

OSBORNE ALMANAC AND ENCYCLOPEDIA



INTERNATIONAL HARVESTER COMPANY OF AMERICA
(INCORPORATED)
CHICAGO U S A

THE calling of
the skilled
tiller of the
soil, the calling of
the skilled mechanic,
should alike be rec-
ognized as pro-
fessions, just as
emphatically as the
callings of lawyer,
of doctor, of banker,
or clerk — they
should be trained
alike in head and
in hand.

—Theodore Roosevelt

OSBORNE

Almanac and Encyclopedia

THE OSBORNE Almanac and Encyclopedia is compiled to give the farmer and his wife practical information. The great trouble with most of the human race is that we are too busy to stop and consider what can be done to lighten burdens and make life more pleasant.

Simple little alterations that cost but a few dollars often make buildings last longer, beautify lawns, or make work easier for both the farmer and his wife. These improvements could be made by the farmer if he were not too busy to stop to think about them. While it is impossible in a book of this size to cover more than a small part of the field, the information is of such practical nature that we hope farmers will find it profitable.

OSBORNE DIVISION
Auburn, New York



When a liar tells the truth nobody believes him.

Index

	Page
About Osborne Twine.	92
Advantages of Using a Side Delivery Hay Rake.	41
Aerate the Soil.	21
Anniversaries, Church Dates, and Festivities.	3
Calendar, January.	6
" February.	10
" March.	14
" April.	18
" May.	22
" June.	26
" July.	30
" August.	34
" September.	38
" October.	42
" November.	46
" December.	50
Chronological Cycles.	3
Cooking Recipes.	11-12-15-16-19-20-23-27-31-32 -36-39-40-43-44-45-47-48-51
Cool Drinks for Hot Weather.	35
Cultivators for All Purposes.	17
Cut Your Corn.	81
Dandelions Killed by Spraying.	63
Eclipses.	5
Eras of Time.	3
Explanation of Calendar Pages.	4
Farm Ice House.	65-66-67
Five Hundred Dollars for Three Days' Work.	13
Helpful Hints About Concrete Work and Cement.	69-70-71-72-73-74-75 -76-77-78-79-80-85
How to Select Seed-Wheat and Oats.	56-57
How to Measure Twine.	91
Ideal Soils.	58-59
I H C Service Bureau.	93
Keeping Lightning Rods in Order.	52-53
Kemp 20th Century Points of Superiority.	61
Meat, Farmers' Clubs.	8-9
Meat, Recipes.	7
More and Better Corn.	24-28-49-54-90
New Bettendorf Steel Gear Farm Wagon.	68
New Osborne Binder.	55
New Osborne Mower.	64
1913 Calendar.	94
One-Man Hay Loader.	33
Osborne Hay Rake.	29
Osborne Hay Tedder.	37
Principles of Bee-Keeping.	82-83-84-85
Pulling Fence Posts.	53
Simple and Effective Device for Lifting Hogs.	9
Sterling Farm Truck Wagons.	86
Useful Knots and Splices.	87-88-89-90
Valuable Information.	6-10-14-18-22-26 -30-34-38-42-46-50



Astronomical Calculations

By BERLIN H. WRIGHT, DeLand, Florida

Eras of Time

The Gregorian year 1912 corresponds to the following eras:
 The latter part of the 136th and the beginning of the 137th year of the Independence of the United States of America.
 The 46th of the Dominion of Canada, beginning July 1.
 The year 1330 of the Mohammedan era, beginning Dec. 22, 1911; the year 1331 begins Dec. 11, 1912.
 The year 8021 A. M. of the Greek Church, beginning Jan. 14.
 The year 4809 (nearly) of the Chinese era, beginning Feb. 18.
 The year 5672-73 (nearly) of the Jewish era; year 5673 begins at sunset, Sept. 11.
 The year 2572 of the Japanese era, beginning Feb. 18.
 The year 6625 of the Julian Period.
 The year 7420-21 of the Byzantine era, beginning Sept. 1.
 The first day of January, 1912, is the 2,419,403d day since the commencement of the Julian Period.

Chronological Cycles

Dominical Letters	G. F.	Roman Indiction	10
Epact (Moon's Age, Jan. 1)	11	Dionysian Period	241
Lunar Cycle (Golden N'ber) . . .	17	Jewish Lunar Cycle	10
Solar Cycle	17		

Anniversaries, Church Days and Festivals.

New Year's Day (Circumcision)	Jan. 1	Nativity of John the Baptist	June 24
Epiphany	" 6	Peter and Paul	" 29
Lee's Birthday	" 19	Independence Day	July 4
Conversion of St. Paul	" 25	Mary Magdalen	" 22
Purification of B. V. M.	Feb. 2	St. James	" 25
Septuagesima Sunday	" 4	Transfiguration	Aug. 6
Sexagesima Sunday	" 11	Heart of Assumption B. V. M.	" 15
Lincoln's Birthday	" 12	St. Bartholomew	" 24
St. Valentine	" 14	Labor Day (exc. in certain states)	Sept. 2
Quinquagesima (Shrove) Sunday	" 18	Exaltation of Holy Cross	" 14
Shrove Tuesday	" 20	St. Matthew	" 21
Ash Wednesday	" 21	Day of Atonement (Your Kippur)	" 21
Washington's Birthday	" 22	First Day of Tabernacles	" 26
Quadragesima Sunday	" 25	Michaelmas	" 29
St. Patrick's Day (Mid-Lent Sun.)	Me. 17	St. Luke	Oct. 18
Annunciation (Lady Day)	" 25	Simon and Jude	" 28
Palm Sunday	" 31	Halloween	" 31
First Day of Passover	Apr. 2	All Saints	Nov. 1
Good Friday	" 5	All Souls	" 2
Easter Sunday	" 7	General election (exc. in certain states) . .	" 5
Low Sunday	" 14	Thanksgiving Day	" 28
St. George	" 23	St. Andrew	" 30
St. Mark	" 25	Advent Sunday	Dec. 1
Phillip and James	May 1	Heart of Immaculate Conception B. V. M. .	" 8
Rogation Sunday	" 12	St. Thomas	" 21
Ascension (Holy)	" 16	Christmas Day	" 25
Hebrew Pentecost (Shebuoth)	" 22	St. Stephen	" 26
Pentecost (Whitsunday)	" 26	St. John the Evangelist	" 27
Memorial Day	" 30	Holy Innocents	" 28
Trinity Sunday	June 2		
Corpus Christi	" 6		

Ember Days

Wednesday, Friday and Saturday after 1st Sunday in Lent—Feb. 28 and March 1 and 2.
 Wednesday, Friday and Saturday after Pentecost—May 29, 31 and June 1.
 Wednesday, Friday and Saturday after 14th of September—September 18, 20 and 21.
 Wednesday, Friday and Saturday after 13th of December—December 18, 20 and 21.



Opportunity doesn't knock very loud; consequently, it pays to keep your ears open.

Explanation of the Calendar Pages

All the calculations are based upon mean or clock time, except the Moon's Phases, which are of that standard within which zone the provinces named are located. The Sun's rising and setting are for the upper limb, corrected for parallax and refraction. In the case of the Moon no correction is needed, as in the Sun, for "parallax and refraction" with her are of opposite nature and just balance each other. The figures given, therefore, are for the Moon's center on a true horizon, such as the ocean or a large plain affords.

The calculations in each of the geographical divisions of each calendar page will apply with sufficient accuracy to all places in the contiguous North American zones indicated by the headings of the divisions.

How to Foretell the Weather

The following formula of popular weather signs was adopted, a number of years ago, by the Farmers' Club of the American Institute: When the temperature falls suddenly, there is a storm east of you. When the temperature rises suddenly, there is a storm to the west or northwest of you. The wind always blows from a region of fair weather toward a region where a storm is forming. Cirrus clouds always move from a region where a storm is in progress toward a region of fair weather. Cumulus clouds always move from a region where a storm is forming. When cirrus clouds are moving rapidly from the north or northeast there will be rain within twenty-four hours no matter how cold it is. When cirrus clouds are moving rapidly from the south or southeast there will be a cold hailstorm on the morrow if it be in the summer, and if it be in the winter there will be a snow storm.

The wind always blows spirally around a storm center, in a direction contrary to the hands of a clock, and generally toward the storm center. When it blows from the north the heaviest rain is east of you; if from the south the heaviest rain is west of you; if from the east the heaviest rain is south of you.

Weather Forecasts and Signals

The operations of the weather bureau of the Department of Agriculture are based upon observations of the weather taken at about 200 observatories throughout the United States at the same moment of time and telegraphed daily to Washington, D. C., and to other important cities. These observations comprising barometric pressure, temperature, precipitation, wind, and clouds, are entered upon outline charts of the United States by means of symbols, forming the "daily weather map," from which the forecasts are made. These forecasts are issued every day for every state in the union, and whenever necessary special warnings are sent out of storms, frosts, cold waves, heavy snows, and floods. In addition to the main office in Washington there are subordinate forecast centers in Chicago, New Orleans, Denver, San Francisco, and Portland, Ore. The forecasts are first telegraphed to about 2,300 principal distributing points, whence they are further disseminated by telegraph, telephone, and the mails.

If you look easy, everybody will pitch in to help you make good.



Eclipses, 1912

There will be four eclipses this year, two of the Sun and two of the Moon, as follows:

I. Partial of the Moon April 1, invisible in U. S. This is the last one of the series to which this eclipse belongs, which began on the Moon in northern limb in the year 1047.

II. Central and total of the Sun April 17. The Sun will rise more or less eclipsed throughout most of the southern, eastern and middle states; invisible west of a line from near Pensacola, through Memphis and Des Moines to Winnipeg. East of a line from near Sag Harbor, through Albany to Clayton, N. Y., the eclipse will be wholly visible but very small and on the southern limb of the Sun.

Throughout New England the eclipse will begin shortly after sunrise and end about 7 a. m.; size about three digits as shown in Fig. 1.

At Boston the eclipse will begin at 5:30 a. m. and end at 6:32 a. m.; at New York City the eclipse will be on at sunrise and will end at 6:31 a. m., nearly 4 digits being eclipsed.

The next eclipse of the series to which this one belongs will be April 27, 1930, which will be total also and visible in U. S. A complete series of solar eclipses includes 60 or 70 recurrences or saros period and covers a period of over 1,000 years.

III. Partial of the Moon, September 26, the Moon setting as the eclipse begins in eastern U. S., where it will, therefore, be invisible. Visible as follows:



The figure shows 1, 2, 3 and 4 digits cut off from the sun's southern limb.

Fig. 1

	Cent. Time H. M.	Mtn. Time H. M.	Pac. Time H. M.
Begins at (a)...	5:03 a. m.	4:03 a. m.	3:03 a. m.
Mid'le at (b)...	5:45 a. m.	4:45 a. m.	3:45 a. m.
End at (c)...	6:26 a. m.	5:26 a. m.	4:26 a. m.

Size of the eclipse at b, 1.46 digits, as shown in the annexed figure, where the arrow indicates the path of the Moon through the southern portion of the earth's dark shadow from west to east. The next recurrence of this eclipse will be October 6, 1930, when the series closes, which began 865 years ago on the Moon's southern limb, since which time there have been 48 eclipses of this series.



Lunar Eclipse of Sept 26

Fig. 2

IV. Total of the Sun October 10, visible in the U. S. as a very small eclipse on the Sun's southern limb. In the gulf states the Sun will rise with the eclipse on. Throughout most of North and South Carolina the whole of the eclipse will be visible, just after sunrise, but will be very small, less than one digit being eclipsed (see Fig. 1). The next eclipse of the series of which this is one will be October 21, 1930, when it will be total again.



If things aren't coming your way, go out and bring them in.

JANUARY

Moon's Phases		Intercol. T.		Eastern T.		Central T.		Mountain T.		Pacific T.	
	D.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
☾ Full Moon	4	9	30	8	30	7	30	6	30	5	30
☾ Last Quarter	11	3	43	2	43	1	43	0	43	11	43 ^{10th}
☾ New Moon	19	7	10	6	10	5	10	4	10	3	10
☾ First Quarter	27	4	51	3	51	2	51	1	51	0	51

Day of Mo.	Day of Wk.	Lt. and Dk. of Moon	Moon's Pl.	UNITED STATES											
				Northern States						Southern States					
				Sun Rises	Sun Sets	Moon S. & R.	Sun Rises	Sun Sets	Moon S. & R.	Sun Rises	Sun Sets	Moon S. & R.	Sun Rises	Sun Sets	Moon S. & R.
				H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1 M	☾	☾	☾	7 25	4 43	4 11	7 3	5 6	3 46						
2 Tu	☾	☾	☾	7 25	4 44	5 31	7 3	5 7	4 59						
3 W	☾	☾	☾	7 25	4 45	6 46	7 3	5 7	6 11						
4 Th	☾	☾	☾	7 25	4 46	rises	7 4	5 8	rises						
5 Fr	☾	☾	☾	7 25	4 47	6 7	7 4	5 9	6 36						
6 Sat	☾	☾	☾	7 25	4 48	7 27	7 4	5 10	7 49						
7 Sun	☾	☾	☾	7 25	4 49	8 45	7 4	5 11	9 0						
8 M	☾	☾	☾	7 24	4 50	9 59	7 4	5 11	10 5						
9 Tu	☾	☾	☾	7 24	4 51	11 8	7 4	5 12	11 8						
10 W	☾	☾	☾	7 24	4 52	morn	7 3	5 13	morn						
11 Th	☾	☾	☾	7 24	4 53	16 7	3	5 14	9						
12 Fr	☾	☾	☾	7 23	4 54	1 22	7 3	5 15	1 8						
13 Sat	☾	☾	☾	7 23	4 55	2 28	7 3	5 16	2 8						
14 Sun	☾	☾	☾	7 23	4 56	3 33	7 3	5 17	3 7						
15 M	☾	☾	☾	7 22	4 57	4 38	7 3	5 18	4 7						
16 Tu	☾	☾	☾	7 22	4 59	5 40	7 2	5 19	5 5						
17 W	☾	☾	☾	7 21	5 0	6 35	7 2	5 20	5 59						
18 Th	☾	☾	☾	7 21	5 1	7 22	7 2	5 21	6 47						
19 Fr	☾	☾	☾	7 21	5 2	sets	7 1	5 21	sets						
20 Sat	☾	☾	☾	7 20	5 3	6 10	7 1	5 22	6 33						
21 Sun	☾	☾	☾	7 19	5 4	7 14	7 1	5 23	7 32						
22 M	☾	☾	☾	7 18	5 5	8 19	7 0	5 24	8 30						
23 Tu	☾	☾	☾	7 17	5 7	9 23	7 0	5 25	9 28						
24 W	☾	☾	☾	7 17	5 8	10 26	6 59	5 26	10 24						
25 Th	☾	☾	☾	7 16	5 9	11 31	6 59	5 27	11 23						
26 Fr	☾	☾	☾	7 16	5 10	morn	6 58	5 28	morn						
27 Sat	☾	☾	☾	7 15	5 11	40	6 58	5 29	25						
28 Sun	☾	☾	☾	7 14	5 13	1 52	6 57	5 30	1 30						
29 M	☾	☾	☾	7 13	5 14	3 46	6 56	5 31	2 36						
30 Tu	☾	☾	☾	7 12	5 15	4 22	6 56	5 32	3 48						
31 W	☾	☾	☾	7 12	5 16	5 33	6 56	5 33	4 57						

January was named from Janus, an ancient Roman divinity, and was added to the Roman Calendar 713 B.C.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	5:31	5:52
16	5:33	5:51

TWILIGHT ENDS

Day	Southern States	Northern States
1	6:36	6:15
16	6:47	7:29

DAY'S LENGTH

Day	Southern States	Northern States
1	10 h. 16 m.	8:51
11	10 h. 23 m.	9:03
21	10 h. 32 m	9:23

The World's Calendar for Wheat Harvests

Every month in the year the world has a wheat harvest somewhere.

During January they are harvesting in New Zealand and the Argentine Republic.

Valuable Information

For a Sick Headache—Take one tablespoonful of baking soda and dissolve it in a half tumbler of water; into this pour the juice of half a lemon and drink while effervescing. Headache may nearly always be relieved by applying heat to the feet. To lie down and put one's feet against a hot bottle will often cause one to fall asleep and to wake up feeling relieved.

A Simple Cure for Indigestion and Constipation—After each meal slowly masticate three pinches of wheat bran. This is a very effective remedy if faithfully tried.

Apples eaten daily insure clear, bright complexions.

If a man is continually telling you that honesty is the best policy, look out for him.



Curing Meats

January is a good month for butchering. The weather is generally cool and gives the meat plenty of time to take salt, and be in good condition when time to smoke. After butchering, give the meat plenty of time to cool. When cool, cut up and salt down in a barrel that will hold the brine; salt very heavy, 2 gallons of salt to 100 pounds of meat. Leave the meat in the salt from six to eight weeks. Hang the meat in a smoke-house and smoke for ten days, using green hickory wood for smoking. Pack in a box in dry salt or good oats, or seal up in heavy paper sacks.

To Cure Meat

Four pounds brown sugar; $1\frac{1}{2}$ pounds pepper, cayenne and black; 1 pound saltpeter; 10 quarts salt for 1,000 pounds of meat, live weight. Dissolve saltpeter and mix all together. Rub in well, one application; lay away. When dry, it is ready to smoke. Lay on board, do not pile one above the other.

Pickle for Pork

(Fly-proof, sure, and good)

One quart salt, 1 quart ground black pepper and 1 quart sugar, $\frac{1}{4}$ pound saltpeter. Mix well and rub well into meat all it will take; work in close to bone; use same day animal is slaughtered. Let meat be on table a few days to drip. Store away in a cool place, but not in a cellar; a large box is a good place.

Scrapple

Soak the head of hog in hot water, clean and boil until the meat will drop from the bones; chop the meat, after carefully removing all bone; season with salt and pepper; strain the water it was boiled in, let stand and cool, then take off grease; put the liquor over the fire, put in the chopped meat, and stir in cornmeal till of the consistency of soft mush; cook one hour or more, pour in pan and cool; slice. Nice for breakfast.

Head Cheese

Clean the hog's head thoroughly and boil until the meat drops from the bones; remove bones and grind the meat through the sausage grinder. Put into a kettle and add a pint of water to a head. Thicken with cornmeal until it leaves the kettle, then salt and pepper it. The liver and heart may be cooked with it. To serve, slice it cold and dry it.

Knickerbocker Pickle for Meats

To 20 pounds beef or hams, use 1 gallon water, $1\frac{1}{2}$ pounds common salt, $\frac{1}{2}$ pound brown sugar, $\frac{1}{2}$ ounce saltpeter, $\frac{1}{2}$ ounce soda. Boil, skim, and settle. When cold, pour on meat. A little saltpeter sprinkled on the top absorbs the surface blood.

Pickled Pigs'-Feet

Take 12 pigs'-feet; clean well and boil till tender; drain. Take 1 gallon water, 1 gallon vinegar, 1 tablespoon each, ground pepper, whole allspice, and coriander seed; 3 sticks cinnamon broken well; 1 teaspoon whole cloves. Put together in a kettle and let come to boil; then put in the pigs' feet and let boil 5 minutes. Put in large earthen jar, weight down, tie up, and keep in cool place. Will be ready for use in a week.



The man who owes you a dollar will always laugh at your jokes.

Farmers' Meat Club

One of the great objections that has long been held against the Farmers' Meat Club is that the different members do not receive the same quality of meat.

This can easily be overcome if the carcass is divided according to the diagram. The pieces which go together are Nos. 1 and 18, 2 and 16, 3 and 12, 4 and 13, 5 and 17, 6 and 20, 7 and 11, 8 and 15, 9 and 14, 10 and 19. This method of division furnishes about 20 pounds of meat for each member of the Club.

The killing and the cutting of the meat may be done by the members in turn, or by the local butcher. The great object of the Club of this kind is to give the farmers fresh meat in the summer and save them a great deal of money that is usually expended for meat. Farmers who put up ice can keep themselves supplied with fresh meat in this manner during the summer months at a small fraction of what it costs them to purchase their meat at local butchers.

Some years ago President Waters of the Kansas Agricultural College made some investigations and arrived at the conclusion that Kansas farmers spend from \$3,500 000 to \$7,000,000 a year for meat which grew on Kansas farms. The farmers pay at least a double price for their meat, because the live stock is first sold to the packers, who in turn re-sell to the farmers at double the original purchase price. President Waters estimates that the meat bought by the average farm family of five persons varies from \$10.00 to \$300.00 per year, the average being \$55.00. This made the total meat bill of Kansas farmers over \$7,000,000. Half of this amount would certainly be worth saving.

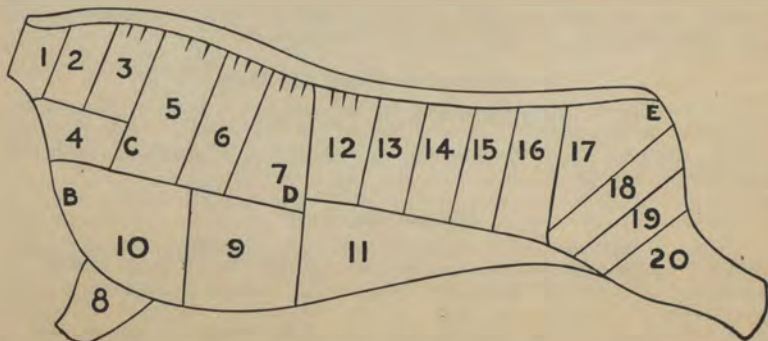


Diagram showing how a beef can be divided so that each receives an equal quality of meat

Give your alms in secret is the command. Most men get caught at it.

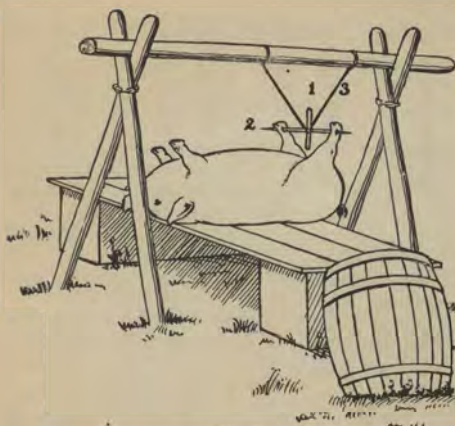


Fig. 1.

The plan most commonly in use for furnishing the live animal is for the Club to select three members who either purchase the animals from some member of the organization, or, if none of the members have suitable butcher stock, where they can best buy it. The cost of course is apportioned equally among the members. If twenty farmers do not care to form an organization of this kind, a lesser number of course can do the same thing, except that the division of the meat will be larger and each farmer will receive more meat.

The amount of money that farmers can save in this

manner of course depends upon the amount they eat in the course of a year, but it can be figured that it will amount to one-half what they have to pay for meat when they buy it from butchers, and they have the satisfaction of knowing the quality of the meat they are using.

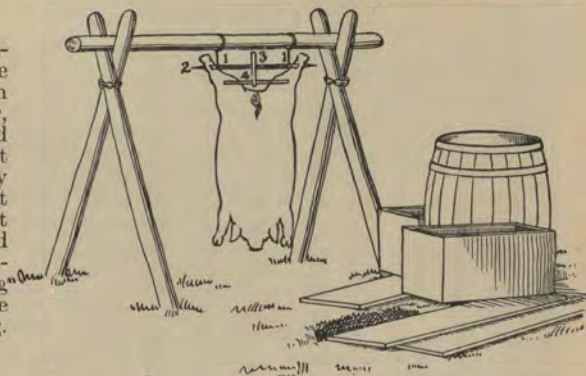


Fig. 2.

A Simple and Effective Device for Lifting Hogs

Butchering time comes only once or twice a year on the farm. For this reason farmers do not keep block and tackle for raising the carcass.

A simple little device can be made for raising the hogs without any of the hard work of lifting by hand. Figures 1 and 2, show how it can be done. In Figure 1, the rope is placed in the form of a swing on the gammon stick. The gammon stick should be round and the surface perfectly smooth. Placing a short stick between the rope and the gammon stick and turning it around and around, the gammon stick acts as a windlass and raises the hog easily and quickly. This is an appliance that any farmer can make.



If praying doesn't bring it to you, go out and get it.

FEBRUARY

Moon's Phases		Intercol. T.		Eastern T.		Central T.		Mountain T.		Pacific T.	
	D.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
☾ Full Moon	2	7	58	6	58	5	58	4	58	3	58
☾ Last Quarter	9	8	51	7	51	6	51	5	51	4	51
☾ New Moon	18	1	44	0	44	11	44	10	44	9	44
☾ First Quarter	25	3	27	2	27	1	27	0	27	11	27

Day of Wk.	Day Mo.	Lt. and Dk. of Moon	Moon's Pl.	UNITED STATES											
				Northern States						Southern States					
				Sun Rises	Sun Sets	Moon S. & R.	Sun Rises	Sun Sets	Moon S. & R.	Sun Rises	Sun Sets	Moon S. & R.	Sun Rises	Sun Sets	Moon S. & R.
				H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	Th	☾	♏	7 11	5 18	6 34	6 54	5 34	6 0						
2	Fr	☾	♏	7 10	5 19	rises	6 54	5 35	rises						
3	Sat	☾	♏	7 9	5 20	6 17	6 53	5 36	6 35						
4	Sun	☾	♏	7 7	5 21	7 34	6 52	5 37	7 44						
5	M	☾	♏	7 6	5 22	8 39	6 51	5 38	8 41						
6	Tu	☾	♏	7 5	5 23	9 59	6 51	5 38	9 55						
7	W	☾	♏	7 4	5 25	11 8	6 50	5 39	10 57						
8	Th	☾	♏	7 3	5 26	morn	6 49	5 40	11 58						
9	Fr	☾	♏	7 2	5 27		16 6	48	5 41	morn					
10	Sat	☾	♏	7 1	5 28	1 23	6 47	5 42	59						
11	Sun	☾	♏	7 0	5 30	2 30	6 46	5 43	1 59						
12	M	☾	♏	6 58	5 31	3 33	6 45	5 44	2 59						
13	Tu	☾	♏	6 57	5 32	4 30	6 44	5 45	3 54						
14	W	☾	♏	6 56	5 34	5 19	6 43	5 46	4 44						
15	Th	☾	♏	6 55	5 35	6 2	6 42	5 46	5 29						
16	Fr	☾	♏	6 53	5 36	6 36	6 41	5 47	6 8						
17	Sat	☾	♏	6 52	5 37	7 4	6 40	5 48	6 42						
18	Sun	☾	♏	6 51	5 39	sets	6 39	5 49	sets						
19	M	☾	♏	6 49	5 40	7 15	6 38	5 50	7 21						
20	Tu	☾	♏	6 48	5 41	8 20	6 37	5 51	8 20						
21	W	☾	♏	6 46	5 43	9 25	6 36	5 52	9 18						
22	Th	☾	♏	6 45	5 44	10 33	6 36	5 52	10 19						
23	Fr	☾	♏	6 44	5 45	11 42	6 35	5 53	11 22						
24	Sat	☾	♏	6 42	5 46	morn	6 34	5 54	morn						
25	Sun	☾	♏	6 41	5 48		55 6	33	5 55	29					
26	M	☾	♏	6 39	5 49	2	8 6	32	5 56	1 36					
27	Tu	☾	♏	6 38	5 50	3	19 6	31	5 57	2 43					
28	W	☾	♏	6 37	5 51	4	23 6	30	5 57	3 47					
29	Th	☾	♏	6 36	5 52	5	15 6	29	5 58	4 43					

February was named from the Roman divinity *Februus* (Pluto), or *Februa* (Juno), and was added to the Roman Calendar about 713 B. C.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	5:29	5:41
16	5:20	5:24

TWILIGHT ENDS

Day	Southern States	Northern States
1	7:00	6:46
16	7:10	7:05

DAY'S LENGTH

Day	Southern States	Northern States
1	10 h. 48 m.	9:48
11	11 h. 3 m.	10:16
21	11 h. 20 m.	10:45

The World's Calendar for Wheat Harvests

During the latter part of February the harvest is on in East India, Upper Egypt and Chili.

In Upper Egypt the camel is used as a draft animal. In Chili the pony and oxen draw the harvesters. In East India the reaping hook is still used.

Valuable Information

Remedy for Blackheads is to bathe the face every night with very hot water, drying it with a soft towel, and then rubbing in, very gently, some cold cream, perfumed or not; in the morning wash the face well with hot water and soap, and then rinse several times in tepid water so that all the soapuds may be removed. Follow with a dash of cold water to contract the pores.

Mustard Water is used for removing any unpleasant odor, as that of onions, from the hands.

When the Hands are Very Dirty rub them over thoroughly with a little vaseline or lard, to loosen the dirt, before washing with soap and water. This will keep the skin soft and smooth.

For Warts and Corns use castor oil. An application of the oil twice daily will bring about a cure in a period of a fortnight to six weeks.

Aim high if your gun is loaded. If it isn't, don't aim.



A Few Handy Recipes for Each Month in the Season

There are seasons in the year when every good housewife complains that she does not know what to cook. The recipes given on the pages immediately following each calendar give a good idea as to what can be cooked during that month.

The recipes are arranged in this way, instead of placing cakes, pies, soups, puddings, etc., in classified order, to give the housewife a better idea of the things she can cook from produce that is grown on the farm.

In this age of high prices, the economical housewife will appreciate that these recipes have eliminated, as far as possible, all materials except those that are grown on the farm. Of course, the condiments and certain fruits that are grown in tropical regions, are exceptions.

It is surprising how cheaply one can cook even when all kinds of produce are excessively high priced, if the farm folks will be careful to take care of their fruit, garden vegetables and other materials necessary for cooking, in the proper season.

The meat packer makes it a point to utilize every possible part of the carcass, and this is why packers can kill meat and sell it as cheaply as the home butcher. The farm folks are in position to do exactly this thing if they take it upon themselves, especially in reference to things which they need for bodily sustenance.

Boston Baked Beans

Soak small white beans over night in fresh water. In the morning put them in a kettle with fresh water enough to cover. Parboil until the skins present a shriveled appearance. Add a pinch of soda and pour off the water. Salt and pepper, mixing them up, and transfer to a bean pot; place in the middle a piece of fat salt pork scored on top. Add one-half cup of molasses. Fill the pot (a covered earthen vessel is best) with warm water, put on the lid and bake in a slow oven all day, keeping watch that the water does not dry out until the beans are thoroughly cooked.

Buckwheat Cakes

Sift dry one pint of buckwheat flour and two teaspoonfuls of baking powder, and add a tablespoonful of brown sugar with milk or water sufficient to make a batter. Beat but lightly and bake at once on a hot griddle.

Apples Baked With Walnuts

Take five or six large apples—those which are tart are best for baking—take out the cores carefully so as not to break the outside skin, fill the cavity with the kernels of black walnut meats, then bake them in a quick oven. When done place in a dish, pour over them whipped cream and serve while hot. Do not take the skin from the apples.

Caramel Cake

White sugar, one and one-half cupfuls; butter, one-half cupful; sweet milk, one-half cupful; two eggs; baking powder, two teaspoonfuls; flour, two and one-half cupfuls. Bake in layers.

Caramel Filling—One and one-half cupfuls of brown sugar, one-half cupful sweet milk, one tablespoonful butter. Boil six minutes, then beat until thick and creamy, spread between layers. Put the remainder on the stove and cook until it threads. Spread this on top of the cake.

Apple Pudding

Six good-sized apples, stewed and well beaten; six eggs, beaten separately; one pint of sweet cream, sweeten and flavor to taste. Bake with an under crust. It may be eaten with whipped cream, and is excellent.



The man who doesn't make mistakes never does anything. The trouble lies in repeating them.

Apple Batter Pudding

Mix together one cup flour, one teaspoonful of baking powder, a pinch of salt; into this rub one tablespoonful of butter. Beat one egg, and stir into it half a cup of milk; add this to the flour, etc. Pare and slice two sour apples, and press into the dough. Bake about one-half hour. The beauty of this pudding is that you are always sure of success. This recipe makes enough for a family of four.

Sauce—One cup of sugar, two-thirds of a cup of butter, two tablespoonfuls of flour, three gills of boiling water; boil three minutes; flavor to taste.

Meat Porcupine

Two cups chopped cold meat and two-thirds cup of bread crumbs; season with very small chopped peppers (either ripe or green) and salt; moisten with one egg, lightly beaten, and form into a loaf; lay over top of loaf narrow strips of bacon. Bake until brown. Serve either hot or cold.

Parsnips

Wash and scrape until nice and clean; cook till tender; cut in halves; season with salt and pepper, fry in hot butter till they are nice and brown.

Bread Pudding

One tablespoon of butter, 1 pint bread crumbs, 1 cup molasses, 1 cup water, 1 cup raisins, 1 egg, spice to taste, 1 teaspoon soda, 1 cup flour, $\frac{1}{2}$ nutmeg, 1 teaspoon cinnamon, $\frac{1}{2}$ teaspoon cloves. Beat the egg very light, mix all together and steam two hours.

