, the remainder being hilly woodland devoted to stock raising, fruit growing and mining. Wheat, corn, oats, hay, apples, peaches, strawberries, etc., are the standard crops. Immense orchards, mainly of apple and peach trees are located at Goodman and Lanagan and an immense business is done in the shipping of strawberries, dairy products and poultry. The soils



MOON'S PHASES.

F. Q.	BOSTON		NEW YORK		CHICAGO	
	D. H. M.	D. H. M.	D. H. M.	D. H. M.	D. H. M.	D. H. M.
	8 7 30	8 7 30	8 7 30	8 6 30	8 6 30	8 6 30
F. M.	15 0 6 A.	15 0 6 A.	15 11 6 M.			
L. Q.	22 2 47 M.	22 2 47 M.	22 1 47 M.			
N. M.	29 9 4 A.	29 9 4 A.	29 8 4 A.			

MOON'S SIGNS.	LATITUDE			SUN EAST.
	Sun rises.	Sun sets.	Moon rises.	
	H. M.	H. M.	H. M.	M.

LATITUDE		
Sun rises.	Sun sets.	Moon rises.
H. M.	H. M.	H. M.

D. M.	D. W.	HISTORICAL EVENTS.
1	Sa	II ♃ ☉.

6	31	4	56	5	54	16
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6	17	5	10	6	11
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44. 23d Sunday after Trinity. Matt. 23. 10h. 23m. Day's Length, 10h. 51m.

2	Su	♁	6 32	4 55	6 35	16	6 18	5 9	6 54
3	M	♁	6 33	4 54	7 20	16	6 19	5 8	7 40
4	Tu	♁	6 35	4 53	8 8	16	6 20	5 7	8 28
5	W	♁	6 36	4 52	9 0	16	6 21	5 6	9 19
6	Th	♁	6 37	4 50	9 55	16	6 22	5 6	10 12
7	Fr	♁	6 38	4 49	10 53	16	6 23	5 5	11 6
8	Sa	♁	6 39	4 48	11 52	16	6 24	5 4	morn

45. 24th Sunday after Trinity. Matt. 9. 10h. 7m. Day's Length, 10h. 39m.

9	Su	♁	6 40	4 47	morn	16	6 24	5 3	0 1
10	M	♁	6 42	4 46	0 55	16	6 25	5 2	1 0
11	Tu	♁	6 43	4 45	1 58	16	6 26	5 2	1 59
12	W	♁	6 44	4 44	2 59	16	6 27	5 1	2 56
13	Th	♁	6 45	4 43	4 7	16	6 28	5 0	4 0
14	Fr	♁	6 46	4 43	5 18	16	6 29	5 0	5 6
15	Sa	♁	6 47	4 42	rises	15	6 30	4 59	rises

46. 25th Sunday after Trinity. John 6. 9h. 53m. Day's Length, 10h. 28m.

16	Su	♁	6 48	4 41	5 52	15	6 31	4 59	6 11
17	M	♁	6 50	4 40	6 50	15	6 32	4 58	7 11
18	Tu	♁	6 51	4 40	7 55	15	6 33	4 58	8 14
19	W	♁	6 52	4 39	9 3	15	6 34	4 57	9 19
20	Th	♁	6 53	4 38	10 10	14	6 34	4 57	10 23
21	Fr	♁	6 55	4 38	11 19	14	6 35	4 56	11 27
22	Sa	♁	6 56	4 37	morn	14	6 36	4 56	morn

47. 26th Sunday after Trinity. Matt. 25. 9h. 40m. Day's Length, 10h. 19m.

23	Su	♁	6 57	4 37	0 26	14	6 37	4 56	0 30
24	M	♁	6 58	4 36	1 28	13	6 38	4 56	1 28
25	Tu	♁	6 59	4 36	2 29	13	6 39	4 55	2 25
26	W	♁	7 0	4 36	3 32	13	6 40	4 55	3 23
27	Th	♁	7 1	4 35	4 33	13	6 41	4 55	4 21
28	Fr	♁	7 2	4 35	5 33	12	6 42	4 54	5 17
29	Sa	♁	7 3	4 34	6 29	12	6 42	4 54	6 11

48. 1st Sunday in Advent. Matt. 21. 9h. 30m. Day's Length, 10h. 11m.

30	Su	♁	7 4	4 34	sets	11	6 43	4 54	sets
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MOON'S PHASES.

	BOSTON	NEW YORK	CHICAGO
	D. H. M.	D. H. M.	D. H. M.
F.Q.	8 1 26 M.	8 1 26 M.	8 0 26 M.
F.M.	14 10 47 A.	14 10 47 A.	14 9 47 A.
L.Q.	21 3 0 A.	21 3 0 A.	21 2 0 A.
N.M.	29 4 25 A.	29 4 25 A.	29 3 25 A.

LATITUDE
Of New York City, N. England, N. Jersey, Conn., Pa., Ohio, Ind., Ill., Neb. and N. Cal.

LATITUDE
Of Charleston, N. Car., Miss., Ga., Ala., Arkansas, New Mexico and S. Cal.

D. M.	D. W.	HISTORICAL EVENTS.	MOON'S SIGNS.	MOON'S RISES.			MOON'S SETS.		
				H. M.	H. M.	H. M.	H. M.	H. M.	H. M.

1	M	Gen. W. H. Emory d., '87.	♌	7 5	4 34	6 3	11 6 44	4 54	6 23
2	Tu	☾ in apogee.	♌	7 6	4 34	6 54	11 6 45	4 54	7 13
3	W	♄ ♀ ☽.	♌	7 7	4 33	7 47	10 6 46	4 54	8 5
4	Th	Tyndall died, 1893.	♌	7 8	4 33	8 43	10 6 46	4 54	8 58
5	Fr	♄ ♀ ☽. ♀ in ☽.	♌	7 9	4 33	9 42	10 6 47	4 54	9 52
6	Sa	Jefferson Davis died, 1889.	♌	7 10	4 33	10 41	9 6 48	4 54	10 48

40. 2d Sunday in Advent. Luke 21. 9h. 22m. Day's Length, 10h. 5m.

7	Su	De Lesseps died, 1894.	♍	7 11	4 33	11 42	9 6 49	4 54	11 46
8	M	☾ 8th. ♀ gr. hel. lat. N.	♍	7 12	4 33	morn	8 6 50	4 54	morn
9	Tu	♄ J.W. Forney d., 1881.	♍	7 13	4 33	0 42	8 6 51	4 54	0 42
10	W	♄ in aphelion.	♍	7 13	4 33	1 46	7 6 51	4 54	1 41
11	Th	♄ ♀ ☽.	♍	7 14	4 33	2 53	7 6 52	4 54	2 44
12	Fr	♄ ♀ ☽ Superior.	♍	7 15	4 33	4 3	6 6 53	4 55	3 49
13	Sa	♄ ♀ ☽.	♍	7 16	4 34	5 13	6 6 54	4 55	4 56

50. 3d Sunday in Advent. Matt. 11. 9h. 17m. Day's Length, 10h. 1m.

14	Su	☽ 14th. ♄ ☽ ☽ Superior.	♎	7 17	4 34	6 23	6 6 54	4 55	6 3
15	M	☾ in perigee.	♎	7 18	4 34	rises	5 6 55	4 55	rises
16	Tu	N. O. Fair opened, 1884.	♎	7 18	4 35	6 42	5 6 55	4 56	7 0
17	W	Ember Day.	♎	7 19	4 35	7 53	4 6 56	4 56	8 8
18	Th	Gen. Dahlgren died, 1889.	♎	7 20	4 35	9 4	4 6 57	4 57	9 14
19	Fr	Ember Day.	♎	7 20	4 36	10 13	3 6 57	4 57	10 20
20	Sa	Ember Day.	♎	7 21	4 36	11 21	3 6 58	4 58	11 23

51. 4th Sunday in Advent. John 1. 9h. 16m. Day's Length, 10h. 0m.

