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ESTABLISHED IN 1863.
\$1.00 A YEAR.

HAPGOOD-HANCOCK

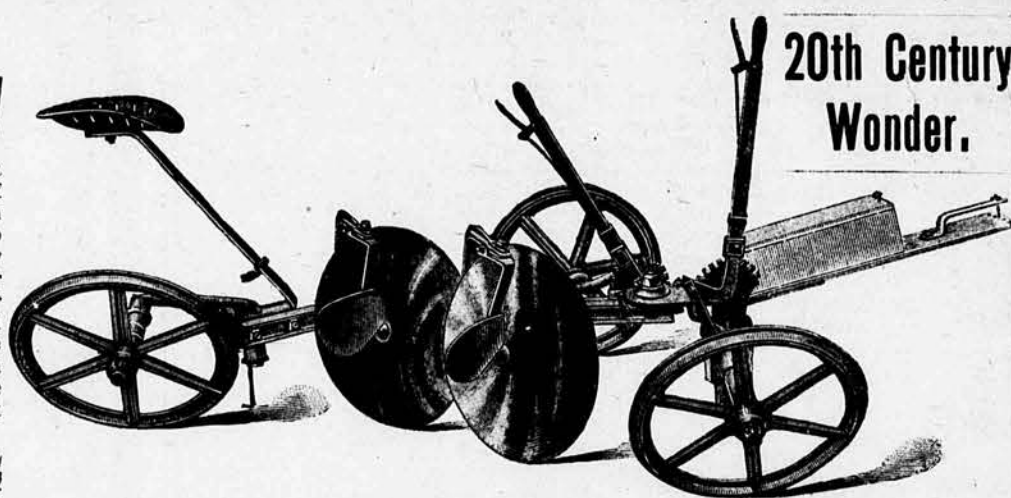
Disc Sulky and Gang Plow

As great an improvement over the Mold-board Plow as that Plow was over the Crooked Stick. We dare not tell you half the facts. You would not believe us. We want you to see it in the field. We guarantee to do more and better work with two horses on sulky, or three on gang, and plow 14 in. wide on sulky and 24 on gang, 6 to 8 ins. deep, than any other mold-board or Disc Sulky Plow on earth with three horses, or gang with four horses. Will plow, hard, dry ground when no other plow will work. Do not judge this plow by other disc plows. Others are all failures because only imitators. Can you find any of them saying anything about light draft? Read our guarantee. One man writes: "Have plowed ground so hard could not break it with a pick. We want your help. Write us. Good pay."

Send for our New Catalogue of Buggies and Harness in colors

Hapgood Plow Co.

ALTON, ILL. The only Plow Factory in the World selling direct to the farmer
Box H.



20th Century Wonder.



THE BUCHEY STACKER

Is the Latest and Best.

No Silks. No Derrick. No Forks. No Waste or Delay in Windy Weather. It SAVES Time, Hay, Labor, and Money.

It is endorsed Unqualifiedly by the leading ranchmen of the West. Send for illustrated circular.

BUCHEY STACKER CO., 127 NORTH KANSAS AVENUE, TOPEKA, KANSAS.

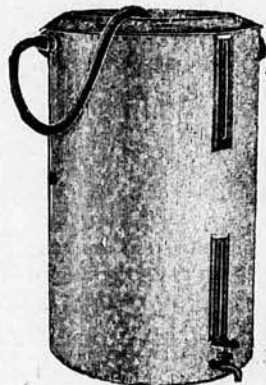
..The Smith.. Cream Separator

DOES NOT MIX MILK AND WATER.

20TH CENTURY, OR THE SMITH

CHURN STATION PLAN

Is as follows: The plant is built by the farmers of a neighborhood and the Smith Company, as a mutual association; the Smith Company retains stock in each plant built; the Smith Company assists in the management and helps the secretary and management in marketing the product; and also sees to it that the enterprise is a success. The farmer stockholders elect the officers, yet the Smith Company assists this board, because each is mutually interested. Each farmer separates his own milk at home, feeds or uses the skimmed milk while fresh and sweet; and instead of costing 12 1/2 to 15 cents per hundred pounds to haul it to the creamery and have the skimmed milk returned not fit to use or feed, it will cost but about two cents to move the cream from 100 pounds of milk, saving 10 to 13 cents per hundred here. Again: where the cows have been paying the farmer \$20 each, by the "Smith Plan" the same cows will net them \$50 and a fine calf each year, in the increased amount and quality of product, and a higher market value when sold. Stop a moment, brother farmer, and figure. Why give all your labor and profit to some middle point? Why not save it all? Run your own churn station, and get the New York, Chicago, or Kansas City market prices and keep your own earnings. You can do it. Others are making a fine thing of it. Why not you? You can build a churn station in your neighborhood, and will be surprised by the profits realized on your butter. Our churn stations are wholly of the farmers, for the farmers, and by the farmers! (See illustration.)



AGENTS Wanted in Every County in the United States.

FOR FULL INFORMATION, ADDRESS

The Smith Cream Separator Co.,
113 West Locust Street, Des Moines, Iowa.



..JOINT SALE OF.. SHORTHORNS

To be held at MARYVILLE, MO., WEDNESDAY, MAY 22, 1901

This offering will be drafts from the herds of Alex. John & Son, and O. M. Healy, of Bedford, Iowa, numbering

60 HEAD—18 BULLS, AND 42 COWS AND HEIFERS

Consisting of Scotch, Scotch-topped, Bates, and Bates-topped cattle. Also such families as Mazurkas, Rose of Sharons, Young Phyllis, True Loves, etc., etc. We wish to call special attention to the 2 HERD BULLS in the sale. Sale will be held under cover. Parties attending our sale can also reach the Martin Flynn sale at Des Moines, the following day, via either the Burlington, or Chicago Great Western R. R.'s without inconvenience. Catalogue tells the whole story. Send for one. Address, Alex. John & Son, or O. M. Healy, Bedford, Iowa. Cols. Woods, Callahan, and Hosmer, Auct's.

For People Who Think

Did you ever stop to think, you have protection on almost all your property, with the exception of your **GROWING CROPS**, and these are more liable to destruction than any other kind of property? You recognize and acknowledge the value of fire insurance, but plant your crops in the spring and never think of insuring them against Hail.

Do you know that hail in its season is vastly more destructive than fire? It is.

A hail storm may visit you this season and destroy in ten minutes your labor and care of months. Can you afford to take this risk yourself when we will carry it for you for 20 cents per acre?

Last year in the State of Kansas the loss and damage to crops by **HAIL** was **ENORMOUS**. There is no reason why it should not be as much or more this year. Because your crops did not suffer last year from hail is no reason why they may not be destroyed this year. This Association offers you the protection that you want at moderate cost. Our cash plan is the very best.

We insure **ALL** your crops and our contracts are simple.

Give the agent your application to-day, tomorrow may be too late.

If our agent has not called on **YOU** drop us a line and he will do so.

The Farmers' Mutual Hail Association,

Columbian Bldg., Topeka, Kansas.

No More Lonely Evenings on the Farm

A chat with your neighbor, an invitation to come over and spend the evening—all the light and pleasure that friendly intercourse can bring into your home, is within your easy reach if you have a telephone in your house and connection with your friends.

The Farmer's Telephone Costs You \$11

It's yours. You own it for life without making any further payments. Not controlled by any trust. No rent to pay. Wire and poles at lowest prices.

AGENTS WANTED—to solicit farmers in neighborhoods not already taken. Thousands in use. Sell wherever shown. Best thing for the farmer ever invented. Write for special terms to agents, booklets, etc.

Send us your name and that of your nearest neighbor and the shortest distance from your house to his and we will send you full particulars and facts on Telephone construction worth while knowing.

KELLOGG SWITCHBOARD & SUPPLY CO., 2332 S. Green St., Chicago.



No. 191. Fancy Body Top Buggy; is complete with side lamps, fenders, side curtains, storm apron and shafts. Price \$25.00 as good as delivered for \$30. Write for Illustrated Catalogue—FREE.

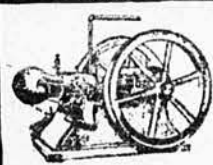
BE YOUR OWN AGENT

and Save Money. Every time you buy an article from an agent or dealer you must pay him a liberal commission in addition to the actual value of the article. In many cases this places an article beyond your reach.

WE HAVE NO AGENTS but sell our vehicles and harness direct from our factory at wholesale prices.

We are the largest manufacturers of vehicles and harness in the world selling to the consumer exclusively. We make 128 styles of vehicles, and 65 of harness. Remember that we ship our goods anywhere for examination and guarantee safe delivery.

Elkhart Carriage & Harness Mfg. Co., W. B. Pratt, Secy. Elkhart, Indiana.



LIGHTNING GAS ENGINE AND SCALES

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Use Rock Salt for Brine, Pickles, Hides, Meats, Ice Cream, Ice Making, Fertilizing and Refrigeration.

USE

Kansas Lump Rock Salt

GROUND ROCK SALT FOR STOCK. For Stock. MINES AND WORKS, LYONS & KANOPOLIS, KAN.

PUREST, MOST HEALTHFUL, BEST. HIGHEST AWARDS AND MEDALS FOR PURITY, WORLD'S EXPOSITION, CHICAGO, 1893; TRAN-MISSISSIPPI EXPOSITION, OMAHA, 1899.

WESTERN ROCK SALT CO., ST. LOUIS, MO.

Time Savers are Money Savers

Did you ever stop to consider that when you have a big gang of men threshing at your place, with a big pay roll and a big board bill, that every time the machine stops for a moment you are losing money at a very rapid rate? If something goes wrong with the thresher or the engine, causing delay, you lose money. The remedy is to employ a machine so built and so equipped with conveniences and time savers that there will be no time wasted and no money lost by inconvenient stoppages.

The Nichols-Shepard Machinery

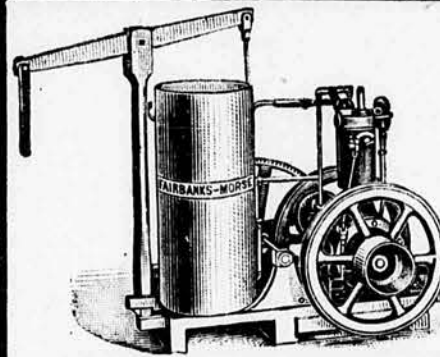


is of that kind. Take for instance the changing of the sieves in wind-stacker separators. In most machines this change is attended with much difficulty and loss of time. In most machines these sieves must either be poked down through an opening in the top or pushed up through an opening in the bottom. In either case the operation is a difficult one and loses lots of time. Now look at the cut and see how quickly and easily this is done in the Nichols-Shepard Separator. Just swing up the hinged opening and slide the sieve into place, drop the leaf and the thing is done. This method and all its train of advantages is peculiar to the Nichols-Shepard Separators only. It is but one of the many advantages that make it advisable for the farmer to employ them in his threshing.

If you want any Thresher Goods, apply to **NICHOLS & SHEPARD CO.** Battle Creek, Mich.

BRANCH HOUSES.

Kansas City, Mo. Des Moines, Iowa. Indianapolis, Ind.
 Minneapolis, Minn. Milwaukee, Wis. Mansfield, Ohio.
 Bloomington, Ill. Nashville, Tenn. Fargo, N. D.
 Lincoln, Neb.



Fifteen Men Wanted

who together can pump more water, grind more feed, shell more corn or saw more wood than this little

GASOLINE ENGINE

If you want to know more about this, address the manufacturers

FAIRBANKS, MORSE & CO.,

Station AA. Kansas City, Mo.

The Brinkman Reinertsen Co.,

609 Board Trade, - - - KANSAS CITY, MO.

Receivers **GRAIN** Exporters

Special Departments for Consignments and Options.

Solicit Consignments and Execute orders (1000 and upwards) in Futures in the Kansas City market.

Reference: National Bank Commerce American National Bank

REBUILT MACHINERY **UNLIMITED SUPPLIES** at **BARGAIN PRICES**

PERFECTION PREPARED FELT ROOFING. Two sheets saturated felt, and between sheets water-proof cement, making a solid, flexible sheet, the layers of composition thoroughly combined. It can be put on without removing the old roof. Can be applied without previous experience, requiring no special tools. Each roll contains 108 square feet. Comes complete with cement for two coats, caps and nails to lay. Price per roll.....\$1.05

A million feet of Brand New and Second Hand RUBBER, LEATHER and COTTON STITCHED BELTING, bought at various Sales. We guarantee to save you from 25 to 50 per cent. We have a job in **ENDLESS THRASHER BELTS.**

ROPE OF ALL KINDS, Wire, Manila, Flax, Tow, Sisal, &c. Write for prices.

IRON PIPE in all sizes at a saving of 50 per cent.

ASK FOR FREE ILLUSTRATED CATALOGUE No. 61 **CHICAGO HOUSE WRECKING CO.** WEST 35th & IRON STS., CHICAGO.

Breeders' Directory

SWINE.

D. TROTT ABILENE, KANS., famous Duroc-Jerseys and Poland-Chinas

Registered Stock, DUROC-JERSEYS, contains breeders of the leading strains.

N. B. SAWYER, - - Cherryvale, Kansas.

M. H. ALBERTY, - - Cherokee, Kansas.

Duroc-Jerseys.

100 head for this year's trade; all eligible to record.

MAPLE AVENUE HERD J. U. HOWE, WICHITA, KANSAS. Farm 2 miles west of city on Maple Ave.

GEDAR SUMMIT POLAND-CHINA STOCK FARM. Only choicest individuals reserved for breeding purposes.

J. D. MARSHALL, Walton, Kansas. FOR SALE—Thirty-five fine gilts, sired by Miles Look Me Over 18879, prize-winner in five fairs in 1900.

FAIRVIEW HERD DUROC-JERSEYS Contains breeders of the leading strains. We have some fine summer and fall pigs to sell at moderate prices.

V. B. Howey, Box 103, Topeka, Kans. Breeder and shipper of Poland-China hogs, Jersey cattle, S. L. Wyandotte chickens.

PARKDALE STOCK AND FRUIT FARMS THOROUGHbred HEREFORD CATTLE. CHAS. A. SCHOLZ, Proprietor, - FRANKFORT, KANS.