Liverwurst

To the livers from 2 hogs, use 1 hog's head. Cook separately until very tender. Remove from liquor and let get thoroughly cool. Remove all the little bones and mash up and mix thoroughly. If it seems dry, moisten with a little of the broth from the head. Season with salt and pepper to taste. Pack in an earthen jar. Slice and serve cold, or add a little water, heat, and serve hot.

Smoked Tongue

Pickle tongue for a few days in regular pickle for meat, then smoke two or three hours and hang up. When ready to use, soak over night, and boil from four to five hours, or until very tender. Take out of the kettle and skin immediately, then coil it around in a bowl, with the tip on the outside; put a weight on it and press until entirely cold. When you wish to use it, slip it out of the bowl and slice with a sharp knife.

If we loved our neighbors as we love ourselves, the earth would be heaven.



\$500.00 for Three Days' Work

A boy in Edwards County, Kansas, made \$500.00 by three days' work following the binder with a disk harrow; i. e. the ground he treated in this manner, produced 42 bushels and 10 pounds of wheat to the acre, while that of the rest of the farm, planted in the ordinary way, produced only 25 bushels.

A farmer in Decatur County, Iowa, raised 109 bushels and 40 pounds of corn to the acre because he disked the ground.

These are two instances—one a grain grower and the other a corn grower. In both cases the increased yield was due to the use of the disk harrow. The grain grower was in a district where rainfall is not so abundant as it is where the corn grower lives, but both raised bumper crops.

No matter whether it is a wet year or dry year, the disk harrow properly used, will increase the yield.

Osborne disk harrows give good service in all conditions of ground. This is absolutely necessary if the best results are to be obtained. The disks are made to both penetrate and pulverize the ground in the best possible manner. The frames are strong, holding the gangs to the work at all times.

The Osborne line of disk harrows comprises the Osborne Bumper, Osborne Rival, Osborne Orchard, and Osborne double disk harrow. This means a disk harrow for all purposes.



The Osborne Disk Harrow does good work



Sometimes a club is the best "dove of peace."

MARCH

Moon's Phases				Intercol. T.			Eastern T.			Central T.			Mountain T.			Pacific T.		
				D.	H.	M.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.
☾ Full Moon	3			3	6	42		5	42		4	42		3	42		2	42
☾ Last Quarter	10			10	3	56		2	56		1	56		0	56		11	56
☾ New Moon	18			18	6	9		5	9		4	9		3	9		2	9
☾ First Quarter	25			25	11	2		10	2		9	2		8	2		7	2

Day of Mo.	Day of Wk.	Lt. and Dk. of Moon	Moon's Pl.	UNITED STATES														
				Northern States						Southern States								
				Sun Rises	Sun Sets	Moon S. & R.	Sun Rises	Sun Sets	Moon S. & R.	Sun Rises	Sun Sets	Moon S. & R.	Sun Rises	Sun Sets	Moon S. & R.			
H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	
1	Fri	☾	☾	6 35	5 53	5 59	6 28	5 58	5 32									
2	Sat	☾	☾	6 34	5 53	rises	6 27	5 58	rises									
3	Sun	☾	☾	6 32	5 54	6 22	6 26	5 59	6 28									
4	M	☾	☾	6 30	5 55	7 34	6 25	6 0	7 33									
5	Tu	☾	☾	6 29	5 56	8 47	6 24	6 1	8 39									
6	W	☾	☾	6 27	5 57	9 57	6 23	6 1	9 42									
7	Th	☾	☾	6 25	5 58	11 7	6 22	6 2	10 45									
8	Fr	☾	☾	6 24	5 59	morn	6 21	6 3	11 38									
9	Sat	☾	☾	6 22	6 0		6 20	6 3	morn									
10	Sun	☾	☾	6 20	6 1	1 22	6 19	6 4	49									
11	M	☾	☾	6 19	6 2	2 23	6 17	6 5	1 47									
12	Tu	☾	☾	6 17	6 3	3 15	6 16	6 6	2 39									
13	W	☾	☾	6 16	6 4	4 16	6 14	6 6	3 26									
14	Th	☾	☾	6 14	6 5	4 37	6 13	6 7	4 6									
15	Fr	☾	☾	6 12	6 6	5 7	6 11	6 8	4 42									
16	Sat	☾	☾	6 11	6 8	5 32	6 10	6 9	5 13									
17	Sun	☾	☾	6 9	6 9	5 52	6 9	6 9	5 40									
18	M	☾	☾	6 7	6 10	sets	6 8	6 10	sets									
19	Tu	☾	☾	6 6	6 11	7 15	6 6	6 11	7 10									
20	W	☾	☾	6 4	6 12	8 22	6 5	6 11	8 11									
21	Th	☾	☾	6 2	6 13	9 33	6 3	6 12	9 15									
22	Fr	☾	☾	6 1	6 14	10 45	6 2	6 13	10 20									
23	Sat	☾	☾	5 59	6 15	12 00	6 1	6 14	11 28									
24	Sun	☾	☾	5 58	6 16	morn	5 59	6 14	morn									
25	M	☾	☾	5 56	6 17	1 12	5 58	6 15	37									
26	Tu	☾	☾	5 54	6 18	2 16	5 57	6 16	1 40									
27	W	☾	☾	5 52	6 19	3 11	5 56	6 16	2 37									
28	Th	☾	☾	5 51	6 20	3 56	5 55	6 17	3 27									
29	Fr	☾	☾	5 49	6 21	4 31	5 54	6 18	4 9									
30	Sat	☾	☾	5 47	6 22	4 59	5 52	6 18	4 44									
31	Sun	☾	☾	5 45	6 23	5 22	5 50	6 19	5 16									

March was named from Mars, the god of war. It was the first month of the Roman year.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	5:07	5:00
16	4:50	4:33

TWILIGHT ENDS

Day	Southern States	Northern States
1	7:18	7:25
16	7:28	7:46

DAY'S LENGTH

Day	Southern States	Northern States
1	11 h. 33 m.	11 h. 12 m.
11	11 h. 52 m.	11 h. 45 m.
21	12 h. 10 m.	12 h. 15 m.

The World's Calendar for Wheat Harvests

March witnesses a continuation of the harvest begun during February in East India, Upper Egypt and Chili.

March was named from Mars, the god of war. It was the first month of the Roman year.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	5:07	5:00
16	4:50	4:33

TWILIGHT ENDS

Day	Southern States	Northern States
1	7:18	7:25
16	7:28	7:46

DAY'S LENGTH

Day	Southern States	Northern States
1	11 h. 33 m.	11 h. 12 m.
11	11 h. 52 m.	11 h. 45 m.
21	12 h. 10 m.	12 h. 15 m.

The World's Calendar for Wheat Harvests

March witnesses a continuation of the harvest begun during February in East India, Upper Egypt and Chili.

Valuable Information

Cleaning up the Farm

While it goes without saying that the proper time for cleaning up the brush is when it is freshly cut, it should be remembered that early in the spring, brush and all kinds of rubbish should not be left lying on the ground, because they kill out the grass, giving weeds an opportunity to grow and flourish.

March is a good time of the year to take the handy wagon, and dump the brush into ditches that wash badly. Enough broken boards and posts can be picked up to furnish sufficient firewood for the entire summer, saving the price of the coal and improving the appearance of the farm.



Salads and Sandwiches

Mayonnaise Dressing

Beat a raw egg, with half a teaspoonful of salt, until it is thoroughly smooth. Add a teaspoonful of mixed mustard, made thicker than usual. When smooth, add (a little at a time) half a pint of olive oil. Rub smooth to a thick paste; then dilute with vinegar until the consistency of thick cream. This sauce keeps well if bottled and corked with a glass stopper, and may be made in advance when yolks are left over from baking. This is very nice on cold sliced tomatoes, cucumbers, cabbage, or other salads.

Salad Dressing

One small teacup of vinegar, butter half the size of an egg, one teaspoonful of mustard, one-half a teaspoonful of salt, $\frac{1}{4}$ spoonful pepper, one teaspoonful of sugar, two eggs. Cook till it rises as a cream; never let it boil, and when cold add one-half a teacupful of cream.

Bread Crumb Salad

Take cold biscuit or light-bread crumbs. Put in the oven and let remain until quite brittle; then run through a sieve. To two teacups of crumbs add two small onions, cut fine. Have ready four eggs, boiled hard. Cut up the whites of two eggs, and mix with the crumbs. Pour on two tablespoonful of melted butter; season with vinegar, black pepper, and salt. Add lukewarm water enough to work up smooth. Then put into a glass dish and press down smooth. Take the yolks of the eggs and press through the sieve, letting them fall on the salad until it is entirely covered. Take the two whites and cut into rings and half circles, and place about over the top. A few parsley leaves put on top add to its appearance.

Waldorf Salad

Dice 2 or 3 large apples, add $\frac{1}{2}$ cup walnut meats, $\frac{1}{2}$ cup celery. Dress with mustard or cream dressing.

Vegetable Salad

Almost any cooked vegetables, beans, peas, corn, beets, etc., mixed together, dressed with a mustard or cream dressing and served on a lettuce leaf, make a dainty salad.

Chicken and Nut Salad

Cut the white meat of a chicken into small pieces, and add to it a half cup of English walnut meats chopped rather coarse, and a cup of finely cut celery or four or five lettuce leaves torn in shreds. If the latter, sprinkle with celery salt, dust lightly with pepper, marinate with just a little vinegar or lemon juice, and add half a cupful of chicken stock or gravy and the same amount of mayonnaise. Toss lightly with a fork. Line a salad bowl—or the little individual paper cases—with the white leaves of lettuce, curling each one to form a cup or nest. Fill these with a salad mixture and crown each with a teaspoonful of mayonnaise.

Cheese and Nut Sandwiches

Chop the meats of twenty-five hickory nuts, almonds, or any nut on hand. Add them to a cream cheese and a dozen olives chopped fine. Spread on thin slices of white bread.



The best wisdom is that which comes from experience.

Mixed Sandwiches

Cut fine one cup of any cold meat, such as turkey, chicken, or veal, one cup of nut meats chopped fine, four small cucumber pickles chopped fine. Add plenty of lemon juice and mix well. Spread on lettuce leaves between white bread. This sandwich is also delicious with mayonnaise dressing.

Lettuce Sandwiches

A lettuce leaf laid between thin slices of bread nicely buttered makes a delicious and easily prepared sandwich. If desired, add a dash of salad dressing.

Cucumber Sandwiches

Slice cucumbers very thin, let stand a half hour in cold salt water. Lay between slices of buttered bread.

Croquettes

One can salmon, 2 eggs well beaten, 1 tablespoon butter, $\frac{1}{2}$ cup milk, $\frac{1}{4}$ cup bread or cracker crumbs. Salt and pepper. Mix well together, roll in flour and fry slowly in butter. Any cold meat may be substituted for salmon.

Soups

The pieces of meat for soup are either portions of the shank, the shin, or the neck. The meat should be cut in small pieces and the bone thoroughly cracked and broken. The water in which the bones and meat are boiled should never boil rapidly or irregularly, but simmer slowly and evenly. If it gets to boiling too fast, throw in a little cold water. This also causes the scum to rise. If a clear soup is wished, this should be carefully skimmed off. If a thick soup, it is not necessary, as the scum contains nothing unfit for food, but is a very nutritious element of the soup, being albumen. Salt should also be added at first, as it assists in extracting the juices and aids the scum to rise. Use whole spices, pepper corns, and herbs in the spring for seasoning, as they do not cloud or discolor the soup and can be easily strained out when done.

Rich Stock

Cut the meat from the soup bone and break the bones into small pieces; lay meat and bones in a flat-bottom kettle with a tight-fitting cover; cover with cold water in the proportion of one and one-quarter pints to each pound of meat and bone. Add also one-half teaspoonful of salt to each pound of meat and bone, and simmer slowly, an hour to the pound. Skim carefully, and when done strain into an earthen vessel and let stand over night. In the morning all the fat will have collected at the top in a cake, which can be easily taken off, and if a perfectly clear soup is wanted, the settling at the bottom must not be disturbed. This stock can be used as it is for bouillon, or flavored with one onion, one carrot, one turnip, a bouquet of herbs (thyme, sweet marjoram, parsley, and a bay leaf) and a few pepper corns, and colored with a little caramel as a rich brown soup.* Rice is also often added, also vermicelli, tomato strained to get out the seeds, or noodles. In fact the uses of good beef stocks are infinite, and each housekeeper will form her own combinations.

If money didn't travel so fast, it would go further.



Cultivators for All Purposes



Osborne Cultivator No. 95

Osborne cultivators can be adapted for a wide variety of uses. They meet the conditions that are common to each crop cultivated.

They are very strong, yet they are light and compact. The frames are high and the shank shaped to permit the cultivator to clear itself of trash easily.

The shovels cannot come loose or turn on the shank. The shape of the shovels is such that they retain a sharp point until completely worn out.

The mold boards are reversible and can be adjusted to throw dirt towards or away from the plants.

The expansion lever is equipped with double bars on both sides, making a most rigid construction. The lever is equipped with double latching device which insures an exceptionally rigid cultivator. Close adjustment of the width of cultivation can be made—giving the operator the advantage of adjusting the cultivator close to the plants in different widths of rows.

To be brief, Osborne cultivators are the kind for the gardener and farmer who want their tools set so that they can cultivate as close to the plant as they choose.

Osborne 14-tooth Cultivator

The Osborne 14-tooth cultivator is particularly desirable for cultivating deep without stirring the ground. For this reason, fruit growers and trucksters will find this cultivator very satisfactory, particularly when cultivating strawberries, raspberries, blackberries, gooseberries, hops, vineyards, etc.

It is furnished with a zigzag or straight bar frame, with or without lead wheel and expanding lever or thumb screw expansion.



Osborne 14-tooth Cultivator



Some men don't attempt to climb fame's ladder because they are afraid of a fall from the dizzy height.

APRIL

Moon's Phases	D.	Intercol. T.			Eastern T.			Central T.			Mountain T.			Pacific T.		
		H.	M.		H.	M.		H.	M.		H.	M.		H.	M.	
☾ Full Moon	1	6	4		5	4		4	4		3	4		2	4	
☾ Last Quarter	9	11	24		10	24		9	24		8	24		7	24	
☾ New Moon	17	7	40		6	40		5	40		4	40		3	40	
☾ First Quarter	24	4	47		3	47		2	47		1	47		0	47	

Day of Mo.	Day of Wk.	Lt. and Dk. of Moon	Moon's Pl.	UNITED STATES											
				Northern States						Southern States					
				Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.
				H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1 M	☾	☾	☾	5 44	6 24	rises	5 47	6 21	rises						
2 Tu	☾	☾	☾	5 42	6 26	7 34	5 45	6 21	7 23						
3 W	☾	☾	☾	5 41	6 27	8 46	5 44	6 22	8 28						
4 Th	☾	☾	☾	5 39	6 28	9 57	5 43	6 23	9 31						
5 Fr	☾	☾	☾	5 37	6 29	11 5	5 41	6 24	10 34						
6 Sat	☾	☾	☾	5 36	6 30	morn	5 40	6 25	11 34						
7 Sun	☾	☾	☾	5 34	6 31		9 5	39 6 26	morn						
8 M	☾	☾	☾	5 33	6 32	•	54 5	38 6 26	27						
9 Tu	☾	☾	☾	5 31	6 33	1 55	5 36	6 27	1 20						
10 W	☾	☾	☾	5 30	6 34	2 36	5 35	6 28	2 4						
11 Th	☾	☾	☾	5 28	6 35	3 7	5 34	6 29	2 40						
12 Fr	☾	☾	☾	5 26	6 36	3 34	5 33	6 29	3 12						
13 Sat	☾	☾	☾	5 25	6 37	3 57	5 31	6 30	3 42						
14 Sun	☾	☾	☾	5 24	6 38	4 16	5 30	6 31	4 7						
15 M	☾	☾	☾	5 22	6 39	4 37	5 29	6 31	4 34						
16 Tu	☾	☾	☾	5 20	6 40	4 56	5 28	6 32	5 1						
17 W	☾	☾	☾	5 19	6 41	sets	5 27	6 33	sets						
18 Th	☾	☾	☾	5 17	6 42	8 31	5 25	6 33	8 9						
19 Fr	☾	☾	☾	5 16	6 43	9 46	5 24	6 34	9 17						
20 Sat	☾	☾	☾	5 14	6 44	11 0	5 23	6 35	10 26						
21 Sun	☾	☾	☾	5 13	6 45	morn	5 22	6 36	11 32						
22 M	☾	☾	☾	5 11	6 46		9 5	21 6 36	morn						
23 Tu	☾	☾	☾	5 10	6 47	1 7	5 20	6 37	32						
24 W	☾	☾	☾	5 8	6 48	1 56	5 19	6 38	1 25						
25 Th	☾	☾	☾	5 7	6 49	2 34	5 18	6 39	2 10						
26 Fr	☾	☾	☾	5 6	6 50	3 3	5 17	6 39	2 46						
27 Sat	☾	☾	☾	5 4	6 51	3 28	5 16	6 40	3 18						
28 Sun	☾	☾	☾	5 3	6 52	3 50	5 15	6 40	3 47						
29 M	☾	☾	☾	5 2	6 53	4 10	5 14	6 41	4 15						
30 Tu	☾	☾	☾	5 0	6 55	4 31	5 13	6 41	4 43						

April was named from *aperire* (to open), the season when buds open.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	4:30	4:01
16	4:10	3:28

TWILIGHT ENDS

Day	Southern States	Northern States
1	7:39	8:00
16	7:50	8:33

DAY'S LENGTH

Day	Southern States	Northern States
1	12 h. 30 m.	12 h. 49 m.
11	12 h. 48 m.	13 h. 19 m.
21	13 h. 5 m.	13 h. 51 m.

The World's Calendar for Wheat Harvests

April is the harvest month in Lower Egypt, Asia Minor and Mexico.

In Mexico the harvest is carried on almost as it is in this country, except that oxen are frequently used in place of horses.

Valuable Information

Preventing Sore Shoulders on Horses

In the spring when horses are first used, their shoulders are naturally soft. Shedding hair at this time also has a tendency to make sore shoulders unless special care is taken to prevent it. The best way naturally is to prevent the shoulders from becoming sore. Taking care to see that the shoulders are clean and all the loose hairs removed from the lining of the collar or sweat-pad should keep the horses' shoulders in good condition.

Line the sweat-pad or collar that comes next to the horse's shoulders with pure white oilcloth. The oilcloth should be pure white without a color mark in it. Put the smooth part next to the shoulder, lining the pad or collar all through and sewing it in around the edges. The oilcloth has a tendency to keep the shoulders cool and can be washed off and kept clean.

No man is entitled to an opinion unless he knows what he is talking about.



Asparagus

Cut stalks into inch lengths, leaving tops to add after asparagus has cooked 10 or 15 minutes. Cook in a generous amount of butter, with just enough water to keep from frying. Salt and pepper to taste, and when water has cooked out and asparagus is tender, add enough thick cream to cover. Let boil and serve at once. Nice served on toast.

Points on Pie Crust

1. Use only the best materials in making pastry.
2. Use winter wheat or pastry flour. If the winter wheat flour is very soft, however, use one-third bread flour.
3. Butter and lard should be fresh, sweet, and hard.
4. Have the water ice cold.
5. Make the pie crust, if possible, in a cool room.
6. Set it away in a cold place as soon as made, and let it stand as long as possible before using it.
7. Use plenty of shortening, as crust which is tough and heavy is far more indigestible than pastry which is tender and flaky.
8. A little baking powder sifted into the flour will make the paste lighter.
9. Pie dough should be worked or mixed as lightly as possible, just enough to hold the ingredients together.
10. The oven must be hot at first, and after fifteen minutes the temperature should be lowered.
11. In making juicy pies, brush over the bottom crust with the unbeaten white of egg, to prevent crust from absorbing the juice.
12. To bake the top crust a nice brown brush it first with lard, then with white of egg.

Cream Pie

One pint sweet cream, 3 tablespoons sugar, yolks of 2 eggs, 1 teaspoon lemon extract. Let come to a boil in a double boiler, and thicken with 2 tablespoons flour. Pour the custard into a crust, which should be previously baked. Beat the whites of the eggs to a stiff froth, add 3 tablespoons sugar; pour over custard; set in oven and allow to come to a light brown.

Lemon Pie

One egg, 2 teacupfuls of white sugar, 1 tablespoonful of butter, 2 teacupfuls of boiling water, 2 small tablespoonfuls of corn starch, 2 lemons. Dissolve the corn starch in a little cold water, then put it in the boiling water; add the sugar, and let it boil a few minutes. Set it aside and when cool add the butter, egg, and the juice and grated rinds of the lemons. This makes three pies; by adding more water to the above quantity, it may be used for four.

Raisin Pie

One teacup raisins (seeded and chopped), 1 cup sugar, the juice and rind of 1 good-sized lemon, $1\frac{1}{4}$ cups boiling water. Set this on stove; let come to a boil; then add 4 heaping teaspoons flour, wet in a little cold water; after it boils again, put in a small piece of butter and a little grated nutmeg; let cool before making into pies. This makes one very large pie.

Baked Eggs

Break 6 eggs into a well-buttered dish, covered with fine bread crumbs; season with butter, salt, and pepper, and cover with cream. Set in oven and bake 20 minutes. Serve very hot.



If the "gift-horse" is a mule, stand off and keep your eyes on his heels.

Poached Eggs

If you do not have a poaching pan, a good way to poach eggs and keep them hot when served is to take small sauce dishes and set them in the vessel you are going to poach the eggs in. Pour in the water and when it is boiling drop the eggs in the sauce dishes, and when cooked to suit, pour the hot water off and serve in the dishes. They should be salted and peppered and a little butter added before taking to the table.

Coffee

Coffee should always be freshly ground.

The royal road to making good coffee lies in the use of an ordinary percolating pot; by this I mean a pot so arranged that the grounds of the coffee are never allowed to remain in the infusion. The upper portion of the pot may be metal, glass, or even a bag—anything that will hold the ground coffee above the water. The coffee must be of good quality, nicely browned, and freshly ground. Allow one rounding tablespoonful to each half pint of freshly boiled water. Soft water makes better coffee than hard water, but the water itself must be boiling and must be taken at its first boil. In boiling, water parts with its gases and becomes a little flat, and does not so easily draw out the flavoring of the coffee. The coffee may be drained off, and poured over the grounds a second time. Remove the grounds from the pot and keep the coffee boiling hot. Always scald the pot before putting in the coffee.

Breakfast coffee is better served with scalded milk—this does not mean boiled milk, but milk put over hot water until it steams. In cold weather heat the coffee cup by pouring hot water into it; then put in the milk, then the coffee; if cream is added, it should be added after, not before coffee goes into the cup.

An artist may make good coffee by putting it into the saucepan and boiling it, but nine out of ten cups of boiled coffee are not only unpalatable, but they are also unwholesome. Allow one tablespoon of coffee to each half-pint of water; put the quantity of coffee into the pot and add a tablespoonful of the white of an egg and sufficient cold water to moisten the mixture; mix thoroughly and pour over it the given quantity of freshly boiled water. Cover the pot and put it over the fire. At first boiling put in a tablespoonful of cold water; let it quickly return to the boiling point and boil for not more than a minute; then put in half a cupful of cold water and stand aside to settle. Put the coffee into a china pot which has been thoroughly heated with hot water, and serve at once.

Coffee is not spoiled by being kept one or two hours, provided the grounds are removed and the coffee is kept at the boiling point. Warmed-over coffee is always objectionable and should never be used.

Making Coffee in Large Quantities

One pound of ground coffee will make 3 gallons of good coffee. Break an egg over the coffee, mix thoroughly, add a little cold water, let stand a few minutes, then add boiling water, let come to a boil, fill up, and set where it will keep hot but not boil. The coffee may be placed in cheesecloth sacks and boiling water put over it and set back on the stove where it will keep just below the boiling point but not boil. Made this way it should be made at least an hour before wanted.

The best seed bed you can prepare is the best assurance of growing two blades where you grew one.



Aerate the Soil

The spring-tooth harrow is of vital importance in preparing a proper seed bed. As a matter of fact, there are some soils in which a spring-tooth harrow will do better work than any other type of harrow.

A spring-tooth harrow does better work in stony fields than the disk harrow.

There is no implement known that is as efficient for aerating the soil as the spring-tooth harrow. Its use has not been fully understood until the last few years when scientists have been endeavoring to find the whys and wherefores of certain soil conditions and how best to overcome them. Their experiments have proved that the spring tooth harrow is of great benefit in preparing the seed bed because it aerates the soil,—that is to say, puts it in the proper condition for free circulation of air.

All soils need nitrogen and the atmosphere is the store-house for nitrogen. Nitrogen is one of the essentials of plant life. Plants do not take their nitrogen directly from the air. It comes in contact with the plant in an indirect manner through the organic substances of the soil. In other words, the nitrogen in the air combines with mineral substances in the soil, and then through the action of bacteria certain compounds are formed which contain nitrogen in soluble form. Then nitrogen becomes a plant food.

It is plain to see that nitrogen cannot come in contact with mineral substances in the soil unless the air which contains nitrogen has a chance to circulate in the ground. The peculiar action of the spring-tooth harrow opens up the ground to permit the air to circulate through the soil better than any other implement that has thus far been made, consequently, every farmer regardless of what his crops may be will always benefit them by using the spring-tooth harrow in the preparation of the seed bed.

The Osborne spring-tooth harrow, because of its strong construction, is an especially valuable implement for this purpose.

The Osborne combination and vineyard spring tooth harrows are equally as efficient in their work as the spring-tooth harrow.



The Osborne Spring-tooth Harrow Aerates the Soil



The grey hairs of an honest man are more to be admired than the polished brow of a rich malefactor.

MAY

Moon's Phases		Intercol. T.			Eastern T.			Central T.			Mountain T.			Pacific T.		
		D.	H.	M.	H.	M.		H.	M.		H.	M.		H.	M.	
☾ Full Moon	1	6	19		5	19		4	19		3	19		2	19	
☾ Last Quarter	9	5	56		4	56		3	56		2	56		1	56	
☾ New Moon	16	6	13		5	13		4	13		3	13		2	13	
☾ First Quarter	23	10	11		9	11		8	11		7	11		6	11	
☾ Full Moon	30	7	29		6	29		5	29		4	29		3	29	

Day of Mo.	Day of Wk.	Lt. and Dk. of Moon	Moon's Pl.	UNITED STATES											
				Northern States						Southern States					
				Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.
				H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1 W	☾	☾	☾	4 59	6 56	rises	5 12	6 42	rises	4 19	5 42	8 20	3 56	5 19	8 20
2 Th	☾	☾	☾	4 58	6 57	8 49	5 11	6 42	8 20	4 19	5 42	8 20	3 56	5 19	8 20
3 Fr	☾	☾	☾	4 56	6 58	9 50	5 10	6 44	9 21	4 13	5 36	9 21	3 50	5 13	9 21
4 Sat	☾	☾	☾	4 55	6 59	10 50	5 9	6 44	10 21	4 7	5 30	10 21	3 44	5 7	10 21
5 Sun	☾	☾	☾	4 54	7 0	11 49	5 8	6 45	11 13	4 1	5 23	11 13	3 38	5 1	11 13
6 M	☾	☾	☾	4 53	7 1	morn	5 7	6 46	11 58	3 55	5 0	11 58	3 32	4 55	11 58
7 Tu	☾	☾	☾	4 52	7 2	32 5	6 6	6 47	morn	3 49	4 52	12 28	3 26	4 48	12 28
8 W	☾	☾	☾	4 51	7 3	1 7 5	5 6	6 47	37	3 42	4 45	1 11	3 20	4 42	1 11
9 Th	☾	☾	☾	4 49	7 4	1 35 5	4 6	6 48	1 11	3 36	4 40	1 41	3 14	4 36	1 41
10 Fr	☾	☾	☾	4 48	7 5	1 59 5	3 6	6 49	1 41	3 30	4 34	2 8	3 8	4 30	2 8
11 Sat	☾	☾	☾	4 47	7 6	2 19 5	3 6	6 50	2 8	3 24	4 28	2 34	3 2	4 24	2 34
12 Sun	☾	☾	☾	4 46	7 7	2 39 5	2 6	6 50	2 34	3 18	4 22	2 34	3 0	4 18	2 34
13 M	☾	☾	☾	4 45	7 8	2 59 5	1 6	6 51	3 01	3 12	4 16	2 34	2 54	4 14	2 34
14 Tu	☾	☾	☾	4 44	7 9	3 20 5	1 6	6 52	3 28	3 6	4 10	2 34	2 48	4 10	2 34
15 W	☾	☾	☾	4 43	7 10	3 43 5	0 6	6 52	3 58	3 0	4 4	2 34	2 32	4 4	2 34
16 Th	☾	☾	☾	4 42	7 11	4 13 6	59 6	53	4 35	2 54	3 58	2 34	2 20	4 35	2 34
17 Fr	☾	☾	☾	4 41	7 12	sets	6 59	6 54	sets	2 48	3 52	2 34	2 8	4 30	2 34
18 Sat	☾	☾	☾	4 40	7 13	9 56 6	58 6	54	9 20	2 42	3 46	2 34	2 2	4 24	2 34
19 Sun	☾	☾	☾	4 39	7 14	11 16	58 6	55	10 25	2 36	3 40	2 34	2 54	4 18	2 34
20 M	☾	☾	☾	4 39	7 15	11 53 6	57 6	56	11 21	2 30	3 34	2 34	2 48	4 12	2 34
21 Tu	☾	☾	☾	4 38	7 16	morn	6 56 6	56	morn	2 24	3 28	2 34	2 42	4 6	2 34
22 W	☾	☾	☾	4 37	7 17	36 6	56 6	57	9	2 18	3 22	2 34	2 36	4 0	2 34
23 Th	☾	☾	☾	4 36	7 18	1 56	55 6	58	47	2 12	3 16	2 34	2 30	3 54	2 34
24 Fr	☾	☾	☾	4 36	7 19	1 32 6	55 6	58	1 21	2 6	3 10	2 34	2 24	3 48	2 34
25 Sat	☾	☾	☾	4 35	7 20	1 54 6	55 6	59	1 50	2 0	3 4	2 34	2 18	3 42	2 34
26 Sun	☾	☾	☾	4 34	7 20	2 16 6	54 7	0	2 18	1 54	3 0	2 34	2 12	3 36	2 34
27 M	☾	☾	☾	4 34	7 21	2 36 6	54 7	0	2 46	1 48	2 54	2 34	2 6	3 30	2 34
28 Tu	☾	☾	☾	4 33	7 22	2 58 6	53 7	1	3 15	1 42	2 48	2 34	2 0	3 24	2 34
29 W	☾	☾	☾	4 32	7 23	3 23 6	53 7	2	3 46	1 36	2 42	2 34	1 54	3 18	2 34
30 Th	☾	☾	☾	4 32	7 23	rises	6 53 7	2	rises	1 30	2 36	2 34	1 48	3 12	2 34
31 Fr	☾	☾	☾	4 31	7 24	8 43 6	53 7	3	8 8	1 24	2 30	2 34	1 42	3 6	2 34

May was named from the Latin *Maius*, the growing month.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	3:51	2:54
16	3:36	2:22

TWILIGHT ENDS

Day	Southern States	Northern States
1	8:04	9:01
16	8:17	9:32

DAY'S LENGTH

Day	Southern States	Northern States
1	13 h 22 m.	14 h. 18 m.
11	13 h. 36 m.	14 h. 43 m.
21	13 h. 48 m.	15 h. 5 m.

The World's Calendar for Wheat Harvests

May is the harvest season in Algiers, Central Asia, China, Japan and Texas.

Texas is the first state in this country to begin the wheat harvest.

Valuable Information

Perspiring Feet—People who suffer from this trouble will find great relief if they wash the feet every night with warm vinegar and water for several minutes. Then dust over them a powder of one part salicylic acid to eight parts of talcum powder.

Bleeding from the Nose is something very troublesome. Keep the head thrown back, holding a wet cloth or sponge to receive the blood, at the same time raising the arms above the head. Press the fingers firmly on each side of the nose where it joins the upper lip. Place some cold substance, as a lump of ice, at the back of the neck, or on the forehead at the bridge of the nose. Chew some paper into pulp and keep it for a while under the upper lip.



Spinach

Wash free from dirt and grit, and boil twenty minutes in salted water; drain and chop very fine; add butter, salt, pepper, and nutmeg to taste. Garnish with hard-boiled eggs cut in slices.

A Yankee Boiled Dinner

Prepare as much pork as you want for dinner. Put in the kettle with two and one-half pints of water. Get a medium-sized cabbage-head, wash, and cut in two. Take out the heart (or stalk), lay the halves together, and put them into the kettle. Next a good-sized white, sweet beet (red will do, but it is not quite so nice); wash, peel and cut lengthwise into four pieces. If desired, put in turnips with the beets, cut crosswise. Boil slowly for two hours, and then put in your potatoes and slices of squash. If the pork is not salty enough, season with a pinch of salt. A red pepper pod is an improvement. Boil until the potatoes are done. Carrots may be added, if desired.