21	Su	☽ 21st. ♄ ☽ ☽ St. Thomas	♏	7 21	4 37	morn	2 6 58	4 58	morn
22	M	☽ ent. ♄. Wint. beg.	♏	7 21	4 38	0 21	2 6 59	4 58	0 19
23	Tu	Henry Grady died, 1889.	♏	7 22	4 38	1 26	1 6 59	4 59	1 18
24	W	♄ ♀ ☽.	♏	7 22	4 39	2 27	1 7 0	5 0	2 17
25	Th	Christmas Day.	♏	7 23	4 39	3 27	0 7 0	5 0	3 12
26	Fr	St. Stephen.	♏	7 23	4 40	4 24	sl. 7 1	5 1	4 7
27	Sa	St. John Evangelist.	♏	7 23	4 41	5 18	1 7 1	5 1	4 59

52. 1st Sunday after Christmas. Luke 2. 9h. 18m. Day's Length, 10h. 1m.

28	Su	Innocents.	♏	7 24	4 42	6 9	1 7 1	5 2	5 49
29	M	☽ 29th. ☾ in apogee.	♏	7 24	4 42	6 56	2 7 2	5 3	6 37
30	Tu	♄ ♀ ☽. ☽ ♀ ☽.	♏	7 24	4 43	sets	2 7 2	b 3	sets
31	W	♄ gr. hel. lat. S.	♏	7 24	4 43	6 37	3 7 2	5 4	6 52

are as a rule very fertile and running streams and springs are very numerous. Fine building stone is abundant and fuel is plentiful and cheap. Lead and zinc ore have been found near Goodman. There are some 10,000 acres of United States government land still open for settlement. Mr. G. A. Raney, receiver United States land office, Springfield, Mo., can give information concerning the same. Unimproved lands are cheap. Improved lands vary in price from \$10 to \$30 per acre, being usually sold part cash and balance on time. The prices quoted do not, however, apply to bearing orchards.

McDonald County, on the Kansas border; area 523 miles; population 13,574; average altitude 900 feet above sea level. Stations on the line, Anderson, population 500; Goodman, Lanagan, Madge, Nall and Powell.

Crawford County, Kas.

The surface of this well settled county is gently undulating prairie land, usually black in color and highly fertile. Corn, wheat, oats, barley and fruits are extensively grown. Fruit, dairy products, poultry and live stock constitute a very large source of income, orchards being especially numerous. Near Pittsburg, a famous manufacturing point in lead, zinc and clay products, and a great coal shipping center, lands are very high in price. Farms average 160 to 200 acres and can generally be purchased at prices varying from \$25 to \$30 per acre, part cash, part on time. All the lands in this county are improved and have the conveniences incident to an old settled county. Building material and fuel are very cheap, especially coal, which is mined in enormous quantities.

Crawford County, on the Missouri border; area 592 square miles; population 33,809; average altitude 950 feet. Stations on the line Pittsburg, population 10,112; Nelson and Fuller.

Indian Territory.

The towns of Sallisaw, population 965; Stilwell, population 779; Westville, population 296, and Baptiste, Barron Fork, Bunch, Gans, Marble and Redland stations are in the Cherokee nation. Negotiations are pending between the Cherokee nation and the U. S. government for a division of the tribal lands, and until some definite conclusion has been reached no titles to real estate can be given.

In the Choctaw nation are the towns of Poteau, population 1,182; Howe, population 626; Spiro, population 543; Thomas-

ville, population 400; Panama, population 300, and Heavener, population 234, as well as the stations Houston, Petros Mill, Page and Shady Point. Land titles are in the same condition as in the Cherokee nation. The population of the Choctaw and Cherokee nations is 201,435.

Benton County, Ark.

The county lies on the western slope of the Ozark range and is essentially a fruit country. Much of the country is high level plateau interspersed with areas of fine prairie country and rolling timber lands. The highest point in the county on the railway is Gentry Station, altitude 1,352 feet. All the standard crops of Missouri and Kansas are grown and vast numbers of live stock, poultry and eggs find their way to market, but the fruit growing industry is the engrossing pursuit of the inhabitants. About two-thirds of the county is entirely free from stone, but the stony uplands are considered of the greatest value for fruit. The acreage devoted to fruit is not known to the writer but it is safe to assert that forty acres out of every section within five miles of a railroad station are devoted to this purpose. The shipment of apples, peaches and berries run into several thousand car loads in the course of the year. The county is large and not so densely settled as those in Missouri and Kansas. In Benton county, Ark., there are still open for settlement 40,020 acres of United States government land, concerning which Mr. John I. Worthington, register United States land office, Harrison, Ark., can give further information. Unimproved lands are very cheap, ranging in price from \$5 to \$20. Improved lands can be had at prices varying from \$8 to \$50 per acre. One-third or one-half is usually paid in cash, balance on long time. The county is well grassed and exceptionally well watered. Corn yields about 25 bushels per acre, wheat 15 bushels, strawberries 100 crates, worth about \$1 per crate, apples about \$80 per acre. Building material cheap and abundant and plenty of open pasturage for live stock.

Benton County, in the northwest corner of the state; area 392 square miles; population 31,611; average altitude 1,200 feet. Towns on the line, Decatur, population 300; Gentry, population 419; Gravette, population 447; Siloam Springs, population 1,748, and Sulphur Springs, population 315.

Washington and Crawford Counties, Arkansas.

Washington and Crawford County. These counties are not traversed by the Kansas City Southern railway, but are within ten or twelve miles of the railway stations. They have much in common with Benton county above described and offer many attractions to homeseekers. There are 28,270 acres of U. S. government land in Washington county and 800 in Crawford county still open for settlement. Address U. S. land office at Harrison, Ark., for further information.

Sebastian County, Ark.

Northward from Fort Smith and extending into Crawford county the county is undulating and in places hilly. Eastward and southward there is much level and prairie land. Westward are rich river bottoms, upland and prairie lands. There is much variety in the soils but nearly all of them produce well. The prairie lands are well grassed and afford good natural pasturage. The principal crop grown is cotton, of which about 50,000 bales are annually sold at Fort Smith. Corn, wheat, oats, tobacco and Irish potatoes are very important and profitable crops. The money value of the cotton crop is from \$20 to \$50 per acre, that of potatoes about \$40. Peaches and apples are extensively grown and the berry shipments reach about 200 car loads in one season. The whole surrounding country is underlaid with coal and about 486,000 tons are annually mined. Fine building stones, brick clays, etc., are abundant and extensively used. The railroad facilities are exceptionally good. Lands near Fort Smith in tracts of forty acres and larger, and improved sell at about \$50 per acre. Five miles out, from \$20 to \$40. Unimproved lands within reasonable distance of small towns can be had at \$5 to \$10 per acre. The usual terms of sale are one-third cash, balance on long time with 8 per cent interest.

Sebastian County, on Arkansas river and Indian Territory border; area 542 square miles; population 36,935. Fort Smith, a famous manufacturing and commercial center, has 11,587 inhabitants within the city limits with about 10,000 more in the suburban additions.

Folk County, Ark.

The surface of the county is hilly and mountainous, yet there is a very large acreage that can be tilled to

good advantage. The soil generally is very good and fertile where the land is smooth enough for tillage and in the creek bottoms the soil is exceptionally rich and deep. Much of the country is timbered with fine hardwoods and pine, but the latter is being rapidly consumed in the mills. The principal field crops grown are cotton, corn and small grain, with very satisfactory monetary returns. Vineyards, orchards and truck gardens are very numerous and it has been the experience for several years that they yield much greater money returns than do the standard field crops. The pasturage is good and for present uses ample. The stock now in the hills is generally farm stock, as stock raising is not carried on as a separate business. The mineral resources are abundant and in great variety. Coal is found in many places and borings for oil are being made at Mena and other points. Lead, zinc, copper and the more precious metals are being mined near Mena, near which place are also some of the most extensive slate quarries in the United States. Good building stone is abundant and building material and fuel are very cheap. The United States government has 92,502 acres of land open for settlement in the county, concerning which information can be had by addressing Mr. E. A. Shicker, receiver United States land office Camden, Ark. Unimproved private lands can be bought for \$1.25 to \$2.50 per acre, though near railroad stations they are higher in price. Improved lands range in price from \$5 to \$30 per acre.