POLAND-CHINAS. Extra Good Fall Fancy Strains. DIETRICH & SPAULDING, Richmond, Kas.

Riverside Herd of Poland-China Swine. Commodore Dewey No. 46187 head of herd, assisted by a grandson of Missouri's Black Chief.

Duroc-Jersey Swine—Registered. Some choicest July, August and September males at reasonable prices, to make room for spring farrows.

CHERRY GROVE FARM DUROCS, From best prize-winners. One spring boar, also fall and winter pigs for sale.

WARE & POCOKE, Station B, St. Joseph, Mo.

Mound Valley Herd of POLAND-CHINAS Has some show gilts bred to I. B. Perfection (25172 S.). Others bred to Black U. S. Best (21767). Also a fine lot fall pigs for sale.

W. P. WIMMER & SON, Mound Valley, Kans. D. L. BUTTON, North Topeka, Kans., Breeder of Improved Chester Whites.

T. A. HUBBARD, ROME, KANS., Breeder of POLAND-CHINAS and LARGE ENGLISH BERKSHIRES. Two hundred head. All ages. 25 boars and 45 sows ready for buyers.

Ridgeview Farm Herd of Large English Berkshires Sold out of everything but fall pigs. Place your orders for them now. Silver Laced and White Wyandotte eggs for sale, \$1.50 per 15.

Verdigris Valley Herd POLAND-CHINAS. Large-boned. Prize-winning. We have for sale 80 head of fall pigs—the best grown out lot we ever raised.

MAPLE GROVE HERD OF Registered Poland-Chinas. HIRAM SMITH, Colwich, Sedgwick Co., Kans. Headed by the grand boars Black Chief 42367, Ideal U. S. 48259, and assisted by Perfect I Am Vol. XXIII, grandson of Perfect I Know 19172, granddam the great sow Anderson's Model 43611, mated to a lot of choice selected sows of the most noted prize-winning families.

Prospect Park Herd of Thoroughbred Poland-China Hogs Perfect We Know, a son of Chief I Know, the sweepstakes boar at the Omaha Exposition, at head of herd.

J. H. TAYLOR, Telephone address Pearl, Kans. RHINEHART, Kansas.

Pure Bred Poland-Chinas I have 25 choice October pigs that I will sell for \$10 and \$12.50 for the next 30 days, sired by Corwin I Know 18448, and Hadley U. S. 20186; dams equally as well bred, all good colors.

R. S. Cook, Wichita, Kansas, BREEDER OF POLAND-CHINA SWINE. The prize-winning herd of the Great West. Seven prizes at the World's Fair.

SWINE.

KANSAS HERD OF POLAND-CHINAS has some extra fine spring gilts, some January gilts, and sows 18 months, bred to Sen. I Know, by Perfect I Know; and some nice fall gilts by Sen. I Know and U. S. Tec. Address F. P. MAGUIRE, Haven, Reno Co., Kans.

Poland-China Hogs. Herd headed by I Know Perfect 48263 O., sired by Chief I Know 37167 O. A few gilts for sale, also two 2-year-old sows that will be bred for August or September farrow and one 3-year-old sow by King Breckenridge.

STANDARD HERD OF Registered Duroc-Jerseys PETER BLOCHER, Richland, Shawnee Co., Kans.

Herd headed by Big Joe, and others. Choice pigs of both sexes for sale; pairs and trios not related. S. C. B. Leghorn eggs.

SUNNYSIDE HERD OF PEDIGREED POLAND-CHINA HOGS. We now have for sale 10 good young boars 8 months old, and 8 bred gilts—fine well-developed sows, and a choice lot of September, October and November, 1900, pigs for sale cheap.

M. L. SOMPERS, Altoona, Kans.

CATTLE.

ENGLISH RED POLLED CATTLE—Pure-bred young stock for sale. Your orders solicited. Address L. K. Haseltine, Dorchester, Green Co., Mo. Mention this paper when writing.

MEADOW BROOK SHORTHORNS—Some fine young stock, 20th Earl of Valley Grove at head of herd, for sale. Breeding of the best, in color unexcelled. Address F. C. KINGSLEY, Dover, Shawnee Co., Kans.

ROSEDALE HERD OF HOLSTEINS. C. F. STONE, PROPRIETOR, PEABODY, KANS. Home of Empress Josephine 3d, champion cow of the world. Gerben's Mechtshilde Prince at head of herd.

SHORTHORN BULLS FOR SALE A few choicely bred young bulls, spring yearlings, for sale at very reasonable prices.

ALFALFA MEADOW STOCK FARM 1,300 acres. Pure-bred stock only. Herefords, Poland-Chinas, Light Brahmas and Belgian hares. Stock of all kinds for sale. Pedigreed hares, \$2.

Norwood Shorthorns. V. R. ELLIS Gardner, Kans. Sir Charming 4th at head of herd. Cruckshank top crosses on best American families. Young stock for sale.

Maple Leaf Herd of Thoroughbred SHORTHORN CATTLE And POLAND CHINA SWINE. Farm is 2 miles south of Rock Island depot. JAMES A. WATKINS, Whiting, Kans.

RED POLLED CATTLE LARGEST HERD IN AMERICA. S. A. CONVERSE, PROPRIETOR, IMPORTER and BREEDER, CRESCO, HOWARD CO., IOWA.

ROCKY HILL SHORTHORNS. We have for sale 7 Scotch-topped bulls, about 1 year old. Quality and prices right. J. F. TRUE & SON, Newman, Kans. Newman is on U. P. R. R. 12 miles east of Topeka.

Shorthorns and Poland-Chinas. Two good bulls, Scotch-topped, 7 and 11 months old. A good lot of fall boars, and young sows bred for September farrow. Prompt response to inquirers.

Breed the Horns off by using a RED POLLED BULL. CHAS. FOSTER & SON, FOSTER, Butler Co. Kas. Breeders of Red Polled Cattle, Herd Headed by Powerful 4882. Pure-bred and grades for sale. Also prize-winning Light Brahmas.

REGISTERED HEREFORDS. THOS. EVANS, BREEDER, Hartford, Lyon County, - Kansas. SPECIAL OFFERINGS—FOR SALE—Four yearling bulls, one imported 4-year-old bull, a few young cows and heifers.

SYCAMORE SPRINGS STOCK FARM. SHORTHORNS. H. M. Hill, Prop., La Fontaine, Kans. No Shorthorns for sale at present, but will have a few young things in the spring. Personal inspection of our herd invited.

SUNFLOWER HERD SCOTCH AND SCOTCH-TOPPED SHORTHORN CATTLE, POLAND-CHINA SWINE. Herd Bull, Sir Knight 124403. Herd Boars, Black U. S. 25582 S, and Sunflower Black Chief 23603. Representative stock for sale. ADDRESS ANDREW PRINGLE, Rural Route 2, Eskridge, Kans.

CATTLE.

POLLED DURHAMS 10 bulls from 6 to 30 months. A few females. All stock recorded free in two records. Correspond at once before too late. A. E. BURLIGH, Knox City, Knox Co., Mo.

POLLED DURHAMS! THIS LITTLE AD. will direct you to the largest as well as the best Scotch bred Polled Durham herd of cattle in the United States. 150 Fine Duroc-Jersey Pigs. F. F. FAILOR, Newton, Iowa.

Recorded Hereford Bulls FOR SALE.

The get of Marmton 66646 and Anxiety Wilton A-45611, 10 to 24 months old. These bulls are large, and good individuals, and of the best of breeding. Inspection invited. Fred. Cowman, Lost Springs, Kans. Breeder (not dealer) of Hereford Cattle.

125 RAVENSWOOD SHORTHORNS, C. E. LEONARD, BELLAIR, MO. Males and females for sale. Inspection especially invited. Lavender Viscount 124755, the champion bull of the National Show at Kansas City, heads the herd.

ED. PATTERSON, Manager. Railroad and Telephone station, Bunceton, Mo.

H. N. Holdeman, Girard, Crawford Co., Kans. BREEDER OF PERCHERON HORSES And HOLSTEIN FRIESIAN CATTLE.

Representing Josephine, Mechtshilde and Parthena families. Poland-China hogs. Son of Missouri's Black Chief at head of herd. B. P. R. and B. L. H. chickens. Eggs in season, always guaranteed as represented.

Silver Creek Herd SHORTHORN CATTLE.

GWENDOLINE'S PRINCE 19018 in service, a son of the \$1,000 cow Gwendoline 5th. Best Scotch, Bates and American families represented. Also bred

High Class Duroc-Jersey Swine. Can ship on Santa Fe, Frisco and Missouri Pacific railroads. J. F. STODDER, Burden, Cowley Co., Kans.

BLACK DIAMOND STOCK FARM Has for Sale a Few CHOICE GALLOWAY BULLS,

Bred by a World's Fair winner. Also a few English Fox Terrier pups of finest quality. FOR SALE OR TRADE—A 15-acre suburban property in Des Moines, Iowa. Information promptly furnished by the owner.

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MT. PLEASANT HERD OF SHORTHORNS.

Herd headed by Acorn Duke 18th 142177. Herd composed of Young Marys, Galatas and Sanspareils. Young bulls for sale. A. M. ASHCRAFT, Atchison, Kans. Inquire at Ashcraft & Sage Livery Barn, Main Street.

CLOVER CLIFF FARM. REGISTERED GALLOWAY CATTLE. Also German Coach, Saddle and Trotting-bred horses. World's Fair prize Oldenburg Coach stallion Habbo, and the Saddle stallion Rosewood, a 16-hand 1,100-pound son of Montrose in service. Visitors always welcome. Address BLACKSHERE BROTHERS, Elmdale, Chase Co., Kans.

H. R. LITTLE, HOPE, DICKINSON CO., KANS. BREEDS ONLY The Best, Pure-Bred SHORTHORN CATTLE. Herd numbers 135, headed by ROYAL CROWN 125698, a pure Cruckshank, assisted by Sharon Lavender 14302. FOR SALE JUST NOW 16 BULLS of serviceable age, and 12 bull calves. Farm 1 1/2 miles from town. Can ship on Mo. Pac., R. I., or Santa Fe. Foundation stock selected from three of the great herds of Ohio.

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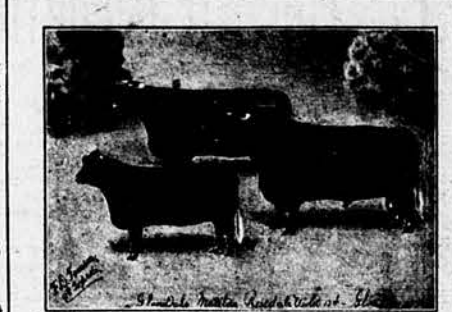
CATTLE.

A. D. SEARS & BROS., - - Leon, Iowa. SHORTHORNS. 2d Grand Duke of Hazelhurst 150091 heads the herd.

D. P. NORTON'S SHORTHORNS, Dunlap, Morris Co., Kansas. Breeder of PURE-BRED SHORT-HORN CATTLE, Herd Bull, Imported British Lion, 133692.

YOUNG - STOCK - FOR - SALE. ALLENDALE HERD OF Aberdeen-Angus Cattle

The Oldest and Largest in the United States. Splendid recently imported bulls at head of herd. Registered animals on hand for sale at reasonable prices at all times. Inspection herd at Allendale, near Iola and La Harpe, Allen Co., Kans., and address Thos. S. Anderson, Manager, there; or ANDERSON & FINDLAY, Prop's, Lake Forest, Ill.



GLENDALE SHORTHORNS, OTTAWA, KANS. Leading Scotch and Scotch-topped American families compose the herd, headed by the Cruckshank bull Scotland's Charm 127264, by Imp. Lavender Lad, dam by Imp. Baron Cruckshank, Twenty bulls for sale. C. F. WOLFE & SON, Proprietors.

HORSES AND MULES. PERCHERON HORSES and ABERDEEN-ANGUS CATTLE.

GARRETT HURST, Breeder, Zyba, Sumner Co., Kans. Young stock for sale of either sex. All registered.

PERCHERON HORSES. J. W. & J. C. ROBISON, Towanda, Kans. Importers and Breeders. Stallions for sale. Send for Catalogue.

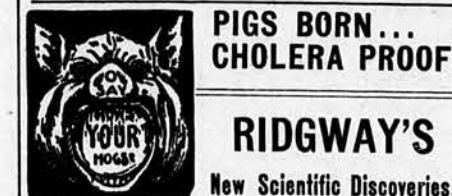
LIVE STOCK AUCTIONEERS. JAS. W. SPARKS, LIVE STOCK AUCTIONEER, MARSHALL, MO. Have been, and am now, booked for the best sales of high-class stock held in America. Write me before claiming dates.

CAREY M. JONES, Live Stock Auctioneer. Davenport, Iowa. Have an extended acquaintance among stock breeders. Terms reasonable. Write before claiming date. Office, Hotel Downs.

LIVE STOCK AUCTIONEER Col. J. N. HARSHBERGER, Lawrence, Kansas. Special attention given to selling all kinds of pedigreed stock, also large sales of graded stock. Terms reasonable. Correspondence solicited. Mention KANSAS FARMER.

TO SHEEP BREEDERS. First edition Stewart's "DOMESTIC SHEEP" sold out. Second edition, revised and enlarged, now ready. 384 pages banded down sheep and wool knowledge, covering every department of sheep life. Acknowledged everywhere as the best book ever published on the subject. Used as a text-book in Agricultural Colleges. Publisher's price, \$1.50. In club with Kansas Farmer for one year, \$2. Address KANSAS FARMER CO., Topeka, Kans.

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THE LINCOLN IMPORTING HORSE COMPANY,
LINCOLN, NEBRASKA.

We have fully decided to offer special inducements for the next 20 or 30 days on our **PERCHERON AND SHIRE STALLIONS.**

Some of the largest and grandest individuals that ever crossed the ocean. Our Percherons are coal blacks. Our Shires are bays and chestnuts. All of them in the best of condition, healthy in every respect and sound as gold dollars. Parties coming to examine our stock and finding we have made any untrue statements, remember, we pay all expenses. Come at once and take advantage of first choice, and cut prices from 15 to 25 per cent and some still more.