Rhubarb Pie

Bake crust separate. Mix 1 pint cooked rhubarb, yolks of 2 eggs, 1½ cups sugar, 2 tablespoons flour; cook until thick. Whip whites of eggs and add 2 tablespoons sugar, and place on top. Brown in oven.

Pressed Chicken

Cut up fowls and place in a kettle with a tight cover, so as to retain the steam. Put about 2 teacups of water and plenty of salt and pepper over the chicken, and let it cook until the meat separates from the bone. Cut or chop all the meat (freed from skin, bone, and gristle), about as for chicken salad, season well, put into a dish and pour the remnant of the juice in which it was cooked over it; this will jelly when cold. The knack of making this simple dish lies in not having too much water; it will not jelly if too weak, or if water is allowed to boil entirely away while cooking.

Soft Ginger Bread

One cup sugar, 1 cup sorghum molasses, 3 eggs, 1 cup sour cream (not too thick), 1 cup shortening (butter or drippings), 3 cups flour, 1 teaspoon cinnamon, 1 teaspoon ginger, 1 teaspoon soda in the molasses, ½ teaspoon baking powder.

Beets

Remove leaves, wash clean, being careful not to break off the little fibres and rootlets, as the juices would escape, and beets lose their color. Boil in plenty of water; if young, 2 hours; if old, 4 or 5 hours; trying with a fork to see when tender. Take out, drop in a pan of cold water, and slip off the skin with the hands; slice those needed for immediate use, place in a dish, add salt, pepper, and butter; if not very sweet, add a teaspoon sugar; set over boiling water, to heat thoroughly, and serve hot, with or without vinegar. If beets are very young cook them with the leaves on and serve with vinegar for greens.

Creamed Rice

Put into a pudding dish 4 tablespoons rice and 3 pints milk, a coffee cup sugar, and butter size of a walnut. Stir thoroughly every 10 minutes. Bake 3 hours. Can be eaten with or without cream.



An easy way to make an enemy is to tell a man what you think he should do.

More and Better Corn

On the agricultural balance sheet for the year 1910 we find that the farmers of the United States are credited with producing more than 3,000,000,000 bu. of corn, which at 50 cents a bushel would amount to more than \$1,500,000,000. On the debit side of this account they are charged with the use of 120,000,000 acres of land for corn production, making an average yield of about 25 bushels to the acre, which at 50 cents a bushel means a return of \$12.50 for every acre of corn. Deducting from this \$4.50 for the fertility removed from the soil, there is but \$8.00 left for labor and interest on investment—a small sum indeed.

These facts are startling on first consideration, but in looking over the field it can readily be seen that there are many ways of so improving the conditions under which corn is produced that the returns from the land can be made more nearly what they should be. Instead of an average production of 25 bushels to the acre, it can be made 30, 35, and finally, 40 or more bushels.



A champion ear of corn

There are several things that are essential to the production of good corn, among which are fertile land, good seed, thorough cultivation, favorable seasons, and last but not least, a variety of corn adapted to the soil and the climate. It is not possible for all of us to own a fertile farm, nor are we always favored with the best seasons, but the principles of good corn production that we can in a large measure control are

The choosing of a variety adapted to our locality
The careful selection and testing of the seed
Proper and thorough cultivation.

Important as are the various principles of corn production, the one that requires most attention is the selecting and testing of the seed. A glance at conditions in Iowa, which is considered a good corn state, will substantiate this statement, for by investigation it was found that the average stand of corn varies from 64 to 72 per cent. If the stand throughout the United States is but 72 per cent, it means that practically 30,000,000 acres were cultivated last year from which no corn was received, thus consuming the time and energy of thousands of men and horses. This means, to the average farmer, the spending of 2½ to 3 hours a day in cultivating soil that gives no returns—a waste that can largely be avoided by the use of good seed.

(Continued on page 28)

Love in a young man is an insane desire to take care of some other man's daughter.



Osborne Peg Tooth Harrow

The Osborne peg tooth harrow gives good service in conditions of soil where the average peg tooth harrow will not work at all. For this reason it does not pay to buy a harrow because it is cheap in price. The farmer loses more in the loss of crops in one season than the difference in the cost of the two implements.

A harrow with a weak frame which allows the tooth bars to spring out of shape is a poor investment at any price, for the simple reason that in unfavorable conditions it cannot be depended upon to work up the soil. The Osborne peg tooth harrow will not spring out of shape and the tooth beams will not bend. No one has ever heard a complaint of this character against the Osborne harrow. There is no stronger evidence of the value of the harrow than this very fact. Farmers who regard first requirement will be interested in the Osborne peg tooth harrow.

The reason for the exceptionally strong construction of the Osborne peg tooth harrow is the strengthening bars that are placed, one on each side of the section. Whenever a tooth strikes an obstruction, this bar throws the strain on all of the tooth bars, thus making it impossible to bend one bar without bending the others, consequently the strength of the entire section helps to resist the strain thrown upon the tooth bar. While this harrow is stronger in other respects than the average harrow, these bars make it by far the strongest harrow made. The Osborne peg tooth harrow is made with 25, 30, or 35 teeth to the section, $\frac{1}{2}$ inch square or $\frac{5}{8}$ inch diamond shape. One section can be used or as many sections as desired can be connected into one harrow.



The final preparation of the seed bed



The man who knows how, can grow 50 bushels of wheat where the man who doesn't grows 15.

JUNE

Moon's Phases		Intercol. T.			Eastern T.			Central T.			Mountain T.			Pacific T.		
		D.	H.	M.	H.	M.		H.	M.		H.	M.		H.	M.	
☾ Last Quarter	7	10	36		9	36		8	36		7	36		6	36	
☾ New Moon	15	2	24		1	24		0	24		11	24 ^{14th}		10	24 ^{14th}	
☾ First Quarter	21	4	39		3	39		2	39		1	39		0	39	
☾ Full Moon	29	9	34		8	34		7	34		6	34		5	34	

Day of Mo.	Day of Wk.	Lt. and Dk. of Moon	Moon's Pl.	UNITED STATES											
				Northern States						Southern States					
				Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.
				H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	Sat	☾	♌	4 31	7 24	9 41	4 52	7 3	9 5						
2	Sun	☾	♌	4 30	7 25	10 28	4 52	7 4	9 53						
3	M	☾	♌	4 30	7 26	11 7	4 52	7 4	10 35						
4	Tu	☾	♌	4 30	7 26	11 36	4 52	7 5	11 10						
5	W	☾	♌	4 29	7 27	morn	4 51	7 5	11 42						
6	Th	☾	♌	4 29	7 28		4 51	7 6	morn						
7	Fr	☾	♌	4 29	7 28		4 51	7 6							
8	Sat	☾	♌	4 29	7 29		4 51	7 7	35						
9	Sun	☾	♌	4 28	7 30	1 0	4 51	7 7	59						
10	M	☾	♌	4 28	7 30	1 21	4 51	7 8	1 27						
11	Tu	☾	♌	4 28	7 31	1 43	4 51	7 8	1 55						
12	W	☾	♌	4 28	7 31	2 8	4 51	7 9	2 27						
13	Th	☾	♌	4 28	7 32	2 41	4 51	7 9	3 8						
14	Fr	☾	♌	4 28	7 32	3 24	4 51	7 9	3 56						
15	Sat	☾	♌	4 28	7 32	sets	4 51	7 10	sets						
16	Sun	☾	♌	4 28	7 33	6 43	4 51	7 10	9 9						
17	M	☾	♌	4 28	7 33	10 30	4 52	7 10	10 2						
18	Tu	☾	♌	4 28	7 33	11 7	4 52	7 11	10 45						
19	W	☾	♌	4 28	7 34	11 36	4 52	7 11	11 22						
20	Th	☾	♌	4 29	7 34	12 0	4 52	7 11	11 53						
21	Fr	☾	♌	4 29	7 34	morn	4 52	7 11	morn						
22	Sat	☾	♌	4 29	7 34		4 53	7 11	22						
23	Sun	☾	♌	4 29	7 35	38	4 53	7 11	46						
24	M	☾	♌	4 29	7 35	1 4	4 53	7 12	1 18						
25	Tu	☾	♌	4 30	7 35	1 26	4 54	7 12	1 48						
26	W	☾	♌	4 30	7 35	1 55	4 54	7 12	2 22						
27	Th	☾	♌	4 30	7 35	2 29	4 54	7 12	3 1						
28	Fr	☾	♌	4 29	7 35	3 12	4 55	7 12	3 47						
29	Sat	☾	♌	4 29	7 35	rises	4 55	7 12	rises						
30	Sun	☾	♌	4 29	7 35	9 5	4 55	7 12	8 33						

June is traced to Juno, the queen of heaven, who was thought to preside over marriages.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	3:25	1:55
16	3:21	1:40

TWILIGHT ENDS

Day	Southern States	Northern States
1	8:31	10:00
16	8:39	10:20

DAY'S LENGTH

Day	Southern States	Northern States
1	13 h. 57 m.	15 h. 25 m.
11	14 h. 3 m.	15 h. 34 m.
21	14 h. 6 m.	15 h. 39 m.

The World's Calendar for Wheat Harvests

In June the harvest begins in Turkey, Spain, Southern France, California, Tennessee, Virginia, Kentucky, Kansas, Utah and Missouri.

The modern self-binder is found throughout France, also in Spain.

Valuable Information

Fainting is caused by an interruption of the supply of the blood to the brain. The head should be lowered immediately. Often laying the person down will revive her without other measures. The head may be allowed to hang over the side of the couch for a few moments. Smelling salts held to the nose and heat applied over the heart will help. Open a window or outer door to admit plenty of fresh air, and unfasten the clothing to permit free circulation. When unconsciousness is prolonged, place a mustard paste over the heart; if the breathing stops, artificial respiration should be begun. It is useless to try to give stimulants by mouth unless the person is sufficiently conscious to be able to swallow. The attack usually passes off in a few minutes, but the invalid should lie still and be kept quiet for some time after.

The young man who feels sorry every time he looks at his parents is well on the road to the penitentiary.



Canned Strawberries

Wash the berries thoroughly before picking off the stems, and weigh them; to each pound of berries, allow one-fourth of a pound of sugar. Let them cook fifteen minutes after they come to a boil; then they are ready for the cans.

Preserved Strawberries

Remove the hulls from your berries, and put into a colander a couple of quarts only at a time. Pour water over to cleanse them. Have on the stove a pan of syrup made of two pounds of white sugar and one-half cupful of water. Drop the berries into it, allow them to cook rapidly for twenty minutes, remove all the scum that rises, but do not stir the fruit. Pour into tumblers. Cook the extra syrup and juice to a jelly, and fill up your glasses; let stand until next day, and tie up with thin paper, over which put a cloth. Keep in a dry place.

French Strawberry Short-Cake

One egg, 3 tablespoonfuls of milk, 1 tablespoonful of sugar, 1 teaspoonful of baking powder, 1 tablespoonful of butter, flour to stiffen. Roll out one-half inch thick, and bake in a deep cake-tin; when done fill with whole well-sweetened strawberries; on top of this put the white of an egg beaten stiff and sweetened the same as frosting.

Preserved Cherries

Stone and stem tart cherries, saving all the juice. To every pound of fruit allow a pound of sugar. Put the sugar and juice in the preserving kettle over the fire, and when the sugar is entirely dissolved, add the cherries. Cook until the syrup is very thick; put into glass jars and seal.

Cherry Pudding

Two eggs, 1 cupful of sweet milk, 2 teaspoonfuls of baking powder, flour enough to make a stiff batter, and as many cherries as can be stirred in. Bake one-half hour, and serve with sugar and cream.

Spiced Cherries

Seven pounds fruit, 4 pounds white sugar, 1 pint strong vinegar, cinnamon and cloves to taste. Put sugar, vinegar, and spices together and let come to a boil, then add the pitted fruit. Cook 2 or 3 hours, or until thick.

Creamed Peas

Before shelling the peas, wash them well and let drain. Shell and take the hulls and boil quickly in 3 cups of cold water, or more, according to the quantity cooked. Boil about 20 minutes, then strain off the liquor and use in cooking peas. Cook until tender, season with salt, pepper, and if not sweet enough, a little sugar. Stir a teaspoon of flour into a tablespoon of melted butter and add just before taking them up, cooking all together until the sauce is smooth. Peas cooked this way are much sweeter than when cooked in clear water.

Sponge Cake

One-half teaspoon salt, 3 eggs—beat 2 minutes. $1\frac{1}{2}$ cups white sugar—beat 5 minutes. 1 cup flour—beat 2 minutes; 1 cup flour with 1 teaspoon cream tartar stirred in; $\frac{1}{2}$ cup cold water with $\frac{1}{2}$ teaspoon soda dissolved in it. Flavor to taste. Bake forty minutes in moderate oven.



Great minds don't worry over small things.

More and Better Corn

There are three fundamental resolutions that should be adopted in the selection and care of seed corn.

First, that every ear to be used for seed be selected from the field before frost.

Second, that every ear be carefully stored so as to permit it to thoroughly dry out and at the same time not be subjected to the danger of freezing.

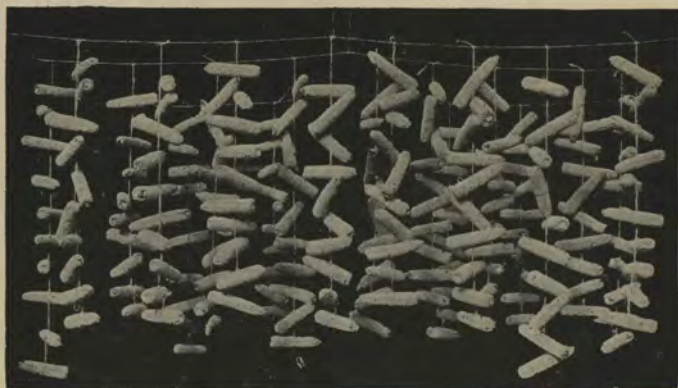
Third, that every ear be tested by sprouting not less than six kernels from it; and discarding all ears except those which show vigorous germination.

Time for Selecting Seed Corn

The best time for selecting seed corn is early in the fall just after corn has become well glazed, and before frost. Do not put off the selecting of the seed until the rush of corn picking causes us to carelessly and hastily pick our seed corn. It will take only a short time for one man to go through the field and select 30 or 40 times as many ears of good corn as he expects to plant acres the next year. By doing this he will be able to choose the very best kind of ears from the best stalks, and he will not be subjecting his seed to the danger of freezing. In selecting the seed corn, choose the ears from stalks of medium size tapering well toward the tassel. The ear should be located about 4 or 4½ feet from the ground. The stem of the ear should be short and should allow the ear to hang down. It is best not to select the corn from stalks that are given special advantage by being alone, but rather from stalks that are well surrounded with other corn. The ears should be of medium size, the rows straight, and the kernels should be deep, and not too sharp nor too blunt at the point. The butt of the ear should be well filled out, and the tip well covered with corn.

Caring for the Seed Corn

The care of the seed is important, for the germination will depend very largely on the way in which the seed is stored. One way is to pick the corn



One very good method of hanging up seed corn. It permits a free circulation of air and reduces the loss caused by rats and mice

(Continued on page 49)

Some men are like fleas. When you want to put your finger on them, they are elsewhere.



Osborne Hay Rake

The Osborne hay rake is of the kind that gives dependable service year after year. It can be depended upon to do good raking whether the hay is light or heavy. The rake head is made high, giving large holding capacity. The teeth are long, extending well under the center of the rake so that they carry the hay along rather than push it. The teeth are fastened to the rake head by clamps so made that they form a bridge which strengthens rather than weakens the rake head. The clamps are interchangeable so that the teeth can be placed close together or wide apart. The cleaner rods are adjustable. They can be placed so that there is no danger of the rake teeth catching on them when dumping the rake.

The Osborne hay rake dump rods are reversible and interchangeable, making four changes in the dumping rods. This means the wear of two rakes in one.

The rake head is strong, having few holes on the side which supports the weight. The rake head is high, giving large holding capacity.

The floating check teeth absolutely prevent hay from rolling, wrapping, or losing out at the ends of the rake.

The Osborne hay rake wheels are without question the strongest that have ever been placed on a rake. The large, round, staggered spokes brace each other, and the groove in the channel rim protects the riveting on the outer end of the spokes from wear.



The Osborne Hay Rake does clean raking

The adjustable snubbing casting causes the teeth to drop close to the windrow, whether driving a fast or slow walking horse, consequently no unraked hay is left.

The patented singletree pulling device does away with all singletree troubles.

The horse pulls the rake around the corner with the tugs instead of pushing it with the thills.



Nature does things in her own way. Don't take issue with her. Better work with her.

JULY

Moon's Phases		Intercol. T.		Eastern T.		Central T.		Mountain T.		Pacific T	
	7 ^h .	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
☾ Last Quarter		0	47	11	47	10	47	9	47	8	47
☾ New Moon	14	9	13	8	13	7	13	6	13	5	13
☾ First Quarter	21	1	18	0	18	11	18 20th	10	18 20th	9	18 20th
☾ Full Moon	28	0	28 29th	11	28	10	28	9	28	8	28

Day of Mo.	Day of Wk.	Li. and Dk. of Moon	Moon's Pl.	UNITED STATES											
				Northern States						Southern States					
				Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.
				H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1 M	☾	☾	☾	4 32	7 35	9 38	4 56	7 12	9 11						
2 Tu	☾	☾	☾	4 32	7 35	10 34	4 56	7 12	9 41						
3 W	☾	☾	☾	4 33	7 34	10 27	4 57	7 12	10 11						
4 Th	☾	☾	☾	4 33	7 34	10 47	4 57	7 12	10 37						
5 Fr	☾	☾	☾	4 34	7 34	11 54	4 58	7 11	11 2						
6 Sat	☾	☾	☾	4 35	7 34	11 24	4 58	7 11	11 27						
7 Sun	☾	☾	☾	4 35	7 33	11 43	4 59	7 11	11 53						
8 M	☾	☾	☾	4 36	7 33	morn	4 59	7 11	morn						
9 Tu	☾	☾	☾	4 37	7 33		7 5	0 7 11	24						
10 W	☾	☾	☾	4 37	7 32		35 5	0 7 10	58						
11 Th	☾	☾	☾	4 38	7 32	1 13	5	1 7 10	1 43						
12 Fr	☾	☾	☾	4 39	7 31	2 0	5	1 7 10	2 35						
13 Sat	☾	☾	☾	4 39	7 31	3 3	5	2 7 9	3 39						
14 Sun	☾	☾	☾	4 40	7 30	sets	5 3	7 9	sets						
15 M	☾	☾	☾	4 41	7 30	9 2	5	3 7 9	8 38						
16 Tu	☾	☾	☾	4 42	7 29	9 35	5	4 7 8	9 18						
17 W	☾	☾	☾	4 43	7 29	10 1	5	4 7 8	9 52						
18 Th	☾	☾	☾	4 44	7 28	10 24	5	5 7 7	10 22						
19 Fr	☾	☾	☾	4 44	7 27	10 45	5	6 7 7	10 51						
20 Sat	☾	☾	☾	4 45	7 26	11 7	5	6 7 6	11 20						
21 Sun	☾	☾	☾	4 46	7 26	11 30	5	7 7 6	11 49						
22 M	☾	☾	☾	4 47	7 25	11 58	5	8 7 5	morn						
23 Tu	☾	☾	☾	4 48	7 24	morn	5	8 7 4	24						
24 W	☾	☾	☾	4 48	7 23		29 5	9 7 4	1 1						
25 Th	☾	☾	☾	4 49	7 23	1 10	5	10 7 3	1 45						
26 Fr	☾	☾	☾	4 50	7 22	1 57	5	10 7 3	2 33						
27 Sat	☾	☾	☾	4 51	7 21	2 52	5	11 7 2	3 27						
28 Sun	☾	☾	☾	4 52	7 20	rises	5 12	7 1	rises						
29 M	☾	☾	☾	4 53	7 19	8 9	5	12 7 0	7 45						
30 Tu	☾	☾	☾	4 54	7 18	8 32	5	13 6 59	8 14						
31 W	☾	☾	☾	4 55	7 17	8 51	5	14 6 59	8 40						

July was named in honor of Julius Caesar, who was born on the 12th of July.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	3:26	1:44
16	3:35	2:05

TWILIGHT ENDS

Day	Southern States	Northern States
1	8:42	10:22
16	8:36	10:25

DAY'S LENGTH

Day	Southern States	Northern States
1	14 h. 4 m.	15 h. 35 m.
11	14 h. 8 m.	15 h. 24 m.
21	13 h. 50 m.	15 h. 6 m.

The World's Calendar for Wheat Harvests

July is the harvest season in Roumania, Austro-Hungary, Southern Russia, Germany, Switzerland, France, Southern England, Oregon, Nebraska, Southern Minnesota, Wisconsin, Colorado, Washington, Iowa, Illinois, Indiana, Michigan, Ohio, New York, New England and Eastern Canada.

Valuable Information

To Preserve White Lace, keep it in a box, and before putting it away sprinkle it thoroughly with magnesia. Shake out before using.

A Raw Potato cut in half and rubbed on the marks will remove mud stains from black clothes.

Waterproof and Squeaking Boots—To make leather boots waterproof, saturate them with castor oil; to stop squeaking, drive a peg into the middle of the sole. White of egg brushed over morocco leather freshens it.

If the Buttonhole of a stiff collar be slightly moistened, the difficulty in inserting the collar button will be obviated.

There's more enjoyment in doing things you don't have to do than in doing things you have to do.



Corn Oysters

Six ears grated corn, 1 egg, 2 tablespoons flour, 1 teaspoon baking powder, 1 teaspoon sugar, $\frac{1}{2}$ cup milk or cream, 1 even teaspoon salt. Drop in hot butter and fry brown.

Corn Omelet

One and one-half cups cold corn, cut from the cob; mix with two eggs, slightly beaten; 1 teaspoon salt, a dash of pepper, $1\frac{1}{2}$ teaspoons melted butter, 1 tablespoon flour, and 1 pint scalded milk. Pour into small buttered timbale moulds (best set in a pan of hot water) and bake in a moderate oven.

Currant Jelly

Leave the currants on the stems, weigh the fruit and remember the number of pounds. Put a little water—a pint or so, in your kettle, and add the currants, a few at a time to prevent burning. Have a three-cornered bag made of thin but strong cotton, well scalded and wrung until almost dry. After boiling twenty minutes, put your currants in the bag, let them drain all night (or a long time), but do not squeeze (unless currants are very scarce). In the morning put the juice into the kettle without measuring. Let it boil for three or four minutes, then add half as many pounds of sugar as you had pounds of currants. As soon as the sugar is entirely dissolved, the jelly is done. To make sure, see that it begins to jelly on the spoon. All the boiling should be done before the sugar is added.

Note—If you have but two pounds of currants, put in a pint of water.

Spiced Currants

Five pounds currants, 4 pounds sugar, 1 pint vinegar, 1 tablespoon each of ground cinnamon, cloves, and mace; boil $1\frac{1}{2}$ hours.

Currant Jam

Six pounds currants, $6\frac{1}{2}$ pounds sugar, $1\frac{1}{2}$ pounds raisins, 3 oranges, $\frac{1}{2}$ teaspoon each of nutmeg, cinnamon, and mace. Stone the raisins, chop the entire oranges (minus the seeds), also the raisins quite fine. Cook all the ingredients together until the juice jellies, or, cook the fruit a few minutes and then add the sugar.

Blackberry Jam

Three-quarters of a pound of sugar to a pound of berries. Rinse the fruit and put in the preserving kettle, stir constantly until part of the juice is evaporated, then add the sugar and simmer to a fine jam. This will be found better than putting the sugar in first; the seeds are not so hard in this case. A pint of currant juice to every 5 pounds improves the flavor. Pour in glasses dip white paper in brandy and lay on the jam, then seal with paper.

Fried Chicken

Cut up chicken, salt and pepper and put in a hot skillet with a large lump of butter. Add water and let simmer slowly until perfectly tender; take out, roll in flour, and place more butter in the skillet; put back and fry until a nice brown.



The successful farmer is a student of his own soils.

White Cake

One and one-half cups sugar, $\frac{1}{2}$ cup melted butter, 1 cup water, whites of 5 eggs, $2\frac{1}{2}$ cups flour, 2 teaspoons baking powder in flour. Flavor to taste. Bake in loaf or layers, with icing on top or between.

Potato Chips

Pare and cut into thin slices on a slaw cutter, 4 large potatoes (new are best). Let stand in ice cold water for a short time. Take a handful of the potatoes, squeeze the water from them, and dry in a napkin. Separate the slices and drop a handful at a time into a skillet of boiling lard, taking care that they do not strike together; stir with a fork until they are a light brown color; take out with a wire spoon, drain well, salt to taste.

Lemonade

Squeeze the lemons, allowing two lemons for every three glasses of lemonade. Remove any seeds that may have fallen in or strain the juice if the lemonade is wanted clear. Sweeten the juice with sugar or with sugar syrup. When ready to use add the necessary amount of water and a large piece of ice or put cracked ice into the glasses if only a few glassfuls are made.

Spiced Gooseberries

Seven pounds fruit, 7 pounds sugar, 1 pint vinegar, spice to taste. Boil 1 hour; put in jelly glasses.

Green Cucumber Pickles

Put each gallon of cucumbers to soak in $\frac{1}{2}$ teacup salt and cold water to cover. Let stand over night, then scald the same brine and pour over pickles nine mornings in succession. The tenth morning, take vinegar enough to cover, a piece of powdered alum the size of a hickory-nut, scald and pour over the pickles. Let stand a day, then pour off. Take fresh vinegar, 1 cup brown sugar, and mixed spices; scald and pour on pickles. They will keep without canning.

Raspberry Ice

Mash and drain the juice from 1 quart of berries, add the juice of $1\frac{1}{2}$ lemons, $1\frac{1}{4}$ cups sugar, $1\frac{1}{2}$ cups water and 1 cup nuts. Freeze rapidly.

Orange Ice

For 2 quarts: 6 oranges, 2 lemons, 2 cups sugar, 1 pint water. Make a syrup and when cool add the fruit juice and freeze.

Strawberry Ice

One pint water, 1 pint sugar, 1 quart box of strawberries. Boil sugar and water together and set away to cool. When cool add the crushed berries and freeze.

Strawberry, Raspberry, or Orange Ice

These may be improved in the following way: When frozen, press the ice against the freezer can, leaving a well in the center, fill the center with whipped cream, which has been sweetened and flavored. Let the mixture stand, packed in ice and salt about 4 hours. When ready to serve, turn out of can and slice.



The One-Man Hay Loader

The Osborne hay loader is pre-eminently the one-man loader. This means that one man can do the driving and loading. In the average timothy hay, one man can put on the load in fifteen minutes and do the driving himself. Consequently the farmer who does not desire to hire help will find this loader the greatest aid he can have in hay harvest.

The Osborne loader will load the heaviest hay from the swath or handle light windrows. The stroke of the rake arm is such that the loader carries the hay to the wagon without wadding, tangling, or binding together the leaves or blossoms. The rake arms move parallel to the ground through nearly one-half the distance traveled by them in making a revolution. This permits the use of a slow drive, eliminating unnecessary pounding of the hay, making the loader lighter in draft. The rock shaft which operates the driving bars and sector gears does away with all the disadvantage of a crooked crank shaft such as lost motion, springing out of shape, and breakage, making a much simpler mechanism. All parts of the mechanism are protected to prevent them from wrapping with hay. The apron can be dropped when starting the load and raised in finishing it. The loader can be disconnected from the wagon without the operator getting off the load. The release lock cannot become clogged with hay.



The Osborne is a one-man loader



The odor of the apple blossom is more fragrant than that of the hot house lily.

AUGUST

Moon's Phases		Intercol. T.		Eastern T.		Central T.		Mountain T.		Pacific T.		
	D.	H.	M.		H.	M.	H.	M.	H.	M.	H.	M.
☾ Last Quarter	5	0	18	6 th	11	18	10	18	9	18	8	18
☾ New Moon	12	3	58		2	58	1	58	0	58	11	58
☾ First Quarter	19	0	57		11	57	10	57	9	57	8	57
☾ Full Moon	27	3	59		2	59	1	59	0	59	11	59

Day of Mo.	Day of Wk.	Lit. and Dk. of Moon	Moon's Pl.	UNITED STATES											
				Northern States						Southern States					
				Sun Rises		Sun Sets		Moon R. & S.		Sun Rises		Sun Sets		Moon R. & S.	
				H.	M.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
1	Th	☾	☾	4	56	7	16	9	11	5	14	6	58	9	5
2	Fr	☾	☾	4	57	7	14	9	28	5	15	6	57	9	29
3	Sat	☾	☾	4	58	7	13	9	47	5	16	6	56	9	54
4	Sun	☾	☾	4	59	7	12	10	8	5	16	6	55	10	22
5	M	☾	☾	5	0	7	10	10	34	5	17	6	54	10	55
6	Tu	☾	☾	5	1	7	9	11	6	5	18	6	53	11	33
7	W	☾	☾	5	2	7	7	11	46	5	18	6	52	morn	
8	Th	☾	☾	5	3	7	6	morn	5	19	6	51	1	19	
9	Fr	☾	☾	5	4	7	5	41	5	20	6	50	1	17	
10	Sat	☾	☾	5	5	7	4	1	48	5	21	6	49	2	24
11	Sun	☾	☾	5	6	7	2	3	7	5	21	6	48	3	39
12	M	☾	☾	5	7	7	1	sets	5	22	6	47	sets		
13	Tu	☾	☾	5	8	7	0	7	59	5	22	6	46	7	46
14	W	☾	☾	5	9	6	58	8	24	5	23	6	45	8	19
15	Th	☾	☾	5	10	6	57	8	48	5	24	6	44	8	50
16	Fr	☾	☾	5	11	6	55	9	9	5	25	6	43	9	19
17	Sat	☾	☾	5	12	6	54	9	31	5	25	6	42	9	49
18	Sun	☾	☾	5	13	6	53	9	58	5	26	6	41	10	22
19	M	☾	☾	5	14	6	51	10	29	5	27	6	40	10	59
20	Tu	☾	☾	5	15	6	50	11	5	5	27	6	39	11	40
21	W	☾	☾	5	16	6	48	11	52	5	28	6	37	morn	
22	Th	☾	☾	5	17	6	47	morn	5	29	6	36	29		
23	Fr	☾	☾	5	17	6	45	45	5	29	6	35	1	21	
24	Sat	☾	☾	5	18	6	44	1	46	5	30	6	34	2	19
25	Sun	☾	☾	5	19	6	42	2	50	5	31	6	33	3	18
26	M	☾	☾	5	20	6	41	3	53	5	31	6	31	4	16
27	Tu	☾	☾	5	21	6	39	rises	5	32	6	30	rises		
28	W	☾	☾	5	22	6	37	7	17	5	33	6	29	7	10
29	Th	☾	☾	5	23	6	36	7	35	5	33	6	28	7	34
30	Fr	☾	☾	5	24	6	35	7	52	5	34	6	26	7	59
31	Sat	☾	☾	5	25	6	34	8	13	5	35	6	25	8	26

August was named in honor of Augustus Caesar, he having been made consul in this month.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	3:49	2:35
16	4:01	3:02

TWILIGHT ENDS

Day	Southern States	Northern States
1	8:24	9:36
16	8:07	9:02

DAY'S LENGTH

Day	Southern States	Northern States
1	13 h. 36 m.	14 h. 44 m.
11	13 h. 19 m.	14 h. 15 m.
21	13 h. 4 m.	13 h. 47 m.

The World's Calendar for Wheat Harvests

August is the harvest month in Holland, Belgium, Great Britain, Denmark, Poland, Western Canada and the Dakotas.

Western Canada has been called the "Bread Basket of the World."

Valuable Information

Tar and Varnish may be removed from the hands and clothing by rubbing with lard, and then washing in soap and water.

Fruit Stains on Hands and clothing may be removed by the smoke of a burning sulphur match. Moisten the stained surface and expose it fully to the smoke, which will take effect at once.

Mend Broken China with plaster of paris, which should be mixed with the white of an egg. China mended with this mixture will stand wetting.

To Restore Shabby Velvet—Mix two tablespoons liquid ammonia with half a pint of hot water, and apply with a stiff brush, so as to take out all stains and creases. Hold over a hot iron until the steam raises the pile.

Young lady, don't throw a handkerchief into a lion's cage to test your lover.



Cool Drinks for Hot Weather

Cool drinks properly made are very refreshing in hot weather. The following recipes have been found good.