Polk County, on the Indian Territory border; area 868 square miles; population 18,352; average altitude about 1,100 feet. Towns on the line, Mena, population 3,423; Cove, population 340; Grannis, population 225, Hatfield, population 274, Rich Mountain, population 187, and Hatton, population 157.

Sevier County, Ark.

This county is in the western foothills of the Ozark range, and its surface is hilly and rolling, traversed by numerous fine streams. Nearly all of the hilly lands are tillable and the level and bottom lands are exceptionally fertile. Corn and cotton are the standard field crops, though an enormous business is done in the cultivation of fine fruits, berries, cantaloupe and Irish

potatoes. The crop of cantaloups amount to about 20 car loads. Potatoes net about \$50 per acre and are shipped in large quantity. The peach orchards are just beginning to bear and large shipments have been made. Apples do better farther north, but for commercial truck farming the country is unexcelled and much land is being devoted to that purpose. Stock raising is carried on extensively and is very profitable. The mineral resources are varied and abundant. Lead and zinc are mined near Gillham, slate is quarried in several places and numerous borings are being made for oil. Iron ore is abundant in the southern part of the county and coal is known to exist in large quantity. The United States government has in Sevier county, 13,312 acres subject to settlement under the United States homestead laws. Apply to United States land office, Camden, Ark. Unimproved private lands range in price from \$1 to \$5 per acre; improved lands from \$5 to \$25; timber lands from \$5 to \$6 and coal lands from \$15 to \$40. On agricultural lands the terms of sale are usually one-fourth to one-half cash, balance in three or four years. Interest 7 to 8 per cent.

Sevier County, on the Indian Territory border; area 548 square miles; population 16,339. Towns on the line, DeQueen, population 1,200; Avon, population 258; Gillham, population 600; Horatio, population 625, and Pullman, population 90.

Little River and Miller Counties, Ark.

The surface of both of these counties is undulating and in some localities somewhat hilly. The timber growth is heavy and consists largely of pine and valuable hardwoods, which are being rapidly cut up into merchantable lumber. Corn and cotton are the staple crops and much commercial truck and fruit is annually grown. Stock raising is a profitable business. Building material and fuel are very cheap and abundant. Texarkana, an important manufacturing point, affords a very good local market for produce of all descriptions, and is also the best local market for cotton. Lands in both counties are very cheap, and unimproved land can be had at \$2.50 to \$5 per acre, usually one-third cash and balance in two or three years. The usual interest is 7 to 8 per cent. The United States gov-

ernment has open for settlement, in Little River county 1209 acres, and in Miller county 4,018 acres, about which the United States land office at Camden can give further information.

Little River and Miller Counties. These counties are situate in the southwest corner of Arkansas and are separated from each other by Red river. The area of Little River county is 556 square miles and the population 13,731. The stations on the line are Allene, population 125; Ashdown, 400; Hudson, 500; Ogden, 81; Rankin, 92; White Cliffs, 286; Wilton, 208, and Winthrop, 655. Miller county has an area of 665 square miles and a population of 17,558. Part of the city of Texarkana having a population of 10,170 and Ravanna station are in this county.

Bowie and Cass Counties, Tex.

The surface of both counties is undulating and was originally heavily timbered with pine and hardwoods. The soils are fairly fertile and produce good crops of corn and cotton. Fine orchards and vineyards are very numerous. Lands are very cheap, ranging in price from \$2.50 per acre to \$10 and are usually sold on acceptable credit terms. There are no government lands in either of these counties.

Bowie and Cass Counties. Both counties are in the northeast corner of Texas, bordering on Arkansas and Louisiana. Bowie county has an area of 907 square miles and 23,676 inhabitants and Cass county 951 square miles and 22,841 inhabitants. The towns on the line are Texarkana, population 10,170 in Bowie county and Bloomburg, population 193, and Cass in Cass county.

Caddo Parish, La.

The general surface of the parish is undulating, much of it originally covered with timber. The parish is exceptionally well watered, having Red river on its eastern border and Black, Clear Caddo, Sodus and Cross Lakes and numerous small streams within its limits. The Red River Valley soils are exceptionally fertile and the uplands also produce excellent crop. The standard crops are cotton, corn, oats, hay, peas, sweet and Irish potatoes, tobacco, sorghum, sugar cane and commercial truck of all kinds. It is famous as a fruit country and great crops of peaches, pears, early apples, plums, persimmons, grapes and figs are annually grown. Fine live stock is raised in large numbers.

Shreveport, the judicial seat of Caddo Parish, is the second largest city

in Louisiana, is a great cotton centre, and a very important manufacturing and commercial point. There is still open for settlement a large acreage of United States government land. Private lands range in price from \$2.50 per acre to \$50 per acre, according to location and improvements and are usually sold on acceptable terms.

Caddo Parish. In the extreme northwest corner of the state, bordering on Arkansas and Texas; area 906 square miles; population 44,499. Towns on the line, Shreveport, population 16,013; Mooringsport, 100; Rodessa, 104; Vivian, 252.

DeSoto Parish, La.

The greater part of De Soto Parish consists of fertile uplands, with some alluvial lands along the Sabine river and Bayou Pond. The chief crops are cotton, corn, hay, oats, sweet and Irish potatoes, sorghum, tobacco and sugar cane, all of which yield profitable returns. The fruits are peaches, pears, plums, grapes, quinces, etc. The timber consists chiefly of pine, oak, poplar, beech, holly, gum, magnolia, elm, maple, locust, hickory and some walnut, and in some parts of the parish a great lumber industry is maintained. Live stock of all description is raised in great numbers and at nominal expense. There is still a considerable acreage of government land in this parish. Private lands can be had at prices varying from \$2 to \$10 per acre, some highly improved lands being higher in price.

DeSoto Parish; area 864 square miles; population 25,063. Towns on the line, Mansfield, Parish Seat, population 847; Benson, 200; Blanchard, 186; Frierson and Kingston.

Sabine Parish, La.

Sabine Parish is more noted for its lumber industry than for its agricultural resources, yet the latter are very important. The surface of the parish consists of good upland, large pine flats and a small area of alluvial land along the Sabine river. Cotton is the principal crop, though an abundance of corn, hay, oats, sorghum, beans, sweet and Irish potatoes, and commercial truck is grown. The fruits grown are the same as in adjoining parishes. The raising of live stock is a profitable business and is engaged in to a very large extent. The United States government has nearly 100,000 acres of land open for settlement in this par-

ish. Private lands are usually sold at prices ranging from \$1 to \$10 per acre.

Sabine Parish; area 1,029 square miles; population 15,421. Stations on the line, Many, Parish Seat, population 354; Converse, 100; Noble, 110; Zwolle, 276; Christie, Fisher and Florien.

Vernon Parish, La.

Vernon Parish consists in the main of pine-covered hills, with small areas of prairie and alluvial lands. It is traversed by numerous streams and is fairly productive. Cotton is the chief agricultural product and corn, hay, oats, sweet and Irish potatoes are grown in large quantity. Fruits of various kinds are extensively grown and the raising of cattle, hogs, sheep and horses is a profitable business. Leesville is the parish seat and a trading point of considerable importance. The manufacture of lumber is however, the engrossing pursuit of the inhabitants, as the greatest pine forests in the United States are located in this parish. The United States government has about 100,000 acres of land in this parish open to settlement. Private unimproved lands can be had at \$1 to \$5 per acre.

Vernon Parish; area 1,321 square miles; population 10,327. Stations on the line, Pickering, 1,000; Cooper, 200; Hawthorne, 150; Hornbeck, 225; Neame, 200; Orange, 305; Everett and Rose Pine.

Jefferson County, Tex.