Opposite State Farm and Experimental Station. Take University Place or Havelock Street Cars. Inquire for Sullivan's Barns. Telephone 575.



Draft Stallions PERCHERONS, SHIRES, AND CLYDES.

Choicest collection of imported Black Percherons west of the Mississippi River. All horses personally selected by a member of the firm with the aid of our own private interpreter, and a first choice from the oldest and leading breeders of France. All fresh, young stock. If you want a Good Stallion we can suit you. Barns are in town. For further information, address (On C. R. I. & P. Railway, 14 miles west of Washington.) **KEISER BROS., Keota, Iowa.**

Draft Stallions OF THE SHIRE, CLYDE, AND.... PERCHERON BREEDS.

Imported, and Home Bred. All Ages.

POLLED DURHAM AND SHORTHORN CATTLE. POLAND-CHINA HOGS. Prices Right
Snyder Brothers, - - Winfield, Kansas.

AMERICA'S LEADING HORSE IMPORTERS.



100 PERCHERON STALLIONS
40 FRENCH COACH STALLIONS

Now on hand. All mature and ready for service. Frequently there is a neighborhood in which there is no stallion men who will invest the price necessary to procure a first-class registered stallion. In such a locality those farmers and breeders who wish to raise horses must resort to some means of procuring a good Stallion in their neighborhood. We have a plan that has proven most successful where the above conditions exist, and will furnish full explanation upon inquiry.

If you live in such a neighborhood, write us and we will show you how you can procure one of the best stallions and raise horses that will sell for the highest prices.

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T. K. Tomson & Sons,

* * Proprietors of * *

Elderlawn Herd of Shorthorns.
DOVER, SHAWNEE COUNTY, KANSAS.

GALLANT KNIGHT 124468 in service. How would you like a cow in calf to, or a bull sired by, Gallant Knight 124468? His get won 14 prizes at the National Cattle Show held at Kansas City last October. 100 head in herd. Correspondence and inspection invited.

50 Shorthorn Bulls For Sale.

The Bill Brook Herd of Registered Shorthorns

Have on hand for ready sale, 50 Young Bulls, from 6 to 20 months old; also a few good heifers.

Address.. **H. O. Tudor, Holton, Kans.**

250 High Grade Angora Does

All pure white, thin pendulent ears.

Will sell very cheap if taken soon.

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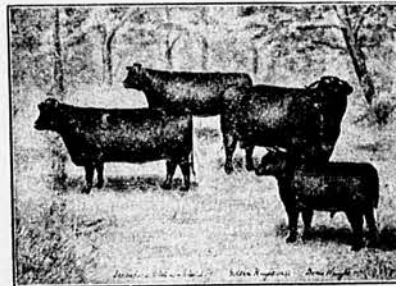
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HERD BULLS:

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...290 HEAD FOR SALE...

Consisting of 200 bulls, from 8 months to 4 years old, and 90 yearling heifers. I will make very low prices on bulls, as I desire to sell all of them before May 1. Write me, or come at once if you want a bargain.

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Herefords

One of the Oldest and Largest Herds in America.

ANXIETY 4th Blood and Type Prevail.

BOTH SEXES, IN LARGE OR SMALL LOTS ALWAYS FOR SALE

VALLEY GROVE SHORTHORNS

THE SCOTCH BRED BULLS

LORD MAYOR 112727, AND LAIRD OF LINWOOD 127149,
HEAD OF THE HERD.

LORD MAYOR was by the Baron Victor bull, Baron Lavender 2d, out of Imp. Lady of the Meadow, and is one of the greatest breeding bulls of the age. Laird of Linwood was by Gallahad out of 11th Linwood Golden Drop. Lord Mayor heifers bred to Laird of Linwood for sale. Also breed Shetland ponies. Inspection invited. Correspondence solicited. A few young bulls sired by Lord Mayor for sale.

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Tebo Lawn Herd of Shorthorns.

—HERD BULLS ARE—

IMPORTED COLLYNIE 135022 bred by Wm. Duthie.
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IMPORTED BAPTON MARQUIS bred by J. Deane Willis.
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FEMALES are the best CRUICKSHANK families topped from the leading importations and American herds. These added to the long established herd of the "Casey Mixture," of my own breeding, and distinguished for individual merit, constitute a breeding herd to which we are pleased to invite the attention of the public. Inspection and correspondence solicited. Address all correspondence to manager.

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For Sale--35 High Grade Herefords.

Thirty-five head of very high grade Herefords for sale, consisting of 20 cows, from 3 to 9 years old, with calf, or calves at foot from my herd bulls, Lomond Grove 71084, and Bright Light 81616. Fifteen head yearlings, this spring, that are fancy, in quality and condition, sired by above bulls. Address

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Have sold for, and am booking sales for leading stockmen everywhere. Write me before claiming dates. I also have Poland-China Swine, Bronze turkeys, B. P. Rock, and Light Brahma chickens. 150 birds, and a lot of pigs ready to ship. Write for Free Catalogue.

Agricultural Matters.

The Soy-Bean as a Forage and Seed Crop.

(Continued from last week.)

THE SOY-BEAN AS A SEED CROP.

During the past ten years the soy-bean has been quite generally recommended in this country as a valuable crop to grow for seed to be ground into meal. Its chief advantages are the economy with which it can be grown, its adaptability to our soils and climate, and its fairly large yields of seed rich in protein. With the early white variety, which has been grown mainly for seed by the Storrs station, yields of 15 to 20 bushels per acre have been obtained. The medium early green variety has been found to be much more productive than the early white, but has not been grown by this station on a sufficient scale to determine the amount of yields that can be obtained with it. The Hatch station at Amherst, Mass., reports yields of 25 to 40 bushels per acre with this variety, and considers 30 to 35 bushels a fair yield. While the soy-bean is not so productive of seed as corn, and can not be expected to replace that grain, its high percentage of protein makes the seed, when ground into meal, a valuable grain feed to use with corn meal and other feeds deficient in protein. The large proportions of protein and fat in the soy-bean meal, together with its high digestibility, place it in the same group of feeding stuffs as cotton-seed and gluten meals.

Proportions of total and digestible nutrients in soy-bean seed.—The following table gives the average composition of soy-bean seed as compared with that of other grain feeds as analyzed by this station. The proportion of total nutrients given are those contained in the seed when in an air-dry condition; that is, the beans were sampled and analyzed when dry enough to grind into meal. The table also shows the proportions of digestible nutrients in the various seeds and grains. These proportions were computed from the percentages of total nutrients by the use of the coefficients of digestibility given in Table 2.

linseed meal." Experiments were also made at the Kansas station in feeding soy-bean meal for fattening hogs. The soy-bean with Indian corn and with Kaffir-corn was compared with each of these feeds by itself. In five experiments "when the soy-bean meal was fed with corn or Kaffir-corn for fattening hogs a saving of 13, 27, 31, 33, and 37 per cent respectively was made in the amount of feed needed to make 100 pounds of gain." That is, on the average, a saving of 30 per cent was made in the amount of grain feed needed to produce 100 pounds of gain, when soy-bean meal constituted a part of the ration, as compared with a ration of corn or Kaffir-corn alone. On the whole then, these experiments would seem to show that soy-bean meal is a healthful, nutritious, and valuable feed for growing animals or milch cows. Its tendency, when fed to cows, to soften the butter might be objectionable, but this could be counteracted by feeding limited amounts in connection with cotton seed meal, which has a tendency to harden butter.

CULTURE OF THE SOY BEAN.

Soil and fertilizers.—The soy-bean should be grown on rather sandy or loamy soils with porous subsoils. Clay soils do not favor a rapid enough growth to allow the crop to mature before there is danger of injury by frost. If the soil is naturally fertile, and if it contains those organisms which produce the nodules on the roots and enable the plant to use the nitrogen of the air, fair yields may be produced with the application of mineral fertilizers only. Barn-yard manure or nitrogenous fertilizers, however, tend to increase the growth even where the nodules are present on the plants. Muriate of potash and finely ground bone together give good results.

Seeding and cultivating.—The soy-bean should be grown in drills far enough apart to allow for cultivation. The plants make a rather upright growth, so that if the drills are from 2 to 2½ feet apart, the plants will have sufficient space to spread. The amount of seed planted should vary according to the use to be made of the crop. One-half bushel is sufficient when the crop is to be grown for seed, while 3 pecks to 1 bushel are desirable when it is

TABLE 3.

Composition of soy-bean seed compared with that of other grain feeds.

| | Total Nutrients* | | | | Digestible Nutrients. | | | |
|---------------------|------------------|------|--------------------|--------|-----------------------|------|--------------------|--------|
| | Protein. | Fat. | Nit.-free extract. | Fiber. | Protein. | Fat. | Nit.-free extract. | Fiber. |
| Soy-bean seed | 36.8 | 18.4 | 27.2 | 3.7 | 32.1 | 15.7 | 20.4 | 2.6 |
| Cotton seed meal | 44.0 | 11.8 | 25.8 | 4.3 | 39.2 | 11.0 | 15.6 | 2.4 |
| Chicago gluten meal | 35.6 | 5.8 | 45.3 | 2.5 | 32.3 | 5.5 | 40.7 | ... |
| Wheat bran | 17.0 | 5.0 | 53.3 | 9.4 | 13.2 | 3.4 | 37.0 | 2.7 |

* Proportions of total nutrients taken from averages of all analyses made by this station up to 1898.

The thoroughly matured seeds of the different varieties of soy-beans do not seem to differ much in composition. From the above table it will be seen that the soy-bean seed resembles cotton seed meal in composition, the soy-bean being about 6 per cent lower in digestible protein and about 5 per cent higher in digestible fat and in nitrogen-free extract. This shows how the soy-bean seed may be used instead of cotton seed or gluten meal or other highly nitrogenous feeds as a grain feed for milch cows and growing animals.

Feeding value of soy-bean meal.—Only a limited number of feeding experiments have been made with soy-bean meal. In 1893 the Hatch Experiment Station at Amherst, Mass., made a comparison of soy-bean and cotton seed meal in feeding two lots of dairy cows during two periods of three weeks each. The yields of milk and of butter for the two lots of cows were practically the same when soy-bean meal was fed as when cotton seed meal was fed. The butter made from the cows that were fed cotton seed meal was finer in texture but appeared greasy, while it was thought that the butter from the cows that were fed soy-bean meal had a more agreeable texture and flavor.

The Kansas Experiment Station has been making experiments on the soy-bean, and is endeavoring to introduce the crop among the farmers of that state for use as a grain feed in place of part of the corn commonly used. Bulletin 92 (March, 1900) of that station says: "So far as we have tested the soy-bean grain we have found it to take the place and have about the same effect as linseed meal for feeding steers, dairy cows, and calves. The soy-beans are richer in protein and fat than linseed meal; they have the same laxative effect, and when fed to cows giving milk, tend to soften the butter the same as

grown for fodder. The crop should be cultivated several times during the early part of the season, but it will soon cover the ground and choke the growth of weeds and will then require but little care.

Harvesting.—When wanted for use as a soiling crop for milch cows, the soy-bean may be fed any time after the blossoming stage until injured by frost. If planted the last week in May, the crop will usually be available for feeding for from three to four weeks, beginning about the middle of August. If grown for silage, it will be ready for the silo about the 10th to the 20th of September. Its best stage of growth for silage seems to be when the pods are well formed and the seeds are about one-half to three-fourths grown. As the seeds develop toward maturity the stems of the plants become quite woody. They are then difficult to cut and may become so hard as not to be well eaten by stock.

When grown for seed the crop should remain standing until the seeds are well matured. By this time most of the leaves will have dropped. The plant should then be pulled or cut and placed in small stooks. As soon as dry the crop should be hauled and stored in a dry place. If left in the field after the pods become dry the seeds are liable to scatter badly by the snapping open of the pods and considerable waste will result in case the weather is dry.

Methods of introducing the nitrogen gathering germs.—It is a quite well known fact that plants belonging to the legume group, as for example the clovers, vetches, lupines, cow-peas, and soy-beans, are able to acquire nitrogen from the air. This nitrogen is taken into the plants through the agency of the bacteria that live in the little wart-like bunches on the roots, known as root tubercles or nodules. The nodules are the home of the bacteria, and several

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Dipping, washing or spraying live stock is essential for the cure of Scab, Mange, Itch, etc., and for killing and removing ticks, fleas, lice, etc. Lincoln Dip is composed of nicotine, sulphur and valuable oils, but contains neither lime nor arsenic. It is effective but not poisonous or injurious. Write for literature upon treatment of stock for skin parasites.

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distinct species or kinds of bacteria are found on the roots of different kinds of plants. It seems to be well proven that where the nodules are not found on the roots the plant does not acquire atmospheric nitrogen, except possibly in very small amounts. The proper species of bacteria for the inoculation of most of our common legumes are found in nearly all soils. Such plants as clover, peas, common beans, and alfalfa are naturally supplied with the nitrogen gathering germs in most soils, owing to the presence of the bacteria capable of inoculating these plants. When plants are first introduced into a locality they sometimes need to have the some way been supplied with the proper germs in order to have the plants become inoculated the first season. The soy-bean is one of those plants that do not seem to produce nodules nor make a vigorous growth until the soil has in some way been supplied with the proper germs. The introduction of the germs may be brought about in any one of three ways: first, the spores of the bacteria may be carried to and introduced into the new soil with the seed; second, the spores may be introduced by mixing with the soil of the new field a small amount of soil from a field where the beans have been grown and have produced nodules; third, the spores may be introduced by gathering the dust and dirt that falls from the roots of the soy-beans when threshed, and applying it in the soil when the beans are planted.

The introduction of the germ spores with the soy-bean seed requires no special effort. If the seed that grew on a field where there was an abundance of nodules is planted on a new field and the crop is continued for three or more successive years, the plants will gradually become inoculated. A few of the tiny spores or seeds of the bacteria seem to adhere to the bean seeds and are thus transferred to the new crop, and, although only a limited number of germs may thus be introduced, the bacteria increase gradually from year to year, and in about three years their presence will be shown by an abundance of root nodules on the crop.