The easiest made and one of the very best of the summer drinks is, of course, lemonade, which every one knows how to prepare. There are also various other sorts of fruit-ades which are made simply by mixing the juices of fruits with water and adding a little sugar. All of these ades are improved by the addition of a little lemon juice. It is said that the best way to add the sugar to them is in the form of a sugar syrup. Apple lemonade may be made from six tart apples, three lemons, one-fourth stick of cinnamon, four cups of sugar, one cup of raisins, and one orange. The directions for preparation are to quarter, core, and mash the apples, and put them in a kettle with the raisins and cinnamon and two quarts of water. The mixture is brought to a boil and two more quarts of cold water added in which sugar and grated lemon and orange rind has been dissolved. The whole is let simmer slowly for half an hour after which it is drained and let cool. After the juice of the lemons and oranges has been added and the entire mixture has been thoroughly cooled, it is ready to serve.

Pineapple-ade may be made from one pineapple, three-fourths pound of sugar, and the juice of a lemon. The pineapple is peeled, sliced, and pounded to a pulp. The sugar is boiled in two cups of water and the resulting syrup poured hot on the pineapple pulp. Then the juice of the lemon is added and the whole is let stand covered for two hours after which it is filtered through a cloth, and two pints of cold water are added.

A beverage known as apple water may be made from tart apples, by quartering and coring them and then adding one-half their weight in sugar, covering with water, simmering till tender, straining through a jelly bag and cooling.

Ginger ale is made by dissolving three pounds of granulated sugar in two gallons of water and adding the beaten whites of three eggs and two ounces of ground ginger previously dissolved in water. After the mixture has been boiled and cooled again add the juice of four large lemons and one-fourth of a cake of compressed yeast previously dissolved in a little water. Then stir the mixture thoroughly, let stand for a moment, strain through a cheese cloth bag, and pour into bottles. After the mixture has stood in a cool, dark place for forty-eight hours, the ginger ale will be ready to drink.

Another ginger preparation known as ginger beer may be made by putting two ounces of ground ginger in a large crock with two ounces of cream of tartar, the rind and juice of one lemon, and one and one-half pounds of sugar. Add four quarts of boiling water and allow the whole to stand until luke-warm after which a half cupful of yeast is added. This is let stand for six hours, strained, and put away in sealed bottles and kept in a cool place until wanted.

A fine grape juice preparation is prepared by mixing the juice of two lemons, one orange, one pint of grape juice, one small cup of sugar, and a pint of water.



The man who respects himself will be respected.

Plain Ice Cream

Three cups sugar, 2 quarts milk, 1 quart cream, 3 scant tablespoons flour, 3 tablespoons flavoring. Boil the milk and sugar, reserving a cupful of milk with which to mix the flour, of which make a smooth paste, and thin to the consistency of thin cream before adding to the boiling milk. Cook in double cooker to prevent scorching. If thoroughly cooked there will be no taste of the flour, and the mixture when done, should be about as thick as single cream. When cold, add cream and flavoring and freeze. Serve plain or with any sauce desired.

Chocolate Ice Cream

For about $2\frac{1}{2}$ quarts of cream, use $1\frac{1}{2}$ pints milk, 1 quart thin cream, 2 cups sugar, 2 ounces chocolate, 2 eggs, and 2 heaping tablespoons flour. Put the milk on to boil in a double boiler. Put the flour and 1 cup sugar in a bowl, add eggs, and beat mixture until light. Stir this into boiling milk and cook 20 minutes, stirring often. Put the chocolate in a small sauce-pan, add 4 tablespoons sugar (from second cupful) and 2 tablespoons hot water. Stir over hot fire till smooth and glossy. Add this to cooking mixture. When this has cooked 20 minutes, remove it from the range and add the remainder of sugar and the cream, which should be gradually beaten into the hot mixture. Set away to cool and when cool, freeze.

Iced Tea

A very refreshing drink in summer. It is served in glasses with plenty of cracked ice and should not be made very strong. It is improved by adding a slice of lemon to each glass.

Tea

To give the proportions of tea and water is impossible, as such different degrees of strength are demanded. One teaspoon of tea to a pint of water, steeped five minutes, makes a weak tea. If tea is boiled or permitted to steep longer than five minutes, its delicate flavor is lost, owing to the large amount of tannic acid developed.

Watermelon or Ripe Cucumber Pickles

Take 7 pounds of melon rinds (melons not too ripe are better, as the rinds are thicker), cut in strips about 2 inches wide and 3 or 4 inches long. Lay them in a weak brine over night, then boil them in a weak alum water (about $\frac{1}{2}$ teaspoon to a kettle of water) till transparent; lift them out and put them in a jar. 1 quart cider vinegar, 2 ounces stick cinnamon, 1 ounce cloves, 3 pounds granulated sugar. Let this boil and add the fruit, cooking it 20 minutes longer. Pour in a jar and cover closely. Scald it over for two mornings, then seal.

Pickled Cucumbers and Onions

Pick over and wash thoroughly 100 cucumbers the size of your finger. Also peel the same number of little button onions. Mix them together and cover with a weak brine; let stand 24 hours, pour off the brine and cover with scalding vinegar and water, $\frac{1}{2}$ of each. Repeat this process for three mornings. Then prepare the vinegar in which the pickles are to be bottled, by scalding pure cider vinegar with a little sugar and salt added. When it boils, drop in the pickles, a few at a time, skimming out quickly when the vinegar boils up. Pack them closely in Mason jars, cover with the boiling vinegar, and seal air-tight. If the vinegar is good, they will keep fresh and crisp for years.

If your farm is worth anything, it is worth tilling well.



Osborne Hay Tedder.

The hay tedder is of great value to the farmer. If he has occasion to cut hay early in the year, he can go over the hay with the tedder a few hours after it is cut, stir it up so that the air will circulate through it, curing it much more quickly than if it is left in the swath to sun dry. The rapid curing of hay depends upon light and air, and if the hay is left in the swath, the light and air cannot circulate through it as rapidly as they should to cure it quickly, consequently a farmer who uses a hay tedder particularly in heavy hay, will find that he can stack or store it in the barn much sooner than if he leaves it to cure in the swath. The hay tedder is also the best possible tool to use in spreading hay after a rain whether it is in the swath or in windrows. The Osborne tedder is strong enough to scatter windrows, saving much of the hard labor of doing the work by hand with a pitch fork.

On the Osborne hay tedder, the wheels and counter-shaft are equipped with roller bearings, making the tedder light in draft.

The crank shaft is solid and shaped so that only one fork presses the hay at a time, insuring the best tedding. The outside forks are outside the wheels, and ted all the hay over which the wheels pass.

The power for driving is furnished by both wheels, imparting a continuous and positive power.



A quick way to air cure hay



An optimist is he who anticipates pleasures he cannot realize.

SEPTEMBER

Moon's Phases		Intercol. T.		Eastern T.		Central T.		Mountain T.		Pacific T.	
	D.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
☾ Last Quarter	4	9	23	8	23	7	23	6	23	5	23
☾ New Moon	10	11	48	10	48	9	48	8	48	7	48
☾ First Quarter	18	3	55	2	55	1	55	0	55	11	55 ^{17th}
☾ Full Moon	26	7	34	6	34	5	34	4	34	3	34

Day of Mo.	Day of Wk.	Li. and Di. of Moon	Moon's Pl.	UNITED STATES											
				Northern States						Southern States					
				Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.
1	Sun	☾	♊	5 26	6 33	8 36	5 35	6 24	8 55						
2	M	☾	♊	5 27	6 31	9 4	5 36	6 23	9 30						
3	Tu	☾	♊	5 28	6 29	9 41	5 37	6 21	10 12						
4	W	☾	♊	5 29	6 28	10 28	5 37	6 20	11 4						
5	Th	☾	♊	5 30	6 26	11 28	5 38	6 19	morn						
6	Fri	☾	♊	5 31	6 25	morn	5 39	6 17	5						
7	Sat	☾	♊	5 32	6 23	41	5 39	6 16	1 15						
8	Sun	☾	♋	5 33	6 21	2 0	5 40	6 15	2 28						
9	M	☾	♋	5 34	6 20	3 20	5 40	6 13	3 42						
10	Tu	☾	♋	5 35	6 18	4 43	5 41	6 12	4 56						
11	W	☾	♋	5 36	6 16	sets	5 42	6 11	sets						
12	Th	☾	♋	5 37	6 15	7 9	5 42	6 9	7 15						
13	Fr	☾	♋	5 38	6 13	7 32	5 43	6 8	7 45						
14	Sat	☾	♋	5 39	6 11	7 57	5 43	6 6	8 19						
15	Sun	☾	♌	5 40	6 9	8 26	5 44	6 5	8 54						
16	M	☾	♌	5 41	6 8	9 2	5 45	6 4	9 35						
17	Tu	☾	♌	5 42	6 6	9 45	5 46	6 3	10 21						
18	W	☾	♌	5 43	6 4	10 37	5 46	6 1	11 14						
19	Th	☾	♌	5 44	6 3	11 35	5 47	6 0	morn						
20	Fr	☾	♌	5 45	6 1	morn	5 48	5 58	10						
21	Sat	☾	♌	5 46	5 59	37	5 48	5 57	1 8						
22	Sun	☾	♍	5 47	5 58	1 43	5 49	5 56	2 8						
23	M	☾	♍	5 48	5 56	2 47	5 50	5 54	3 6						
24	Tu	☾	♍	5 49	5 54	3 51	5 50	5 53	4 4						
25	W	☾	♍	5 50	5 53	4 54	5 51	5 52	5 1						
26	Th	☾	♍	5 51	5 52	rises	5 52	5 50	rises						
27	Fr	☾	♍	5 52	5 50	6 19	5 52	5 49	6 30						
28	Sat	☾	♍	5 53	5 48	6 41	5 53	5 48	6 58						
29	Sun	☾	♍	5 54	5 46	7 9	5 54	5 46	7 32						
30	M	☾	♍	5 54	5 44	7 43	5 55	5 46	8 13						

September was named from *Septem* (seventh), as it was the seventh Roman month.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	4:14	3:13
16	4:25	3:57

TWILIGHT ENDS

Day	Southern States	Northern States
1	7:46	8:35
16	7:27	7:52

DAY'S LENGTH

Day	Southern States	Northern States
1	12 h. 47 m.	13 h. 17 m.
11	12 h. 29 m.	12 h. 46 m.
21	12 h. 11 m.	12 h. 15 m.

The World's Calendar for Wheat Harvests

In September harvest is on in Scotland, Sweden, Norway, Northern Russia and Siberia, and continues into October.

Valuable Information

How to Stone Raisins—Free the raisins from stems, and then put them in a bowl. Cover them with boiling water, and let them stand for two minutes. Pour off the water; open the raisins and the seeds can be removed quickly and easily without the usual stickiness.

Uses to Which Salt may be Put—Salt puts out a fire in the chimney. Salt under baking tins will prevent their scorching on the bottom. Salt and soda will remove stains from discolored teacups. Salt and soda are excellent for bee stings and spider bites. Salt thrown on soot which has fallen on the carpet will prevent stain. Salt put on ink when freshly spilled on a carpet will help in removing the spot. Salt in whitewash makes it stick. Salt thrown on a coal fire which is low will revive it. Salt used in sweeping carpets keeps out moths. (Continued on page 42)

If you believe you are all right and your neighbor all wrong, the trouble lies with you.



Tomato Catsup

One gallon juice, 1 pint vinegar, 3 tablespoons pepper, 3 tablespoons ground mustard, $1\frac{1}{2}$ tablespoons each, cloves and allspice, 4 tablespoons salt. Boil down at least one-half, and then seal in pint jars. Some years it is necessary to boil more than half, owing to the tomatoes.

Chili Sauce

Eighteen ripe tomatoes, 3 green peppers, 3 onions, 3 cups vinegar, 1 cup sugar, $\frac{1}{3}$ cup salt, 1 tablespoon each, of all kinds spice. Boil one hour, or a little longer, till rather thick.

Cucumber Catsup

Chop fine several large green cucumbers, sprinkle with salt, and drain over night in bag. In the morning, season to taste with vinegar, pepper, and more salt, if needed. Bottle and seal.

Piccalilli

Two cabbages, 1 dozen green cucumbers, $\frac{1}{2}$ dozen green peppers, 1 quart green tomatoes, 1 quart onions. Slice the onions and let them stand one hour in cold water. Chop all ingredients fine, sprinkle with salt, and let stand one hour; drain and cover with cold vinegar. In 24 hours drain the vinegar, and to every gallon of the mixture add $\frac{1}{2}$ pound brown sugar, $\frac{1}{2}$ cup brown and $\frac{1}{2}$ cup white mustard seed, 1 tablespoon celery seed, 30 whole cloves. Cover with fresh vinegar and put up in glass jars.

Sweet Tomato Pickles

One peck green tomatoes sliced; sprinkle with 1 cup salt, let stand over night, and then drain. Boil 15 minutes in 1 quart vinegar and 8 quarts water; drain and throw away liquid. Take 2 quarts vinegar, 2 pounds sugar, 1 tablespoon each, of cloves, ginger, cinnamon, allspice, mustard, 1 teaspoon cayenne pepper; boil all together and pour over pickles, and seal. If liked, onions may be added to tomatoes.

Green Tomato Pickles

Two gallons sliced tomatoes, 1 tablespoon salt sprinkled through them. Let stand over night, put in sack and let drain all day. Take 1 gallon vinegar, 4 pounds sugar, mixed spices to taste; when hot, put in tomatoes and cook till tender.

Apple Roll

Roll plain pie crust as you would for pie, but a little larger; chop up some apples, and cover this crust; add a layer of sugar, and sprinkle with cinnamon; then add a layer of raisins, and sprinkle with bits of citron, chopped fine. Roll all up; pinch the crust closely together at sides and ends; place in dripping pan with one-half cup of butter, and one cup of sugar; pour enough boiling water over it to half cover the roll; put in oven and bake three hours; baste every half hour as you would turkey. When done, the roll will have a crust like taffy. Take out and serve sliced thin. It is delicious.

Bird's Nest Pudding

Pare six or eight large good cooking apples; remove the core by cutting from the end into the middle, so as to leave the apple whole; place them in a deep pie dish, as near together as they can stand, with the opening upward.



An optimist is he who anticipates pleasures he cannot realize.

SEPTEMBER

Moon's Phases		Intercol. T.			Eastern T.			Central T.			Mountain T.			Pacific T.		
		D.	H.	M.	H.	M.	H.	H.	M.	H.	H.	M.	H.	H.	M.	H.
☾ Last Quarter		4	9	23	8	23	7	23	6	23	5	23	4	23	3	23
☾ New Moon		10	11	48	10	48	9	48	8	48	7	48	6	48	5	48
☾ First Quarter		18	3	55	2	55	1	55	0	55	11	55	10	55	9	55
☾ Full Moon		26	7	34	6	34	5	34	4	34	3	34	2	34	1	34

Day of Mo.	Day of Wk.	Lt. and Dk. of Moon	Moon's Pl.	UNITED STATES											
				Northern States						Southern States					
				Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.
				H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	Sun	☉	♈	5 26	6 33	8 36	5 35	6 24	8 55						
2	M	☉	♈	5 27	6 31	9 45	5 36	6 23	9 30						
3	Tu	☉	♈	5 28	6 29	9 41	5 37	6 21	10 12						
4	W	☉	♈	5 29	6 28	10 28	5 37	6 20	11 4						
5	Th	☉	♈	5 30	6 26	11 28	5 38	6 19	morn						
6	Fri	☉	♈	5 31	6 25	morn	5 39	6 17	5						
7	Sat	☉	♈	5 32	6 23	41 5	5 39	6 16	1 15						
8	Sun	☉	♈	5 33	6 21	2 0	5 40	6 15	2 28						
9	M	☉	♈	5 34	6 20	3 20	5 40	6 13	3 42						
10	Tu	☉	♈	5 35	6 18	4 43	5 41	6 12	4 56						
11	W	☉	♈	5 36	6 16	sets	5 42	6 11	sets						
12	Th	☉	♈	5 37	6 15	7 9	5 42	6 9	7 15						
13	Fr	☉	♈	5 38	6 13	7 32	5 43	6 8	7 45						
14	Sat	☉	♈	5 39	6 11	7 57	5 43	6 6	8 19						
15	Sun	☉	♈	5 40	6 9	8 26	5 44	6 5	8 54						
16	M	☉	♈	5 41	6 8	9 25	5 45	6 4	9 35						
17	Tu	☉	♈	5 42	6 6	9 45	5 46	6 3	10 21						
18	W	☉	♈	5 43	6 4	10 37	5 46	6 1	11 14						
19	Th	☉	♈	5 44	6 3	11 35	5 47	6 0	morn						
20	Fr	☉	♈	5 45	6 1	morn	5 48	5 58	10						
21	Sat	☉	♈	5 46	5 59	37 5	5 48	5 57	1 8						
22	Sun	☉	♈	5 47	5 58	1 43	5 49	5 56	2 8						
23	M	☉	♈	5 48	5 56	2 47	5 50	5 54	3 6						
24	Tu	☉	♈	5 49	5 54	3 51	5 50	5 53	4 4						
25	W	☉	♈	5 50	5 53	4 54	5 51	5 52	5 1						
26	Th	☉	♈	5 51	5 52	rises	5 52	5 50	rises						
27	Fr	☉	♈	5 52	5 50	6 19	5 52	5 49	6 30						
28	Sat	☉	♈	5 53	5 48	6 41	5 53	5 48	6 58						
29	Sun	☉	♈	5 54	5 46	7 9	5 54	5 46	7 32						
30	M	☉	♈	5 54	5 44	7 43	5 55	5 46	8 13						

September was named from *Septem* (seventh), as it was the seventh Roman month.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	4:14	3:13
16	4:25	3:57

TWILIGHT ENDS

Day	Southern States	Northern States
1	7:46	8:35
16	7:27	7:52

DAY'S LENGTH

Day	Southern States	Northern States
1	12 h. 47 m.	13 h. 17 m.
11	12 h. 29 m.	12 h. 46 m.
21	12 h. 11 m.	12 h. 15 m.

The World's Calendar for Wheat Harvests

In September harvest is on in Scotland, Sweden, Norway, Northern Russia and Siberia, and continues into October.

Valuable Information

How to Stone Raisins—Free the raisins from stems, and then put them in a bowl. Cover them with boiling water, and let them stand for two minutes. Pour off the water; open the raisins and the seeds can be removed quickly and easily without the usual stickiness.

Uses to Which Salt may be Put—Salt puts out a fire in the chimney. Salt under baking tins will prevent their scorching on the bottom. Salt and soda will remove stains from discolored teacups. Salt and soda are excellent for bee stings and spider bites. Salt thrown on soot which has fallen on the carpet will prevent stain. Salt put on ink when freshly spilled on a carpet will help in removing the spot. Salt in whitewash makes it stick. Salt thrown on a coal fire which is low will revive it. Salt used in sweeping carpets keeps out moths. (Continued on page 42)

If you believe you are all right and your neighbor all wrong, the trouble lies with you.



Tomato Catsup

One gallon juice, 1 pint vinegar, 3 tablespoons pepper, 3 tablespoons ground mustard, $1\frac{1}{2}$ tablespoons each, cloves and allspice, 4 tablespoons salt. Boil down at least one-half, and then seal in pint jars. Some years it is necessary to boil more than half, owing to the tomatoes.

Chili Sauce

Eighteen ripe tomatoes, 3 green peppers, 3 onions, 3 cups vinegar, 1 cup sugar, $\frac{1}{3}$ cup salt, 1 tablespoon each, of all kinds spice. Boil one hour, or a little longer, till rather thick.

Cucumber Catsup

Chop fine several large green cucumbers, sprinkle with salt, and drain over night in bag. In the morning, season to taste with vinegar, pepper, and more salt, if needed. Bottle and seal.

Piccalilli

Two cabbages, 1 dozen green cucumbers, $\frac{1}{2}$ dozen green peppers, 1 quart green tomatoes, 1 quart onions. Slice the onions and let them stand one hour in cold water. Chop all ingredients fine, sprinkle with salt, and let stand one hour; drain and cover with cold vinegar. In 24 hours drain the vinegar, and to every gallon of the mixture add $\frac{1}{2}$ pound brown sugar, $\frac{1}{2}$ cup brown and $\frac{1}{2}$ cup white mustard seed, 1 tablespoon celery seed, 30 whole cloves. Cover with fresh vinegar and put up in glass jars.

Sweet Tomato Pickles

One peck green tomatoes sliced; sprinkle with 1 cup salt, let stand over night, and then drain. Boil 15 minutes in 1 quart vinegar and 8 quarts water; drain and throw away liquid. Take 2 quarts vinegar, 2 pounds sugar, 1 tablespoon each, of cloves, ginger, cinnamon, allspice, mustard, 1 teaspoon cayenne pepper; boil all together and pour over pickles, and seal. If liked, onions may be added to tomatoes.

Green Tomato Pickles

Two gallons sliced tomatoes, 1 tablespoon salt sprinkled through them. Let stand over night, put in sack and let drain all day. Take 1 gallon vinegar, 4 pounds sugar, mixed spices to taste; when hot, put in tomatoes and cook till tender.

Apple Roll

Roll plain pie crust as you would for pie, but a little larger; chop up some apples, and cover this crust; add a layer of sugar, and sprinkle with cinnamon; then add a layer of raisins, and sprinkle with bits of citron, chopped fine. Roll all up; pinch the crust closely together at sides and ends; place in dripping pan with one-half cup of butter, and one cup of sugar; pour enough boiling water over it to half cover the roll; put in oven and bake three hours; baste every half hour as you would turkey. When done, the roll will have a crust like taffy. Take out and serve sliced thin. It is delicious.

Bird's Nest Pudding

Pare six or eight large good cooking apples; remove the core by cutting from the end into the middle, so as to leave the apple whole; place them in a deep pie dish, as near together as they can stand, with the opening upward.



Criticism is the weapon of the man who doesn't know how.

Make a thin batter, using one quart of milk, three eggs, and sufficient flour; pour this into the dish around the apples and into the cavities. Bake in a quick oven. Serve with butter and sugar.

Pickled Peaches, Pears, or other Fruits

Seven pounds fruit, pared, 4 pounds white sugar, 1 pint strong vinegar, mace, cinnamon, and cloves to taste. Pare fruit, put into the kettle with alternate layers of sugar; heat slowly to a boil, add the vinegar and spices; boil the fruit until it can be pierced with a straw. Take out the fruit with a skimmer and spread upon dishes to cool. Boil the syrup until thick, pack the fruit in glass jars, and pour the syrup over, scalding hot.

Canning Beans

String tender beans; break them in pieces as for the table. Cook in slightly salted water until they may be pierced with a fork, but are not tender enough to mash. Drain off all this water and fill in glass jars. Be sure that your jars have been well scalded. Have prepared some water which has been boiled and cooled. Take enough of this water to fill the jars (a little over a pint to a quart jar) and put enough good, clear cider vinegar in it to make it a little sour. Fill the jars up with this until within an inch of the top, then place them in a kettle or boiler on a layer of hay or small board, or, better still a regular can holder which comes for such canning; fill up till the water comes half way up on the jars; weight the cover down and bring to a boil and steam until the water in the jar boils thoroughly and boils up over the tops of the jars. Have some of the acid water on the stove boiling, lift the jars one at a time from the kettle, put on the rubbers, then fill up with the boiling vinegar water and seal as quickly as possible. Do not set the jars in a draught, as they are apt to break. In putting the jars in the kettle to boil have the water heated some, as cold water will crack them.

To Cook These Beans—Pour the water off and rinse with cold water. Scald in water in which has been dissolved a little soda; then prepare a cream dressing, or, put a couple of slices of breakfast bacon on to cook in a pint of water, and let cook down till there is enough left to cover the beans. Turn in the beans, after scalding them, and cook a few minutes. Season to taste. Beans prepared in this way will keep two years and taste like fresh beans. To know whether they are going to keep, if they settle clear within six days they may be put away, but if they are bubbly or cloudy by that time better throw them out and try again.

To Keep Pickles from Getting Soft

To one barrel of pickles, when in brine, add one-half bushel of grape leaves. This will keep them sound and firm.

Grape Catsup

Stew five pounds of grapes over a slow fire until soft; then strain through sieve; add

2½ pounds of sugar
1 tablespoonful of cinnamon
1 tablespoonful of allspice
1 pint of vinegar

1 tablespoonful of cloves
1 tablespoonful of pepper
½ tablespoonful of salt

Boil until a little thick, and then bottle. This makes an excellent sauce for cold meats.

An untried friend is like an uncracked nut. You don't know what's in it.



The Advantages of Using a Side Delivery Hay Rake

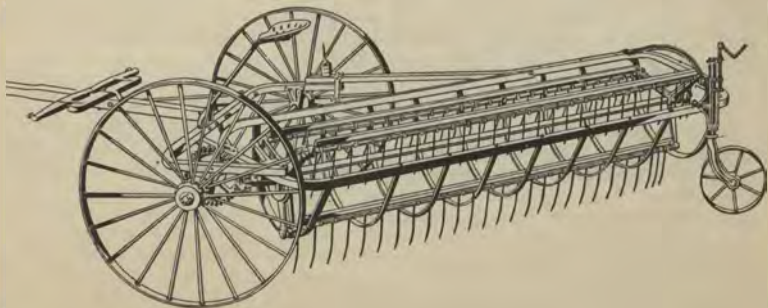
There are two methods of curing hay. One is to allow the hay to lie in the swath and sun dry, the other is to stir it up a few hours after it has been cut, with a tedder or side delivery hay rake.

Hay, sun dried in the swath, loses much of its nutrition and color, and the curing process is a great deal longer. The action of the teeth of the Osborne side delivery hay rake turns the hay up so that it is thrown in a light windrow, giving the air a chance to circulate through it, thus curing it quickly. The advantages of curing hay in this way are that the hay is cured more quickly, saving time, and that the cured product is of a better color. Another advantage of using the side delivery hay rake is that when the hay crop is light, the side delivery rake throws the hay into a continuous windrow so that it is not necessary to travel over so much ground to get a load.

These features of the Osborne side delivery hay rake make this machine particularly adaptable for all hay raking purposes. The swath is turned completely over, the hay being tossed into light, airy windrows through which the air circulates freely. The hay is thus quickly air cured without bleaching. The rake can be used to turn a windrow or swath after a shower. The teeth have an even, steady motion,—therefore do not knock off the blossoms or seed from clover, alfalfa, etc.

The teeth are spring steel, arranged to clear the ground so that no trash is gathered from beneath the stubble. The teeth strike the hay at an angle to the direction in which it lies in the swath, so that it rakes the lightest as well as the heaviest hay entirely clean from the ground.

The mechanism is the simplest possible. There are but two cog wheels on the entire machine. The eccentric motion for driving the tooth bars is the simplest possible. It is in great contrast to that of almost every other type of side delivery hay rake.



Osborne Side Delivery Hay Rake



There is only one effective cure for gossip. Chloroform.

OCTOBER

Moon's Phases		Intercol. T.		Eastern T.		Central T.		Mountain T.		Pacific T.	
	D.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
☾ Last Quarter	3	4	48	3	48	2	48	1	48	0	48
☾ New Moon	10	9	41	8	41	7	41	6	41	5	41
☾ First Quarter	17	10	6	9	6	8	6	7	6	6	6
☾ Full Moon	25	10	30	9	30	8	30	7	30	6	30

Day of Mo.	Day of Wk.	Lt. and Dk. of Moon	Moon's Pl.	UNITED STATES									
				Northern States					Southern States				
				Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises
				H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1 Tu	☾	☾	☾	5 56	5 43	8 28	5 55	5 45	9 0				
2 W	☾	☾	☾	5 57	5 41	9 20	5 56	5 43	9 57				
3 Th	☾	☾	☾	5 58	5 39	10 26	5 56	5 41	11 1				
4 Fr	☾	☾	☾	5 59	5 38	11 41	5 57	5 40	morn				
5 Sat	☾	☾	☾	6 0	5 36	morn	5 58	5 39	12				
6 Sun	☾	☾	☾	6 1	5 35		5 58	5 37	1 23				
7 M	☾	☾	☾	6 2	5 33	2 18	5 59	5 36	2 34				
8 Tu	☾	☾	☾	6 3	5 31	3 35	6 0	5 35	3 44				
9 W	☾	☾	☾	6 4	5 30	4 51	6 1	5 33	4 52				
10 Th	☾	☾	☾	6 5	5 28	6 56	6 1	5 32	5 59				
11 Fr	☾	☾	☾	6 7	5 27	sets	6 2	5 31	sets				
12 Sat	☾	☾	☾	6 8	5 25	6 22	6 3	5 30	6 47				
13 Sun	☾	☾	☾	6 9	5 23	6 57	6 4	5 29	7 28				
14 M	☾	☾	☾	6 10	5 22	7 37	6 4	5 27	8 12				
15 Tu	☾	☾	☾	6 11	5 20	8 27	6 5	5 26	9 4				
16 W	☾	☾	☾	6 12	5 19	9 23	6 6	5 25	9 59				
17 Th	☾	☾	☾	6 13	5 17	10 25	6 7	5 24	10 57				
18 Fr	☾	☾	☾	6 14	5 16	11 29	6 7	5 23	11 56				
19 Sat	☾	☾	☾	6 15	5 14	morn	6 8	5 22	morn				
20 Sun	☾	☾	☾	6 16	5 13		6 9	5 20	56				
21 M	☾	☾	☾	6 18	5 12	1 38	6 10	5 19	1 53				
22 Tu	☾	☾	☾	6 19	5 10	2 41	6 11	5 18	2 50				
23 W	☾	☾	☾	6 20	5 9	3 45	6 11	5 17	3 47				
24 Th	☾	☾	☾	6 21	5 7	4 48	6 12	5 16	4 44				
25 Fr	☾	☾	☾	6 22	5 6	5 54	6 13	5 15	5 43				
26 Sat	☾	☾	☾	6 23	5 4	rises	6 14	5 14	rises				
27 Sun	☾	☾	☾	6 24	5 3	5 42	6 15	5 13	6 10				
28 M	☾	☾	☾	6 26	5 2	6 23	6 16	5 12	6 57				
29 Tu	☾	☾	☾	6 27	5 1	7 14	6 16	5 11	7 51				
30 W	☾	☾	☾	6 28	4 59	8 18	6 17	5 10	8 54				
31 Th	☾	☾	☾	6 29	4 58	9 30	6 18	5 10	10 2				

October was formerly the eighth month, and hence it was named from *Octo* (eight).

TWILIGHT BEGINS

Day	Southern States	Northern States
1	4:33	4:20
16	4:42	4:38

TWILIGHT ENDS

Day	Southern States	Northern States
1	7:06	7:20
16	6:48	6:52

DAY'S LENGTH

Day	Southern States	Northern States
1	11 h. 54 m.	11 h. 44 m.
11	11 h. 35 m.	11 h. 14 m.
21	11 h. 18 m.	10 h. 43 m.

The World's Calendar for Wheat Harvests

The harvest which began in September is continued during October throughout Sweden, Norway, and Northern Russia.

In these countries a large part of the harvesting work is done by women.

Valuable Information

Salt used in washing the hair will prevent the hair from falling out. A teaspoonful of salt in a lamp will make kerosene oil give a brighter light. Added to a bucket of water it forms a remarkably effective fire extinguisher. A handful of rock salt added to the bath is the next best thing to an ocean dip. Damp salt will remove the discoloration of tea and the like in dishes that have been carelessly washed. New calicos soaked in a strong solution of salt for an hour before washing will retain their colors better. As a dentifrice, salt and water will not only cleanse but whiten the teeth, and will harden the gums. When broiling steak, a pinch or two of salt thrown on the fire will quench the flames arising from the dripping fat. A weak solution is good for sore throat, to be used as a gargle.



Bread

Yeast

In the morning, take 4 tablespoons of flour, 2 of salt, 2 of sugar, pour these 1 pint of boiling water. When sufficiently cool, add 2 cakes of any fresh dry yeast, softened in warm water; set in a warm place to rise till noon. At noon, pare and steam eight good-sized potatoes more than needed for dinner, mash fine, or better, press through potato sieve into a large crock. Add one quart boiling water, and one quart cold; when this is cool enough, stir in the mixture prepared in the morning, which by noon is sure to be light; cover crock and set on a warm shelf. Next morning bottle this yeast sponge. Use two-quart glass jars and put where cold.

Bread

Any morning when one wants white bread, rolls, or graham bread for dinner, take one pint of the yeast sponge for each loaf desired, put into bread crock, place on stove to warm. Be careful not to let it get too hot. Then with wooden spoon beat flour into it till firm enough to turn onto bread board. Add more flour, moulding it in till all is a very firm, spongy mass. Place in buttered crock, keep warm, out of draft. When light, which will be soon, mould down into the crock; let rise again. The second time light, form into loaves, shaping carefully without handling more than is necessary. Put into buttered pans, rub tops of loaves with soft butter. Be sure oven is hot when loaves are light. Bake thoroughly. Bread to be sweet and wholesome must be well baked.

Salt Rising Bread

The real formula for making the celebrated Stubbs' salt-rising bread: "On the night before you contemplate this masterpiece of baking, take half a cupful of cornmeal and a pinch each of salt and sugar. Scald this with new milk heated to the boiling point and mix to the thickness of mush. This can be set in a bowl. Wrap in a clean cloth and put in a warm place over night.