The southern part of the county is nearly level gulf coast plain, almost entirely devoid of timber, and carpeted with luxuriant grasses, affording good pasturage for live stock. The northern part of the county is covered more or less densely with pine timber and valuable hardwoods. In the timber lands and also on the loamy coast soils, sea island cotton, corn, sugar cane, tobacco, melons and commercial truck are profitably grown. Peaches, figs, oranges, pears and berries yield large, fine fruit, and cultivated grapes yield well. Much of the coast prairie land formerly deemed valuable only as pasturage, has been converted into very profitable rice land and the cultivation of this cereal is now the most important branch of agriculture carried on in the county. An elaborate system of irrigation and drainage canals has been built in this county

and an immense rice crop is now annually produced. Very extensive mills for the cleaning of rice have been erected at Beaumont and at Port Arthur. During the present year (1901) oil in almost boundless quantity, has been discovered between Beaumont and Port Arthur, and many millions of dollars have been invested in this industry. The lumber business of Beaumont has been enormous and is yet, but is now overshadowed by the oil developments now going on. Farm-

ing lands, unimproved, and free from suspicion of having oil under them are generally sold at \$10 to \$15 per acre. Cut-over timber lands are cheaper. Irrigated rice lands generally sell for \$20 to \$40 per acre and considering the money values derived from the rice crops are cheap at that figure.

Jefferson County. The southeast corner of the state; area 1,109 square miles; population 14,239 (1900). Towns on the line. Beaumont, population (1900) 9,427; Port Arthur, 900, and Nederland.

Household Hygiene.

GET A DOCTOR.—The safest rule to follow, when there is sickness in the family, is to send for the doctor whose trained eye will decide very quickly whether the matter is serious or not. Many ailments become serious through neglect because the ordinary layman has no safe way of judging symptoms. Sometimes treatment is urgent in emergencies and while waiting for the Doctor something can be done for temporary relief.

FOR STRANGULATION OR CHOKING.—If a fish bone is lodged in the throat, insert forefinger at the root of the tongue and induce vomiting. In obstinate cases take an emetic.

A SEVERED ARTERY should be compressed above the wound. Bleeding is checked by tying a tape, cord or other pliable and strong material loosely over the leg or arm injured and twisting same tightly with a stick until bleeding ceases. The tie or band should always be between the wound and the heart. Pressure on the artery is exerted by placing a compress made of a small coin wrapped in linen or cotton directly on the artery, but under the band. Blood from an artery is bright red and flows in spurts. The blood from a vein is dark and flows steadily. It may be arrested by applying a compress and bandage.

NOSE BLEEDING, is sometimes stopped by inserting a plug of lint in the nostrils; if this fails apply cold cloths to the forehead; raise the head and place both arms over it so that it will rest on the hands. Moistening a plug of lint and dipping it in powdered alum is sometimes effective. Pouring cold water over the neck and head or down the spine will at times stop the bleeding.

HEMORRHAGES OF THE LUNGS or stomach can often be stopped by small doses of salt.

HYSTERIA, FAINTING, ETC. Loosen clothes, bathe the temples with cold water; dash cold water in face and warm feet with hot bricks. Admit plenty of air.

SCALDS OR BURNS.—Cover the injured surfaces with either baking soda, flour, magnesia or chalk and lay over this sheets of wadding or cotton batting. The white of an egg, olive oil, collodion, linseed oil are also used, either singly or mixed with chalk. If the burns are slight, hold them in cold water for a short time and cover the skin with linseed or olive oil. Turpentine and vaseline are also used.

Cleaning and Renovating Textiles.

PROPER WAY TO IRON FLANNELS.—Flannels should never be rolled up damp, and consequently, when they are ironed a damp cloth should be spread over them, and the ironing done over it until the wrinkles, if there be any, are pressed out. Embroidered edges should be laid on a flannel and ironed on the wrong side, if the very best effect is desired. The ironing of flannels is facilitated by taking them off the line while they are still a trifle damp, shaking them well and ironing them at once.

Black cotton stockings should never be ironed as the heat will cause them to fade rapidly. Dry them in the shade.

Silk pocket handkerchiefs should be washed by themselves. Put them to soak in cold water for an hour or two; then wash them in water, soaping them as they are washed. If the stains have not then disappeared, wash through a second water of the same description. When finished, they should be rinsed in cold, soft water in which a handful of common salt has been dissolved; then rinse again in water containing a little bluing.

Mildew is easily removed by rubbing or scraping a little common yellow soap on the article and then a little salt and starch upon that. Rub all well and place it in the sunshine.

TO CLEAN WHITE SATIN AND FLOWERED SILKS.—Mix sifted stale breadcrumbs and powdered blue, and rub it thoroughly all over the silk, then shake it and dust it well with clean soft cloths. Afterwards, where there are any gold or silver flowers, take a piece of crimson ingrain velvet, and rub the flowers with it, which will restore them to their original lustre.

CLOTH.—To remove tar from, rub it well with turpentine, and every trace of tar will be removed.

The hangings or portieres of woolen tapestry should be either taken down when the sweeping is done or covered with old sheets. If a child runs against a curtain with a piece of bread and butter the grease spot thus made can be removed with benzine, which is very explosive, or a paste of starch or magnesia and water, keeping it on until dry and brushing off with a whisk.

Should a stain of oil get on a curtain of woolen goods, try grating a potato and rubbing it on the spot until it gradually disappears.

If silk curtains have any grease marks they may be removed with French chalk, scraping it on and allowing it to remain for twenty-four hours; then brush off, and if necessary, repeat the process. Silk hangings are put away for the summer after shaking them well and folding without a wrinkle; then sew up in an old sheet, as dust is an enemy. When there is any wool in the hanging it needs shaking, cleaning if any grease spots are apparent, folding in newspapers sprinkled with turpentine and sewing up in heavy ticking, or the tarred paper coming for that purpose, as moths are to be more dreaded than mere dust. Wiping over woolen tapestries with salt and water brightens the colors.

TO CLEAN BLACK LACES.—When dust has discolored black laces and cannot be shaken from them, mix borax and alcohol in lukewarm water, a teaspoonful and a tablespoonful respectively to each cupful; soak the lace in this for an hour or so, then rinse in clean warm water in which there is a pinch of dissolved gum arabic. Lay the lace flat on a dry clean cloth, pick

Cleaning and Renovating Textiles.

its edges out flat with the fingers, then whisk it smooth with a soft brush; roll it round a rod and leave it to dry. If it still requires smoothing, a moderately warm iron may be used to press it between two stiff papers, but it should not cause a gloss upon it.

TO RESTORE THE COLOR OF CASHMERE that has been splashed with mud, sponge the discolored parts with water with a small piece of soda dissolved in it.

Tar usually yields to a soak in kerosene or buttermilk followed by a thorough rinsing in soapy water. Grass stains, when fresh, may be removed by rubbing in cream tartar and water or alcohol. Javelle water is necessary when the stains are set. Rinse thoroughly.

TO CLEAN KID GLOVES according to the French method, put them on and wash well in spirits of turpentine, exactly as if washing the hands. The fingers and soiled parts must be well rubbed, and when the gloves are taken off they must be stretched and allowed to dry in a strong current of air.

CARPETS, RUGS AND MATTINGS.

Do not sprinkle tea leaves over the carpet, but once a month use corn meal, which revives the colors and effectually lays the dust. In sweeping each week dip the broom in water, shake it well and then sweep, but the broom must be clean, or a muddy appearance is the result.

COLORS.—Setting. To set the color in blue lawn, dissolve a half pound of saltpetre in a pailful of water, and dip the lawn in it several times before washing.

A velvet pile carpet should be sprinkled with damp bran and brushed with a stiff broom. If the carpet looks faded rub it over, doing a small piece at a time, with strong salt and water, put on with a piece of flannel, and then dry with a second cloth at once. Ammonia and warm water are applied in the same manner and with the same result if the colors in the carpet are fast.