In the second method the spores are transferred by taking soil from an old field to the new location where the germs may be wanted. The spores of the bacteria remain in the soil from one season to the next. If soy-beans are to be grown on a new field, the spores may be introduced by taking soil from a field on which the crop was grown the year previous, providing the nodules were abundant on the crop that year, and using it on the soil of the new field. The soil may be used at the rate of about 1,000 pounds per acre, and will inoculate the plants most quickly if sown in the drills with the seed. If the soil is dried and finely pulverized, 600 to 800 pounds will introduce an abundance of germs. If the soil is scattered over the field broadcast and harrowed in, the plants will become inoculated much the same as when the soil is scattered in the drills, but the process is a slower one. If the inoculation is to do the most good the first season, the nodules should begin to ap-

pear by the time the plants are 6 inches high, and for this reason it is better to scatter the soil in the drills, so that the bacteria will do their work promptly.

The third method by which the germs may be introduced is by saving the dust and dirt from the floor where the soy-beans have been threshed, and using that to inoculate the new crop by applying it with the seed when planting. If the soy-bean plants are pulled rather than cut when harvested many dried and crushed nodules can be swept up after threshing. This material has inoculating properties a great deal stronger than the soil as recommended for use in the second method, so that a small amount of it will introduce the germs on a considerable area, if the dust is scattered in the drills with the seed.

Experiments on inoculating soy-beans to produce root nodules.—The station began to grow soy-beans in 1890 and has grown them each year since; but for the first three years no nodules were found on the roots. During this time the yields were light, unless the crop was heavily fertilized, and the foliage was pale yellow in color. In 1893 seed of the early white variety was obtained from the Hatch station, of Amherst, Mass., and, at the same time, some soil from a field where soy-beans had been grown by that station and where the nodules were abundant the year before. This soil was obtained for the purpose of introducing the nitrogen gathering germs. Six hundred pounds were scattered over about one-tenth of an acre at the time of planting. The amount of soil used was larger than later experience showed was necessary. At the same time some seed from the same lot as that used on the larger field was planted in two drills about 20 feet long in the grass garden, but no soil was added for the purpose of introducing the germs. The soy-beans on the larger field had their roots covered with nodules by the middle of the summer, but none were found on the plants in the grass garden where no imported soil was added. The plants upon which no nodules were found were pale yellow in color and produced a light growth of seed. The plants on the larger field made a vigorous growth and seeded heavily. In 1894 seed from the large field was planted on a strip of land near that upon which the crop grew in 1893, and again the nodules were abundant on the roots. It seems probable that by the harrowing and cultivating, enough soil to transplant the germs may have been carried from the plot on which the crop had been grown in 1893 to the adjoining plot on which it was planted in 1894. The growth on the large area was again heavy and the plants of good color.

Seed from the crop which had no root nodules in 1893 was planted on the same area in 1894. A very few nodules were found on the roots that season, and the crop was a little heavier than the previous year. The seed grown in 1894 was again sown on the same area in 1895. The nodules were abundant that year and the yield of seed was considerably larger than for either of the

(Continued on page 473.)

GALLOWAYS.

LARGEST HERD OF REGISTERED GALLOWAYS IN THE WORLD.

Bulls and females, all ages for sale—no grades. - - Carload lots a specialty.

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GALLOWAYS.

Largest Herd of Registered Galloways in Kansas.

Young bulls, cows, and helpers for sale.

E. W. Thrall, Eureka, Kansas

The Stock Interest.

THOROUGHBRED STOCK SALES.

Dates claimed only for sales which are advertised or are to be advertised in this paper.
 October 8-10, 1901—American Berkshire Association Sale at Kansas City.
 November 21, 1901—Ernst Bros., Shorthorns, Tecumseh, Neb.
 December 10, 11 and 12, 1901—Armour-Funkhouser, Herefords, Kansas City.
 December 13, 1901—H. C. Duncan, Shorthorns, Kansas City.

Beginning and Progress of the Short-horn Breed.

SECRETARY COBURN'S INTRODUCTION TO HIS MARCH REPORT.

This breed of cattle, better known, more numerous, and more widely disseminated than any other, originated in the northeastern counties of England—mainly Durham and Yorkshire, in the valley of the river Tees—from which fact they have been known the world over as Durhams, and in many localities, in an early day, as Teeswater cattle. As early as 1750 the cattle of that region had considerable reputation for large size and as being good milkers, but were coarse boned, flat ribbed, and slow in maturing. The success of Robert Bakewell in improving the cattle known as Long-horns encouraged the breeders of the Teeswater cattle to efforts for their improvement also. Among these breeders were Robert and Charles Colling, who, in 1780, were established as farmers and stockmen, and afterwards became, and continued for nearly forty years, more conspicuous than any of their contemporaries in connection with the improvement in Shorthorns. Charles Colling was a man of superior business qualifications, and knew the value of reputation and notoriety for his stock; hence, in 1796, he selected and fitted for exhibition a steer that was transported over England and in some parts of Scotland in a large wagon, as a show. This was the animal known as the "Durham ox," and weighed, alive, when 6 years old, 3,524 pounds. Soon after this Robert Colling fed a beautiful thorough-bred heifer, and sent her for exhibition through many counties; this was known as the "white heifer that traveled." Her estimated live weight was 2,300 pounds, and profitable dead weight, 1,820 pounds. The exhibition of these animals, with their marvelous weight and symmetry, made the stock, from that time, the objects of wide observation and great demand. In later years, Thomas Bates attained great prominence as a breeder and improver of Shorthorns, and his name, as has that of Thomas Booth, who with his sons were great improvers of Shorthorns, adheres to certain strains or families of them to the present time. From the Bates cattle are descended the "Duchess" tribe, individuals of which have sold for higher prices than any other that ever lived. Closely following these pioneers were such breeders as Mason, Wetherell, Whittaker, Earl Spencer, and others, "who reduced the size and improved the finish and feeding qualities of the old Teeswater type."

In 1837 Amos Cruickshank, of Sittytown, near Aberdeen, in Aberdeenshire, northeast Scotland, laid the foundation for a herd of Shorthorns, the descendants of which are now generally designated as "Cruickshanks," or "Scotch," and constitute, perhaps, at the present time, the most popular and best-selling type of the breed. The Cruickshank sort are noted for beefy qualities, and may be said to be founded on a blend of such families or strains as the originator deemed most likely to contribute to a strictly profitable type of animal, regardless of any so-called "fashion" or particular strain.

At the beginning of the past century there had been a number of small importations made to this country, more especially into several eastern states, and in 1817 shipments were made into Kentucky, from a part of which are descended the cattle known to American breeders as the unfashionable "Seventeens." It is scarcely possible to conjecture the number of Shorthorns that have been imported to and bred in the United States, as previous to 1845 no American herd-book was kept. Entries have been closed for volume 48 of the American Shorthorn Herd-book, and that, with its predecessors, will contain pedigrees of 162,000 bulls and 279,000 cows, or a total of 441,000 pure-bred Shorthorns with lineage recorded in the United States alone, to date, besides which pedigrees of 4,000 bulls and 8,000 cows have already been filed with the editor for publication in volume 49.

In color, Shorthorns may be either red, white, or any combination of these; the red may vary in shade from a light or yellow, to a very dark or mahogany, the latter at present being the favorite

with many breeders in this country, while the white is least popular, or in fact, scarcely acceptable at all; in England the roan color is valued most highly, and in America it is an especial favorite in the feed lots, although breeders of thoroughbreds are partial to red, because they claim that animals of that color, unaccountable as it may seem, in consideration of their conceded superior quality, are more readily and profitably sold for breeding purposes.

The cows vary greatly in the milking quality at present, but early in their history were valued highly for the dairy. In later years a majority of breeders have unfortunately been so absorbed in the development of the beef-making qualities of their stock as to greatly neglect the equally important matter of development in milk-and-butter production—a condition which true friends of the breed will hope to see modified for the better from year to year in the future.

Cross-bred vs. Pure-bred.

EDITOR KANSAS FARMER:—It is perhaps rather late in the day to criticize the discussions at the last meeting of the Improved Stock Breeders' Association, but the speech of our much esteemed Gov. Glick, under the heading of "Hints to Young Breeders," is so much at variance with my experience as a breeder, and my general opinions formed by reading and study of the subject, that I desire to say something upon the subject, as I believe a further discussion is desirable from several points of view. It is an easy matter to make assertions as to correct principles of breeding, but such theories should be backed up by cold facts without distortion (facts are very stubborn things). Let us deal with facts, and let them lead us where they will. We read the following: "But we have another class of cattle, called the Cruickshank; a man will make a mistake if he attempts to cross them with the Booth cattle." This is the assertion of Gov. Glick. We all remember the World's Fair of 1893, when J. & W. Russel, of Richmond Hill, Ont., showed their herd of Shorthorns, winning in cash prizes \$1,785, besides medals. This is more than any other herd won. We know they breed Booth and Cruickshank cattle, mixing them to a certain extent. The head of this herd at the time was Stanley 113853, sire of the champion yearling white bull, Lord Stanley, at same fair, and progenitor of all the cattle he showed. What was Stanley? He was practically about 11-16 Cruickshank blood, 2-16 of Booth, and 3-16 of Bates—a fine mixture, which, according to Gov. Glick's theory, would render him unfit to head any pure-bred herd, but the success of his immediate progeny at that fair is enough to dispel any such illusion.

We have all known of the fine show bull, Banker 10861, that headed the renowned herd of W. P. Harned, of Missouri, and improved it also—he was bred by the Russels, of Ontario, and got by Stanley 113853. He was a mixture also of Cruickshank, Booth, and Bates blood, as follows: Cruickshank 59 per cent, Booth 31 per cent, Bates 10 per cent. We have the word of Mr. Harned that Banker did great work on his Cruickshank cows, and it must have been owing to the Booth blood in his veins. His dam was by a pure Booth bull. It was reported through the press at the time that Banker had got the best bunch of calves ever seen in Mr. Harned's herd.

I will give one more example of the great success of using a cross-bred Booth and Cruickshank bull in the great Bates herd of Wm. Warfield, the great Kentucky breeder. The following was clipped from the Breeders' Gazette about three years ago:

"Wm. Warfield's selection of sires has been singularly successful. When he brought Royal Roussillon from Ontario, the 'absolutely pure' men made all sorts of grimaces. In the light of the years that have elapsed, Mr. Warfield pronounces the daughters of that bull the best breeding matrons ever known in his herd."

The bull, Royal Roussillon 89211, was got by imported Duke of Lavender 69290 (bred by Amos Cruickshank) out of the prize Booth cow, imported Rachel, by Lord Rose 87708.

Mr. Glick says, "The Booth cattle never crossed successfully upon any other cattle." What will he have to say of the above cross, and its results? Will he dispute the opinion of so great a breeder as Wm. Warfield? Is there no merit in a cross that improves one of the greatest herds in America, and a Bates herd at that? Mr. Glick says, "Cross-bred animals are good animals, sometimes better than the original pairs." But when you breed beyond the second pair you will find it to be a continual failure." I will pursue this subject at an-

other time. In the meantime I solicit criticisms from any quarter.
 Dunlap, Kans. D. P. NORTON.

Cane Killed the Cattle.

EDITOR KANSAS FARMER:—During the latter part of last year you gave an account of a law suit tried in Ottawa County, wherein a party sued to recover damages for cattle killed while in a pasture, from eating growing Kafir-corn, the fact than corn was so growing being known to owner of pasture, but not to owner of cattle, and which case the defendant had judgment.

At the term of court just closed here, E. J. Lowe, the owner of a pasture wherein was growing sorghum cane, upon which, during July last, she placed cattle belonging to defendant, A. J. Champlin, in her care and keep, and from eating which several head died, tried an action to recover for the pasture bill, and the defendants filed a cross claim, claiming damages in excess of the pasture bill, for the dead cattle. The facts showed that Lowe took Champlin's cattle to keep under the ordinary terms, and placed them on the cane, knowingly, but without Champlin's knowledge. The evidence showed clearly that for many years growing cane has been known to be a dangerous and deadly plant to cattle, and such knowledge was general, in this vicinity. The instructions in the case followed very closely after the instructions given in the Ottawa County case, practically the same, and to the effect that if the owner of the pasture knew, or might by the use of ordinary prudence have known, sorghum cane to have been a dangerous plant, she ought to pay for the cattle. The jury very promptly found for the defendants, for the value of the cattle, which was considerably in excess of the pasture bill sued for.

Thus you see this is not a matter of law, but a matter of fact, and so far as Phillips County is concerned, sorghum cane has a bad reputation and it is established as general knowledge that it is a dangerous and deadly plant, and one pasturing it does not exercise ordinary prudence. Perhaps if our Ottawa County friends would move out into the short-grass country where knowledge is more general, they would cease to lose cattle from this source at least.

R. FRANK STINSON.
 Phillipsburg, Kans.

The Angus Sale at Omaha.

The new sale pavilion and barns, at the Union Stock Yards, South Omaha, Neb., had the opening last week with the very successful Angus combination, under the management of Mr. Chas. Escher, Jr., w. n. consignments from the herds of such well known breeders as Everett Jones, Spring Valley, Minn.; Palmer & Palmer, Princeton, Ill.; N. G. Daughmer, Douglas, Ill.; Omer Catterson, Maryville, Mo.; E. T. Davis, Iowa City, Iowa; M. A. Martin, Wall Lake, Iowa; Cantine Bros. & Stevenson, Quimby, Iowa; E. Reynolds & Son, Prophetstown, Ill.; Collins Dysart, Nachusa, Ill.; Geo. Shawver, Lewiston, Ill.; C. D. Hooker & Son, Maryville, Mo.; A. C. Binnie, Alta Iowa; T. J. McCreary, Highland, Kans., and Silas Igo, Palmyro, Iowa.

Col. Woods, Carey M. Jones, Silas Igo, and W. M. Harding were the auctioneers at this first sale in the new pavilion. Col. Woods, in opening the sale, said in part: "Twenty years ago this month I arose in the State of Nebraska to open the first thoroughbred cattle sale that was ever made in the State. I didn't have the restrum of a grand amphitheater like this to stand on, but stood in an old double wagon of very doubtful footing."