"In the morning, take a one-gallon stone jar and into this put one scant cupful of new milk. Add a level teaspoonful of salt and one of sugar. Scald this with three cupfuls of water heated to the boiling point. Reduce to a temperature of one hundred and eight degrees with cold water, using a milk thermometer to enable you to get exactly the right temperature. Then add flour and mix to a good batter; after the batter is made, mix in your starter that was made the night before. Cover the stone jar with a plate and put the jar in a large kettle of water and keep this water at a temperature of one hundred and eight degrees until the sponge rises. It should rise at least an inch and a half. When it is light mix to a stiff dough, make into loaves and put into pans. Do not let the heat get out of the dough while working. Grease the loaves well on top and set your bread where it will be warm to rise. When light, bake in a medium oven for one hour and ten minutes. When you take the loaves from the oven wrap them in a breadcloth."

Boston Brown Bread

Scald 3 pints cornmeal by pouring over it enough boiling water to moisten. Let cool. Add 1 cup syrup, $\frac{1}{2}$ teaspoon salt, 1 cake compressed yeast. Let rise. When light, stir up stiff with wheat flour. Put in buttered pan, steam three hours and bake three-fourths of an hour. This makes one large loaf.



Once you tell a secret it is public property.

Parker House Rolls

Dissolve 2 tablespoonfuls of white sugar, 1 teaspoonful of salt, $\frac{3}{4}$ of a teacup of good yeast, 1 cup of shortening in 1 quart of warm milk, 4 quarts of flour before sifting. Put on the milk to scald, add the butter while hot. Then let this cool, and mix in enough flour to make a smooth batter. Then add the sugar, salt, and yeast, and set it to rise. When light, add the rest of the flour and knead in a loaf, let rise again. Cut out with cooky cutter, lay a dot of butter in the middle, fold over, put in a greased pan, and let them rise again. When light, bake in a moderately hot oven. If wanted for breakfast, mix them at night, but if for tea, mix them in the morning.

Muffins

One egg, $\frac{1}{2}$ cup of butter and lard, mixed, melted, and poured into 1 pint sweet milk, 3 teaspoonfuls of baking powder. Sift the baking powder with enough flour to make a stiff batter. Beat it hard and bake in gem pans. These are excellent made of Graham flour.

Coffee Bread

Take a piece of bread dough, roll out an inch thick. Spread with lard, sprinkle thickly with sugar and cinnamon, and roll up as you do jelly cake. Cut crosswise into 3-inch lengths and stand on end in pan. Let rise. Bake until well done.

Coffee Cake

One cup brown sugar, $\frac{3}{8}$ cup butter, 1 cup of molasses, 1 cup of strong coffee (cold), 1 egg, 4 or 5 cups of flour, 1 teaspoonful of soda, 1 pound of raisins, 1 teaspoonful of cloves, 1 tablespoonful of cinnamon, $\frac{1}{2}$ nutmeg, grated, 1 teaspoon baking powder. Mix it very stiff and bake in a moderate oven for an hour.

Weights and Measures

2½	Teaspoonfuls	make One Tablespoonful
4	Tablespoonfuls	make One Wineglassful
2	Wineglassfuls	make One Gill
2	Gills	make One Teacupful
2	Teacupfuls	make One Pint
4	Teaspoonfuls Salt	make One Ounce
1½	Tablespoonfuls Granulated Sugar	make One Ounce
2	Tablespoonfuls Flour	make One Ounce
2	Cups or 1 Pint Granulated Sugar will weigh	about One Pound
1	Scant Quart Wheat Flour	about One Pound
10	Ordinary Sized Eggs	about One Pound
2	Cups of Butter	about One Pound
	A Piece of Butter the Size of an Egg	1½ Ounces

Measuring

Dry ingredients such as flour, spices, and soda should be sifted before measuring, unless the recipe states to the contrary. Many carefully written and many-times-tried recipes fail from the lack of this little precaution, for a tablespoonful of unsifted flour will measure more than twice that much after it is sifted. The table, dessert, and teaspoons used for measuring



should be of the regulation sizes made in silver; the cup, the regulation kitchen cup, holding two gills or one-half pint. In measuring dry materials, a spoonful means that whatever is measured should round as much above the spoon as the spoon rounds underneath. When a level or a heaping spoonful is desired, it is so stated in the recipe. A spoonful of liquid is the spoon full to the brim; one-half of a spoonful should be measured lengthwise of the spoon—not across.

A cupful is an even cup, leveled off—not shaken down—and accurate portions of the cupful may be found by using the measuring cups which are divided into thirds and fourths. These now come in glass, which makes accuracy easy.

Time Table For Cooking Vegetables

Potatoes—Boiled	20 to 30 minutes
Potatoes—Baked	45 minutes
Sweet Potatoes—Boiled	45 minutes
Sweet Potatoes—Baked	1 hour
Squash—Boiled	25 minutes
Squash—Baked	45 minutes
Green Peas	20 minutes
Shell Beans (green)	$\frac{1}{2}$ to $\frac{3}{4}$ hours
String Beans	30 to 45 minutes
Green Corn—Boiled	20 to 25 minutes
Asparagus	15 to 30 minutes
Spinach	15 to 20 minutes
Tomatoes (fresh)	30 minutes
Tomatoes (canned)	20 to 30 minutes
Cabbage	45 minutes
Cauliflower	20 to 30 minutes
Onions	30 to 45 minutes
Beets	1 to 3 hours
Turnips	45 minutes
Parsnips and Carrots	30 to 45 minutes

Preparing Fruits for Canning

Boil cherries moderately five minutes; raspberries, six minutes; blackberries, six minutes; plums, ten minutes; strawberries, eight minutes; small, sour pears, whole, thirty minutes; Bartlett pears, in halves, twenty minutes; peaches, in halves, eight minutes; peaches, whole, fifteen minutes; pineapple, sliced half an inch thick, fifteen minutes; Siberian or crabapple, whole, twenty-five minutes; ripe currants, six minutes; tomatoes, twenty minutes.

The Amount of Sugar to a Quart—Raspberries and peaches, four ounces; cherries, blackberries, pears, and pineapple, six ounces; crabapple, plums, and currants, eight ounces.

Preserves, Jellies, and Pickles

For jelly, select your fruit before it is too ripe, if possible, as it has a much better flavor. The fruit should be put on and brought to a heat, as the juice can be much better extracted. Jelly should always be strained twice, and comes much clearer by allowing to drip over night in jelly bag.



Some men find excuse-making more to their liking than doing things.

NOVEMBER

Moon's Phases		Intercol. T.		Eastern T.		Central T.		Mountain T.		Pacific T.	
	D.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
☾ Last Quarter	1	11	37	10	37	9	37	8	37	7	37
☾ New Moon	8	10	5	9	5	8	5	7	5	6	5
☾ First Quarter	16	6	43	5	43	4	43	3	43	2	43
☾ Full Moon	24	0	12	11	12	10	12	9	12	8	12

Day of Mo.	Day of Wk.	Lt. and Dk. of Moon	Moon's Pl.	UNITED STATES									
				Northern States					Southern States				
				Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises	Sun Sets	Moon R. & S.	Sun Rises
				H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1 Fr	☾	☾	☾	6 30	4 57	10 46	6 19	5 9	11 13				
2 Sat	☾	☾	☾	6 31	4 56	morn	6 20	5 8	morn				
3 Sun	☾	☾	☾	6 32	4 54		2 6	21 5	7 21				
4 M	☾	☾	☾	6 34	4 53	1 19	6 22	5 6	1 30				
5 Tu	☾	☾	☾	6 35	4 52	2 32	6 23	5 5	2 36				
6 W	☾	☾	☾	6 36	4 51	3 45	6 23	5 4	3 42				
7 Th	☾	☾	☾	6 37	4 50	4 59	6 24	5 4	4 48				
8 Fr	☾	☾	☾	6 38	4 49	6 11	6 25	5 3	5 53				
9 Sat	☾	☾	☾	6 40	4 48	sets	6 26	5 2	sets				
10 Sun	☾	☾	☾	6 41	4 47	5 31	6 27	5 2	6 4				
11 M	☾	☾	☾	6 42	4 46	6 17	6 28	5 1	6 52				
12 Tu	☾	☾	☾	6 43	4 45	7 11	6 29	0 7	7 46				
13 W	☾	☾	☾	6 44	4 44	8 11	6 30	0 8	8 45				
14 Th	☾	☾	☾	6 46	4 43	9 16	6 31	4 59	9 55				
15 Fr	☾	☾	☾	6 47	4 42	10 21	6 31	4 58	10 44				
16 Sat	☾	☾	☾	6 48	4 41	11 24	6 32	4 58	11 42				
17 Sun	☾	☾	☾	6 49	4 40	morn	6 33	4 57	morn				
18 M	☾	☾	☾	6 50	4 39		28 6	34 4	57 39				
19 Tu	☾	☾	☾	6 51	4 38	1 34	6 35	4 57	1 39				
20 W	☾	☾	☾	6 53	4 38	2 32	6 36	4 56	2 30				
21 Th	☾	☾	☾	6 54	4 37	3 36	6 37	4 56	3 28				
22 Fr	☾	☾	☾	6 55	4 36	4 42	6 38	4 55	4 28				
23 Sat	☾	☾	☾	6 56	4 36	5 54	6 39	4 55	5 32				
24 Sun	☾	☾	☾	6 57	4 35	rises	6 40	4 55	rises				
25 M	☾	☾	☾	6 58	4 35	5 7	6 41	4 55	5 42				
26 Tu	☾	☾	☾	6 59	4 35	6 9	6 41	4 54	6 45				
27 W	☾	☾	☾	7 0	4 34	7 19	6 42	4 54	7 53				
28 Th	☾	☾	☾	7 2	4 34	8 36	6 43	4 54	9 4				
29 Fr	☾	☾	☾	7 3	4 34	9 53	6 44	4 54	10 14				
30 Sat	☾	☾	☾	7 4	4 34	11 8	6 45	4 54	11 22				

November was named from *Novem* (nine), as it was formerly the ninth month.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	4:52	4:58
16	5:03	5:25

TWILIGHT ENDS

Day	Southern States	Northern States
1	6:34	6:28
16	6:26	6:21

DAY'S LENGTH

Day	Southern States	Northern States
1	10 h. 59 m.	10 h. 9 m.
11	10 h. 46 m.	9 h. 42 m.
21	10 h. 32 m.	9 h. 20 m.

The World's Calendar for Wheat Harvests

November is the harvest month in Peru and South Africa.

The American made machines are often drawn by a long-necked animal called the llama, the only animal domesticated by the South American Indians.

Valuable Information

In Baking Bread or Rolls, put a saucepan of boiling water into the oven. The steam will keep the crust smooth and tender. When the oven is too hot, the temperature may be reduced by putting a pan of cold water in the oven.

Paint can be easily removed from glass by wetting a copper or silver coin and rubbing the paint with it.

When Scrubbing Floors and Tables do not use soda, for it makes boards a bad color, and does not cleanse better than soap and plenty of cold water. The boards should be scrubbed the way of the grain, and not round and round, as so many prefer doing.

Matting should be washed with salt and water and wiped dry at once with a coarse flannel cloth. Never scrub a matting.

You can tell more about a man by what he does than by what he says.



Roast Turkey

After the turkey is picked, singed, and dressed, wash it thoroughly and rub with salt, inside and out; fill it with a dressing of bread crumbs cut from a loaf at least three days old. Moisten the bread with warm water or milk, add a large lump of butter, pepper, salt, sage, 2 fresh eggs, well beaten, and 1 pint of raw oysters. Mix thoroughly. Sew up the openings, tie the legs and wings close to the body, place in a covered baking pan, with sufficient water to keep the turkey moist, and bake slowly till done, basting frequently and adding more water as needed.

Cranberry Jelly

To three quarts of cranberries take two pounds of granulated sugar and one quart of water; cook thoroughly, mashing all the berries fine, then put all through a fine sieve. Return the juice to the stove, and cook fifteen minutes more. Pour into glasses, and seal when cool.

Pumpkin Pie

Cut the pumpkin into cubes $1\frac{1}{2}$ to 2 in. in size. Pare and boil, being careful not to add too much water. Stew down dry, and sift. For one pie, 1 cup pumpkin, 1 cup milk, 2 eggs, $\frac{1}{2}$ cup sugar, $\frac{1}{4}$ cup molasses, $\frac{1}{2}$ teaspoon cinnamon, $\frac{1}{2}$ teaspoon ginger, a little nutmeg, and a pinch of salt. Canned pumpkin may be used.

Mince Meat

One cup meat chopped fine, $2\frac{1}{2}$ cups apples, 1 tablespoon butter, $\frac{1}{4}$ cup of molasses, $\frac{1}{2}$ cup vinegar, $\frac{1}{2}$ cup sugar, 1 teaspoon each, cinnamon, cloves, $\frac{1}{2}$ teaspoon nutmeg, $\frac{1}{2}$ teaspoon salt, 1 cup raisins, 2 cups currants. A little cherry or plum juice gives a nice flavor. Left over steak and other meats may be saved, stewed until tender, and used for mince-meat.

Mock Mince Meat

Two cups warm water, $\frac{1}{2}$ cup butter, two-thirds cup vinegar, 1 cup raisins, 1 cup bread crumbs, 1 cup sugar, 1 cup molasses; spices to taste. This makes enough for three pies.

Rabbit or Squirrel

Roll the pieces of rabbit in flour, then fry in butter and lard, equal parts; when nicely browned, add a small quantity of boiling water. Let cook slowly for 20 minutes; then, if the gravy is not thick enough, add a little flour. Season to taste.

Doughnuts

Rub a tablespoonful of melted butter into a level cupful of sugar. Add 2 eggs and beat thoroughly. Dissolve a level teaspoonful of soda in a cup of sour milk and add to above. Season with nutmeg. Add a heaping teaspoonful of baking powder to 1 quart of flour; sift and stir into above mixture. Fry in lard, turning constantly to secure an even color.

Stewed Turnips

Pare and cut the turnips into dice. Put them in boiling unsalted water, and cook below the boiling point, until transparent and white. New turnips require about 20 minutes, old ones 45 minutes. Drain, turn in a heated dish, and cover with cream sauce.



One difference between a foolish and a wise woman is this—the former drives a man, the latter leads him.

Sauer Kraut

Sixty large, solid heads cabbage. Have ready a 20-gallon keg, well cleaned. Cover bottom of keg with cabbage leaves. Slice the cabbage with a kraut cutter and put the cabbage in in layers, sprinkling each layer with salt. After a few layers are in, stamp each down well with a kraut stamper. It will require 3 pints of salt to 20 gallons of kraut. When the keg is full, cover with cabbage leaves, then a clean cloth, and a board on top of that and then weight down and keep in a cool place—cellar is best. In making it, each layer of cabbage should be stamped until the brine rises on it till you can see it.

Devil's Food

One cup grated chocolate, 1 cup sweet milk, 1 cup brown sugar; set on the stove to boil; remove and cool. Part second—1 cup brown sugar, 1 small cup melted butter, 3 cups flour, 1 teaspoon soda, 1 cup sweet milk, yolks 3 eggs; stir the first part into the second. Bake in buttered pans.

Boiled Icing

To 1 egg, well-beaten, take 1 tumbler of sugar in lumps, and 2 tablespoons of water. Boil the sugar and water together till it threads. Beat this syrup into the white of the egg. Flavor with vanilla or lemon.

Chocolate Icing

Three tablespoons chocolate, 6 tablespoons sugar, 2 tablespoons cream, small piece of butter. Let simmer for a few minutes. Flavor with vanilla.

Hard Sauce for Pudding

Cream 4 tablespoons butter, and add 1 cup powdered sugar, a little at a time, work till light and smooth; add the beaten white of 1 egg and beat into the sugar till white. Add the flavoring—a teaspoon vanilla, a grating of nutmeg, or, the juice and grated rind of a lemon if preferred.

Lemon Sauce

One cup sugar, 1 cup hot water, butter size of an egg, juice and rind of a lemon, 1 tablespoon flour stirred into the sugar; cook, and stir in the beaten white of an egg when the sauce is cool enough not to cook it.

Cream Hard Sauce

One cup sugar, 2 tablespoons butter. Add 2 or 3 tablespoons cream. Cream sugar and butter and mix with cream.

Foaming Sauce

One cup sugar, 1 cup butter, 2 eggs, juice and grated rind of a lemon; beat the yolks with the sugar, rind and juice of the lemon, beat the whites by themselves, and when stiff, mix with the sugar and yolks. The minute before it is sent to the table, stir in rapidly, a teacup of boiling water.

Many a man is brave when the danger is miles distant.



More and Better Corn

(Continued from page 28)

leaving the husks on. The husks may be tied together, thus providing a means for hanging up the ear. Among other methods that are in practice for curing and storing seed corn is to hang the ear up by strings. This is not only one of the handiest and best ways, but it is inexpensive and may be done by almost any one. We know of instances where the corn is hung for a short time on a clothes line out in the yard or from wires in the driveway of the corn crib, in the haymow, or in other places that are convenient. The main thing is to choose a place that is open, permitting free circulation of the air. In no event should the corn be piled or corded up, as this will retard the drying, and afford a splendid place for mice and rats. The first month after picking is the most important one, for if the corn is hung in a well-ventilated place it will in most cases be dry enough by the end of that time so that there will be very little danger from freezing. It has been found by experiments conducted to determine the best way of curing seed corn, that the attic gives the best results, but the main thing to consider after the corn is dry, is to avoid sudden changes in temperature and not to subject it to fluctuations in the amount of moisture in the air, as corn will absorb moisture very readily and a change in temperature is apt to be injurious to its germinating power.

Every Ear should be Tested

Even if the corn is selected early and taken from the field, and stored under the very best conditions, we are not always certain that it will grow



Corn germination box, showing the method of laying off the squares and placing the corn in them

(Continued on page 54)



If the dotard would spend as much time at his work as he does inventing excuses he would be called industrious.

DECEMBER

Moon's Phases				Intercol. T.			Eastern T.			Central T.		Mountain T.		Pacific T.	
				D.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.	
☾ Last Quarter				1	7	5			5	5	4	5	3	5	
☾ New Moon				8	1	7			11	7	10	7	9	7	
☾ First Quarter				16	4	6			2	6	1	6	0	6	
☾ Full Moon				23	0	30 24th			10	30	9	30	8	30	
☾ Last Quarter				30	4	12			3	12	2	12	0	12	

UNITED STATES															
Day of Mo.	Day of Wk.	Lt. and Dk. of Moon	Moon's Pl.	Northern States						Southern States					
				Sun		Moon		Sun		Moon		Sun		Moon	
				Rises	Sets	R. & S.	Rises	Sets	R. & S.	Rises	Sets	R. & S.	Rises	Sets	R. & S.
				H.	M.	H.	M.	H.	M.	H.	M.	H.	M.	H.	M.
1	Sun	☾	☾	7	5	4	34	morn	6	46	4	54	morn		
2	M	☾	☾	7	6	4	33		21	6	47	4	54	28	
3	Tu	☾	☾	7	7	4	33	1	33	6	47	4	54	1	32
4	W	☾	☾	7	8	4	33	2	45	6	48	4	54	2	37
5	Th	☾	☾	7	9	4	32	3	56	6	49	4	54	3	41
6	Fr	☾	☾	7	10	4	32	5	9	6	50	4	54	4	47
7	Sat	☾	☾	7	11	4	32	6	22	6	51	4	54	5	53
8	Sun	☾	☾	7	12	4	32	7	31	6	51	4	54	6	57
9	M	☾	☾	7	13	4	32	sets	6	52	4	54	sets		
10	Tu	☾	☾	7	14	4	32	5	59	6	53	4	55	6	34
11	W	☾	☾	7	15	4	32	7	1	6	53	4	55	7	33
12	Th	☾	☾	7	15	4	32	8	7	6	54	4	56	8	33
13	Fr	☾	☾	7	16	4	33	9	11	6	55	4	56	9	31
14	Sat	☾	☾	7	16	4	33	10	15	6	55	4	56	10	29
15	Sun	☾	☾	7	17	4	33	11	16	6	56	4	56	11	23
16	M	☾	☾	7	18	4	33	morn	6	57	4	57	morn		
17	Tu	☾	☾	7	18	4	33		17	6	57	4	57	19	
18	W	☾	☾	7	19	4	34	1	19	6	58	4	57	1	14
19	Th	☾	☾	7	20	4	34	2	24	6	58	4	58	2	12
20	Fr	☾	☾	7	20	4	35	3	32	6	59	4	58	3	14
21	Sat	☾	☾	7	21	4	35	4	43	6	59	4	59	4	17
22	Sun	☾	☾	7	21	4	36	5	58	7	0	4	59	5	27
23	M	☾	☾	7	22	4	37	rises	7	0	5	0	rises		
24	Tu	☾	☾	7	22	4	37	5	38	7	1	5	0	6	13
25	W	☾	☾	7	23	4	38	6	17	7	1	5	1	6	48
26	Th	☾	☾	7	23	4	39	7	37	7	1	5	1	8	0
27	Fr	☾	☾	7	23	4	39	8	56	7	2	5	2	9	12
28	Sat	☾	☾	7	23	4	40	10	13	7	2	5	3	10	21
29	Sun	☾	☾	7	24	4	40	11	25	7	3	5	3	11	26
30	M	☾	☾	7	24	4	41	morn	7	3	5	4	morn		
31	Tu	☾	☾	7	24	4	42	33	7	3	5	5	27		

December was named from *Decem* (ten), the Roman Calendar terming it the tenth month.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	5:14	5:32
16	5:24	5:46

TWILIGHT ENDS

Day	Southern States	Northern States
1	6:23	6:03
16	6:28	6:04

DAY'S LENGTH

Day	Southern States	Northern States
1	10 h. 24 m.	9 h. 1 m.
11	10 h. 16 m.	8 h. 51 m.
21	10 h. 14 m.	8 h. 43 m.

The World's Calendar for Wheat Harvests

In December the harvest season begins in the Argentine Republic, Uruguay and Australia.

The Argentine harvest is continued well into the month of January.

December was named from *Decem* (ten), the Roman Calendar terming it the tenth month.

TWILIGHT BEGINS

Day	Southern States	Northern States
1	5:14	5:32
16	5:24	5:46

TWILIGHT ENDS

Day	Southern States	Northern States
1	6:23	6:03
16	6:28	6:04

DAY'S LENGTH

Day	Southern States	Northern States
1	10 h. 24 m.	9 h. 1 m.
11	10 h. 16 m.	8 h. 51 m.
21	10 h. 14 m.	8 h. 43 m.

The World's Calendar for Wheat Harvests

In December the harvest season begins in the Argentine Republic, Uruguay and Australia.

The Argentine harvest is continued well into the month of January.

Valuable Information

Uses for Old Linen—Soft old linen is almost invaluable for the final polishing of furniture. It is also good for polishing silver, brass, and other metals. If not so worn as to shed lint it will polish glass.

To Erase Finger Marks from polished furniture, rub with a chamois leather moistened with vinegar and water. Afterwards polish.

To Sweep Carpets—Tea leaves may be pressed tightly after they have been steeped and put aside to sprinkle over the carpet just before sweeping. They brighten the carpet and prevent the dust from flying and soiling the furniture and paper; or once a month use cornmeal, which revives the colors and effectually lays the dust.



Roast Goose

Dress a young goose and let set on ice or freeze for several days. Rub well with butter, salt, and pepper; sprinkle a little flour over it; put in roasting pan and pour 1 pint water over it; more may be added as it roasts. Start to roast slowly and let roast three hours or more.

Suet Pudding

One cup sweet milk, 1 cup molasses, a pinch of salt, 1 cup suet chopped fine, $1\frac{1}{2}$ cups raisins, $3\frac{1}{2}$ cups flour, 1 tablespoon soda, 1 teaspoon cinnamon, $\frac{1}{2}$ teaspoon cloves. Put in a buttered crock or pan, steam 3 hours. Serve with sugar and cream or with any pudding sauce.

Cream Candy

Three cups sugar, $\frac{1}{3}$ cup vinegar; $1\frac{1}{2}$ cups cold water, piece of butter size of a walnut, 1 tablespoon vanilla; boil till it hardens when dropped in cold water. Pour in buttered pans, and when cold enough to handle, pull till white.

Peanut Brittle

Take the desired amount of brown sugar; melt the sugar without adding water; cook until it is brittle in water, stir in chopped peanuts, and pour into buttered pans.

Chocolate Caramels

Two cups molasses, 1 cup brown sugar, 1 cup cream or milk, $\frac{1}{2}$ pound of chocolate, piece of butter size of an egg. Beat all together, boil until it thickens in water, turn into well-buttered pans, and when nearly cold, cut into small squares.

Panache

Two cups light brown sugar, 1 cup rich milk, butter size of a walnut. Boil sugar and milk until it makes a soft ball when dropped in cold water. Just before removing from fire, put in butter. Take from fire, flavor, beat until it sugars, pour into buttered pan. If desired, stir in nut meats.

Chocolate Fudge

Two cups sugar, 1 cup rich milk, butter size of a walnut, 2 squares chocolate. Let boil until it forms a very soft ball in cold water; stir all the time. When ready to take off, add 2 teaspoons vanilla; then beat until it begins to cool. Pour in greased platter.

Walnut Molasses Candy

Put into a large saucepan, one pint of good New Orleans or Porto Rico molasses, one cupful of brown maple sugar, one tablespoonful of butter, one tablespoonful of vinegar. Mix and stir until they boil. Boil slowly until the syrup hardens when dropped in ice water. Take from the fire and pour it over black walnuts that have been put in a greased shallow pan. When partly cooled, cut into bars.

White Taffy

Two cups sugar, two-thirds cup hot water, $\frac{1}{4}$ teaspoon cream tartar dissolved in the water. Boil till of the right consistency when dropped in cold water, add flavoring, pour into buttered pans, and when cool enough to handle, pull white. Cut into small pieces with scissors.

Butter Scotch

One cup sugar, 1 cup molasses, $\frac{1}{2}$ cup butter, 1 tablespoon vinegar, a pinch soda. Boil all together until it forms a hard ball when tested in cold water. When done, pour into buttered pans and cut in squares when cold.



As you live, so will your health be.

Keeping Lightning Rods in Order

There is a great deal of skepticism as to the value of lightning rods, due to the fact that very frequently houses and barns equipped with rods have been struck by lightning. Of course the fault was laid to the lightning rods when in reality the conditions of the system were at fault. It is a significant fact that farmers who take special pains to see that their lightning rods are always in first-class condition never have their buildings struck by lightning. On the other hand, those farmers who put up their rods and pay no more attention to them may expect their buildings to be struck just as easily as though they had no rod.

Electricity is developed in a cloud by the contact of the different particles. This is usually called positive electricity. The negative electricity is developed in the building. The stroke, or flash, of lightning is the connection between the negative and positive electricity. Since the negative electricity was formed in the building and deposited in the cloud, the stroke naturally is from the building to the cloud.

The value of a lightning rod is this. It has been known for a great many years that electricity readily passes off a sharp point. The object of a lightning rod is to draw off electricity as it accumulates. This prevents enough electricity accumulating for a stroke or flash of lightning. In order to facilitate the continuous passage of the negative electricity, the lightning rod must have enough surface to carry off electricity, must come in contact with the moist earth, be in close mechanical contact with the building and end in a sharp point. Knowing these facts it is readily discernible that lightning rods must not be broken in any place because the broken wire stops the current, permitting the electricity to accumulate. In mending rods great care should be taken to see that the ends of the rods come together and that the metal on the ends is clean from rust and other impurities. The best way to mend the broken rod is to completely cover the broken ends with solder.

Care should be taken at all times to see that the rods extend deep enough into the ground so that they reach moist earth. The point of the rod on top of the building should be protected by a coating of platinum or some other non-oxidizable metal. The point does not need to be as sharp as a needle, but it should be smooth and come to a point without any obstruction on the surface—the surface must be smooth. It is a peculiar fact that if the point has a knob on the end, the lightning rod becomes an instrument to draw the flash immediately to the building. A test of this fact can be made on a cold, winter day when the air is dry.

Let a boy stand on a piece of beeswax placed on a pane of glass, or on a stool with glass casters. If some person strikes him with a catskin a few times, his hair begins to stand on end. This means that he is charged with electricity. If some one will take a sharp pointed metal instrument such as an awl and point it at him, his hair will resume its natural position. On the other hand, if the awl has a knob on the end, there will be a spark, a miniature stroke of lightning. What the lightning rod must do is to keep the electricity from accumulating. If the point is sharp and the end of the rod is in the ground sufficiently deep to reach moisture and there is no break anywhere in the rod, lightning will not strike the building protected by the rod.

Another thing in connection with lightning rods is this,—no rule can be laid down as to the extent of the region protected by one rod. It may be

Take it as a rule that the fellow who can't write can make his dollar mark.



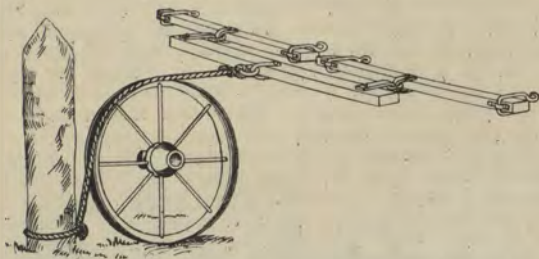
Keeping Lightning Rods in Order—Cont.

assumed with safety however that on buildings of ordinary height, a rod will protect the surface made by an angle of 45 degrees to the point of the rod. On high buildings such as tall chimneys or towers, the conditions are altogether different. When the lightning rod system is first installed, particular pains should be taken to have the rods placed in the right position with regard to chimneys, towers, gable windows, etc., so that each one is protected. On buildings that are covered with metallic bodies such as lead or zinc roofing, metal tanks, etc., see that good connection is made with the rod. Glass or porcelain insulators such as are employed by telegraph wires are a needless, expensive, and possibly dangerous practice.

Protect Stock

Another phase of the lightning question that interests farmers is the number of horses, cattle, sheep, and hogs that are killed yearly by lightning striking the fences. Lightning frequently strikes the fence one-half mile from the place where the stock are killed, then runs along the wire until it has a chance to reach the earth. The danger to stock can be almost entirely eliminated. All any one needs to do is to take a crow-bar or sharp iron of any kind and drive it down as far as possible into moist earth by the side of every fifth post—then take a piece of plain wire, put it down the hole and fasten it solidly to each wire of the fence. If this is done properly and the wire put down until moist earth is reached, the chances of the cattle huddled together being struck by lightning are not one in a thousand.

Pulling Fence Posts



A quick and easy way to pull fence posts

One of the meanest jobs that a farmer has to do is to pull fence posts from the ground. This work can be made very easy if the farmer will take an ordinary rope, an old corn planter wheel, doubletrees, and a team of horses and use them in the manner shown in the accompanying illustration. The wheel acts as a fulcrum giving the horses the advantage of greater leverage to pull the posts. Farmers can pull a great many posts in a very short time by using this method. If a corn planter wheel does not happen to be handy, any type of wheel that has a wide enough tire for the rope will suffice. The wheel must be high enough to give the horse the advantage of leverage.



*If you look backwards you'll travel in that direction.
Progress is made by looking ahead.*

More and Better Corn

(Continued from page 49)

and produce a thrifty and hardy stalk of corn. For this reason it is very important that every ear of corn should be tested thoroughly and carefully before planting time. There are two principal reasons for doing this:

- (1) It will enable us to throw out the ears that will not grow.
- (2) It will enable us to select for planting only that corn which gives a hardy, thrifty, and vigorous growth, which is not so apt to produce small and nubbins corn.

The testing should be done early in the spring before the rush of the season's work begins. Its importance can perhaps be brought before us in no better way than by saying that every ear of corn will plant from 800 to 900 hills, which should yield 4 or 5 bushels, or, in other words, at 50 cents per bushel, from \$2.00 to \$2.50 worth of corn. What better paying proposition does a man want than to make \$2.50 for every poor seed ear that he removes. At this rate one ear a day would not be bad wages during the early spring.

In testing the corn, lay the ears out in rows with each ear numbered in such a way that they will not become mixed. According to Professor Holden one of the best ways of making a germinating box is to use sawdust. Make a box 3 inches deep and 30 x 30 inches in size, fill it about half full of moist sawdust, and tamp firmly with a brick. Rule off a piece of good white cloth (sheeting) into squares $2\frac{1}{2} \times 2\frac{1}{2}$ inches each way, checker board fashion, and number the squares 1, 2, 3, etc. Place this cloth, which should be the size of the germination box, on the sawdust and tack it to the sides and ends of the box. Lay the ears of corn to be tested side by side on the floor or table. Remove six kernels from six different places in ear No. 1 and place them in square No. 1 in the germination box, germ side up and crown pointing from you. Then remove six kernels in a like manner from ear No. 2 and place in square No. 2 in the germination box and so on. When the squares in the germination box are filled, lay a piece of good cloth over the kernels and dampen by sprinkling water over it. Place over this, a cloth considerably larger than the box, and fill the box with moist sawdust, tamp with a brick or board until firmly packed on top of the corn. Keep the box in a place where it will not freeze; raise the upper side of the box or the side toward which the crowns of the kernels point, 3 or 4 inches; the stem sprouts will then grow up and the root sprouts down, thus making it much easier to read the test. It requires about eight days for the corn to germinate. At the end of that time roll back and remove the cloth containing the top layer of sawdust. Now remove the second cloth as carefully as possible and examine the six kernels in each square.