Very dirty spots in a carpet should be washed out with a scrubbing brush and warm water strong with ox gall. Grease spots will disappear under equal parts of magnesia and fullers earth, mixed to a paste with boiling water. This is put on warm and left for twenty-four hours, and when brushed off the grease is a thing of the past. Raw starch and water is another remedy for grease spots and various stains, repeating the coat of paste several times if necessary.

If oil is spilled on a carpet, apply blotting paper or heavy brown wrapping paper at once, and press it with a very warm iron. Fresh ink may be removed by using the blotting paper at once. Take up as much of the ink as possible with a spoon, says an excellent housewife, and then pour cold sweet milk on the spot and dip it up with the spoon until the milk is barely tinged with ink. Then wash in cold water and wipe as dry as possible.

For cleaning and removing rugs, hang them on a line and beat with a rattan, etc., then lay on a flat surface and sweep on both sides with a clean broom dipped lightly in water and ammonia. The highest proof kerosene also is used in this manner to brighten rugs, but salt and water or ammonia and water are better for the purpose.

RICE—ITS HISTORY AND CULTIVATION.

The record of most of our staple grain crops is lost in the gray mists of antiquity. Where or when wheat was first grown is unknown, though it apparently was a staple crop with the Egyptians and Babylonians 7,000 or 8,000 years ago. Its cultivation goes as far into the past as does the history of the human race. The cultivation of rice seems to run parallel with that of wheat, and the Chinese claim that it was introduced in their country in the year B. C. 2822, several centuries before the deluge. How long the Winnebago and other Indians have harvested the wild rice of the Northern Lakes is an unsolved mystery.

In appearance cultivated rice has much in common with wheat in its early growth. The arrangement of the seeds in the head is somewhat similar to that of oats, but the kernel looks more like barley. With both barley and oats, the hull is folded over the seed, but with rice the seed or kernel is entirely closed like the kernel of a nut, and the hull must be removed by friction severe enough to crack the hull. Rice stools very thickly, producing from thirty to one hundred straws to each seed and from 100 to 400 seeds to each head. It is claimed that rice is the only small grain that yields the one hundred fold of scripture, but this is not absolutely true, for both wheat and oats, under irrigation and other favorable conditions are known to yield from seventy to one hundred and twenty bushels to the acre. There is room for suspicion that originally wheat oats and barley were water plants, but were converted into upland varieties as the result of the migrations of human kind.

Rice is today the staple food for one half the population of the earth, more particularly so of the dense populations of China, Japan, the East Indies, and the numerous large islands of the Indian Ocean. Though not the exclusive food except in periods of famine, it is the most generally used of all cereals. The estimated populations of the oriental countries are, the Chinese Empire, 402,000,000; the British possessions in Asia, 291,000,000; Japan, 43,000,000; and other rice-consuming countries, 90,000,000. Ordinarily one-half the food consumed by these peoples consists of rice, the other foods being mainly beans and fish. The quantity of rice grown annually is estimated at 12,500,000 tons or 250,000,000,000 pounds, nearly all of which is consumed in the countries where it is grown. The exports to Europe are large, but do not reach one per cent of the total production.

Food Values and Uses of Rice.

Among the food values rice takes the first rank, being easily digestible and highly nutritious. It is equal in nutrition to choice meats, poultry, fish, Indian corn products, Irish potatoes, oatmeal or malted milk. It is claimed that boiled rice is digestible in one hour and where it is the principal food indigestion and stomach troubles are of rare occurrence. It is the ideal crop for a densely settled country for the reason that the irrigation water used in its production, to very large extent, replenishes the fertilizers extracted from the soil by the crop. Very few people have any conception of the quantity of natural fertilizers carried by even a clear stream. It has been calculated to equal five to ten tons per acre in the course of a year and to be equal to the best compost. Compared with all other cereals rice has the better keeping qualities, particularly so in the tropics, where it can be stored for a long period of time with reasonable safety. Its preparation for the table is simple; it can be cooked with the crudest utensils and under all conditions it is always a healthful food.

Compared with the staple foods in common use, the nutritive properties of rice are claimed to be in excess of any of them, weight for weight, and at the present market price rice is claimed to be 33 1-3 per cent cheaper than any other food.

Rice and its by-products are utilized in various ways. Preparations of it are in common use in the treatment of various ailments of the digest-

ive organs. It is used in the manufacture of jewelry, toys, cements and paper, and likewise is used in the manufacture of beer, sake and arrack rum. The inferior grades of rice, and part of the bran and rice polish, can be converted into merchantable starch and the latter are turned also to practical account in feeding live stock, though the polish and rice flour are fit for human consumption. They are in great demand in Europe and are exported from New Orleans in great quantity. The straw is a fairly good fodder and is much liked by cattle, being equal in nutritive value to southern prairie hay. The hulls make a fairly good fertilizer.

Rice Culture in the Orient.

The methods of cultivation are the most primitive in the countries in which the culture has continued the longest time and where the greatest number of people depend upon the crop for subsistence. It was anticipated some years ago that the American rice grower would be unable to produce home grown rice cheap enough to compete with the imports from Asia on account of the extremely low value set on human labor in the Orient. This fear was altogether unfounded as the crop is now produced so cheaply by the use of improved machinery that competition between the two rice producing regions, the Occident and the Orient, is entirely out of the question. A comparison of the modes of cultivation explained below, will show the reasons why there can be no Oriental competition to the detriment of the American rice grower.

Throughout the entire Orient, rice culture is carried on without the use of modern labor-saving machinery and in most localities the prevailing conditions are such that it could not be used to advantage. There are but minor differences in the methods employed. Rice has been under cultivation for so great a period of time that many distinct varieties of the grain have been developed. Some varieties thrive in the salt or brackish marshes along the coast, while others reach maturity on the mountain slopes of India, 7,000 to 10,000 feet above sea level. Some grow only in deep water, while others are grown where water for irrigation is not obtainable. There is also considerable variation in the quantity, quality and value of the crop.

The lands devoted to rice are divided by levees or ridges into small fields, seldom containing more than half an acre of ground. These fields are well drained and thoroughly worked by hand. Oxen are sometimes used for plowing, but most of the soil is turned with the spade or mattock. Prior to planting the fields have been prepared and flooded to a depth of 1½ to 4 inches. The plants, grown separately in a seed bed, are set in rows about one foot apart and at a distance of ten to twelve inches in the row. They are imbedded in the mud so that the soil covers the roots. The fields are fertilized from time to time, thoroughly weeded, hoed and irrigated.

The seed, which has been previously selected for its size and quality, is soaked in pure water until well sprouted and is then sown broad cast on the seed bed, which has been previously worked into a bed of mud covered with water to a depth of two and one-half inches. In five or six days the rice is well started. It is irrigated and drained daily. Early in June, when the plants are from eight to ten inches high, they are pulled up, tied in bundles of six to ten plants and transplanted into the fields.

In harvesting the grain is cut close to the earth with a small sickle and tied in bundles from three to four inches thick. After drying during the day, they are hung on bamboo poles. When dry, the grain is removed by pulling the grain through hetchels and is then spread on mats in the sun to remove all moisture. The hulls are removed by passing the grain through a pair of burs. It is then winnowed by dropping it through the air or running it through a fanning mill. Sacks of rice straw are used for packing the grain for market.

In the Philippines, the direct rainfall, which amounts to 74.56 inches, converts the fields into shallow ponds lasting long enough to mature the

crop. Sowing the seed in beds is the common rule, though there is also considerable broadcast sowing. Labor is abundant and very cheap, but the quantity produced per individual is so small that it cannot possibly come in competition with American labor saving machinery. Much rice is grown, but not nearly enough to supply the population. The average annual import from 1886 to 1890 was 157,332,654 pounds.

In the Hawaiian Islands 4,700 acres are devoted to rice, producing 5,500,000 pounds. The lands used are low lying tracts that could not be turned to any other account and are cultivated exclusively by Chinamen. The crop takes the second place in the value of product, there being on the Islands also 125,000 acres in sugar and 6,915 acres in coffee.