"Gentlemen, I stand before you to-day in behalf of the stock interests of this grand State of Nebraska, in behalf of Mr. Kenyon, in behalf of these stock yards, and in behalf of the city of Omaha, representing this great State of Nebraska, to dedicate to you this, the greatest and best fine stock pavilion in America."

"In dedicating this pavilion, I am not authorized to dedicate it to any particular breed. It is not to be dedicated to the Herefords, the Angus, the Shorthorns, the Galloways, or any particular breed, but it is dedicated to everyone who believes in a good cattle. The stock interests of a country rise as the intelligence of her people rises. You show me the stock that a certain community raises, gentlemen, and I can tell you about its people. This is particularly true of this great State of Nebraska, and I congratulate the people of this great State upon the advancement that her live stock industry indicates she has made."

The result of the two day's sale was an average of \$226.63 for 110 head, consisting of 43 bulls which sold at an average of \$200.35, and 67 cows and heifers, sold at an average of \$243.58. The top price for bulls was \$550, for A. C. Binnie's Mayor of Alta was \$550, sold to J. Nelson, Sheldon, Iowa. The top price for cows was \$1,055, for E. Reynolds & Son's Blackbird of Woodland 2d olds & Son's Blackbird of Woodland 2d olds & Son's Blackbird of Woodland 2d olds, sold to A. C. Binnie, Alta, Iowa, and \$1,025 was paid for Nightingale Roxie 27129, consigned by Cantine Bros., Stevenson, and sold to Jas. Williams, Marcus, Iowa.

Chicago as a Market.

At Chicago, the home of the International Live Stock Exposition, all live stock sells on its merits at the best average prices, as shown by the following: The Foremost Live Stock Market.—A few years ago it was very popular to predict that as Albany, Buffalo, and Cincinnati had in turn gained and lost supremacy as live stock markets, so the vast prestige so long held by Chicago would slowly but surely be wrested from her by cities still



AMERICAN FIELD AND HOG FENCE FULLY GUARANTEED.
 Best steel wires heavily galvanized. Strong, economical, efficient, durable. Local agents everywhere. If no agent in your town write to the makers.
 American Steel & Wire Co., Chicago or New York.

ZENOLEUM Kills Lice, Ticks, Mites, Fleas, Etc., on all kinds of animals and poultry. Given internally it drives out worms. Cures all cuts, wounds, sores, etc. Non-poisonous. Endorsed by leading veterinarians. "Veterinary Adviser" free. Zenger Disinfectant Co., 61 Bates St., Detroit, Mich.

PROTECTED PIGS PAY The verdict of thousands of stockmen who use VESEY'S STAR ANTI-CHOLERA. It not only protects—it cures cholera hogs. It makes them grow and fatten; it causes early maturity. SOLD UNDER AN ABSOLUTE GUARANTY. Pay no money until satisfied with results. Call on or address ANTI-CHOLERA CO., 263 F Exchange Bldg., Kansas City Stock Yards.

NO SPAVINS The worst possible spavin can be cured in 45 minutes. Curbs, splints and ringbones just as quick. Not painful and never has failed. Detailed information about this new method sent free to horse owners. Write today. Ask for pamphlet No. 12. FLEMING BROS., Union Stock Yards, Chicago, Ill.

FREE Drug Book They cost us \$2. each. 1500 illustrations. Contains over 15000 drugs, medicines, home remedies, flavoring extracts, trusses, electric belts, paints, oils, etc. We save you 15 to 75% on any of them. Send 10c to pay cost of mailing book which amount is refunded on your first order. Send for book to-day, you may need medicine to-morrow. One can never tell. Better get it and keep it handy. We are "The Only Mail Order Drug House in the World." Heller Chemical Co. Dept 47, Chicago, Ill.

"ELI" Baling Presses ARE THE EASIEST TO FEED having a large feed opening. This makes them correspondingly fast balers. They are made in 38 styles and sizes for either horse or steam power. They are thus best suited to the wants of the individual farmer or the man who makes baling a business. Made entirely of steel, they combine in a high degree, lightness, strength, durability and general efficiency. Bales are compact and even sized—pack to good advantage in cars, saving freight. We mail large illustrated catalogue free. COLLINS PLOW CO. 1120 Hampshire St., Quincy, Ills.

Ripley's Fly Remover Instantly removes all flies, mosquitoes, lice and other insects from cattle, horses and other animals sprayed with it. It is healing to any sore. Animals rest easy and feed quietly all day. Cows give 1/2 more milk, which is a big saving. 1 gal. will protect 500 cows. Money refunded if animals are not protected. Indorsed by the best class of people. Order at once and secure agency, you can sell hundreds of gallons. 1 gal. \$1.10, 2 gal. \$2.10, 5 gal. \$4.50, 10 gal. \$9.00. Ripley's Special Sprayer to apply same, \$1.50 gal. Compressed Air Sprayer to apply same on large herds, \$6.25. Address, RIPLEY HARDWARE COMPANY, BOX 28, GRAFTON, ILL. Branch Offices: 18 Park Place, N. Y. City, N. Y. 134 Merchants' Row, Boston, Mass.

Reduction in Price of Binder Twine
KANSAS BINDING TWINE
 Is made from pure Sisal and put up in 50-lb. bales. No bales broken for shipment. Price is 7 1/2 cents per pound, f. o. b. Lansing. Special price on 10,000-lb. lots. Remit with order to
E. B. JEWETT, Warden,
 Lansing, Kansas.

farther west. Other market centers sprang up and made a great growth, and for a time it looked as if those who predicted that there would one day spring up a greater Chicago far to the westward might be right. The drawing powers of Chicago, however, were too great to be impeded and the foremost live stock markets of America and of the world continue to reassert her strength and demonstrate her greatness. There hasn't been very much tooting of horns, or blowing of trumpets, or beating of drums about it, but the quiet, effective work has been done here by the new management of the Union Stock Yards & Transit Company during the past few years has not only attracted the attention of producers and consumers throughout the world as never before to the superior advantages, facilities, and excellence of the Chicago market, but has also made Chicago the greatest market ever known for pure-bred live stock of all kinds, has created and permanently established the International Live Stock Exposition, and in many other ways has benefited, aided, and encouraged the entire live stock industry of the United States. More than ever before in its history there is being impressed upon all interests the fact that Chicago was, Chicago is, Chicago always will be the greatest, most progressive and most reliable live stock

market and meat packing center in the world.—Chicago Live Stock World.
One of the largest eastern shippers demonstrated conclusively the difference between St. Louis and Chicago as a hog market. Their drove of 270-pound hogs cost \$5.82½ in Chicago and \$5.65 in St. Louis. St. Louis will probably show to-day a "marked up" sale as high as Chicago's top, but when the same drove of hogs can be bought 17½ cents lower there than here, it shows conclusively that the general run of hogs are selling 15 to 20 cents lower than Chicago prices, or that hogs could be shipped from St. Louis to Chicago and make money.—The Chicago Drovers Journal.

New Stock Yards Buildings.—Nearly \$2,000,000 worth of new buildings are in the course of erection at the stock yards in Chicago. Schwarzschild & Sulzberger's new packing house at Forty-first Street and Ashland Avenue, is enclosed and will be ready for slaughtering by July 15. It costs completed \$1,000,000.

Libby, McNeill & Libby have begun the erection of a gigantic smoke and tank house in the rear of their plant at Exchange and Packers Avenue. It will cost \$75,000.

Nelson Morris & Co. are erecting a large 3-story building at Forty-third Street and Packers Avenue, which will be used as a general office. The outlay is \$100,000.—The National Provisioner.

As good a sign as any yet marked that the immediate future of the beef producing industry is promising in the extreme is the fact that Schwarzschild & Sulzberger, the New York packers, who paid \$2,145 for the champion steer, Advance, at the International show last December, have almost completed a very extensive beef slaughtering house in Chicago. The plant will have a very large capacity. The Anglo-American Co., hitherto identified almost wholly with the bacon and ham-curing interest, is also putting up a beef plant and has announced its intention of actively competing for a share of the dressed beef trade. The Cudahys, who are at present without a plant in Chicago, but have extensive slaughtering houses elsewhere, are known to be contemplating either the building or buying of a beef plant here, and the Hammond folks have decided to abandon their South Omaha house and concentrate their forces in Chicago where more regular supplies of choice cattle may be obtained. This certainly looks well for the makers of beef.—The Breeders Gazette.

Chicago Still On Top.—Prophets who have announced from time to time that Chicago would soon become insignificant as a live stock and packing center must acknowledge that their calculations have been shattered of late. New buildings now being erected there will in themselves constitute a packing capacity of gigantic proportions, and these, added to the already existing plants, will place Chicago so far in the lead that talk of her decline will not find hearers for some years to come.—New York Butchers Advocate.

International Live Stock Exposition.—In the course of an official statement concerning the second annual exposition at Chicago, General Manager W. E. Skinner says: "From interest manifested and length of time for preparation, this exposition will probably be the greatest, grandest, and most comprehensive exposition of live stock this generation will have the privilege of viewing. The range men are all alive to the place of vantage given them in the exposition, and their department promises to be spirited. The management of the Union Stock Yards of Chicago is more than doubling the building capacity for the exposition, and will have the carcass content and display on Dexter Park grounds, so that all of the exposition will be together. Breeders knowing that the world will view the stock of the next exposition, are exerting their nerve and muscle to make an exhibition that will please and startle the universe by its perfection. The agricultural colleges are hard at work and their finished product exhibit promises to be a great feature. The exposition is to be run on the same broad grounds as the first, President Spoor taking the firm stand that the exposition shall in no sense drift into a money making scheme, that it must be confined as originally planned for the good of the live stock industry of the North American continent."

Sale of Red Polled Cattle.

The recent sale of Red Polled cattle from the Borden Stock Farm Herd at Touti, Ill., May 2, was in many respects a decided success. Breeders were in attendance from Virginia, Pennsylvania, Ohio, Indiana, Tennessee, Illinois, Michigan, Wisconsin, Iowa, and other western States. Capt. V. T. Hills, Delaware, Ohio, bought 9 head, paying for them \$2,325, an average of \$258.33. C. C. Vink, Plymouth, Ind., secured a trio for \$525, averaging \$175 each. J. L. Sanderson & Son, Centerville, Wis., secured two for \$605. Chas. B. Wood, Charlottesville, Va., was the purchaser of seven head for \$1,680, averaging \$240. Among this lot was the bull Gatwick 6254, by Ensign 3096, by Paris 1874, which topped the sale at \$565. Other buyers were: G. W. Farr, Maquoketa, Iowa; G. W. Steele, Rochelle, Ill.; C. J. Buchanan, Indianapolis, Ind.; J. J. Chambers, Sadorus, Ill.; J. F. Dobler, Girard, Pa.; and J. T. Jones, Kimmunity, Ill. P. G. Henderson, Central City, Iowa, president of the Red Polled Association, was also in attendance.

Thirty-four females sold for \$6,850, averaging \$201.47; seven bulls sold for \$1,425, averaging \$203.57; forty-one head sold for \$8,275, averaging \$201.87.

Gossip About Stock.

The Shawnee County Breeders' Club is to have a special meeting at the Topeka Commercial Club, at 2 p. m. sharp, Saturday, May 18, 1901.

The Union Pacific Railroad will probably build a sheep yard at Manhattan. Mr. Sam Hill, the live stock agent of the road, has recommended to his company the immediate building of sheds that will accommodate 20,000 sheep.

O. F. Nelson, of Hiawatha, Kans., last week purchased the entire herd of Herefords of J. Q. Cowee, of Shawnee County, consisting of 50 head of cows and heifers. This makes Mr. Nelson's herd number about 100. His herd is headed by Dandy Dolan, a full brother to Gudgeon & Simpson's famous bull, Dandy Rex.

Peter Blocher, Richland, Shawnee County, Kansas, reports 60 head of pigs of this spring's crop of the popular strains of Duroc-Jersey swine. Five gilts farrowed 48

FROM WASHDAY



Wickless BLUE FLAME Oil Stove

will boil, bake, broil or fry better than a coal stove. It is safe and cleanly—can not become greasy, can not emit any odor. Made in several sizes, from one burner to five. If your dealer does not have them, write to nearest agency of

STANDARD OIL COMPANY.

From Monday to Saturday—at every turn in the kitchen work—a Wickless Blue Flame Oil Stove will save labor, time and expense—and keep the cook comfortable. No bulky fuel to prepare or carry, no waiting for the fire to come up or die down; a fraction of the expense of the ordinary stove. A



TO BAKING DAY

live pigs. Mr. Blocher has his herd established so that he feels that he can give satisfaction to those who send him orders by mail. See his breeder's card in this issue.

The first day of the three days' combination sale at Indianapolis, last week, was devoted to the Herefords, and resulted in the disposal of 60 head for \$14,335, or an average of \$238.25. Forty-five females averaged \$276.33, and 15 bulls, \$160. The highest price of the day was \$800, at which figure Guy Hawkes, of Veedersburg, secured the cow, Dorana 3d.

To a Kansas City Journal reporter John Sparks, of Reno, Nevada, the owner of Armour Rose, of Convention Hall fame, says that the famous animal has been petted so much and has lived such a high life that he has grave fears that his investment will be unfortunate. No animal since the cow that caused the Chicago fire has become so closely identified with a city as Armour Rose.

J. W. & J. C. Robison, Towanda, Kans., report the following: "We have just sold the handsome 2-year-old black Percheron stallion, Popillon 24017, to C. N. Harwood, of Hammond, Kans., and A. H. Shaffer, of Fulton, Kans. This is one of the best colts we have ever had the pleasure of owning; had extra fine style and action, weighed at 2½ years old, 1,700; price, \$1,500. He was bought to use on their herds of registered Percheron mares. We have 2 more extra good imported black Percheron stallions yet for sale."

We call special attention to the advertisement of H. N. Holdeman, Girard, Kans., who breeds Percheron horses, Holstein-Friesian cattle and Poland-China swine. The desirable stock for ready sale consists of one Percheron stallion, Poland-China males ready for service, gilts bred or open, of the Missouri's Black Chief, Tecumseh and Klever's Model strains. In the Holstein-Friesian cattle males and females of serviceable age, of the very best families of the breed. Prices will be made an object if taken soon.