"The above box when completed and set away for germinating may be described briefly as follows: Two inches of sawdust packed firmly in the bottom of the box. On this is laid the cloth ruled off in squares, then the kernels laid in the squares, a second cloth spread on the kernels and dampened, then a third cloth much larger than the box, on which is placed 2 inches more of damp sawdust packed firmly. The edges of the larger cloth may be folded over on the top of the sawdust."

(Continued on page 90)

The fact that a man leads a double life is no indication that he does two men's work.



New Osborne Binder

The new Osborne binder works successfully in down and tangled grain. When you are in the market for a binder, examine the new Osborne and you will see why.

The cuttter bar and platform are constructed so that they can be tilted close to the ground with the guards resting on the ground, if necessary, without trash or stones accumulating between the guards and platform, or interfering with the knife. This is a distinctly Osborne feature. All reel adjustments are made with one lever and two latches, and the range of adjustment is so great, that short, down, and tangled grain is forced to the platform with great facility.

The top of the elevator is large and roomy to prevent tangled grain accumulating at this point and clogging the machine. The twine disk yields the twine in the direction of the bill hook when the knot is being tied, taking all the strain off the twine, eliminating the danger of breakage, and insuring a perfect knot.

When you buy the new Osborne binder, you can feel assured that you are getting a machine that will do the best possible work in bad grain as well as in that which is standing and in good condition for cutting. All the levers are easy to manipulate and convenient to the driver.



New Osborne Binder



*If a man says he likes to work, don't call him a liar.
Let him prove it.*

How to Select Seed Wheat and Oats

The practice of picking seed corn in the field is recognized by most farmers as the only reliable means of securing good seed corn. If farmers tried to pick out their seed corn after it was shelled, they would have nothing to guide them but the size and shape of the kernels. This would often be misleading, as even a poor ear from a poor plant will have a few good appearing kernels. In all probability such kernels will not reproduce their own desirable qualities, but instead will produce a plant having all the inferiority of the plant on which the seed grew. This same reasoning should be applied when wheat or oat seed is being selected.

Nearly fifty years ago a farmer in Pennsylvania by the name of Fultz realized the truth of this. Accidentally discovering three remarkably fine heads of beardless wheat in a field, he gathered them and planted them separate from any other wheat. From this small start was developed the Fultz variety of wheat. This illustrates what careful selection and treatment of grain seed will accomplish. In fact, most varieties of our grains have been evolved in much the same manner as was the Fultz variety of wheat.

The development of new varieties of wheat or oats is not an object with many farmers. Their chief aim is to get seed that will insure a good yield. This can be accomplished best by selecting the seed while the grain is standing in the field just before harvest. In selecting the seed, go through the field and pick out heads that are full and well developed from one end to the other. Consider the stool from which the head came and be sure that it has produced a large number of stalks bearing the kind of heads you are looking for. Do not be deceived as to the strength of a plant which appears vigorous because it is growing on a very rich spot of ground or because no other grain has grown very close to it. Such a plant has grown under exceptionally favorable conditions and probably would not do nearly so well if grown under ordinary conditions. Select seed from plants that have grown under the average conditions of your field.

Another quality of the plant which should be considered is the strength and straightness of the stalk. This is especially true of oats. A strong, straight oat stalk will not lodge nearly so easily as the weaker kind.

Do not select seed from a plant that is badly affected with rust. You will only perpetuate that undesirable condition.

The seed selected in the above manner should be planted next season in a plot by itself and carefully watched. A good plan is to plant the seed from each head in a separate row. If this is done it will be found an easy matter to eliminate the seed produced by any head which for some reason lacks the ability to reproduce its own good qualities.



*Two well-developed heads of
Fultz wheat*



*Young wheat plants from strong and
weak seed*

duced by any head which for some reason lacks the ability to reproduce its own good qualities.

The successful man is like the bull-dog. He sticks to the last ditch.



How to Select Seed Wheat and Oats—Cont.

The rows should be planted about a foot apart and around the plot within a foot of the outside row, a few rows of ordinary wheat should be planted.

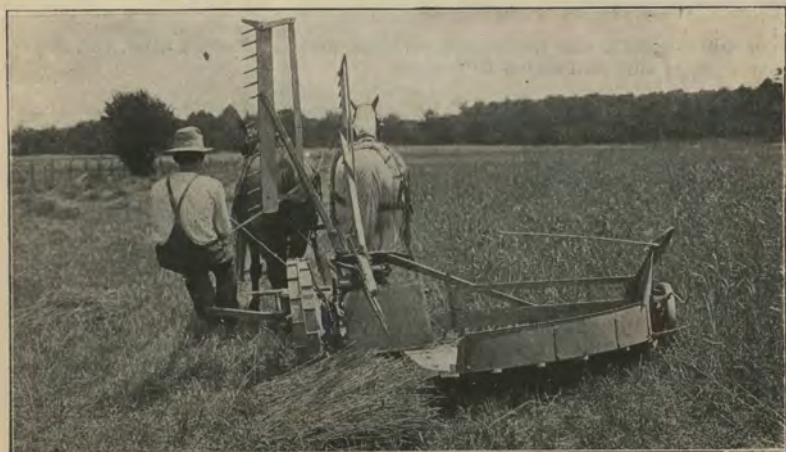


Oat stool showing well developed oats and strong stiff straws

This will prevent the outside rows of the plot from gaining any undue advantage which they would ordinarily have on account of being on the outside.

The rows should be numbered and a record kept of the good or poor qualities they develop throughout the growing season. The difference in the different rows will be surprising considering that they all started from seed very much alike.

When the grain is ripe, only the best heads from the best seeds in the plot should be selected and then carefully threshed out by hand. The poor rows and heads should be discarded. The seed secured may be planted in a large field the next season if desired and the results will be surprisingly good. For the best results, however, the process of selecting and eliminating should go on for several years; each year selecting and planting the best grains in a separate plot.



New Osborne reaper in a wheat field



Brooding over a trouble exaggerates it. The best way is to forget it.

Ideal Soils

The ideal soil is well drained, yet has a large water capacity. It contains an abundance of all the elements of soil fertility, and plenty of humus. It works easily and contains enough vegetable matter to hold sufficient moisture. While this in a general way describes an ideal soil, the crop must be taken into consideration in connection with the soil before an ideal soil can be absolutely described. Some soils are good for growing fruit, others for corn, grain, vegetables, etc. In connection with the soil, climatic conditions must be considered because the chemical composition has as much to do with the growing of crops as the mechanical condition of the soil.

Corn requires a great deal of nitrogen; clover, alfalfa, and the other legumes produce abundantly on soils that are rather poor in nitrogen, but which contain lime, potassium, and phosphorus.

As a general rule, corn, grasses, and in fact all crops that are grown for a rank or luxuriant growth, require a soil rich in nitrogen. Clover, beans, peas, alfalfa, small grains, and all fruits require less nitrogen and an exceptional amount of phosphorus and potassium.

If a soil is moderately rich in plant food, its desirability for any particular crop is determined largely by its physical condition. The best grass lands are clays, because clay soils hold a great deal of moisture, which meadows and pastures require. Potatoes and in fact all vegetables that are grown by trucksters grow especially well in a rather sandy land because this land warms up quickly in the spring and is easily worked. Corn grows best on a silt loam, and as a general rule, fruit grows best on a sandy loam. The supposed reason for this is because of the relation of these various types to temperature and moisture.

Agricultural experts who have been working on this problem, consider the following proportions as ideal soil conditions.

Early vegetable and potato soil, 60% or more of medium sand, not more than 10% of clay and about 20% of silt.

Late truck and fruit, 50% or more of medium fine sand, not more than 25% of clay, and from 10 to 30% of silt.

General grains, 20 to 30% fine sand, 15 to 20% clay, 40 to 60% silt.

Wheat, not more than 15% sand, from 20 to 30% clay, and from 30 to 70% fine silt.

Grasses, not more than 10% sand, 40 to 70% clay, 20 to 30% silt.

These mixtures cannot be taken as arbitrary, since it is a well-known fact that very good crops have been grown on soils altogether different from those mentioned, but the point is that these are the best soils for growing these crops. The only satisfactory way to determine ideal soil is to give the crop and the soil a trial together.

Climate also has much to do with the growth of the crops on different kinds of soil. Considering the fact that every farm contains different kinds

The theatrical manager is the only man who can put over a double bill and make it stick.



of soil in greater or less percentage, the farmer who gets the most out of his land must necessarily grow the crops that are best adapted to his particular soils. While it is not possible for a farmer to hire a chemist to make a chemical analysis of the soil and a soil physicist to make a mechanical analysis, he must satisfy himself as to the best crops to grow on his particular soil by watching closely year by year the results of growing crops on different land and ascertaining why they are poor or good as the case may be.

The following table taken from the New York bulletin on fertilizers shows in pounds per acre the quantities of the elements suggested for use in available form in fertilizers for the crops indicated:

CROPS	Nitrogen	Phosphorus	Potassium	CROPS	Nitrogen	Phosphorus	Potassium
Alfalfa	5-10	12.5-25	30-60	Lettuce	40-80	20-40	60-120
Apples	8-16	12.5-25	40-80	Millet	15-30	12.5-25	30-60
Asparagus	20-40	12.5-25	30-60	Muskmelons	30-60	20-40	50-100
Barley	12-24	8.5-17	20-40	Nursery stock	10-20	10-20	25-50
Beans	5-10	12.5-25	30-60	Oats	12-24	8.5-17	25-50
Beets	20-40	10-20	30-60	Onions	45-90	25-50	70-140
Blackberries	15-30	12.5-25	30-60	Parsnips	20-40	25-50	40-80
Buckwheat	15-30	12.5-25	30-60	Peaches	15-30	17.5-35	45-90
Cabbage	40-80	30-60	75-150	Pears	8-16	12.5-25	40-80
Carrots	15-30	15-30	35-70	Peas	5-10	12.5-25	30-60
Cauliflower	40-80	30-60	75-150	Plums	10-20	15-30	35-70
Celery	40-80	20-40	50-100	Potatoes	30-60	17.5-35	55-110
Cherries	10-20	15-30	35-70	Pumpkins	30-60	20-40	50-100
Clover	5-10	12.5-25	30-60	Quinces	8-16	12.5-25	40-80
Corn	10-20	15-30	25-50	Radishes	15-30	15-30	35-70
Cucumbers	30-60	20-40	50-100	Raspberries	12-24	17.5-35	50-100
Currants	10-20	10-20	30-60	Rye	12-24	8.5-17	25-50
Egg-plant	40-80	20-40	75-150	Sorghum	10-20	15-30	25-50
Flax	10-20	10-20	25-50	Spinach	15-30	25-50	35-70
Gooseberries	10-20	10-20	30-60	Squashes	30-60	20-40	50-100
Grapes	8-16	12.5-25	35-70	Strawberries	25-50	25-50	60-120
Grass for pastures	15-30	12.5-25	30-60	Tobacco	30-60	20-40	60-120
Grass for lawns	20-40	10-20	25-50	Tomatoes	25-50	15-30	30-60
Grass for meadows	15-30	12.5-25	30-60	Turnips	20-40	10-20	30-60
Hops	20-40	15-30	80-160	Watermelons	30-60	20-40	50-100
Horseradish	15-30	10-20	30-60	Wheat	12-24	8.5-17	10-20



A good way to make an ideal soil



The smooth land agent doesn't attempt to sell \$1000 per acre orchards to experienced fruit growers.

What is Manure Worth?

Barnyard manure—what is it worth? That depends on how it is used. Spread it by hand, 20 or 30 loads to the acre, and its value is decreased by one-half. Why? Because 8 to 15 loads are sufficient, but since it is impossible to make this quantity cover an acre evenly when spreading with a fork, manure must be distributed with a machine to make it give best results.

Then the questions arise—Will a machine pay for itself? Can it be used at a profit? Here is the answer:

Cow manure has a value of \$29.27, annually.

Pig manure has a value of \$60.88, annually.

An average size calf produces manure valued at \$24.45, annually.

Sheep manure has a value of \$26.09, annually.

Horse manure has a value of \$27.74, annually.

If four horses are kept, the total value of the manure amounts to \$110.96. If in addition to the four horses, ten cows are included, we are obliged to add \$292.70—this makes a sum total of the following:

10 cows, \$29.27 . . . \$292.70, total value of manure produced annually by
10 cows

4 horses, 27.74 . . . 110.96, total value of manure produced annually by
4 horses

\$403.66, value of manure produced by 4 horses and 10
cows

These figures are simply the commercial value of the elements contained in the manure. They do not take into account the fertilizing value of the humus. On farms where a greater number of cattle are kept, the value of the manure is proportionately larger.

The next question that arises is—How many tons of manure does each horse and each cow produce? Approximately 12 tons—a ton each month, or a sum total of 168 tons for 10 cows and 4 horses. If this quantity is spread by hand at the rate of from 20 to 30 loads per acre, from 5 to 8 acres are covered.

Use a spreader and the same manure will fertilize from 10 to 20 acres. What is more, the machine will spread manure more evenly. Even spreading means even results—maximum yield. That's what counts.

On experimental fields where manure was applied evenly at the rate of 15 7-10 tons per acre, the average annual gain amounted to \$15.41 per acre. Beneficial effects, however, are not exerted for a single year, but extend over a period of three years. This brings the value of manure up to three times \$15.41, which equals \$46.23.

By referring back, our figures show 168 tons of manure covered from 5 to 12 acres more when a spreader is used than it does when spread with a fork. This means that there is an annual loss of 5 times \$46.23, which equals \$231.15, every time 168 loads of manure is used on five acres.

If 168 loads are spread annually, the total loss will be \$231.15 the first year, \$462.30 at the close of the second year, and \$693.45 the third year, or a sum total of \$1,386.90.

Isn't this tidy little amount worth saving? Of course it is. Then why not commence saving?

Throw aside the spreading fork and use a manure spreader.

If you are the right kind of a man you don't need to be out of a job.



Kemp 20th Century Points of Superiority

The apron is moved simultaneously from both sides, thus there is no twisting or binding as might be the case if it were moved by a single chain. Three rows of rollers support the apron and give it a free, easy movement. This reduces the draft and is one of the reasons why the Kemp machine operates so easily.

Steel wheels with wide rims reduce the draft.

Inwardly flanged rims strengthen the rims and prevent accumulation of trash.

The Kemp Spreader is Provided with a Positive Force Feed

This feed insures positive delivery of manure of any texture to the beater. Five distinct changes in feed can be made—from a light top-dressing to a covering sufficient for vegetables. The feed with which the Kemp 20th century spreader is equipped insures positive delivery of manure to the beater whether the machine is operating up hill or down.

The Kemp 20th Century Can Be Turned in Its Own Length

Four distinct sizes can be furnished. There is a Kemp 20th Century for every size farm. Kemp 20th Century No. 1 is a narrow machine and is a very convenient size for driving into dairy barns. It is the size the dairy farmer appreciates. The No. 2 is slightly larger. The No. 3 is a universal favorite and is the size most generally used on farms of average size. The No. 4 is a large machine for extensive operations.

Special attachments—For special use in market gardens a drilling attachment can be furnished. A limehood can be supplied for distributing ground limestone.



Note the even spreading



Putting a bad apple in a peck of good ones will not make the bad one good.

Weeds

No farmer can compute the amount of loss he sustains every year on account of weeds. To successfully cope with the weed nuisance, a knowledge of the different kinds of weeds is essential. Briefly, weeds are divided into three classes—annuals, biennials and perennials.

Annual weeds are those that live but one year. Most of them, however, leave seeds which germinate and reproduce in kind the following year. The most common of these are foxtail, field mustard, cocklebur, and ragweed. The best method of killing the annual weeds is to keep them down so that they do not go to seed any time during the year. How to do this, of course, depends altogether upon the field, and the kind of crop grown upon it. It is a difficult matter to kill out foxtail in the cornfield by cultivating it, because, in most sections of the country there is sufficient time after the final cultivation for the plant to grow and mature seed before frost. There are farmers, however, who make it a point in badly infected fields to cultivate as late as possible, in order that the frost may catch the seed before it ripens. However the work be done, it is essential, if these annual weeds are to be exterminated, to see that none of the seed ripens in the fall.

Biennial weeds are those that live naturally two years. The most common example are the teasel, wild carrot, mullen, and evening primrose. These weeds depend entirely upon production for their perpetuation. The first year after the seed of the biennial weed germinates, the plant produces some sort of a rosette of leaves on the ground above the root, and in the second year the flowering stalk springs up. This stalk brings forth the flowers and ripens the seed. Then the whole plant dies. Knowing this peculiarity of the plant, of course in order to kill it, it is essential to prevent it from going to seed the same as the annual weeds.

The perennial weeds are those that flower from the same root year after year. The most common example of these are the morning glory, the dock, buckthorn, Canadian thistle, and red sorrel. These weeds propagate in two forms. One is by young shoots springing up from the roots, and the other by the seed scattering. It is an exceedingly difficult task to control these weeds after they get started; consequently, every care should be exerted to kill them as soon as they are discovered.

The bind-weed, or wild morning glory, is one of our dangerous weeds, ranking close to Canada thistle, quack grass, and horse nettle. Like these, it is a perennial which propagates by underground root stocks, and produces an abundance of seed as well. Its vining habit is an additional cause of trouble.

The general methods of morning glory eradication may be grouped under four heads: The fallow method, the crop-smother method, the clean cultivation method, and eradication with hogs. By the fallow method the use of the ground is lost for a year, as it consists simply in plowing the ground in the spring and following throughout the season by frequent diskings, harrowings, and cultivations. This method does the work, but it is probable that the bind-weed may be destroyed with less labor. In using the crop-smother method, plow as early as convenient in the spring, disk and redisk until the ground is in good shape and then seed to one of the following crops: Buckwheat, rape, millet, sorghum, or cowpeas. All of these, with the exception of rape, should be sown after the ground is well warmed. If buckwheat is used, the ground should be prepared into a good seed bed as for corn, and then either sow broadcast at the rate of about a bushel and a half to the acre, or drill in at the rate of a bushel. The use of alfalfa is a variation of this method; the frequent cuttings seem to discourage the morning glories, and the alfalfa tends to smother them.



Weeds—Continued

Clean cultivation will kill out bind-weed. It takes more time, however, than most farmers are willing to give. Horse cultivation must be thorough and frequent, and followed several times by hand hoeing.

Pasturing bind-weed infested fields with hogs is fairly effective. The hogs like the succulent underground root stocks and will root considerably in order to get them. The land may be plowed in the fall, the root stocks thus being turned up, and hogs allowed to run the field during the winter. This method must, of course, be followed by clean cultivation to kill the root-stocks which escape, as well as the sprouting seed. Of all the methods of eradication, the clean cultivation and crop-smother methods appeal to us as most practical.



New Osborne Verticle Lift Mower

It is very important, in fighting weeds, to keep them out of the fence corners, roadsides, ditches, and waste places in general, because the wind, birds, and rain carry seeds a long distance. For this reason, a field that is free from weeds one year may be exceedingly weedy the next. In a general way, all weeds should be kept well cut throughout the season, to prevent ripening the seeds, and as far as possible, all waste places should be cleaned up, and a good, clean grass sod made; but the most important thing of all is to understand the habits and peculiarities of the weeds, and then the best methods of killing them suggest themselves.

The killing of weeds by the use of chemical sprays is a new method that is being tried out by experiment stations. Information that will be of great value in exterminating kinds of weeds that cannot be eradicated any other way, can be secured from the experiment stations in most of the states.

Dandelions Killed by Spraying

Dandelions in the lawn may be killed by spraying with an iron sulphate solution made by dissolving two pounds of iron sulphate to each gallon of water. This solution kills the dandelions but if properly put on, does not harm the grass. It should be applied as a fine spray three or four days after mowing when there is no rain in prospect, and several days before another cutting. On badly infested lawns, it may be necessary to repeat the process every four or six weeks. One gallon of solution is sufficient for about five square rods.



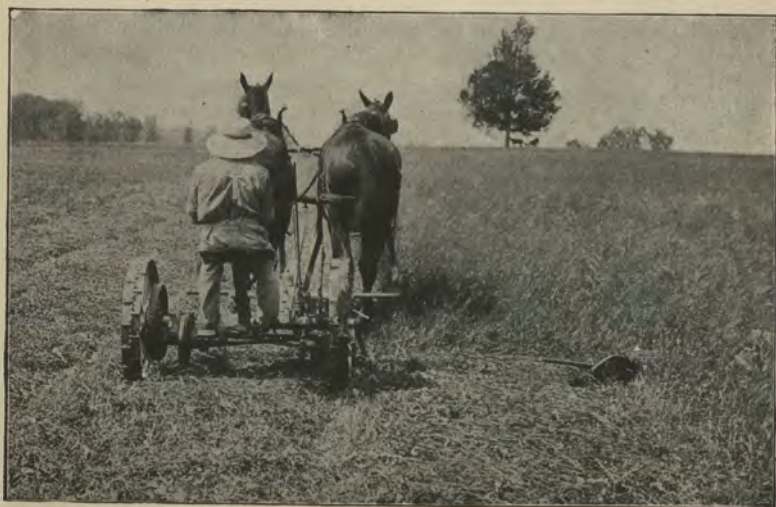
The man with plenty of money can always help himself.

New Osborne Mower

The new Osborne mower is the machine you can depend upon to successfully cut all kinds of grass. The cutter bar is the working end of the mower consequently it must be made exceptionally strong, and as light as possible. The guards are shaped to penetrate the grass easily. The ledger plates permit a shear cut the entire length, thus preventing the grass from catching at the rear and pulling. The sections of the knife have round headed rivets above and below, making them exceptionally strong, and insuring that the sections will not easily come loose.

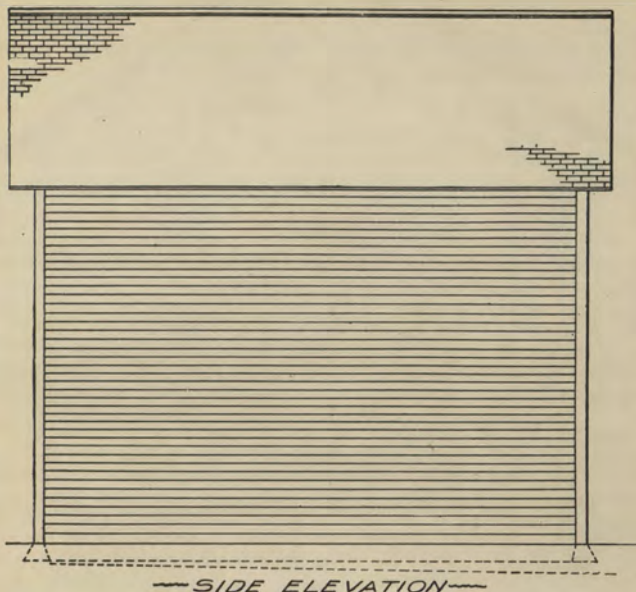
Another feature of the new Osborne mower is the re-alignment of the cutter bar after it becomes worn. All mower cutter bars become worn and sag back after usage. By means of an eccentric in the heel, and a ball and socket in the front of the shoe, all the wear that ever takes place in the new Osborne cutter bar, can be taken up, so that regardless of how long the mower has been in use, the operator need never be troubled with a sagging cutter bar. This eliminates the unnecessary breaking of knife heads, knife bars and other cutting parts.

This mower is light draft and has an exceptionally close adjustment of tilt. This may mean a saving of several tons of hay in one harvest.



New Osborne Mower. Note the clean work of the grass board

If you would be a fruit grower, grow up with your orchard.



The Farm Ice House

Courtesy McCray Refrigerator Company

The value of ice on the farm, particularly in the hot summer months of July and August, has always been underestimated. These are the months in which the flies are the worst, milk sours the quickest, butter is the softest, vegetables decay most quickly, and cooked foods spoil.

The housewife can prevent this if the farmer will build an ice house and put up ice in the winter. The cost of an ice house large enough for the ordinary family use, is very small compared with the great amount of good and profit that the use of the ice will bring during the hot summer months.

The medicinal use of ice will more than compensate for the expense of putting up an ice house in the saving of doctor bills alone, to say nothing of the possible saving of a life by having ice convenient.

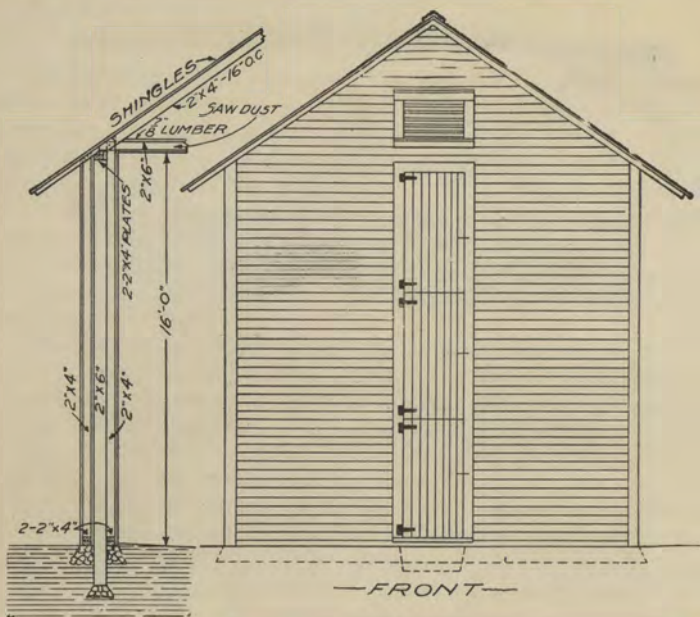
It is not uncommon in rural districts to find it impossible to secure ice when it is urgently needed.

Location

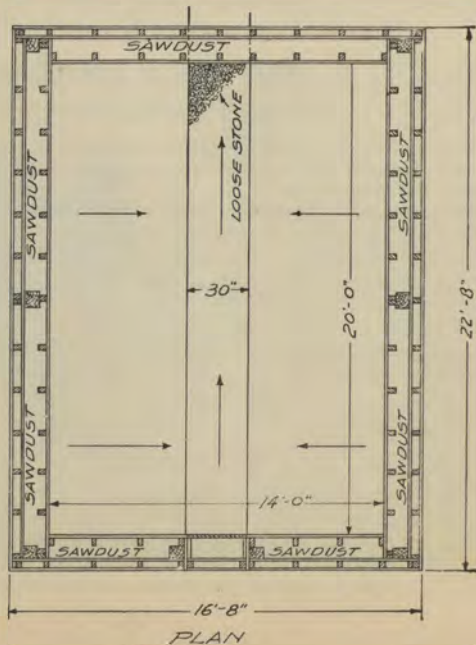
Have the ice house, when possible, by itself—not in a hollow, or where water can run into it from a bank. Having selected the location, prepare the bottom. If the soil is sandy or of a porous nature, it will need no drain; but if not, great care should be taken to arrange for a drainage. In an ordinary house, dig a trench through the center thirty inches wide, and twelve inches



Don't expect the hen to hatch chicks out of bad eggs.



**Plans for
the farm
ice house**





The Farm Ice House—Cont.

deep. Fill this with loose stone to within three inches of the top, and slope all parts of the bottom to this drain. Then fill to the top with shavings and straw, covering over with loose boards. You will then have a perfect drain that will carry off all water and let in no air.

Next, set posts in the ground to build on. These posts should be about 6"x6" at the corners and set ten or twelve feet apart. Fill in between these with 2"x4" studding set flush with the outside. Put boarding on this. On the boarding, nail 2x4's, putting the outside boarding on them. This makes an air space of four inches. Now set inside another set of 2"x4" studding which will leave a space of ten inches for filling. Ceil on the inside and fill with sawdust or shavings. **Be sure it is filled solid and dry.** You now have the body of the ice house, with an air space of four inches, and inside, ten inches of filling; making a perfect house that will not easily warm through. Have the inside smooth so that the ice will settle and not catch. Make an ordinary truss roof. The roof should project at least two feet, and can be of shingles or boards. The loft inside, it is well to board over, as it stops all heat from the roof. Openings to the air should be as few as possible and made to close tight. If a more substantial construction is desired the foundation may be made of brick or concrete.

In regard to the care of the ice, do not neglect it. Be careful that the top is always covered. See that you do not get airholes through the sawdust, as that lets in the hot air and melts the ice fast. When sawdust for filling cannot be secured, you can use straw—rye or oat straw being the best; but there is hardly any place where with a little care through the summer, plenty of sawdust cannot be had. As to size and capacity of houses, if the ice is packed fairly solid and well-frozen they will hold for every foot in height about as follows:

14 x 20, 5 tons; 14 x 25, 6 tons; 14 x 30, 7 tons; 20 x 25, 9 tons; 20 x 30, 11 tons; 20 x 40, 15 tons.

This is about the capacity of houses of this size for every foot in height.

The amount of ice a farmer desires to put up depends naturally upon the purpose for which it will be used. The average farm will require about 200 pounds daily if ice is used to cool the milk, butter, cooked food, vegetables, etc. The number of months ice is used depends upon the season, but one can be reasonably sure that the six months beginning with May require ice.

Any lumber dealer can tell exactly the cost of material for building an ice house, by referring to the plans illustrated on pages 66 and 67. Determine upon the size of a house large enough for your needs, and the dealer can tell you the cost.



The Osborne Side-Delivery Rake in the field



There's good money in truck gardening if you know how.

New Bettendorf Steel Gear Farm Wagons

The gear that never checks, shrinks, nor rots

In the New Bettendorf gear there are no paint-concealed knots, putty-filled cracks, wind checks, brashness, or worm-eaten material. Every piece of material shows its quality.

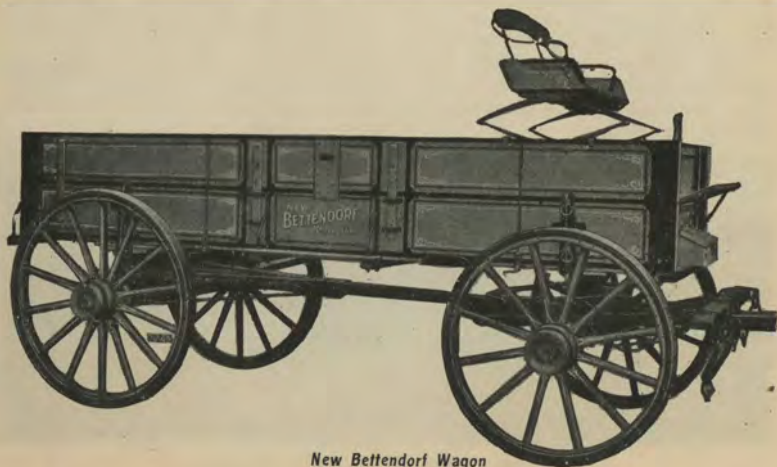
Extra Value

An extension reach box—a convenience that is furnished on no other wagon. It enables the user to lengthen the gear without using an extra reach. This device is invaluable when using the wagon for hauling lumber and other long material.

The axle is fitted with a removable sleeve. When worn, this sleeve can be replaced, making the axle practically everlasting.

In addition to these features—the best box ever constructed is furnished with the New Bettendorf. The sides are made of bay, or yellow poplar of the finest quality. Long leaf yellow pine is used in the bottom. The bottom is doubled over the bolsters, and cleats are riveted to the rear reinforcements to prevent the box from sliding. In the bottom there are no projecting nails or other obstructions to interfere with shoveling. The box binder holds the sections firmly in place without splitting the sides. The New Bettendorf box binder consists of two rods on each side of the box. These rods are hooked at the top, threaded at the bottom, and fitted with a wrench nut and sliding clamp. By adjusting the wrench nut, the sections are held firmly in place, and the bottom is prevented from drawing away from the sides.

A tool box is furnished regularly without additional cost. On the ordinary box this convenience is not provided, but where a tool box is supplied, an additional charge is usually made.



New Bettendorf Wagon

The more a man looks at himself, the less other people see in him.



Helpful Hints About Cement and Concrete Work

Courtesy Information Bureau, Universal Portland Cement Company

Cement—Sacks

Portland cement is generally put up in cloth sacks, but occasionally in paper sacks and wooden barrels. Cloth sacks are superior to paper sacks or barrels, and although cement manufacturers charge more for this kind of a package, a rebate is allowed for the return of the empty sacks in good order. One barrel of Portland cement contains 4 sacks weighing 94 pounds each, and containing 1 cubic foot.

Storing Cement

Cement must be stored in a dry place, preferably on a mat of boards laid on the floor, and should be covered with heavy paper or canvas. Cement exposed to moisture becomes lumpy and is unsuitable for use.