In Japan 43,000,000 people are supplied with rice food from 7,000,000 acres. In India there are under cultivation in rice 60,000,000 acres, supplying the principal food for 287,000,000 people. China has more land devoted to this purpose than any other country. From the China Sea to the Yellow River and far inland, the whole country is a vast network of canals and rice fields and the many millions of natives depend almost exclusively upon this crop for their subsistence. In Siam, Anam, Cochin, China and Tonquin rice is also grown in enormous quantities and largely exported.

Rice Culture in the United States.

In 1694 a vessel on its way from Madagascar to Liverpool, put into port at Charleston, South Carolina. From the captain of this ship, the then governor of the colony obtained some rough rice with the suggestion that it might possibly grow, if it were planted. The experiment was successfully made and yielded the famous Carolina rice. Fifty years later, the culture extended to both Carolinas and Georgia. Eastern Louisiana and Florida engaged in rice culture later. Within the last ten years Texas and Western Louisiana have increased the rice growing area to such extent as to furnish three-fourths of all the rice produced in the United States.

The total consumption of rice in the United States in 1897 was, domestic, 113,400,000 pounds; imported, 225,000,000 pounds. The product of Texas and Louisiana in 1899 was 100,326,000 pounds; of South Carolina, 27,000,000 pounds, and of Georgia, 13,000,000 pounds. The average annual production for the ten years ending 1896 was about 145,120,000 pounds of cleaned rice. The import in 1899 amounted to 153,837,026 pounds. No estimates relating to the actual acreage under cultivation in rice have come to the knowledge of the writer, but figuring on an average crop of 1,620 pounds or ten sacks to the acre, about 145,000 acres must have been devoted to this crop during the ten years preceding the year 1896. In Bulletin No. 22, U. S. Agricultural Dept., entitled "Rice Culture in the United States," it is estimated that about 3,000,000 acres of land, situated in the five states bordering on the Gulf of Mexico, could be successfully irrigated and used for rice culture. Allowing for a rotation of crops one-half of this land could be in rice cultivation each year. About 2,500,000,000 pounds of rice could be annually produced, which would be nearly six times more than our present consumption.

The rice lands yielding the best results are the medium loams containing about fifty per cent of clay and underlaid with an impervious subsoil that will retain the water while under irrigation and readily part with it when drainage is necessary. Without proper drainage the use of improved machinery is impracticable. Gravelly or sandy soils without a clay subsoil are undesirable because the water cannot to advantage be retained. The rich drift soils of the Texas and Louisiana coast have shown themselves to be admirably adapted. As irrigation for this crop is absolutely necessary it is obvious that the land must be located where there is a permanent and abundant supply of fresh water. A moist or humid climate is essential as it has much to do with the magnitude of the yield per acre. The most perfect grain and the largest yield per acre are obtained where there is the most moisture in the air.

Comparative Crop Values.

Ten barrels or 1.620 pounds of rough rice to the acre are considered a good average yield. This rough rice will generally bring about \$3.00 per barrel or \$30.00 per acre. This crop will cost \$10.00 to grow, leaving a margin of profit of \$20.00 per acre. Compared with wheat the rice crop makes a remarkable showing at the average yields and values.

Wheat, 100 acres, land owned by the farmer:

Cost of seed, one bushel to the acre at 65 cents per bushel.	\$ 65 00
Plowing, sowing, and harrowing, \$2 per acre.....	200 00
Harvesting and threshing at \$4 per acre	400 00
	\$ 665 00

Cost of production	\$ 665 00
Avg. yield, 15½ bus. pr acre, 1,550 bus. at 65c. .	\$1,007 50
Cost of production	665 00

Net profit on wheat..... \$ 342 50

Rice, 100 acres, land owned by the farmer:

Cost of seed, 80 lbs. pr acre, 49 bbls. at \$3 pr bbl.....	\$ 147 00
Plowing, sowing and harrowing at \$2 per acre.....	200 00
Harvesting and threshing at \$4 per acre	400 00
Water rent, 200 bbls. of rice at \$3 pr bbl.....	600 00
	\$1,347 00

Cost of production	\$1,347 00
Avg. yield, 10 bbls. per acre, 1000 bbls. at \$3	
per bbl	\$3,000 00
Cost of production.....	1,347 00

Net profit on rice

Rice farmers' net profit from 100 acres \$1,653 00

Wheat farmers' net profit from 100 acres 342 50

Difference in favor of the rice farmer. \$1,310 50

An acre of corn will cost \$11 to grow and will be worth, at fifty cents, \$15.00. Oats will bring less money than corn, and hay less than oats. To get the equivalent value of one acre of rice, it would require three and one-third acres of wheat yielding fifteen bushels per acre and grown at a cost of \$23.33; two acres of corn, yielding thirty bushels per acre and raised at a cost of \$22; or two and one-half acres of oats, yielding forty bushels per acre grown at a cost of \$17.50. With all these crops there is an element of uncertainty of yield which is eliminated in the cultivation of rice.

American Methods of Rice Cultivation.

In South Carolina and Georgia the rice plantations are usually located along some river far enough from the sea to be free from incursions of salt water. The land is so situated that it can be flooded from the river at high tide and drained at low tide. The whole plantation is enclosed by a canal, the dirt from which forms an embankment to protect it from freshets. The tract is cut up by smaller canals into tracts of ten or twelve acres, and again subdivided into strips twenty to thirty feet in width. From sixty-five to eighty miles of canals, ditches and levees are usually found on a tract of five hundred acres.

Early in winter the fields are plowed or hoed and then covered with water which is later drained off. The frosts of winter then thoroughly pulverize the lumps of soil that result from plowing. In March the land is dried and thoroughly harrowed. Seeding lasts from April to the middle of May. The seed, 114 to 135 pounds to the acre, is dropped in trenches 2 to 3 inches deep and twelve inches apart, and is then flooded. In four to six days the seed has sprouted and the water is withdrawn. As soon as the

blades are up a few inches the rice is flooded for a few days. When the rice has two leaves it is again irrigated and the water is held on the field for thirty days. The field is then drained and when dry is carefully hoed and weeded. When the rice begins to joint it is again flooded and water is kept on until within eight days of the harvest. During the irrigation it is changed once a week to avoid its becoming stagnant and harboring water insects.

The yield on the best lands is estimated to reach thirty to forty-five bushels to the acre, the standard weight of rough rice being forty-five pounds to the bushel. The annual cost of cultivation varies from \$24 to \$35 per acre. The rough rice is estimated to cost from \$1.66 to \$2.69 per sack of 162 pounds. In North Carolina, Florida and Mississippi essentially the same methods of cultivation are pursued.

In Eastern Louisiana two methods of cultivation are in common use. In the "wet culture" the fields are flooded before any work is done. They are plowed in the water and the rice is then sown and harrowed. The field is then drained and the seed germinates at once. Planting begins late in April or May. In the "dry culture" the land is plowed in winter and prepared as for cats. The seed is then sown broadcast or drilled in. When it comes up, the land is moistened with water, the same being kept below the top of the plants and being followed up as the plant grows. In both methods the water is kept on continuously from the time the rice appears above ground until the water is drained off for harvesting. The crop is generally harvested in August and put in shocks of twenty bundles, being allowed to dry about a week. After that the crop is thrashed as early as possible. The average yield is about eight barrels per acre, though thirty barrels have been obtained from extra good lands with exceptionally good cultivation.

The Texas and Louisiana Rice Fields.

The rice growing region extends from the Sabine River east and west about one hundred miles and extends inland from the Gulf coast about fifty miles. The lay of the land is unusually favorable for this branch of agriculture, in that very large areas are very smooth and level, naturally very fertile and convenient to permanent streams from which they can be flooded. In some places the land is so level that tracts of forty and eighty acres can be flooded without division into smaller fields.

Rice cultivation was introduced in Eastern Louisiana during the Spanish regime—when several hundred Philipinos were brought to Louisiana for the purpose of cultivating rice. Their descendents still live in south-eastern Louisiana.