We take pleasure in calling attention to the removal on May 1 of the Pasteur Vaccine Company to the "Pasteur Building," 158-160 E. Huron Street, Chicago. The successful career of this concern during the last six years at its old location, 56 Fifth Avenue, Chicago, is well known to every stock raiser in the United States and Canada who has had any experience with blackleg, as the stock raisers are indebted to the Pasteur Vaccine Company for blackleg vaccine. This removal became necessary on account of the growth and extension of business. The "Pasteur Building" is an elegant 4-story building. The Pasteur Company now furnishes quite a number of reliable veterinary remedies, and has issued some instructive and interesting new literature in regard to the diseases of live stock and their treatment, which will be gladly mailed free on request.

According to the Drovers' Telegram of May 11, the Kansas City hog receipts from January 1 up to the close of last week show the tremendous gain over the same time last year of more than 200,000 head. There have been received already this year more than 1,371,000, which lacks only 4,000 head of equaling the total receipts for five months of last year. The largest receipts ever had at Kansas City in the first five months of the year were 1,686,000, in 1898. The supply the present season will, of course, not reach that figure, but aside from that year, the total for the present five months will eclipse any previously.

The Field and Farm of Denver:—The most absolute fizzle in cattle sales occurred this week in Denver when 150 Herefords from Kansas and Missouri were offered with not enough buyers to make things interesting. If we were to account for the failure we would say in the first place that the event was not properly announced and that a page advertisement in Field and Farm, such as appears in eastern agricultural journals for like auctions, would have impressed buyers with the fact that the

sale meant something and the crowd would have been here all right. As it was the entire offerings brought only \$5,925, which paid for the thirty-four animals knocked down. During the sale 21 bulls sold for \$4,025, or \$183 average, and 13 heifers sold for \$1,900, or \$146.15 average. The best animal in the sale was the 19-month-old bull Armour Wilton 97727, for \$550. This is an exceptionally well-bred animal, possessing the blood of Don Carlos, Beau Brummel and Beau Brummel Jr. on the sire side and Lord Wilton, The Grove 3d, and Wiltona Grove on the dam side. He was bred by Kirk B. Armour, of Kansas City, who sold him to Lowell, Barroll & DeWitt some time ago. He goes to the Colorado Agricultural College.

The new advertisement of Messrs. O. E. Morse & Sons, of Mound City, Kans., which appears this week, announces as ready for sale a choice lot of young Poland-China sows bred for September farrow. With these sows are being offered also, a dozen of the best young boars from the fall litters. As is well known, Morse & Son's herd is perhaps the strongest in the State in the blood of Missouri's Black Chief, sold shortly before his death for \$1,000, and acknowledged to be among the most distinguished of modern Poland-China champions. The young sows not directly descended from this hog are bred to one or the other of two of his double grandsons, selected for service on account of their superior quality. Morse & Sons have never priced their stock high but sell good stock of up-to-date breeding at prices any farmer or hogman is glad to pay. The two young bulls, also advertised are of good beef form and come from a good milking family. The older one has two Scotch tops and the younger three, each including a prize-winning bull, bred and shown by Col. Harris and a World's Fair prize-winner, bred and shown by J. H. Potts & Son, of Jacksonville, Ill. These bulls will be priced moderately.

Don't fail to notice the announcement on first cover page this week of the Maryville, Mo., Shorthorn sale, to be held May 22, 1901, by Alex. John & Son and O. M. Healy, of Bedford, Iowa. Mention was made last week of the 2 herd bulls in the Alex. John & Son's draft. Those who are wanting any of the younger things in the sale will be able to see both sire and dam in nearly every instance on sale day. In the Healy draft will be seen 8 young bulls, evenly dark red in color, and of good standard breeding. Among them is a pure Bates Kirklevington. This young fellow is 31st Kirklevington Duke of French Creek (No. 54 in catalogue), by Grand Duke of Springdale 3d, of the Bates Duchess tribe, dam 2d Kirklevington Duchess of French Creek, by 12th Duke of Hilldale. The other young bulls in the offering are Rose of Sharons and Arabellas. The 18 head of good bulls in the offering are sufficient in number and general good character to attract wide attention. The bull buying public should bear in mind that this is about the last chance where any such liberal bull offering will be at their command. In

the female section of this double offering is to be found 42 head, not counting the 15 calves at foot. All cows of breeding age are bred to the herd bulls or have their calves at foot. In the Healy draft the 2 fine Cruickshank cows—Roseleaf 4th, and Golden Empress 4th—both having calves at foot on sale day. His Rose of Sharons are of good character and display an excellent milking trait. In fact, this may be said of the entire offering of females, and we hope to see such cattle appreciated at their worth. Fancy prices are not expected. But if buyers are looking about for good straightforward producers, the kind that make good herd founders, we can recommend this double offering without stint. Do not forget that these cattle sell on May 22, the day before the Martin Flynn sale at Des Moines. You can attend both sales. Secure catalogue of this sale now. See the advertisement.

The proprietor of the Weavergrace Breeding Establishment, Chillicothe, Mo., announces "Sotham's Annual Criterion Sale," to be held in Kansas City, Tuesday, Wednesday, Thursday, and Friday, January 28, 29, 30, and 31, 1902. It has been Mr. Sotham's aim to make each succeeding sale more attractive than the one that preceded it. In order to do this, he has had to follow well defined rules; one of which is, not to offer in any one auction, animals that he can not duplicate or surpass at the next. Breeders often spoil their herds trying to make a "record breaking" sale, one that they can not soon duplicate. In herds where private sales prevail, the output is picked and an offering can not be truly representative. In very large herds, inferior animals are culled and sold at private sale or peddled about the country, and a "record breaker" attempted with a few of the "tops." The Weavergrace herd is comparatively small, and, therefore, to supply the yearly output of 50 head, requires the entire annual increase of the herd, but 2 or 3 females being reserved each year to replace worn-out cows. The Weavergrace auction being the dispersion of the herd's entire annual product, "tops" and "tails" included, just as they come, has, therefore, become in the truest sense the index to value in prime Herefords, and the rule by which normal Hereford values are measured. The Twentieth Annual Weavergrace Sale, in January, 1902, will consist as usual of 50 head about equally divided between males and females. The Corrector blood will predominate, while a large percentage of Improver-Correctors will be the star attraction. Mr. Sotham has accepted consignments for this sale from the Egger Hereford Company, Appleton City, Mo.; Messrs. F. A. Nave, Attica, Ind.; Clem Graves, Bunker Hill, Ind.; Mackin Bros., Lees Summit, Mo.; Geo. P. Henry, Goodnow, Ill.; D. W. Black, Lyndon, Ohio; Jas. Paul, Patch Grove, Wis.; and offers from other breeders are being considered. We are informed that hereafter no animals will be accepted for the Criterion Sale that have not been accepted and approved by Mr. Sotham, so that it is safe to say that Sotham's Twentieth Annual Sale will in 1902, as heretofore, be the criterion of Hereford values in America.

BIG DRESS GOODS OFFER.

For \$1.99 we furnish a FULL DRESS PATTERN of seven yards of genuine HORTON FANCY BLACK MERCERIZED CREPON DRESS GOODS, regular value, \$5.00. Cut this ad. out (No. 1501), and send to us and we will send you a big full dress pattern of SEND NO MONEY. seven yards of this fine, new style dress goods by express C.O.D., subject to examination. You can examine the goods at your express office, and if found perfectly satisfactory, exactly as represented, such a dress pattern as you could not buy from your storekeeper at home at less than \$5.00, a class of goods that is seldom found in country stores at any price, pronounced by everyone the greatest value ever shown in your section, then pay the express agent OUR SPECIAL \$1.99 and express charges. Express charges will average from 25 to 50 OFFER PRICE, \$1.99 cents. By ordering two or more dress patterns at once the charges per pattern will be much reduced. If more than seven yards are wanted, 30 cents per yard extra. THIS IS A GENUINE HORTON BLACK MERCERIZED CREPON DRESS GOODS, an elegant strictly up-to-date fabric for suits or skirts, good weight for year around wear, a firm cloth we can guarantee for service, fancy raised crepon effect, goods that we have bought direct from one of the largest mills under a positive guarantee for quality. For seven yards of this 38-inch goods (a full dress pattern), is a price based on the actual cost to produce, is less than dealers can buy in 100 piece lots, its such value as was never before offered by any house. We make this heretofore unheard of offer of \$1.99 for a full 7-yard dress pattern to advertise our Dress Goods Department, and get people everywhere to send for catalogue. Write for free Dry Goods Catalogue. ORDER TODAY! DON'T DELAY! When these goods are gone they never again can be offered at the price. Order two, four or six dress patterns at our special \$1.99 price, by getting your friends to order with you, and in this way the express charges Address SEARS, ROEBUCK & CO., CHICAGO, ILL. or each one will be almost nothing.

The Home Circle.

A MADRAGAL.

On a fair spring morning
Love rode down the lane,
Youth and Joy and eager Hope
Followed in his train:
All the primroses looked up
Such a sight to see—
Leaning from her lattice high
Mockingly sang she:
"Love's that born at spring-tide
Is too lightly won,
It will pass like silver dew
'Neath the midday sun."

All in glowing summer
Love went riding by,
Not a single downy cloud
Flecked the azure sky:
Generous roses o'er his path
Their sweet petals shed—
Lingering on the terraced walk
Wistfully she said:
"Love that burns so fiercely
May have life as brief,
It will all be dead and cold
Ere the falling leaf."

Late in golden autumn
Love passed up the street,
When the reapers' sickles flash
Through the ripened wheat:
Russet leaves about his way
Fluttered in a cloud—
Half she stayed, then turned aside
With a gesture proud:
"Love though late a-coming
Might be swift to go,
Flying as the swallows fly
From the early snow!"

Through the shivering forest
Swept the wintry blast,
Thundering o'er the frost-bound roads
Love came riding fast:
Snowflakes froze upon his beard,
Yonder lay the waste,
As he paused beside her door
Like a man in haste:
Swift she ran to meet him,
"Love, forgive, and stay,
Never any more, dear Heart,
Will I say thee Nay!"
—The Argosy.

THE MAN OF THE WEEK.

Justus Von Liebig.

(Born May 12, 1803; died April 18, 1873.)

Almost every one has heard of Liebig's extract of meat. Not so many know that the inventor of this famous extract was the greatest of agricultural chemists, and that by his chemical investigations he became one of the great benefactors of humanity.

Chemistry is the handmaid of agriculture. We are only now learning the value to the farmer of the careful and intelligent work of the chemist. What we are now learning is to discriminate intelligently between what chemistry can do and what it can not do. It is important to understand its limitations. Time was when too much was expected of the chemist and his science.

Justus Liebig was born at Darmstadt. He was educated in the gymnasium of his native city, and in the universities of Bonn and Erlangen. After completing his university studies, he spent two years in Paris pursuing investigations under the greatest French chemists. He was attracted to chemistry when a mere boy, and spent his life in devotion to a science which grew amazingly in importance during his lifetime, largely by reason of his genius and industry.

In 1837, Liebig attended a meeting of the British Association for the Advancement of Science, reading on that occasion a paper which attracted the attention of the English chemists, who invited him to draw up two reports, one of which was to be on organic chemistry. Out of this suggestion grew a work which was published in 1840 under the title, "Organic Chemistry in Its Application to Agriculture and Physiology." Twenty-five years later, when chemistry was nearly all there was of scientific agriculture, a noted German scientist said: "The year 1840 was the birth year of scientific agriculture. Liebig's book was the seed from which already such wondrous growths have been quickened."

Liebig's book set forth what has been called the "mineral theory of plant nutrition," as opposed to the old "humus" theory. It laid great stress upon the importance of nitrogen. "We can not suppose that a plant would attain maturity, even in the richest mold," said Liebig, "without the presence of matter containing nitrogen; since we know that nitrogen exists in every part of the animal structure. The first and most important question to be solved, therefore, is: How and in what form does nature furnish nitrogen to vegetable albumen, and gluten to fruits and seeds?"

The nitrogen question is still the important question in agriculture, but its form is changed. How can nitrogen be obtained most economically is the problem of the farmer of to-day. The importance of this element, as it appeared to Liebig, will appear from the following paragraph, quoted from the work already mentioned:

"A certain portion of nitrogen is exported with corn and cattle; and this

exportation takes place every year, without the smallest compensation; yet after a given number of years, the quantity of nitrogen will be found to have increased. Whence, may we ask, comes this increase of nitrogen? The nitrogen in the excrements can not reproduce itself, and the earth can not yield it. Plants, and consequently animals, must derive their nitrogen from the atmosphere."

How plants derive their nitrogen from the atmosphere was not explained till many years after this declaration was made, and not till after the debate between the supporters of Liebig and the advocates of the "humus" theory had been almost unanimously decided in favor of the former. Yet this does not diminish the value to agriculture of the work of Baron Liebig.

"Although the views of Liebig were first published in 1840," says Dr. H. W. Wiley of the Department of Agriculture at Washington, "and were placed before the farmers of America as early as 1845, we find that as late as 1848 grave doubts of their accuracy were entertained by those in charge of the Agricultural Division of the Patent Office." In the introduction to the American Farmer's Encyclopaedia, published in Philadelphia in 1844, this guarded statement is made: "It must, nevertheless, be owned that, though generally adopted, the accuracy of some of Liebig's results has been more than questioned by distinguished chemists in Europe and the United States."

Dr. Wiley has said that the publication of Liebig's work in 1840 "marked a complete change in the theories of chemistry in respect of agriculture," and that, "If Wurtz could say, 'Chemistry is a French science, founded by Lavoisier, of immortal memory,' with all the greater propriety may we say of the agriculture of to-day, 'Agriculture is a chemical science, founded by Liebig, of immortal memory.'"

The day after Liebig's death, the London Times said: "In a practical country like England his name will doubtless be remembered less for his purely scientific attainments than for the advance in practical agriculture which has followed from his researches into the laws of chemistry."
Denver, Colo. D. W. WORKING.

The Etymology of Boss, "Calf," "Cow."

GEORGE HEMPL, PRESIDENT OF THE AMERICAN DIALECT SOCIETY.