Sand and Gravel

The aggregates must be clean, coarse, hard, durable, and well graded. Clean, because if the sand grains or pieces of gravel or stone are covered with a coating or film of clay, stone dust, or other materials, the cement cannot form a bond with the sand, gravel, or stone, and the strength of the concrete can never exceed the strength of the bond between the cement and the aggregate. One of the points to be observed in making good mortar or concrete is to get every particle of sand covered with cement and every particle of gravel or crushed stone covered with the cement mortar.

Unscreened Gravel

It is not advisable to use bank run gravel as a substitute for coarse sand and screened gravel unless the proportions of fine and coarse materials are definitely known. In the great majority of cases, bank run gravel cannot be relied upon for best results, but should be shoveled through a $\frac{1}{4}$ inch screen, the material passing through being used as sand and that remaining as stone. When using unscreened gravel in place of sand and coarse aggregate, replace the sand and coarse aggregate specified by a volume of unscreened gravel equal to that of the coarse aggregate alone; that is, for the equivalent of a 1:2:4 or 1:2½:5 or 1:3:6 mixture, use 4, 5, or 6 parts respectively of unscreened gravel. This statement is based on the assumption that the unscreened gravel contains twice as much coarse as fine material.

Measuring Materials

Sand and gravel may be measured by the wheel-barrow load, or by means of a measuring box (without top or bottom) of known size. Cement should be measured by the sack—or by weight and not by measuring box or shovelful, as it "fluffs" on leaving the sacks, occupying 15% to 25% additional space.

Amount of Materials to Mix

Never mix a quantity of materials requiring less than one sack of cement. Never mix up more concrete at a batch than can be placed in position within 30 minutes after it is first wet.

Concrete Blocks

Hollow concrete building blocks are made in a variety of sizes, but blocks 15¾ inches long, 7¾ inches high, and 8 inches thick are considered standard. Such blocks surrounded by a layer of mortar $\frac{1}{4}$ inch thick occupy a space 16 inches long, 8 inches high, and 8 inches wide in the wall, covering an area of 8-9 square foot.



All men are born free and equal. It is largely their fault if they don't continue to be so.

Mixtures For General Concreting and Body of Concrete Blocks.

Proportions for Body of Block	Cu. ft. of sand and stone per bbl. of cement			Quantities of materials necessary for 1 cu. yd. of concrete			Quantities of Materials necessary for 100 8"x8"x16" standard concrete blocks allowing 33% for air space		
	Bbls. of Cement	Cu. ft. Sand	Cu. ft. Stone	Bbls. of Cement	Cu. yds. Sand	Cu. yds. Stone	Bbls. of Cement	Cu. yds. Sand	Cu. yds. Stone
1:2 4	1	8	16	1.51	.45	.89	2.20	.66	1.30
1:2-1/2:4	1	10	16	1.39	.51	.82	2.04	.75	1.20
1:2-1/2:5	1	10	20	1.24	.46	.92	1.81	.68	1.35
1:3 5	1	12	20	1.16	.52	.86	1.66	.71	1.25
1:3	1	12	..	2.25	1.00	..	3.3	1.46	..

Mixtures For Mortars and Concrete Block Facings

Proportions for Facing	Cu. ft. of sand per bbls. of cement		Quantities of materials necessary for 1 cu. yd. of concrete		Quantities of materials necessary for facing 100 8"x8"x16" standard blocks	
	Bbls. of cement	Cu. ft. of Sand	Bbls. of Cement	Cu. ft. of Sand	Bbls. of Cement	Cu. ft. of Sand
1:1-1/2	1	6	3.86	23.2	.53	3.20
1:2	1	8	3.1	25.1	.43	3.45

*Based on facing used in surface layer 1/2 thick.

†1:3: 5 mixture is not suitable for concrete blocks.

Replacing Decayed Sills and Foundations with Concrete

Often the wooden sills and posts of barns and other farm buildings become rotten and the foundations of stone and brick decay and crumble. This condition frequently exists in buildings which, with this exception, are in a fair state of preservation and well worth saving. Concrete is the only material that can be substituted for the decayed sills and crumbling foundations.

If the foundation is in bad shape, it may be necessary to remove and replace it with concrete, or possibly it can be left in position and boxed in with concrete. Again if that part of the foundation which is below ground is still serviceable, it can be capped with concrete as shown in Fig. 2. The sills and decayed portion of the posts and siding will have to be replaced. It will be necessary to temporarily take the load off the posts, so that the decayed portions may be removed. This may be done as shown in Fig. 1. In a light building a single prop, either on the inside or outside, will be sufficient to carry the load temporarily, but in large barns bracing may be required on both sides. The prop on the inside should be placed under the stringer running out from the post, and on the outside it will be necessary to nail a block or board at least two inches thick to the wall of the building directly opposite the post to be raised. By the use of wedges as shown, the load can readily be taken from the post and carried by props.

The great trouble with rich distant relatives is that they are too close.

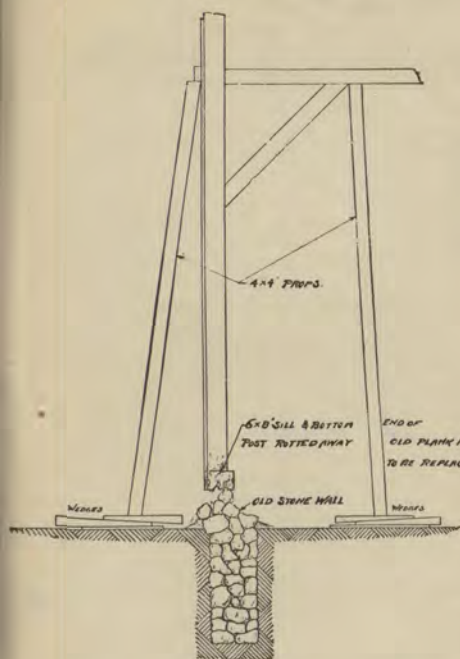


Fig. 1.

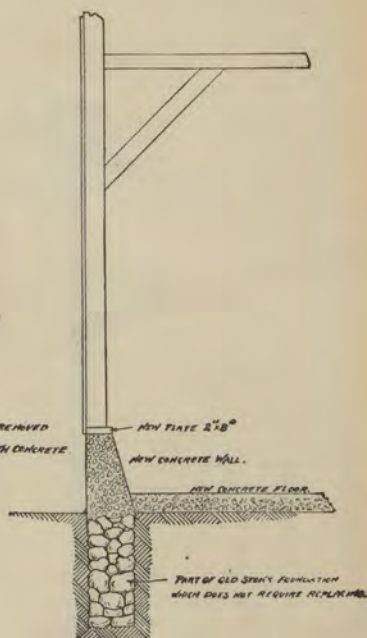


Fig. 2.

The old sill should be removed and the posts cut off above the decayed portion. If the posts are all decayed to a comparatively uniform height, they can be cut to a uniform length, or any number of adjoining posts may be cut to the same length, and the concrete built up accordingly. If an occasional post is in a worse condition than the others, it can be cut and spliced so that it will be the same length as those next to it.

Cement Foundations

Figure 3 shows a convenient form for foundation work, which may be altered as required to meet any particular conditions. Foundations should always go down below frost and must not be built on soft or decaying ground. Use 1 sack Portland cement to 3 cubic feet coarse, clean sand to 5 cubic feet screened gravel or crushed stone, mixed with enough water to give the mass a jelly-like consistency. The foundation should extend at least 6 inches above the ground line, and preferably a greater distance. If the character of the soil will not permit placing concrete directly against the earth, the form shown above will have to be modified to provide double board walls.



People who don't have children give the most advice about raising them.

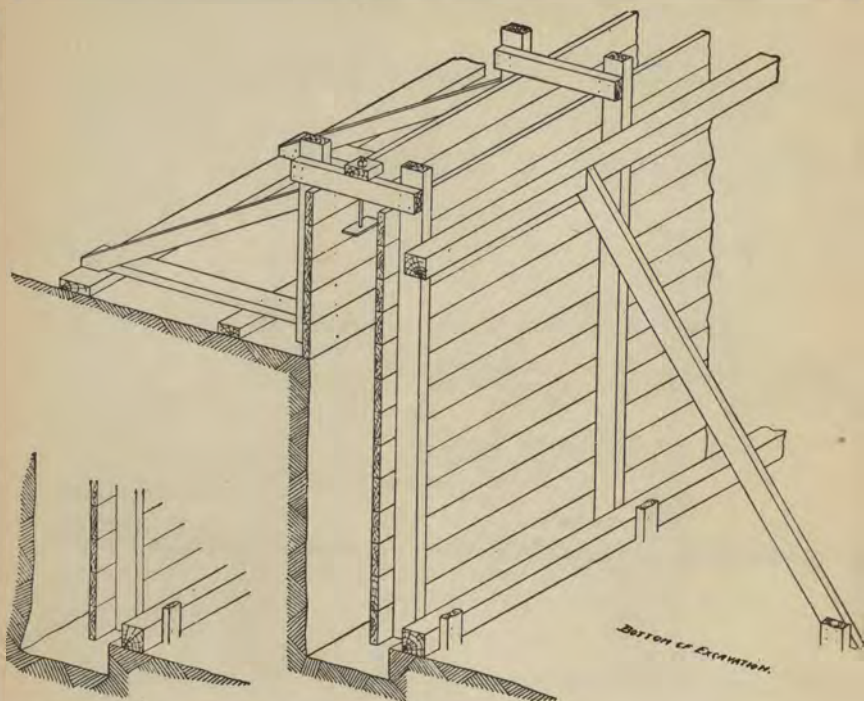


Fig. 3.

Walls and Steps

For foundation walls, especially when they enclose a basement or cellar, it is desirable that they be water-tight, which is perfectly feasible if the concrete is properly made. The concrete should be mixed with sufficient water to produce a plastic mass that can be forced into every part of the form with but little tamping. A wet concrete mixture should not be disturbed after being dumped into the form; therefore, it is advisable that, as nearly as possible, the concrete be deposited in that part of the form where it is to remain. The mass of concrete should be kept practically level; otherwise, the water will drain from the high places, carrying the cement with it.

A smooth surface is usually desirable on the exposed face of walls and can be obtained by "spading" the concrete back from the form with a spade or a specially designed, flat-faced tool. The idea of "spading" is to force the coarse particles back from the forms, allowing the fine material to flow out against them. To get good results from "spading" a mixture carrying slightly more mortar than is required to fill the void spaced between the stone is necessary. It must also be quite plastic, as a dry mixture would have a tendency

The real pleasures of life are inexpensive. The superficial ones cost money.



Walls and Steps

to flow. A dense, smooth surface on a wall will add to its waterproof quality and for this reason, it is desirable that both faces of the cellar walls be "spaded."

When walls are built in sections there is a possibility of water finding its way through the vertical joints; therefore, it is advisable, where water-tight work is desired, to place against the concrete already deposited a cement mortar composed of one part cement and two parts sand, which should be spread about an inch thick over the face of the concrete immediately prior to placing the new concrete. To avoid the possibility of an imperfect bond between the old concrete and the mortar it is necessary to have the concrete surface wet before the mortar is spread. Where windows are to be made in walls, the frames may be placed before concreting begins, or after the forms have been filled up to the level of the position to be occupied by them. If they are put in place first, it will require some care and watchfulness to get the concrete immediately under them; while if the concrete is brought up to the level of the proposed openings before the frames are set, there is no doubt about having them well bedded. The advantage of placing the frames first is that concreting may be carried on without interruption, while if the frames are not put into position until the concrete has reached a given point, the work must usually stop until the frames are placed. If the frames are not put in place before concreting begins, everything should be in readiness so that when the time comes, they can be placed, the forms completed, and concreting resumed with the least possible delay.

If on account of delay in getting a window frame, or for any other reason, the placing of concrete is interrupted long enough to permit of any perceptible hardening, the concrete in place should be cleansed, wet, and covered with a mortar composed of one part cement and two parts sand, mixed with sufficient water to make it a little thinner than would be used in laying brick. The work should then be immediately resumed.

Should the concrete be deficient in mortar, it will be necessary to use a facing or finishing mixture composed of one part cement and one and one-half parts clean, coarse sand. For facing step risers this mixture should be gauged with sufficient water to produce a stiff, plastic mortar, which will spread smoothly under the trowel. This mortar should be spread to a thickness of three-quarters of an inch, on the inside face of the previously wetted cross form, and immediately following, the concrete body of the step should be deposited. The spreading of mortar should be done with care so that no air bubbles will remain next to the form. In building steps, the treads of which are to receive a mortar covering, the concrete should be brought up to within three-quarters of an inch of the correct grade and finished to grade with a thin mortar.

Whether the treads are finished with or without an application of rich mortar, they should receive only the troweling necessary to work the surface to practically a true plane. Excessive troweling is bad for the concrete, and if the work is watched so that the troweling can be done at just the right time, over-troweling can be avoided and time saved.



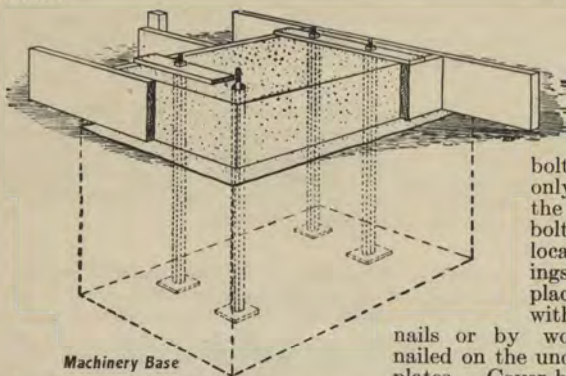
An old wiseacre said: "Man should keep nothing from his wife." Try it if you are hunting trouble.

Machinery Bases

Concrete makes ideal foundations for gasoline engines, cream separators, and other such machinery. The forms generally consist of a simple box, and may be put up in a few minutes' time. Indeed, when the earth is firm enough, the lower part of the foundation can be built without forms. The top of the foundation should usually be six inches or more above ground, as a protection to the machinery, and forms for the top may be made of 1-inch or 2-inch material, as convenient. The top of the foundation should be made perfectly level, and the corners well rounded.

Concerns manufacturing engines usually state the length of anchor bolts and size of foundation needed for the various sizes of machines.

The method of setting the bolts is shown in the sketch. The casings around the bolts, made from a small down-spout or piece of 2-inch pipe, rest on plates at the lower ends of the bolts; they are embedded in the concrete and provide for any necessary adjustment of the bolts when setting the engine in place. The length of each casing equals the length of bolt to be embedded; by tightening the nut on each bolt above the template, the casing fits snugly against the template, and the top of the bolt is brought to proper height. The template shown can be made from 1-inch material, and will be sufficient for smaller engines; for larger foundations, cross bracing should be added.



Machinery Base

In setting bolts, first nail the template securely in place, then mark accurately the position of the bolts and bore holes only slightly larger than the bolts. Be sure the bolt holes are correctly located. Bolts and casings are now set in place centering casings with bolts by several

nails or by wooden strips lightly nailed on the under side of the templates. Cover bolts above the tem-

plates to prevent the concrete touching them. Then fill the form with a 1:2½:5 concrete, using clean, coarse sand and screened gravel or crushed stone, and mixing the concrete so that it will flow readily into place. In placing the first batches of concrete be careful that the lower ends of the bolts remain in position until they are well embedded.

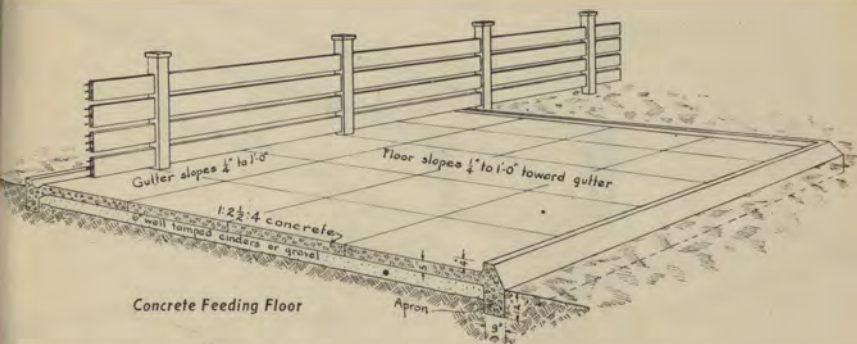
The foundation should have 1½ inch top of 1:1½ cement-sand mortar, applied to the concrete before it has had time to harden. The strips holding the casings are, of course, removed just before reaching the top. The templates themselves are removed after placing the mortar and the foundation top made even and true, using trowel and spirit level.

After the concrete has hardened sufficiently, remove the forms and place the engine in position, adjusting the bolts, and setting the engine itself true to line and level. Before tightening up the bolts fill the bolt-holes with a 1:1½ mortar mixed wet. Allow this to harden thoroughly before operating the engine.

Why does a man who talks about his faults get mad when his friends talk about them?



Concrete Feeding Floor



The concrete feeding floor is an improvement which the up-to-date farmer can hardly afford to be without. The floor should preferably be square in shape, and located where it will get unrestricted sunlight. The floor shown in the illustration is equally well adapted for feeding hogs, poultry, or cattle. Curbs are provided to keep the food from being pushed off the floor, and also to prevent the hogs from rooting under it.

The concrete should be made of 1 sack Portland cement to $2\frac{1}{2}$ cubic feet clean, coarse sand, to 4 cubic feet screened gravel or crushed stone. The latter matter should be larger than $\frac{1}{4}$ in. and less than 1 inch in size. The floor should be about 6 in. in thickness, laid upon good firm earth or a sub-base of tamped cinders. Never lay a floor on manure or soft decaying ground. Drainage conditions should not be such that water can collect under the floor for in case of freezing, the presence of water causes heaving and cracking. Place the concrete first at the low side of the floor, gradually working to the upper side.

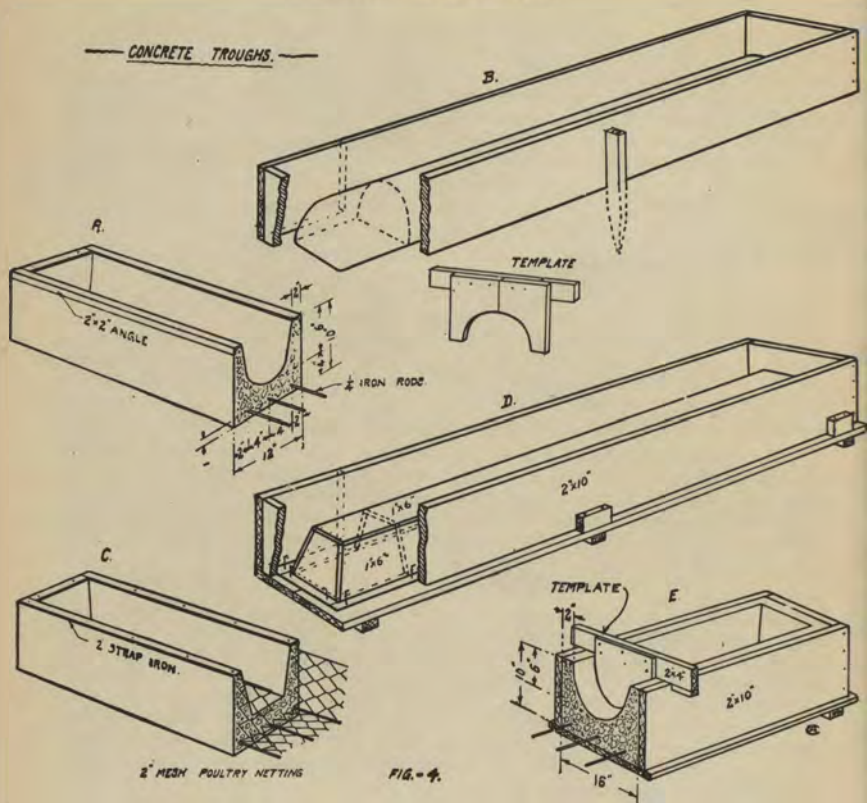
The surface should be given a "float" finish and squared off into slabs 6 ft. by 6 ft. or smaller. It is not desirable to put on a finish coat, as this would tend to make the floor more slippery, as well as add to the expense. A pitch of about $\frac{1}{4}$ in. per foot should be given the floor, in order to allow it to drain into a concrete gutter. This gutter may be made by embedding in the floor a piece of half round lumber or 2x4 with two of the corners so rounded as to give a semi-circular section.

A floor 24 feet by 36 feet, made as directed above, will require about $22\frac{1}{4}$ barrels (89 sacks) of cement, $8\frac{1}{4}$ cu. yds. of sand, and 14 cubic yards of stone. To this amount, a quantity sufficient to build curbs must, of course, be added. Hogs should not be allowed on a floor until it is quite hard, as they frequently lunch upon green concrete if given an opportunity. The floor should be cleaned off between every feeding. If this is done it may be used for all kinds of dry rations, with a considerable saving of labor.



Those who think they are deceiving others are only deceiving themselves.

Small Troughs



The life of wooden or metal troughs is short, making frequent repairs necessary to keep them in service. As a result many farmers have taken to using concrete troughs. These may be easily made during spare time with local materials, and the forms can easily be made from odd ends of lumber.

Troughs shown in the accompanying figures are simple and easy to build. For a given size trough, the outer form will be identical in each case.

Sketch B, figure 4, shows the form for casting a trough upside down, using an earthen core. A core of approximately the inside dimensions of the trough is formed of plastic earth or clay using the template as a gauge.

The work may be conveniently done on a concrete floor. The outside form, which is simply a bottomless box, can then be placed. The outer forms should be held securely in place. When the concrete is being placed, care

A man isn't entitled to much credit for things that come to him naturally.



Small Troughs—Cont.

should be taken not to knock off parts of the core for in this case an irregular inner surface will be produced.

The trough shown in sketch D is similar in construction to the one shown in sketch B with the exception that a wooden core is substituted for the earthen core and the casting is done on a wooden pallet. The trough shown in sketch E can be cast on either a wooden pallet or a concrete floor. After the reinforcing and concrete for the base has been placed, the remaining concrete must be worked into place with a trowel and struck off with a template. A top of a $\frac{1}{2}$ cement and sand mortar is then placed and finished off with a trowel.

Reinforcing for troughs consists of either poultry netting, $\frac{1}{4}$ in. round iron rods, or a combination of the two. Where the trough is to be moved after being made, both poultry wire and rods should be used as shown in sketch C. The spacing of the rods may vary somewhat but should be about 4 in. center to center.

Many of the troughs shown will require about $1\frac{1}{2}$ sacks of cement, 3 cu. ft. of sand and 5 cu. ft. of screened gravel or crushed stone for each 10 ft. of length.

Concrete Fence Posts

One of the great number of practical applications of concrete construction about the farm is found in the use of concrete fences. This includes posts for line fences, gates, corners, clothes lines, mail boxes, lamp, signs, hitching posts and vine supports. Some differences in size or shape are desirable for these various uses.

The concrete mixture used for fence posts should be rich in cement as there should be no question about the strength of the posts. It is cheaper to use a little more cement than is really necessary to secure strong posts, than to make a lot of weak and unsatisfactory posts. The most economical mixture which can be used is the proportion of one sack of cement to two cubic feet

DIMENSIONS			Vol. of Post in Cubic Feet	Wt. of Post in Lbs.	Amount of Reinforcing Metal Re-quired	MATERIALS						
						1-Cement 3-Sand			1-Cement 2-Sand 3-Gravel			
Length	Top	Bottom				No. Posts Per Barrel Cement	For 10 Posts		No. Posts Per Barrel Cement	For 10 Posts		
						Sacks Ce-ment	Cubic Feet Sand	Sacks Ce-ment	Cubic Feet Sand	Cubic Feet Gravel		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
6' 6"	3"x3"	5"x5"	.72	100.8	Four	15.70	2.55	11.47	21.66	1.85	3.73	5.53
7' 0"	3"x3"	5"x5"	.78	109.2	4"	14.49	2.77	12.42	20.00	2.00	4.05	5.99
7' 6"	3"x3"	5"x5"	.83	116.6	Round	13.56	2.95	13.23	18.76	2.14	4.32	6.41
8' 0"	3"x3"	5"x5"	.89	124.6	Rods	12.70	3.16	14.17	17.50	2.29	4.62	6.84
6' 6"	4"x4"	5"x5"	.91	127.4	Four	12.41	3.23	14.50	17.14	2.34	4.72	6.99
7' 0"	4"x4"	5"x5"	.98	137.2	5"	11.53	3.48	15.61	15.90	2.52	5.08	7.53
7' 6"	4"x4"	5"x5"	1.05	147.0	Round	10.76	3.72	16.73	14.85	2.70	5.45	8.07
8' 0"	4"x4"	5"x5"	1.12	156.8	Rods	10.09	3.98	17.82	13.90	2.88	5.82	8.61
6' 6"	5"x5"	6"x6"	1.36	191.1	Four	8.28	4.85	21.74	11.42	3.51	7.09	10.51
7' 0"	5"x5"	6"x6"	1.47	205.8	5"	7.68	5.22	23.42	10.61	3.78	7.64	11.31
7' 6"	5"x5"	6"x6"	1.57	220.5	Round	7.17	5.59	25.09	9.90	4.05	8.18	12.12
8' 0"	5"x5"	6"x6"	1.68	235.2	Rods	6.72	5.97	26.76	9.28	4.32	8.73	12.93



*The only good about himself an eavesdropper hears
is that which he speaks into a talking machine.*

Concrete Fence Posts—Cont.

of sand to three cubic feet of screened gravel or crushed stone. If thoroughly mixed with sufficient water, these proportions give a very dense, strong concrete. If sand and gravel are used just as they come, it is not advisable to use more than three cubic feet of aggregate to one sack of cement. Also if sand alone is used, the proportion should not exceed three cubic feet of sand to one sack of cement. The proper consistency will be obtained where enough water is added to make a mixture which cannot be tamped but which will be forced into every part of a mold or form by the churning or puddling, yet not so thin that the standing water will collect above the solids.

Concrete is strong in compression (crushing) and weak in tension (pulling apart). To provide for this deficiency in tensile strength iron or steel is combined with the concrete. To simply combine iron or steel with concrete without regard to amount of proper distribution will not result satisfactorily. The tension and compression stresses are greater in a post at the point where it enters the ground, for all of the post above ground becomes a lever and any force applied at the top will strain the post at the ground level much more severely than the force applied at the ground level.

The reinforcement is placed in the post to give it additional strength and as the very outer surface of the post is the first to come in tension it is necessary to get the metal as near the outer surface as possible and at the same time have it perfectly covered with concrete. Reinforcement at the centre of the post is therefore of little value unless used in excessive quantity. The amount of metal required for various sized posts is given in the table on Page 77.

While this is given in terms of round rods, other shapes may be used so long as the same cross-section is obtained. The amount of reinforcing metal here recommended is given from practical experience and verified by results of tests obtained by the Experiment Station of the Colorado Agricultural College, and published in their Bulletin No. 148.

Home Made Mold for Concrete Fence Posts—Several different types of home-made molds have been devised and in many cases have proved very satisfactory. In general, such molds built of wood soon warp out of shape, and for this reason do not remain serviceable for any great length of time. If a large number of tests are to be made it is usually considered more economical to invest in steel molds, which can be purchased very reasonably.

Figure 5 shows a mold for making four posts at a time. The gang mold may be made larger if desired but it is found that a 4-post gang mold is as large as can be handled easily. Posts made in this form are 4 inches square at the top and 4 x 6 inches at the bottom, being parallel on two sides and tapered on the other two sides. These can be made in any length desired.

The form consists of the actual post mold held rigidly on a pallet or platform. This platform rests on a skid or frame by means of which the entire mold can be jarred or jolted. The forms proper are made of 1 in. x 4 in. and 2 in. x 4 in. material surfaced on all sides. The 2 in. x 4 in. side pieces are cut 4 inches longer than the required length of the post and two slots $\frac{1}{2}$ in. in depth are cut in either end to receive 2 in. x 4 in. end pieces. These end pieces are also slotted to engage the three 1 in. x 4 in. division pieces which form the four compartments of the mold.

*The lawyer has one characteristic all should admire
—he doesn't give advice unless it is asked.*



FORMS
FOR
CONCRETE FENCE POSTS.

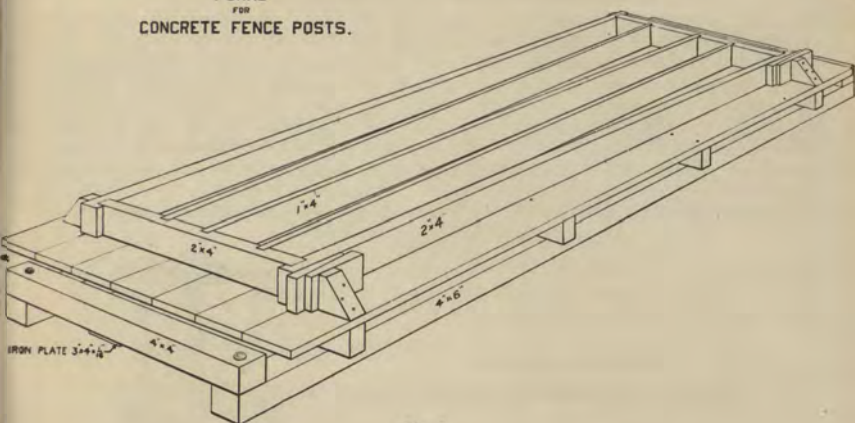


Fig. 5

Concrete Fence Posts—Cont.

It will be noted in the sketch that the form provides for casting a post alternately end for end. Blocks or stops are nailed to the platform between which the forms are held squarely and rigidly with wedges. The floor of the platform or pallet consists of 1 in. x 6 in. boards dressed on both sides so that the floor will be level. It is supported by four 2 in. x 4 in. stringers. The skid or platform built of 4 in. x 6 in. pieces completes the equipment. The end pieces of the skid should be protected on the under side with small iron plates about 4 inches long, 3 inches wide, and $\frac{1}{8}$ inch thick. The use of a rather wet mixture is recommended with this mold as a more solid, smooth, and satisfactory product can be produced by jarring the concrete in the molds rather than by tamping it. This jarring is accomplished with a small iron bar by raising the skid about an inch and then letting it drop. Usually three or four such operations at each end will work the concrete well into the mold and about the reinforcing metal.

Corner Posts—The standard size for end posts is 8 inches square and 8 feet long; for fences 4 ft. 6 in. to 5 ft. high; while posts 10 in. square and 8 ft. 6 in. or 9 ft. in length may be desirable for use with higher fences and long stretches or where, owing to the condition of the ground, it is necessary to set the posts deeper than ordinary. Brace posts are made smaller, and when the length of the fence requires brace posts larger than the ordinary line posts, they can be made 6 in. x 6 in. or 7 in. x 7 in. and 8 ft. long.

Posts Cast in Place—The weight of a corner post is a matter which should be considered in selecting the place for making it, so that it can be handled with the least trouble. A post 8 inches square will weigh about $62\frac{1}{2}$ pounds per foot of length, or 500 pounds for an 8-foot post. On account of the weight, corner posts are molded in place. This method saves much labor in handling and setting and is advisable where the post can be properly cured before any strain is put upon it. When the sides of the hole will stand without caving, the earth will serve for the form below ground. Therefore



A good way to attain success is to discard the word failure from your vocabulary.

Concrete Fence Posts—Cont.

the hole should be the size and shape of the post. It should be dug with vertical sides and enlarged somewhat at the bottom for anchorage. The concrete should be deposited very carefully so that no dirt will be knocked into the hole and ruin the post by being mixed with the concrete. Above ground the form shown in Figure 6 may be used. The method of bracing shown is recommended, as the anchor for the brace can best be cast in place. The brace itself should have been molded and cured sufficiently for safe handling. It should extend into the post at least one inch and be well imbedded in the anchor at the other end. The earth will serve as a mold for the anchor and the hole should be dug to conform to the shape shown in the

(Concluded on page 85)

**FORMS FOR CASTING
CONCRETE END POST & ANCHOR IN PLACE.**

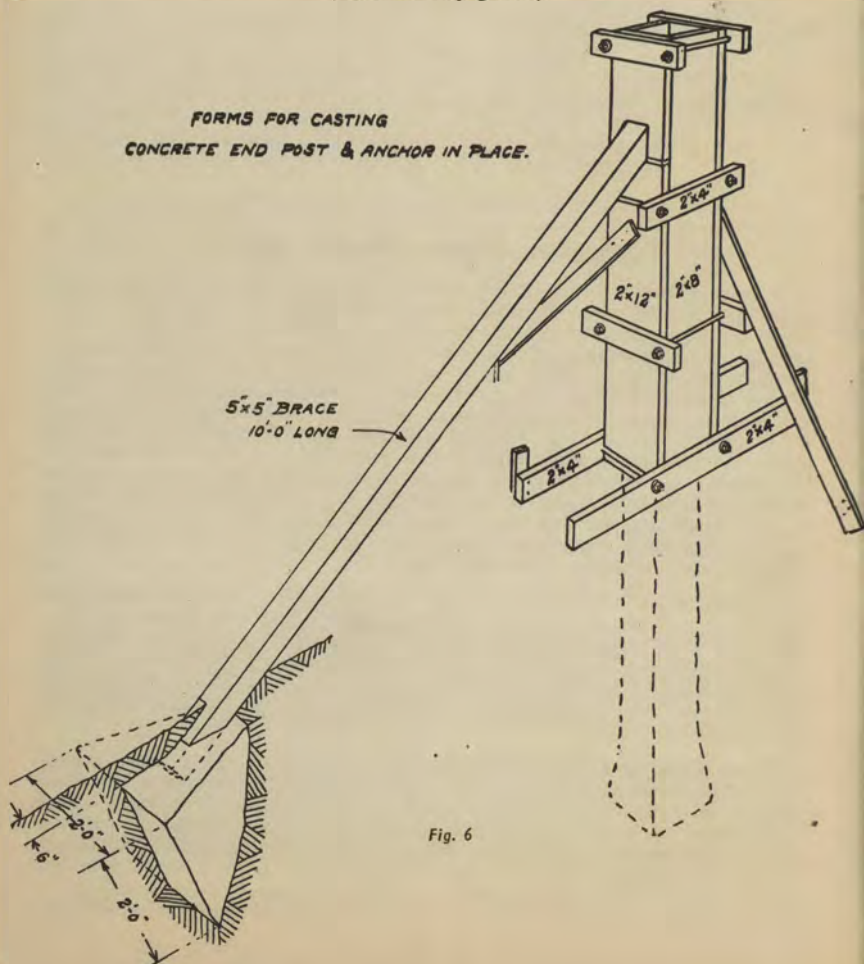


Fig. 6

One of the troubles with the self-made man is, he seldom puts the finishing touches on the job.