Up to 1885 the antiquated methods, almost Oriental in their crudeness, were in common use, making possible a production just sufficient for immediate home consumption. Commercially the rice crop of Southeast Texas and Southwest Louisiana cut no figure in the market whatever. It was "Providence rice" and five acres were enough for anybody. It was the "infant industry," a few scattered isolated fields on low ground, watered when it rained and harvested with the sickle. In 1886 the production amounted to 250 car loads. Six years later, in 1892, it had reached 7,000 car loads.

In 1884 a few farmers from Iowa drifted into Louisiana and settled at Jenning's Station near Lake Charles. Finding that rice could be produced, even though in the crudest of ways, and that the country was adapted to its cultivation, the more venturesome spirits among them experimented in the use of modern machinery and soon adapted the wheat cultivating implements of the northwestern prairies to this purpose. The practical adaptation of machinery was a tremendous leap forward and rice culture in Texas and Louisiana was put on a footing against which old time methods could not compete. The broadcast seeder and then the drill superseded the man with the pail full of rice sown by hand. The sulky and gang plow soon took the place of the little bull tongue cotton plow, and the spring tooth, cutaway and disc harrows replaced the old-fashioned three-cornered

drag. The mowing machine and twine binder drawn by four mules left the forty men with sickles far in the rear, and the steam thrashing machine relegated the man with the flail to the shades of the past. Providence rice is hardly grown nowadays, and there is no transplanting, no sickling, no flailing, and no plowing, sowing, weeding or harvesting in the water. In fact, there are no difficult or complex problems to worry the man who grows rice. Any farmer who has grown wheat can grow rice. The only difference is in the flooding of the land and the irrigation companies do that for him. In 1899 there were in the rice fields over 5,000 harvesters, each doing the work of forty men with sickles.

There are now in operation over one hundred canals and pumping plants aggregating over 500 miles of main canal, each capable of flooding one thousand acres of rice or of irrigating 5,000 acres of other crops. The laterals or branch canals will aggregate 1,000 to 1,500 miles more. During the present year (1901) it is estimated that 300,000 acres can be flooded from these canals, which have called for an investment exceeding \$5,000,000. About 200,000 acres are now cultivated in rice in Louisiana and 40,000 in Texas. This acreage will be increased fifty per cent in Texas and fifteen per cent in Louisiana within a year.

The large supply canals traverse the highest ridges of land and are built by throwing up two parallel levees from the outside, the space between them forming the canal. The water is thus kept above the level of the land to be irrigated. One end of each of these canals begins at the bank of some inexhaustible stream and immense pumping plants lift the water into the canal. In some canals it is lifted two or three times in order to reach certain elevations. The water is distributed through smaller canals, called laterals, through the prairie to the highest point on each man's farm. Some of the pumping plants are capable of lifting 90,000 gallons of water per minute, and they work day and night from the beginning of June to the end of August, in all between sixty and seventy days, during which irrigation is deemed necessary.

A perfect system of rice cultivation was not developed at once. In the earlier history of the industry the natural rainfall was depended upon to secure the crop and rice was only planted on the lowest lying lands, to which water could be drained from the higher lying lands, or which could be flooded direct from the streams. For a succession of years large profits were made, but it was found after a time, that successful rice culture depends upon a constant supply of water. In drouthy years the rainfall could not be relied on and the streams would not rise to the level necessary for flooding the fields. This element of uncertainty was removed by the construction of the canals, which made available large bodies of land quite remote from the streams. There are now numerous canals in Acadia, Calcasien, Cameron and Vermillion Parishes in Louisiana, and Jefferson, Orange and Harris Counties in Texas. The rice farmer rents the water from the canal companies, paying therefor 324 pounds of rough rice for every acre watered. It is estimated that half an acre inch, or 12,600 gallons of water are necessary every twenty-four hours to keep the land properly flooded and replenish what is lost by seepage and evaporation. Much of this loss is however replenished by the rains, the annual rainfall being from fifty-five to sixty inches. Three-fourths of all the land can be drained inexpensively and without the use of pumps.

Barely had the canal system been introduced when the discovery was made that there was available an unlimited supply of good soft water contained in a stratum of gravel some 125 to 200 feet below the surface. This bed of gravel has been found to have a thickness of 50 feet, and the water issuing from it rests under such pressure as to bring it nearly to the surface. Wells 200 feet deep have been bored in fourteen hours and none of them can be exhausted by pumping, no matter how close together they are bored. Water turned into them disappears as rapidly as if turned into a

canal or river. A two inch well will flood ten acres of rice and a six inch well, from eighty to ninety acres. The total cost of an irrigating plant capable of flooding two hundred acres is estimated to cost from \$1500 to \$2500. Gang wells can be made, connected and worked by one engine and pump. Since the discovery of water, oil in limitless quantity has been discovered in the same vicinity. There are now in use (1901) five hundred wells, which, with pumps and machinery, were put in working order at an outlay of \$750,000. The number of wells and the acreage irrigated will probably be doubled in 1902. The wells now in use irrigate 50,000 acres. One enthusiastic writer reports on both discoveries as follows:

"This solved the irrigation question for 7,000,000 acres of land and the result is that this section is being bored full of holes, with the assurance that either water or oil in paying quantities will be secured. If you bore to water and don't like the taste of it, go deeper and get gas; and if that doesn't suit you, go still deeper and get oil. You can bore your hole and take your choice."

Rice culture has brought about the most rapid development of the Gulf coast and has done more in this direction than any other agricultural specialty. In 1885 lands in Calcasieu Parish, La., and Jefferson county, Texas, were deemed practically worthless. To-day these lands are worth \$10 to \$40 per acre. In consequence of the development of rice culture, new towns have been created, old towns enlarged, new branch lines of railroad built and new manufacturing enterprises established.

THE PLANTING OF THE CROP

As Conducted in South-east Texas and South-west Louisiana.

There is considerable diversity of opinion as to whether deep or shallow plowing is best for rice, though both methods have their earnest advocates. Land should be broken for rice growing at any time during the fall and winter, the earlier the better. The heavy growth of grass on new land should be burned or otherwise removed, but if plowed under in the early fall will rot during the winter. In the spring, not later than the beginning of March, the sod should be well cut with disc harrows, rolled and harrowed. On old farms the plow should be followed in a very short time by the disc harrow and then by the smoothing harrow. The harrow should be followed by the roller, to crush all lumps, compact the soil, retain the moisture for the sprouting of the grain and to make a flooding for sprouting necessary. It is understood, of course, that the soil, while dry is sufficiently moist to admit of these operations. If not, a preliminary moistening may become necessary.

Seeding begins about March 10th, and is sometimes continued to June 10th. From about 55 to 80 pounds are usually used to the acre. It is indispensable that the seed rice be perfect in quality and free from red rice, imperfect rice and foreign seeds. It should be planted with a drill in order to secure a uniform depth of planting and a uniform ripening. With broadcast sowing an irregular stand is likely to be secured, which is undesirable as all the grain should be ready for the machine at the same time.

Unless water is necessary for the germination of the seed, flooding should not be begun until the rice is from six to eight inches high, and if there is plenty of rain it is well to wait until the latter height is reached. Eight inches of water is deep enough to prevent the scalding of the plants. If the growing crop thoroughly shades the land, just enough water to keep the soil saturated will usually carry the crop through, though as a matter of safety, it is well that the water should stand from three to six inches deep all over the field, and be renewed by a continuous inflow and outflow. This prevents stagnation, the growth of injurious weeds and the harboring of water insects. A uniform depth of water all over the field will tend to a uniform maturing of the crop, if the drainage is good and

each field has been plowed, harrowed, planted and rolled the same day, and the seed has been planted equally deep and been equally distributed.