The call "Co' boss" is familiar to most of the inhabitants of our Northern States and Canada. In fact, it has something poetic about it for many of us, reminding us of fields and lanes and woods and the mysterious suggestiveness of the coming on of night. And so it is not strange that the word boss has for most Americans an interest which other farm words lack, and that people often inquire as to its origin. Its practical identity in form and meaning with Latin bos, together with the improbability of farm hands dropping into Latin diction in hailing cattle, has wrapped the etymology of the word in a tantalizing mystery. I have long tried to dispel this cloud and get at the plain facts of the origin of the word, and, now that I have succeeded, it seems to me that the general interest in the expression warrants me in publishing its history in a non-technical journal.

Bartlett was, probably, the first to call attention to the word, which he presents in the diminutive form bossy, which reference to Greek moschos "calf." It then entered the larger dictionaries, and is referred to Latin bos in Webster, the Century, and the so-called Standard. The first gleam of the truth is to be found in the Century, where the Icelandic call bas is referred to: "cf. Icel. bas, an exclamation used in driving cows into their stalls (bass, a stall, boose: see boose)."

In America the word is rarely heard except in the call, where it has acquired almost the character of a name, and is often written with a capital, and sometimes confounded with Bess. The form of the call does not vary much, being Come boss, or bossy, or Co' boss, in the North, and Sook boss, or soo' boss in the Midland. In England the word seems to be rare in calls: the only certain information that I have received comes from Somersetshire, where Mr. G. Sweetman of Wincanton reports Coop Bossey (that is, Come up, bossy), as a call to calves. Perhaps the call, Boosh, booshie, that Miss K. Irvine of Lerwick reports from the Shetland Islands, as used in calling cows and calves, is the same, for the old Norse call kus, kus, appears in northern England with sh: cush, cusha, cushy, etc. But the word is in frequent use in southern, or Saxon, England, as a common noun. It occurs in

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the forms bos or boss, bus or buss, bossy, bossy-calf, bossa-calf, boss-calf, buss-calf, and busk, with the meanings, "young calf," "unweaned calf," "calf too long unweaned," "child too long unweaned," "spoil child," "milk-sop." Most of this information is derived from the invaluable "English Dialect Dictionary," of Professor Wright, who erroneously compares Hessian busseling, low-German botlink, "young steer," which would require a "t" in the English word:

The diversity of form seen in boss, buss, busk, is important. It can be explained only on the supposition that the forms represent the detached first element of a compound in which an old long vowel suffered shortening at two different periods of its development. Such a compound is boss-calf or buss-calf. The k of the variant busk is simply the detached c of calf. At first sight, bossy-calf or buss-calf strikes one as a compound of two equivalent words, like pussycat. When we remember, however, that the o and u of boss and buss represent a long o, later long u, which became short before the consonant group sk, we see that the first part of the compound is no other than the word boose, boosy, Middle English bos, *bosy, Old English *bos, bosig, "cow-stall." A boss-calf, or buss-calf, is, then, a boose-calf, that is, a calf that is still allowed to stay with the cow in the boose, or stall. Exactly the same notion is found expressed in dialectic German Stalkalb.

The use of boss or buss for boss calf or buss calf is parallel to the use of Jersey for Jersey cow, pug for pug dog, Shanghai for Shanghai chicken, canary for canary bird, etc. That what was originally a word for calf has come to designate a cow, is to be observed in many similar cases. The animal grows up, but its owner continues to call it by its baby name, which thus becomes a sort of pet name, for which a diminutive, like Bossy, may be formed. Similarly, Sook, originally a form of suck, still addressed in Great Britain and some parts of our country to calves only, is in most of our Midland and South a call to cows, appearing as Sook boss, Soo' cow, and in many variations.

I may take this occasion to state that many more answers to my test-questions must come in before I can complete the task of outlining our dialect districts, which I began some years ago. Every one is, therefore, urged to devote a postal card and a few minutes' time to the answering of the following few questions. If there is uncertainty as to any point, it should simply be passed over, and those questions be answered that can be answered without difficulty or delay.

- (1) Name the town, county, and State for which you are reporting, whether you live there now or not.
- (2) Do most people in your neighborhood say "Get a pail of water" or "Get a bucket of water?"
- (3) "Fry it in the spider," or "Fry it in the pan," or "Fry it in the skillet?"
- (4) Does the ho in hog resemble ha! or haw?
- (5) Does the o in on resemble ah! or awe?
- (6) Does the a in past resemble that in part or that in pat, or is it intermediate in quality?
- (7) Does the a in calm resemble that in cart or that in cat?
- (8) Does the exclamation Ah! rhyme with There you are?
- (9) Spell as best you can the word or sound that farmers use in calling cows from pasture.
- (10) Your name.

Replies should be sent to me at No. 1033 East University Avenue, Ann Arbor, Michigan. If written on a postal card, as shown below, lengthwise, as the print runs on the other side, these replies can be incorporated in the files without my copying them. Thus:

- (1) Battle Creek, Calhoun Co., Mich.
- (2) Pail.
- (3) Spider.
- (4) Ha.
- (5) Ah.
- (6) Pat.
- (7) Cart.
- (8) No.
- (9) Co' boss.
- (10) J. W. Wilson.

Story for Modern Mothers.

Clifford was exceedingly naughty to-day.

I have offered him 50 cents to submit to being whipped, and he has taken the matter under advisement.

I am determined to whip him if I have to pay him \$1.25.

I feel I am quite right in paying my boy for being whipped.

It teaches him quite the value of money.—Detroit Journal.

State of Ohio, City of Toledo, Lucas County, ss.

Frank J. Cheney makes oath that he is the senior partner of the firm of F. J. Cheney & Co., doing business in the City of Toledo, county and state aforesaid, and that said firm will pay the sum of One Hundred Dollars for each and every case of Catarrh that can not be cured by the use of Hall's Catarrh Cure.

FRANK J. CHENEY.
Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886.

(Seal.) A. W. GLEASON,
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Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

F. J. CHENEY & CO., Toledo, O.
Sold by Druggists, 75c.
Hall's Family Pills are the best.

Mothers! Mothers!! Mothers!!!

Mrs. Winslow's SOOTHING SYRUP has been used for over FIFTY YEARS by MILLIONS OF MOTHERS for their CHILDREN while TEething, with PERFECT SUCCESS. IT SOOTHES the CHILD, SOFTENS the GUMS, ALLAYS all PAIN, CURES WIND COLIC, and is the best remedy for DIARRHOEA. Sold by druggists in every part of the world. Be sure and ask for "Mrs. Winslow's Soothing Syrup," and take no other kind. Twenty-five cents a bottle.



A Dairying Proposition

does not go badly with that of raising No. 1 Hard Wheat. Both are satisfactory in the Great Agricultural districts of Manitoba, Assiniboia, Alberta and Saskatchewan. Most favored districts in Western Canada.

Mixed Farming is an assured success.

Every condition is favorable. Schools, Churches, Railways, Climate meet every requirement.

By letters from settlers we find after a few years' residence, one man who came to Western Canada with \$75, is now worth \$10,000; another who brought \$1,000 is now worth \$50,000; another who came with barely enough money to buy a team, is now worth \$20,000, and so on.

These lands are the most valuable on the continent. Railroad and other lands at low figures adjoin Free Homestead Lands. For fuller information, maps, pamphlets, etc., address F. Pedley, Superintendent of Immigration, Ottawa, Canada, or to

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Special low excursion rates during February, March and April.

The Young Folks.

THE CROAKER.

Once on the edge of a pleasant pool,
Under the bank where 'twas dark and cool,
Where bushes over the water hung,
And rushes nodded, grasses swung,
Just where the crick flowed out the bog,
Theer lived a grumpy and mean old frog,
Who'd set all day in the mud and soak,
And jest do nothing but croak and croak.

Till a blackbird hollered, "I say yer'e now!
What is the matter there below?
Are you in trouble, er pain, er what?"
The frog sez, "Mine is a orful lot;
Nothin' but mud and dirt and slime
Fer me ter look at jest all the time;
It's a dirty world!" so the ole fool spoke,
"Croakity-croakity-croakity-croak!"

"But yer lookin' down!" the blackbird
said;
"Look at the blossoms overhead,
Look at the lovely summer skies,
Look at the bees and butterflies,
Look up, ole feller. Why, bless yer soul!
Yer lookin' down in a mus'rat hole."
But still, with a gurglin' sob and choke,
The blamed ole critter would only croak.

And a wise ole turtle who boarded near,
Saz ter the blackbird, "Friend, see here;
Don't shed tears over him, fer he
Is low-down jest 'cause he likes ter be;
He's one er them kind er chumps that's
glad
Ter be mis'rable like and sad;
I'll tell yer something that ain't no joke,
Don't waste yer sorrow on folks that
croak."

—Joe Lincoln, in Exchange.

Queen Victoria's Jewelry.

The jewels of the crown, the regalia, as they are called, are quite distinct from the personal property of the sovereign, and include such emblems of sovereignty as crowns, scepters, state bracelets, jeweled orbs, and the valuable collections of intaglios and cameos, which include the seals and signals of the English kings from the middle ages onward.

The total value of the regalia exceeds £3,000,000, the great ruby alone in the crown made for Queen Victoria's coronation being valued at £110,000. One of the most important and historically valuable of the regalia is St. Edward's crown, which is always carried on the occasion of each successive coronation, while the Queen Consort's crown, made for Mary of Modena, wife of James II, is also a most interesting relic of English history, and will probably be used again for Queen Alexandra at the coronation.

The Imperial State Crown made for Queen Victoria in 1838 contains the most remarkable individual jewel belonging to the crown, the great ruby given to Edward the Black Prince by the King of Castile. A circlet of open work in silver contains the great sapphire from the crown of Charles II, which was bequeathed to George III by Cardinal York, with other Stuart treasures, while the clusters of colored stones are relieved by trefolls of diamonds. Altogether the crown contains, besides the great ruby and sapphire, 11 emeralds, 4 rubies, 16 sapphires, 277 pearls, and 2,783 diamonds. The journeys of the crown are performed in a specially constructed box lined with white velvet, and the velvet cap turned up with miniver, which is always worn with it, is placed in the same luxurious receptacle.

The jeweled orbs, which also form an important item in the ceremonial of the coronation, are of very ancient origin in connection with the royal insignia, and an orb surmounted by the cross was an ancient Christian emblem first found in the time of Edward the Confessor.

Bracelets have from earliest times been emblematic of sovereignty, and were worn by the kings of Babylon and Assyria. Even now, in Persia, only the shah himself or his sons may wear them. They were used at the coronations of various English monarchs, notably those of Richard II, Henry VIII, Edward VI, Mary, and Elizabeth.

The bracelets which are at present among the crown insignia are supposed to have been those made for Charles II, and are 1½ inches in breadth and 2½ inches in diameter. They are of solid gold, lined with crimson velvet, and bear the emblems of the three kingdoms and the fleur-de-lis of France in exquisite champleve enamel work. The Irish harp is in pale blue enamel, the rose of England in deep crimson, the thistle in pale greens and purples, and the fleur-de-lis in a rich, deep yellow.

The plate used on state occasions at the royal palaces, valued at several millions, is also crown property, and is transported from Windsor to London for the various state functions in the shape of court balls, concerts, or dinners. Owing to the fact that in the reign of Charles I everything of value was melted down, the crown gold plate is comparatively modern. The magnificent gold dinner service for 150 people was made by Rondell & Bridges, who were also intrusted with the making of the crown for Queen Victoria's coronation.

Besides the service there are some hundreds of gold plates for use at the state balls. All the gold plate is kept at Windsor in what is known as the gold pantry, which contains, besides hundreds of magnificent salvers and bowls, two complete services, which are now infrequently used together—the "Lion" service and the "Crown" service, each containing some 70 dozen plates. In addition to the crown plate, the late queen had a great deal of both silver and gold articles of service which were personal gifts, and of these were a pair of beautiful silver dishes presented by the Emperor Napoleon III and the Empress Eugenie, which were in constant use by her late majesty.

The famous Koh-i-noor is not, as is usually supposed, part of the regalia, but was the private property of Queen Victoria, who had it made into a brooch, which was kept at Windsor, and worn occasionally at state functions. It was exhibited at the great exhibition of 1851, and at that time was valued at £140,000. In its original uncut state it weighed 800 karats, but after being cut and recut its weight is now only some 106 karats.

A curious superstition attaches to this stone in India, namely, that it carries with it the sovereignty of Hindustan, and whether there is any credence given to this belief over here or not, it is certain that the Koh-i-noor is so carefully preserved at Windsor that no one except the official intrusted with its safety knows its whereabouts.

The late queen, of course, had an enormous quantity of valuable jewelry, which was her own property, and which she could dispose of as she wished. The value of these personal possessions is estimated at well over \$2,500,000, and including the many magnificent gifts made to her on the occasion of her first jubilee. These included gifts not only from every class of her own family and people, but offerings from almost every potentate of Europe and Asia; a beautiful green jade scepter from the emperor of China, and a gold casket from the sultan of Lahore. Her late majesty's diamond jubilee in 1897 was also responsible for many valuable gifts. One of these was a magnificent diamond and pearl brooch presented by the princess of Wales and her children, the duchess of York, and the duke of Fife. The members of her late majesty's household on the same occasion presented a bracelet of beautiful workmanship, designed by Princess Henry of Battenberg, consisting of medallions set in brilliants, the medallions engraved with the national emblems and the lotus flower, representing the colonies.

The late queen was not particularly fond of wearing jewelry, and always preferred those gems which had some personal association for her, especially any gifts from the Prince Consort, or her children. She possessed many elegant rings, but rarely wore them. The rings which never left her fingers were one composed of the hair of the Prince Consort, and another which had been his gift to her on their engagement. On state occasions Queen Victoria wore a wonderful riviére of huge single-stone diamonds, and a small crown of diamonds in a conventional design was also frequently worn at drawing rooms and state dinners.—London Express.

Blind Moose's Friend.

From the region north of Duluth comes a story of a blind moose that is led about by one of his mates, taken by him to feeding grounds, and protected from wolves.

Last fall some hunter shot at this moose, but instead of killing him, succeeded only in blinding him. Woodsmen have had opportunities to watch the animal more or less during the winter, and have been much interested in him. The moose does not appear to have suffered greatly from the loss of his eyes, and is sleek and fat. He is a magnificent specimen, with antlers that branch nearly 6 feet.