Cut Your Corn

The corn and hay grower is in a particularly advantageous position if he cuts his corn. In years when the hay crop is light, the price of hay is naturally high. The farmer who cuts his corn in these dry years, will have enough fodder to make it unnecessary for him to buy hay to feed, and in many instances he can sell part of his hay at a good profit.

The Osborne corn binder is the one machine to help the farmer cut his fodder. This machine does the work of five men at a much less cost. The position of the conveyor chains and packers is such that they do not come in contact with the ears to any extent and for this reason the Osborne corn binder knocks off very few ears of corn.

The arrangement of the binding attachment, drive chain, and pole, is such that side draft is absolutely overcome. The mechanism is well protected from dust and dirt. The important journals and bearings are fitted with roller bearings. The shape of the dividers peculiarly adapts them to pick up down corn. For this reason the Osborne corn binder does good work in all conditions of corn. The retarder at the end of the binder throat can be adjusted so that when binding tangled corn, the bundles are discharged without the tops of the bundles being matted together, thus making good bundles in tangled corn.

The Osborne corn binder is light in draft and has abundant traction power.



The Osborne Corn Binder Does Good Work



People live best who laugh most.

The Principles of Bee-keeping

The importance of scientific apiculture is being slowly but surely recognized. With a wider knowledge of the part bees play in the pollination of fruit blossom and the spread of rural education generally, bee-keeping cannot any longer be regarded as merely a hobby, but as one of the most important of the minor branches of the science of agriculture.

The location of the apiary should be carefully chosen. It is not sufficient to put the bees in a quiet place where they will not disturb others or be disturbed. A little shade is good, but better no shade at all than too much. The one essential to good health in the colony is dryness. The apiary should not be exposed to winter winds. It should have a southern exposure, and the hives should face either south or east.

Bees should never be placed in a location that will compel them to fly over a road or a much-used path. They are much more likely to sting when they are interfered with in this way. If the apiary is near a road, something should be placed between it and the road to make the bees rise high in the air before crossing the road. A hedge or high fence will do this.

The hive is so constructed as to permit the removal of the combs, which are built straight in wooden frames, without injury to either the combs or the bees. This enables the bee-keeper to take the hives apart while the bees are in them and observe the condition and progress of the colony.

The old-fashioned box hive cannot be examined without injuring the combs and destroying many bees. Very little can certainly be known about the condition of the brood or the amount of stores in a box-hive. Bee-keeping with such hives is a mere matter of chance. If the bees survive the winter and produce a small crop of honey, well and good; if they die, the owner is sorry, but he consoles himself with the thought that it couldn't be helped, and thus he makes the best of it.

The methods of modern bee-keeping change all this. The bee-keeper knows what his bees are doing as well as he knows what his horses and hens are doing. He plans for their well-being as carefully as he plans for any other stock on the farm.

In making hive stands two points need to be considered. The first is—that the hives should be free from the moisture that rises from the ground, and so arranged that rain will not run into the entrance. The second, that the stands should not be so high as to make it inconvenient to work with the bees. Hive stands may be made of old pieces of scantling, or waste lumber of any kind. Some bee-keepers are making stands of concrete. These will last forever. Pieces of three-inch tiling make serviceable stands also.

The great majority of bee-keepers have their bees in modern hives, but many do not use these hives as they were intended to be used. The difficulty is that they do not arrange the frames so that the bees will build the combs straight. When the combs are built crooked, or crosswise in the frames, they cannot be removed without injuring them, and so the bee-keeper finds that his modern hive is of no more service to him than an ordinary box hive of the same dimensions.

*The wisest man that ever lived was made a fool of
by a woman.*



The Principles of Bee-Keeping—Cont.

This may be avoided by putting what is known as a "starter" in each frame before the bees are put into the hive. This starter is a narrow strip of comb foundation attached to the center of the top-bar of the frame. If this starter is correctly placed and securely fastened, the bees will build their combs straight and will fasten them to the ends and bottoms of the frames. Thus the combs will be separate one from another, making it possible to remove or rearrange them at will.

The upper story of the hive is commonly called the "super." The part where the bees store the surplus honey is to be taken away from them at the proper time. One of the greatest triumphs of modern bee-keeping was achieved when the bees were induced to build their combs and store the best of the honey in wooden boxes of marketable size and form.

In preparing the supers for the bees, great care should be taken to arrange each section so that the comb will be built in the center of it and not run over into a neighboring section. Starters should be used in each section to guide the bees at the beginning of their work. A few minutes spent in this work of preparation will save much time and labor in the end, as it will insure perfect sections. There is practically no market for crooked or broken sections of honey.

What has been said here is with regard to comb honey. If preferred, one may run the apiary for extracted honey. In this case, the supers will have to be fitted with combs especially designed for extracting. It will also be necessary to procure a machine for extracting the honey from the frames. Larger crops of honey may be obtained in this way, but it requires more labor and equipment to get it.

No one can tell when bees are going to swarm by looking at the outside of the hive. Clustering out is not an indication, although the crowded condition of the hive which causes bees to cluster out may hasten swarming.

The first visible indication of the appearance of the swarming impulse is the presence of drones in the hive. An examination of the combs may be made by tipping up the front of the hive till the combs are visible. Drone brood has the appearance of buckshot on the comb, and can easily be seen when present. While it is not possible to tell when the bees will swarm by the appearance of drone brood, when they begin to rear drones, it may be taken as an indication that the time is near.

A sure sign of the approaching swarm is the appearance of queen cells in the hive. The little wax cell-cups, one-third of an inch in diameter, are often built in large numbers on the sides and at the bottom of the combs several days in advance of their occupation by the queen.

When an egg is laid in one of these cups, if the exact time could be known when the egg was laid, the time that the swarm would issue could be foretold almost to a minute. The swarm will issue when the queen cell is sealed, and it requires nine days to develop a full-grown larva from an egg. So that when the bee-keeper sees an egg in a cell-cup he may rest assured that the colony will swarm within eight or nine days.

The swarming fever does not take full possession of the colony till the queen's cells have been developed beyond the egg stage. This gives the bee-



Things that cost the least are often the most expensive.

The Principles of Bee-Keeping—Cont.

keeper an opportunity to discourage swarming by destroying the eggs as fast as they appear in the cups.

At this period one of the very best methods known to discourage swarming is to enlarge the size of the hive. This can be done with most modern hives by putting an additional story under the brood nest. This lower story should have a full set of frames with drawn combs of full sheets of foundation, or the bees will fill the entire space with drone comb.

Further discouragement may be given by spreading the frames in the brood nest and putting in frames with full sheets of foundation. When this treatment is used at the same time that the eggs are being destroyed as fast as they appear, it is very often possible to break up swarming fever entirely and thus keep all the forces of the hive together for the honey harvest.

Whenever possible, the "clipped queen method" of swarm control should be used. The finding and clipping of the queen is not as difficult a task as some imagine it to be. During the spring and summer she is easily distinguished from the other bees of the colony by her size and shape. The long tapering abdomen of the queen is easily recognizable, and Italian queens are very easily found on account of their light color. When found, the queen should be picked up by the wings as she runs over the comb. She is then transferred to the left hand and held by the head and thorax between the thumb and first finger. In this position her wings will stand out sharply backward and can be easily picked up by a small pair of scissors. The end of one large wing is clipped off and the queen is allowed to run down into the hive again.

The advantage of this method of swarm control is found in the fact that the swarm will not leave the vicinity of the hive without the queen. Having observed the progress of the queen cells, and learned when the swarm will issue, all that remains to do is to go to the hive when the swarm issues, cage the queen, which will be found on the ground near the hive, take the old hive from the stand, and put a new one in its place. While these changes are being made, the bees will be circling in the air looking for a place to cluster, but they will return, to the old stand as soon as they discover the absence of their queen. While they are entering the hive, the queen should be released among them. Thus the swarm is hived without climbing a tree or running the risk of losing the swarm by absconding.

No matter what the method of swarm control is, the swarm should always be hived on the old stand, and the hive from which the swarm issued placed on a new stand. If no increase in number of colonies is desired, the old hive may be placed on top of the one containing the swarm and left there for twenty-one days. In this case all queen cells should be destroyed, and at the end of twenty-one days the bees in the upper hive can be shaken in from off the floor and allowed to unite with this swarm. This is the best possible management to get a large crop of honey.

The tendency of bees to cluster in high trees may be overcome to a certain extent by planting grapevines in the apiary or by placing the hives among low stocky trees or shrubs. As a rule the swarm will choose the lower place to cluster.

Although conditions differ, the principles of bee-keeping are the same the whole world over. The following axioms should be noted:

The man who takes care of his own business hasn't time to bother with his neighbor's affairs.



Principles of Bee Keeping—Cont.

- 1—Bees gorged with honey never volunteer an attack.
- 2—Bees may always be made peaceable by inducing them to accept liquid sweets.
- 3—Bees when frightened by smoke fill themselves with honey and lose all disposition to sting, unless they are hurt.
- 4—Bees dislike any quick movements about their hive, especially any motion which jars their combs.
- 5—In districts where forage is abundant for only a short period, the largest yield of honey will be secured by a very moderate increase of colonies.
- 6—A moderate increase in colonies in any one season will, in the long run, prove to be the easiest, safest, and cheapest mode of managing bees.
- 7—A queenless colony, unless supplied with a queen, will inevitably dwindle away or be destroyed by the wax moth or by robber bees.
- 8—The formation of new colonies should ordinarily be confined to the season when bees are accumulating honey, and if this or any other operation must be performed when forage is scarce the greatest precaution should be used to prevent robbing.

Concrete Fence Posts

(Concluded from page 80)

illustration. The concrete need not come closer than within 6 inches of the top of the ground but should extend below the frost line. Since below ground a rough surface is not objectionable and there is no need for the anchor to be as strong as the posts, a mixture of 1 part cement to 2½ parts sand and 5 parts screened gravel or crushed stone can be used.

Bracing—As far as possible all the tension in the wire fence should be borne by the end posts. This produces a strong tendency to overturn the post or break it off at the ground level. While this tendency can be overcome by massive construction or heavy reinforcement these methods are not economical. The cheaper way and one which is just as effective is to make a strong post and brace or anchor it.

The braces should be placed so that they bear against the center line of the posts, and at the corners a brace is, of course, necessary on each side of the corner. In moulding the end posts either a lug should be cast on the face or a mortise made in it to provide for the end of the brace. The lugs are preferable, as they do not weaken the post. The other end of the brace should either have a special anchorage or else bear against the next post at least one foot below the ground line. This point is important but probably would be overlooked by some, since it is customary to place timber braces well above ground to prevent their rotting out in a few years. With concrete braces there is no danger of decay and a brace can thus be placed in the most advantageous position. It is easy to see that where the point of bearing is well below ground the thrust in the brace is distributed by the whole area on the opposite side of the post below ground, whereas, if the point of bearing is above ground the tendency is to overturn or break off that post also. It is necessary to wire the brace and end posts with the best galvanized wire in the usual manner. Both posts then act as a unit and neither can move without moving the other also.



Look out for the fellow who constantly reminds you of your school days together. He is going to strike for a ten dollar loan.

Sterling Farm Truck Wagons

The Sterling farm truck wagon is designed to meet the demand for a medium priced wagon. This wagon, while sold at a medium price, contains much better material than is ordinarily found in wagons which are sold at a considerably higher price.

The axles are hickory
Hounds—oak or hickory
Hubs—oak or birch
Spokes—oak or hickory
Doubletrees—oak or hickory
Rims—oak—bent in two sections
Reach—oak
Tongue—oak or ash
Singletrees—hickory
Bolster—oak or hickory

The painting is well done; the gears are exceptionally well ironed, and the wagon is lasting.

Sterling Slip Tongue Farm Wagon

The Sterling slip tongue farm wagon is made of the same materials that are used in the regular drop tongue style.

Sterling One-Horse Wagon

Sterling wagons are also made in a one-horse style. These wagons are constructed of the same materials that are used in the two-horse gears. The one-horse wagon can be used for all kinds of light hauling. The box is removable and the gear can be lengthened so that it can be used for small loads of lumber and other material of a similar nature. A rack can also be used for hauling cornstalks, hay, and other vegetable matter. When regularly equipped, thills are furnished in place of a tongue.



Sterling Farm Truck Wagon

It isn't necessarily true that a man is a good fisherman because he can spin good fish yarns.



Useful Knots and Splices

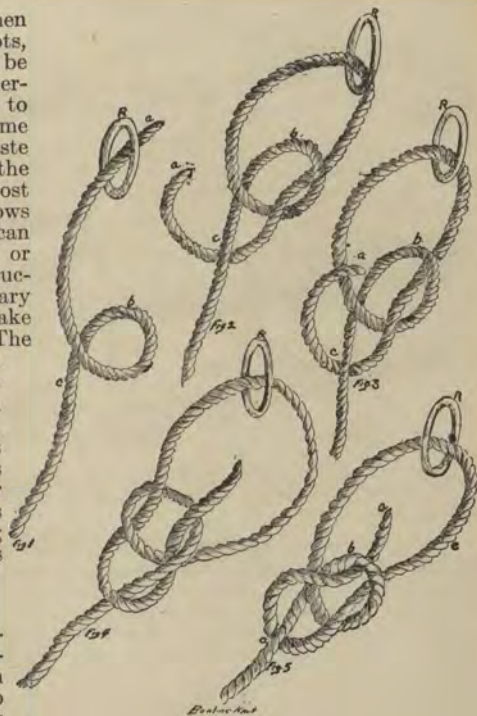
[Extract from the Rope Book issued by Iowa Agriculturist]

Scarcely a day passes when some of the more common knots, hitches, and splices could not be used. There are cases of emergency when to know how to make a splice would save time and money and a needless waste of material. Frequently the hay rope breaks when it is most needed. The farmer who knows how to splice his own rope can save a trip to his neighbor's or to town. A few simple instructions are all that is necessary to teach anyone how to make splices and tie knots. The knots and splices described in this article are the most practical and after a person learns how to make them, a number of different things can be made from these knots and splices so that the farmer can make halters for his horses, slings for throwing animals, and for other uses of this character.

The Bowline Knot

The bowline knot is, without question, the most useful and important knot on the farm, as it will not slip nor draw tight and is always easily untied. This knot is useful in tying the end of a hay rope to the doubletree clevis, in attaching one wagon behind another, and in fact, in any place where a loop that can be quickly and easily untied is wanted.

In learning to tie the bowline, a ring (R) or post, should be at hand through or around which the rope may be passed in making the knot. First, make a loop (b) in the standing part of the rope about two feet from the end (a). Pass end (a) through loop (b) and around the standing part (c) as shown in Figures 2 and 3. Then bring the end back through the loop (b) as in Figure 5. Draw the knot down by holding standing part (c) in one hand, and the parts (a) and (e) in the other, and giving a slight pull. The knot is now complete. Figure 4 is the reverse side of Figure 5.

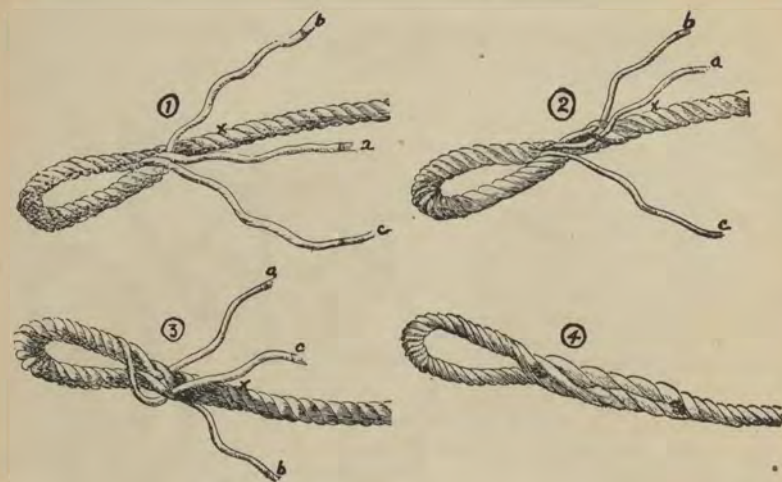


How the Bowline is Tied



The fact that a bank has a stone front is no evidence that it is solid.

The Eye Splice



The Eye Splice

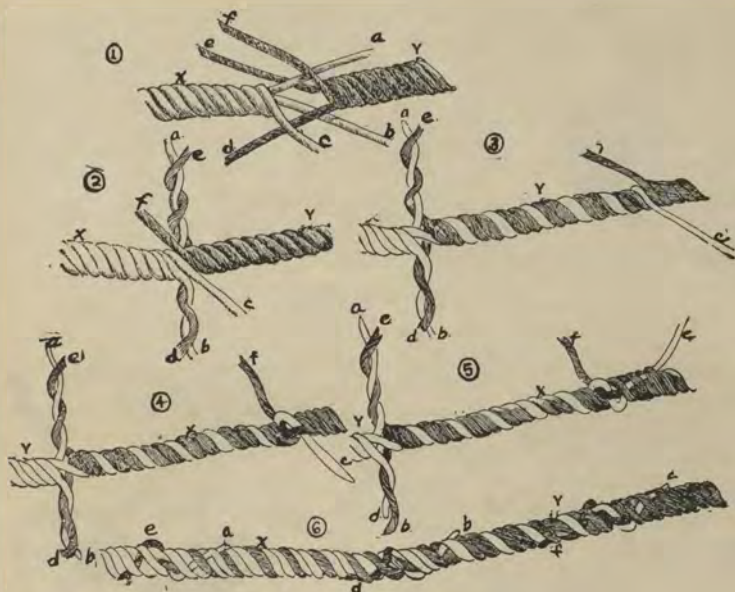
The eye splice is used in making an "eye" or loop in the end of a rope. It is especially useful in making lead ropes for leather halters, rope halters, etc.

To make the eye splice, untwist the strands at one end of the rope about six inches. Then double the rope to the size of "eye" desired. Arrange the strands as (a), (b), and (c) on the main rope (x), Fig. 1. Let the middle strand (a) lie along the main rope (x). Now, holding the loop, in the left hand, raise one of the strands in (x) on the side nearest (a). Push (a) through, under the strand which has been raised (see Fig. 2). Now put strand (b) under the next strand beyond the one which (a) is under (Fig. 2). Next, turn the rope back, raise the third strand in (x). Bring strand (c) down past this strand and then up under the strand in the same direction taken by (a) and (b). Each loose strand should now be under one strand of the main rope. No two should be under the same strand and no two should come out from between the same two strands. Now splice the three strands (a), (b), and (c), down the main rope in the same manner.

Long Splice

The long splice, while requiring more rope than the short splice, is very much smoother, the same size as the remainder of the rope, and will run through a pulley as easily as any of the rope. The long splice is probably the least known of any of the splices, yet it is very important and should be much more generally known. It is most useful in splicing hay and well ropes.

There is one thing about the rainbow chaser we must admire, he gets a run for his money.



The way the long splice is made

Long Splice—Cont.

To make this splice, the strands are unwound 18 to 24 inches. The ends are placed together with each strand passing between two strands of the other rope. (See Fig. 1.) Instead of using all three strands of one rope at once as in making the short splice, one strand from one rope and one from the other are used. The other two pairs of strands are temporarily twisted together to hold them in place (see Fig. 2). Then one strand as (f) in rope (y) (Fig. 2) is unwound one or two turns and the corresponding strand from the other rope as (c) Fig. 2, being kept tightly twisted, is wound into its place. Do not unwind (f) too far before (c) is started. Then continue unwinding (f) and winding (c) into its place, keeping (c) tightly twisted, until within about three inches of the end of (c). Then draw (c) and (f) together as in Fig. 3. Now tie (c) and (f) with a simple overhand knot. (see Fig. 4), drawing the knot down firmly into the groove which (f) occupied. Next "short splice" (c) into (f). This is done to securely fasten the ends. Now turn the rope around, taking the rope (y) in the left hand. Untwist (a) and (e). Untwist (a) one or two turns from the main rope and twist (e) into (a's) place. Continue the same as with (c) and (f) and fasten the same. After (a) and (e) are securely fastened, untwist (b) and (d). Fasten them right where they are by crossing, tying, and "short-splicing," the same as was done with (c) and (f) and with (a) and (e). After (b) and (d) are securely fastened, cut off all the ends. If no mistake has been made, a very smooth even splice is the result. (See Fig. 6.)



The best way to bore a bore is to ignore him.

Half Hitch



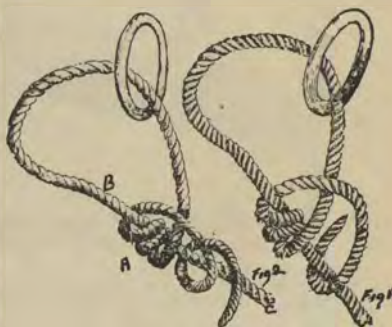
Half Hitch

slip in case the tension on the rope is released.

Running Hitch

The running hitch is used where it is desired to take up slack as in snubbing animals to a post or in drawing up a weight.

The hitch is made by passing the end of the rope around a post, or through a ring, then wrapping it around the standing part toward the post, two or three times, then once above the starting point, making a final half hitch (see Fig. 1). Next draw all the wraps down firmly. A straight pull on the rope (c) should not slip the hitch. However, by taking hold with one hand at (A) and the other at (B) it will slide quite easily.



The Running Hitch

More and Better Corn

(Concluded from page 54)

Things to be Remembered

The sawdust should be soaked at least two hours, better over night. Use a good quality of sheeting for the cloth that is ruled off in squares, also the cloth covering the kernels—a cheap, porous grade of cloth will permit the sprouts to go through it which will greatly interfere with the work. The box, sawdust, and cloth should be thoroughly scalded after making each test. Throw out all ears which show weak germination as well as ears whose kernels fail to grow.

The Seed Patch

After the seed corn testing is done, pick out 100 of the best ears, those that have shown the highest germination power and plant these together on your best land or at one side of the field. This will take but very little time and labor as it is an easy matter to put the best corn in the planter first and plant it all out before using the other. A seed patch of this kind will enable one to select his seed from the very best corn. Remembering the great law that "like tends to produce like," we can see the feasibility and advisability of planting a seed patch.

The quality of the gown doesn't measure the quality of the wearer.



How to Measure Twine

Cheap twines are usually made from low-grade fibre, poorly spun. It is the practice of manufacturers of these twines to offset as far as possible the bad effects of poor workmanship and the use of adulterated and low-grade materials to spin the twine thicker which makes it short of the specified length. This method of deception is seldom detected, and to put our customers in possession of a simple way of protecting themselves against this deception, the following rule for measuring twine is invaluable, because it will enable them to check up inferior twine.

These things must be remembered at the start. Sisal and standard sisal twine should run 500 feet to the pound, manila 600 feet, and pure manila 650 feet. Twine that runs very much over or under these lengths is undesirable, because that which runs very much more than the specified length is too thin, making it weak; and that which is spun short of the specified length is probably made of poor material and spun thick to secure the necessary strength. These kinds of twine always work poorly in the knotter.

Weigh 4 ounces of twine on a chemist's or druggist's scale graduated in $\frac{1}{4}$ ounces. A good way is to take the end of a ball and unwind 4 ounces into the hopper of the scale, cut or tie a colored string around the twine at the 4-ounce mark, and measure the twine weighed to find the length of the 4 ounces. Multiply this length by four to determine the length of the twine per pound.

For example, 4 ounces of sisal twine should measure 125 feet.

Example 1—

$4 \times 125 = 500$ feet per pound—a perfect sisal or standard sisal twine.

If the twine measures 140 feet, then Example 2—

$4 \times 140 = 560$ feet per pound—this twine is spun too thin, consequently it is weak, and has little or no commercial value.

If the twine measures 115 feet, then Example 3—

$4 \times 115 = 460$ feet per pound—this twine is probably made from poor material and spun thick to secure the required strength.

To find the comparative value, divide the price paid per pound by the number of feet which should be in one pound. Then multiply this result by the number of feet in one pound of the twine which you bought.

For example, suppose you are paying 10 cents per pound for sisal or standard sisal twine. You should receive 500 feet for every 10 cents. In example 1, the twine runs 500 feet to the pound, consequently you are getting full value.

In example 3, the twine runs 460 feet per pound.

$10 \text{ cents} \div 500 = .0002$ —value per foot of sisal or standard sisal twine.

$460 \times .0002 = 9.2$ cents—the real value of the twine for which you are paying 10 cents.

Consequently you are losing almost 1 cent per pound.

This rule is applicable to any kind of twine. When manila is measured, it should, if it is perfect twine, run 150 feet to 4 ounces, and pure manila 162½ feet to 4 ounces.



The harvest is measured largely by the preparation of the seed bed.

About Osborne Twine

A farmer who has experienced the troubles that are incident to inferior grades of twine will find in the Osborne brands twines that are made only from the best fibers, whether manila or sisal. There are so many grades of manila twine on the market that it is impossible by the looks of the ball to detect good twine from poor twine. About the only way one can be certain is to purchase a twine the brand of which is a guarantee of its quality. Osborne twine has quality to recommend it. It has full weight, full strength, and full length. It does not pull thin in some places and swell to the size of a rope in others. It is remarkably uniform throughout.

The fiber is inspected when it leaves the field and throughout the process until it is balled and sacked ready for shipment. Any inferior material that may escape the first inspection is discarded during some process of the manufacture, thus making the twine as nearly perfect as it is possible for modern machinery and rigid inspection to make it.

The remarkable increase in the sale of Osborne twine the past few years is evidence enough that farmers are appreciating the efforts of Osborne twine makers to make a product that is satisfactory in every way.

Osborne twine is made in the following brands:

Sisal	500 feet to the pound
Standard	500 " " " "
Manila	600 " " " "
Pure Manila	650 " " " "



A corner in the Osborne twine mill sorting room showing the operators selecting fibres

If you don't crowd your work, your work will crowd you.



I H C Service Bureau

The International Harvester Company of America, Chicago, U. S. A., organized the I H C Service Bureau in August, 1910. As previously announced, the purpose of this Bureau is to supply authentic and accurate information to farmers, schools, and the public generally, with a view to improving American agricultural methods.

The I H C Service Bureau was established:

To help farmers and others interested in agriculture, fruit raising, dairying, and animal husbandry.

To answer their questions and assist them in solving their problems.

To carry on experiments and make investigations into agricultural conditions both general and local.

To furnish free to everybody the latest and most accurate information on soils, fertilizers, rotation of crops, climatic conditions, insect pests, irrigation, care and use of farm machines, spraying, etc.

The Bureau co-operates with the United States Department of Agriculture, the Government Experiment Stations, State Agricultural Colleges, and other authorities.

Articles are prepared for the press, and facts, figures, and photographs furnished to those who have need for them.

Lantern slides illustrating agricultural progress are loaned to schools, colleges, and other institutions offering lectures on the subject.

Only within recent years has the farmer come to realize the vital importance of acquiring a thorough knowledge concerning the business of farming. What began in the outset as an imperfect attempt at more advanced methods of farming has come to be intensified farming, which means the adaptation of crops to soil, climatic, and market conditions, so as to insure the largest possible returns per acre.

There recently died in Missouri a farmer who had never engaged in any other occupation, but because of his skill and the intelligent and progressive methods which he employed, he left an estate valued at \$4,000,000 after having given quite as much during his lifetime to educational and charitable purposes.

The time is rapidly approaching when the farmer, instead of eking out a bare existence from his acres, will with a small area of land be able to enjoy the comforts and luxuries of life, as well as its necessities, and at the same time develop within himself the best qualities of American citizenship.

The high level of general intelligence and educational standards which the rural population of the United States has attained during the last two decades has been remarkable, though it is as yet only beginning to get under way.

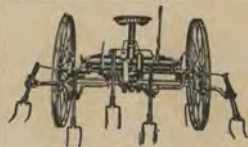
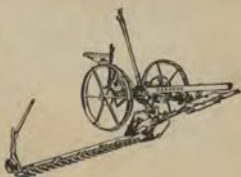
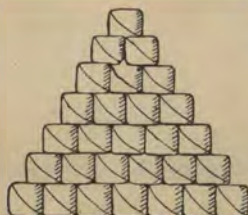
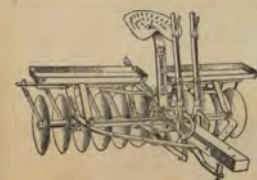
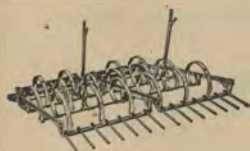
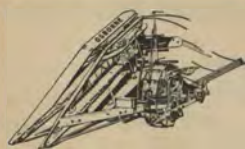
Every such forward movement as that undertaken by the I H C Service Bureau is another step in the right direction. Since the Bureau was established many thousands of inquiries have been answered, and any complaints relative to the work of the Bureau have been by those who failed to sign their inquiries or whose signatures could not be deciphered. We therefore urge upon every one the importance of signing inquiries with the full name and address, plainly written, in order that replies can be sent forward promptly.

If you are too timid to tell a man what you think of him, and want him to know, say it to a third man.



**An
OSBORNE
Machine
or
Implement
For All Seasons**

Disk Harrows
Spring Tooth Harrows
Combination Harrows
Peg Tooth Harrows
Vineyard Harrows
14-tooth Cultivators
5, 7, 9, Combined Shovel
Cultivators
Binders Reapers
Twine Mowers Rakes
Side Delivery Rakes
Hay Loaders
Hay Tedders
Corn Binders
New Bettendorf Wagon
Sterling Wagon
Kemp 20th Century
Manure Spreader





Fear of ridicule has smothered many a genius.

Keep Yourself Advised on Agricultural Machines

Fill in the information requested on this sheet, tear it out along the dotted lines and mail to us promptly. We issue from time to time, new reading matter relating to agriculture and to farm machines. We will keep your name on our mailing list and send you such matter as will interest you.

Name.....R. F. D.....

P. O.....State.....

Fill in Name of Your Nearest Osborne Implement Dealer

Name.....

Town.....State.....

I am particularly interested in the machines I have checked thus ✓ on which send me literature and other information:

Check Here

-Binder, Corn
-Binder, Grain
-Binder, Grain, 8-foot
-Cultivators, 5, 7, 9, Shovel
-Cultivators, 14-tooth
-Disk Harrow, Bumper
-Disk Harrow, Cutaway
-Disk Harrow, Double
-Disk Harrow, Orchard
-Disk Harrow, Rival
-Forecarriage, Disk Harrow
-Harrow, Combination
-Harrow, Peg Tooth
-Harrow, Spring Tooth
-Harrow, Sulky Spring Tooth
-Harrow, Vineyard
-Hay Loader, Osborne
-Knife Grinder

Check Here

-Manure Spreader, Kemp
-Mower, One-Horse, Regular Lift
-Mower, One-Horse, Vertical Lift
-Mower, Two-Horse, Regular Lift
-Mower, Two-Horse, Vertical Lift
-Orchard Guards for Peg Tooth Harrow
-Rake, Hay
-Reaper
-Riding Attachment for Peg Tooth Harrow
-Side Delivery Rake, Osborne
-Tedder, Hay, Osborne
-Transport Trucks for Disk Harrow
-Twine, Osborne
-Wagon, New Bettendorf
-Wagon, Sterling

Address

Osborne Division

Auburn, New York

TRADE in-
creases the
wealth and glory
of a nation, but our
real strength and
stamina are to be
looked for among
the cultivators of
the land.

—Chatham