As soon as the grain is in the dough, the water should be withdrawn. Sufficient moisture will remain to mature the crop. If cutting is delayed until the straw shows yellow to the top, the grain is reduced in quantity and quality and there is also some loss in shattering by the handling of the crop. The cutting should proceed rapidly and about two and one-half feet of straw should be cut with the grain to give it sufficient sustenance to mature. The bundles should be shocked on a dry place, and be left in the shock until the straw is cured and the kernel is hard. Stacking is not much resorted to as rice well cured in the shock and dried after threshing will generally keep from heating. If the rice is damp when it comes from the machine, it should be spread on the floor and be thoroughly dried before it is sacked.

The harvesting of rice does not differ from the harvesting of other small grain, and is done at the same expense and with the same machinery, and the same applies to the threshing of rice. Ten barrels or sacks of rice, weighing 162 pounds each, are considered an average crop, though under favorable conditions, twelve to eighteen and more are frequently produced. The price fluctuates as with other grains, running from \$2 per barrel to \$4.50 and higher, with a good average of \$3.00 per barrel.

Land upon which rice is planted very early, say in March, and where the crop matures early, can be utilized for growing a second crop of rice the same season which can be cut for hay, and will bring from \$10 to \$20 per acre. By cutting and removing the crop of rice as soon as it is matured, and then flooding the ground immediately, the sprouts will start from the rice roots at once, and will soon make a fine growth and mature grain. Some farmers have taken eight to ten barrels of rice per acre from these second crops.

The marketing of rice is easily accomplished and quickly done. Rice ware houses are found in all towns in the rice growing region. There are some thirty mills in operation which were erected at a cost of more than \$1,750,000. Of these there are two large mills at Beaumont, one at Orange, and one at Port Arthur, in Texas; five at Crowley, La.; two at Lake Charles, and one each at Eastwood, Gueydans, Mermenteau Jennings, Welsh, Fenton, West Lake and Opelousas, in Louisiana. The rice acreage tributary to these mills is about 175,000 acres. The Louisiana mills have an aggregate daily capacity of 10,000 barrels and could use up a crop of two million barrels. The Texas mills will probably clean up 6,000 barrels per day. Formerly nearly all the rough rice was sent to New Orleans to be milled, but nearly all this work is now done where the rice is produced. The rice mills will either buy the rough rice, or mill the rice and sell it for the farmer, charging for this service forty cents a barrel, the mill retaining the bran and the polish.

The Modern Rice Mill.

Just as the mortar and pestle to pulverize wheat, and the metate and rubbing stone to grind corn have been fore-runners of the modern flour and grist mill, so the hollow stone or block of wood and pestle, used to crack the hulls of the rice, have been the fore-runners of the up-to-date rice mill. In the Orient the rice is still removed from the hull by dropping a heavy wooden pestle into a hollow log partly filled with rough rice. A man and woman engaged in this work can earn 60 cents (gold) per day, and clean about three barrels of rice. With the more wide awake Japanese a contrivance somewhat like a stamp mill is used and driven by water power. Such a mill with eight pestles, will hull a little over six barrels per day, at a cost of about two cents per barrel. Steam power is used in the cities, but the same method prevails.

A modern American mill will clean from 500 to 5,000 barrels of rice per

day. The rough rice as delivered to the mill is carried on elevators to the top floor and is run into a machine, an agitator and fan, which removes the straws, sticks, dust and loose chaff, and then passes into a machine which removes the hull, leaving the brown grain, then through a machine which removes the bran, next to the brush room where it is polished by passing between great pieces of rubber and wooly sheep skin and closely woven wire screens removing the outside integument and emerges as a beautifully white, pearly, almost transparent grain. Then it passes through a series of screens which separate the whole grains from the broken ones, and the broken grains into uniform sizes. The polish, after being removed is reground and bolted until as fine as patent process flour. All these processes, including the weighing, are automatic, and the grain passes from the ground floor to the top floor seven times during the process of cleaning. The chaff is automatically carried to the furnaces and constitutes the fuel.

LIST OF CANALS.

CROWLEY, LA.	ACRES.	MERMENEAU, LA.	Acres.
Duson & Abbot canal	12,000	Watertown Canal Co. canal	500
J. R. Roller & Co. canal	8,000	Hurd & Wright canal	500
A. Kaplin		S. L. Peck canal	300
Morris & Miller canal	8,000	Cary & Gibbens canal	500
Abbott Bros. canal	7,000	Maignaud canal	500
W. H. Duson canal	6,000		
		LAKESIDE, LA.	
JENNINGS, LA.		H. C. Clay canal	2,000
M. Farland Irrig. Co. canal	6,000	E. I. Hall canal	1,000
A. D. McFarland canal	3,000		
Wilkinson canal	3,000	LACASINE, LA.	
Jennings Irrig. Co. canal	3,000	Ed Morris canal	1,000
C. L. Shaw canal	500		
Riverside Irrig. Co. canal	4,500	MIDLAND, LA.	
Gauthier & Sons canal	500	Midland Canal Co. canal	5,000
Lacassine Irrig. Co. canal	2,500		
Lakeside Irrig. Co. canal	3,500	KINDER, LA.	
Williams & Cooper canal	1,500	O. E. Moore canal	1,000
P. J. Unkel canal	500	Kinder Canal Co. canal	6,000
Northwood Irrig. Co. canal	500		
Eckles canal	300	RAYNE, LA.	
W. R. Conklin canal	500	Bradford Canal Co. canal	projected
A. A. Call canal	1,000		
D. Derouen canal	250	SULPHUR CITY, LA.	
Wm. Spurgin canal	1,600	S. A. Robertson canal	2,000
G. B. Spencer canal	300		
Maysville Canal Co. canal	4,000	WELSH, LA.	
Holton & Winn canal	5,000	Robinson Canal Co. canal	1,000
J. H. Blose canal	200		
		ABBEVILLE, LA.	
LAKE CHARLES, LA.		N. M. Stutts canal	5,000
Pomeroy & Sons canal	500	Farmers' Canal & Irrig. Co. canal	20,000
C. A. Lowry & Co canal	7,000	Moss Canal & Irrig. Co. canal	2,500
Stafford & Linkweiller Co. canal	3,000	Perkins Pumping Plant canal	800
J. N. Houk canal	400	Vermillion Development Co. canal	22,900
D. Herbert canal	400	R. H. Mills canal	2,500
Farmers' Canal Co. canal	6,000		
Paola canal	2,000	RAYWOOD, TEX.	
Houston River canal	8,000	Raywood Rice Canal Milling Co. ..	
H. C. Drew canal	6,000	canal	projected
Black Bayou canal	1,000		
Bunker Hill canal	1,000	TERRY, TEX.	
Bridgford & Crow canal	400	Des Moines Rice Co. canal	1,200
Frazer & Nason canal	2,500		
Lake Bros. canal	3,500	TRINITY, TEX.	
W. Allen canal	200	Trinity Canal & Irrig. Co. canal	5,000
Felix Perkins canal	160		
Lake Benton canal	projected	BEAUMONT, TEX.	
Villere & Duhan canal	160	Beaumont Irrig. Co canal	15,000
		Jefferson County Rice Co. canal	5,000
SHELL PARK, LA.		Southern Rice & Trust Co. canal	1,500
J. B. Foley canal	11,000	Viterbo Bros.' Canal Co. canal	1,500
French & Ward canal	500	McClure Canal Co. canal	1,200
Laurents & Broussard canal	200	McFadden Canal Co. canal	5,000
		ORANGE, TEX.	
		Cow Bayou Canal Co. canal	5,000
		Orange County Canal Co. canal	2,700
		Samuel Wilson Canal Co. canal	1,200
		PORT ARTHUR, TEX.	
		Port Arthur Rice Co. canal	7,500

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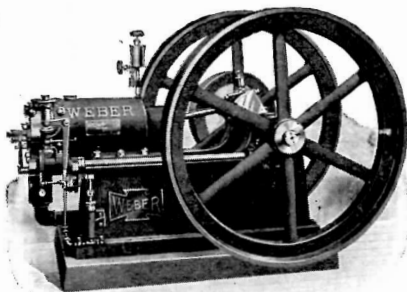
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