Moose form so-called yards in winter in places where there is abundant brush. When the feed about one yard is exhausted they make another some distance away, and there they travel in circles as before, eating the small trees and branches clean of tips and buds. If alone and forced to shift for himself, a blind moose would die of starvation.

To this blind moose there has attached himself a younger bull, and the two are constantly in company, say those who have seen them. The younger moose is the guide and friend of the blind one. One woodsman who watched them for hours one day, says that the younger led the elder to the best bushes about the yard. It had then been eaten pretty clean, and was soon to be deserted, and it was with some difficulty

CONSTIPATION

It is surprising how many people there are who allow themselves to become and remain constipated. They apparently do not know that this condition poisons the entire system. Not immediately of course, but after a little time as the poisonous impurities accumulate they attack the vital organs and undermine the constitution. As a result, the victim becomes pale, hollow-eyed and sallow, the breath is foul, the head aches frequently, the strength slowly declines and the once strong, active body becomes weak and nervous.

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is a cleansing tonic and restorative just suited to such conditions. It is a genial stimulant for the stomach, liver and bowels, purifies the system thoroughly and invigorates the kidneys, conveying strength and new life to the whole internal organism. Under its marvelous reviving influence there is at once a brightening up in body and brain, renewed energy, strength, vim and cheerfulness.

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that the young animal was able to lead the other to clumps of twigs. The blind moose showed sagacity in following, and was almost able, probably by an abnormal development of the sense of smell, to go without assistance.

Wolves are plenty in the neighborhood of moose yards, and the backs and necks of the companions showed plainly the marks of fights with them. It was plain, too, from the position of the wounds on the smaller bull that he had borne the chief attack and had defended the other.

The blind bull has developed a wonderful sense of smell. Even the slightest breeze seems to carry his sharp nose knowledge of the presence of a man, and he will charge up the wind at once. It is easy to keep from him, for once the scent can not help him, he loses all trace of his enemy and wanders aimlessly about, bumping against trees, and tumbling over obstacles. From these the young moose rescues him and leads him back to the well-beaten yard, where the two seem to live in solitude.

Moose are gregarious animals, and that these two live thus alone, the younger one preferring the society of an old, blind bull to that of the herd that has dropped them both, is suggestive and interesting.—Detroit Journal.

Gay Deceivers.

I read a capital story about American women and their boots a day or two ago. It appears that they are very anxious that people should fancy that they have small feet, and that they do not like to put their shoes outside their doors at hotels, for fear that their neighbors passing along the corridor should make remarks on the size of their footwear. So they keep a pair of shoes several sizes too small for them, and, after carefully putting a few specks of mud or a little dust on them, leave them outside the door for other women to envy their small size. The shoes which they have been wearing they clean themselves, and never trust them to the hotel porter. In this way they humor their feet and their vanity at the same time, and all parties are, or should be, satisfied. It is an ingenious idea, and that is how it is done.—London Sketch.

"Oh, sir please, I have swallowed a pin!" exclaimed a servant girl, running into her employer's study.

"Never mind, Mary," he replied, deep in study; "never mind, here's another," drawing one from his pin-cushion.—Chicago Journal.

The Three Million Acre FARWELL RANCH (Also known as the X. I. T. Ranch and the Capitol Syndicate Ranch) in the Panhandle of Texas FOR SALE IN TRACTS TO SUIT.

The land is largely chocolate or black sandy loam, deep, rich, capable of producing forage crops in great abundance. It is thickly coated with buffalo, mesquite, grama, sedge and other choice grasses. Rainfall ample for production of forage crops, grasses and fruits. Admirably adapted for Grapes, Pears, Peaches, Apples, Plums, Melons, etc. An inexhaustible supply and excellent quality of water is procurable at an average depth of 125 feet.

The altitude varies from 2300 feet at the south to about 4700 at the north. The temperature is equable and the climate unexcelled for healthfulness. This is the best cattle and stock breeding country in the world. Panhandle cattle are of very superior quality, a carload of steers bred on this Ranch having been reserve number for the grand champion carload of fat steers at the International Live Stock Exposition in Chicago, December, 1900. The stock subsists on the pastures the entire year, finding very nutritious food in the cured native grasses. This is an unprecedented opportunity for those desiring to engage in the stock farming business or for investors willing to hold for appreciating values. The small ranchmen in the Panhandle have made more in recent years for the capital and energy invested than the farmers in any section of our country.

The Ft. Worth & Denver City Ry. traverses the north end of this land, the Pecos Valley and Northeastern Ry. (part of the Santa Fe system) the south end, and the Chicago, Rock Island and Pacific Ry. is constructing a line from Liberal, Kas. to El Paso, Texas, which will soon traverse the middle of it.

Title perfect. Will be sold in solid blocks to suit purchaser for cash or very liberal time payment.

To inspect lands call on A. G. Boyce at Channing, a station on the Ft. Worth & Denver City Ry. in Hartley Co., Texas, and for full particulars write him or Wm. Boyce, agent, Amarillo, Texas; or Geo. Findlay, agent, 148 Market Street, Chicago, Ill.

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Business cards or miscellaneous advertisements will be received from reliable advertisers at the rate of \$5.00 per agate line for one year.

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Electros must have metal base.
Objectable advertisements or orders from unreliable advertisers, when such is known to be the case, will not be accepted at any price.

To insure prompt publication of an advertisement, send cash with the order; however, monthly or quarterly payments may be arranged by parties who are well known to the publishers, or when acceptable references are given.

All advertising intended for the current week should reach this office not later than Monday.

Every advertiser will receive a copy of the paper free, during the publication of the advertisement.

Address all orders:

KANSAS FARMER CO.,
116 West Sixth Ave., Topeka, Kans.

NOTICE EXTRAORDINARY. BLOCKS OF TWO.

The regular subscription price for the KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, and no single subscription will be entered for less than this price, every old subscriber is authorized to send his own renewal for one year and one new subscription for one year with one dollar to pay for both. In like manner two new subscribers will be entered, both for one year for one dollar. Address, Kansas Farmer Company, Topeka, Kans.

Governor Stanley has issued his proclamation designating Thursday, May 30, as Memorial Day. Memorial Day as this generation has known it, can not continue long to be observed with the aid of those who took part in the great war of the sixties.

The Kansas State Board of Agriculture has received from the Agricultural College of Michigan a request for about 250 volumes of its different reports, and from the Agricultural Department of the University of Illinois a request for 100 volumes, for use by their advanced classes in agriculture and live stock husbandry. Prof. Mumford, of the Michigan college, writes: "Our young men are especially interested in questions relative to live stock husbandry, and will appreciate more than I can tell this series of publications."

The prospects for the National Swine Breeders' show, to be held at Kansas City, October 7-11, 1901, are encouraging. Subscriptions in the way of special prizes are coming in at a very lively rate. Quite a number who have not received the blanks have already sent in donations for the special prize list. It is gratifying to note that Kansas breeders are especially active and generous in this respect. The managing committee are quite anxious to hear from all breeders who desire to help make this show a success before the first of June. Breeders who have not already received blanks should address Frank B. Winn, secretary, 1500 Grand Ave., Kansas City, Mo.

NEW THEORY OF THE SUN.

Prof. Lucien I. Blake, head of the school of electricity at the University of Kansas, lectured recently at Kansas City on new theories regarding the sun. His lecture was illustrated by means of stereopticon views showing some of the discoveries made by means of the bolometer, an invention of Prof. S. P. Langley, of airship fame, of Washington, D. C.

Professor Blake stated that this in-

strument had demonstrated that the sun gives out millions of rays of heat, which it was impossible to detect by the spectroscope or any other instrument prior to the invention of Professor Langley. The sun was also found to have electrical effect upon the earth, in a manner never before known. These conditions, in a lesser degree, obtained with the other planets, and as a result, practically a new astronomy has been developed.

Aside from the interest these discoveries have for scholars, Professor Blake pointed out there was a practical value. He said it was altogether probable that they would result in accurate predictions of the length of the seasons for two or three years in advance. It could be foretold with considerable accuracy whether a summer was to be long and unusually hot or whether the winter was to be short and very severe, and vice versa.

The new science was too new, he said, to tell accurately just how far these meteorological results could be foretold, but he expressed the belief that the science would prove of considerable practical value in determining crop prospects.

GREAT COMMOTION IN WALL STREET.

Thursday, May 9, 1901, will long be remembered by the speculating fraternity of the world as a day of the most terrific changes in the market prices of corporate shares ever experienced. It may be thought by some that the ordinary, industrious citizen, who attends to his own affairs, and lets speculation and stock gambling alone, can not be affected by these commotions. The great panics of the past, and their effects upon every industry and in every home of the country, are sufficient evidence that these commotions do interest every citizen. This fact may become more apparent upon following the path of the recent financial storm.

It has been known for many months that attempts were being made to consolidate the railroads of the entire country into a very few great systems. The plan for doing this has been by the formation of a great financial syndicate to buy up the shares of the several roads sought to be combined into one system. It was not necessary to obtain all of the shares in any road; a bare majority of the stock answered every purpose.

Now these shares or "stocks" constitute a very large portion of the "properties" dealt in on the New York Stock Exchange. This stock exchange is a corporation whose membership is limited in numbers. No one not a member may buy or sell on the exchange except through a member to whom a commission or brokerage must be paid. Transactions through the stock exchange have been very large lately, so that the commissions of members have been enormous. "Seats," or memberships, in the exchange are, therefore, very valuable. A few years ago \$25,000 was paid for a seat, and this price was then thought remarkable. Lately there have been but few sales, but \$60,000 is spoken of as a reasonable figure, and there are doubtless many who would gladly pay \$100,000 could one of these coveted memberships be thereby obtained. The rules of the exchange are very strict as to fulfillment of contracts with brother members. Forfeiture of membership, as will readily be believed, is too great a penalty to be incurred, if possible to avoid it.

Going back to the recent excitement, it should be noted that among the consolidations which were taking place three western railroad systems had become so related that it was believed that a controlling interest in the Northern Pacific would carry with it control of the Great Northern and the Burlington. Capitalists had believed that the syndicate headed by J. Pierpont Morgan was in control of the Northern Pacific. Another combination known as the Harriman syndicate discovered that the Morgan interests lacked something of owning a majority of Northern Pacific shares. Brokers representing the Harriman interests began buying Northern Pacific. This became an "active stock."

There are always dealers who sell any stock whenever it is a little higher than the average, even if they have none to deliver. They depend upon buying on an expected depression in the market and thus filling their contracts at a profit. These are known as "short sellers" or "bears." The large transactions in Northern Pacific and the sharp rise in price attracted the attention of the bears and they sold many thousands of shares. Another class of traders in Wall Street are on the lookout for stocks that are likely to rise. A syndi-

cate of these suspected that there was a contest coming for control of Northern Pacific and bought all that anybody would sell. So, too, both the Morgan syndicate and the Harriman syndicate were persistent buyers and each refused to sell a single share. It soon became apparent that much more Northern Pacific had been sold than was in existence. Then came a wild scramble on the part of the "bears" to buy at any price, hoping to tempt some one of the three holders to sell enough to fill their contracts, for in Wall Street the one thing that is chiefly to be avoided is failure. This situation became acute on May 8 and Northern Pacific was bid up to \$155 per share.

That this was a high price will be realized when it is known that the highest price at which it was sold at any time in 1899 was \$57.50 per share, while in 1897 it sold as low as \$11 a share, and in 1895 transactions were had at \$2.50 a share.

During the night of May 8 the fact that there was a "corner" in Northern Pacific became fully realized. The Morgan syndicate had stock and contracts for stock enough to assure a safe majority and control of the property if the shares contracted could be delivered. The Harriman syndicate found that it too had bought a majority of the stock. The "bull" speculators held large blocks of the stock and contracts for more. The bears became frantic on realizing the situation, and on May 9 they bid Northern Pacific up to \$1,000 a share. Transactions at \$600 to \$700 a share were numerous.

To buy these shares at such prices called for large sums of money. The bears, who must have Northern Pacific, were willing to sell everything else they possessed to obtain money with which to buy the shares which were soaring so high. This sudden marketing of other stocks caused them to fall rapidly in price.

To fully understand the violence of this fall it is necessary to remember that a great many people buy stocks on speculation. They usually pay 10 per cent of the selling price of the stock and the broker's commission, leaving the stock with the broker for security for the balance. If a stock goes down the owner is expected to pay additional money enough to keep good his 10 per cent margin. If he fail to do this the broker or his banker may sell out the stock, accounting only for so much of the 10 per cent as shall not have been consumed by the loss and brokerage on selling out.

When all stocks except Northern Pacific went down there were rapid calls from the banks for margins. Money was rushed forward, but the fall was so rapid that in many cases it could not reach the banker in time to prevent selling out. Thus immense additional sales were forced upon a falling market, and thus the all of many a speculator was wiped out in an hour. The average fall of what are known as active stocks was above \$30 per share of \$100. Twenty million dollars was sent from Chicago to New York during the panic. All over the West were persons who were "trying their luck" in Wall Street. They are not saying a great deal now but if the coming summer shall not disclose a crop of defaulting cashiers and broken merchants the experience of the past will fail.

So far no great failures have been reported as a sequence of the great financial commotion. There seems to be a truce among the parties contending for Northern Pacific. To the surprise of the "bears" they were allowed to settle by paying to purchasers the difference between the prices at which they had agreed to furnish the stock and \$150 per share. This quieted the panic, and other stocks quickly resumed their normal prices. But a lot of "lamb" had been fleeced of their 10 per cent margins.

Every honest financier realizes that the country, indeed the entire western world, narrowly escaped a great calamity. Had the bulls exacted from the bears the full penalty they were in position to enforce no doubt tremendous bank failures in New York would have resulted. The banks of the entire country keep large portions of their money on deposit in New York. The failure of the bank in which a Kansas bank carries heavy deposits might easily compel the Kansas institution to close its doors. This would tie up the funds of the merchant, the stockman, and the farmer who had deposits in the closed banks. The commotion was more severely felt in London than in Kansas.

It is to be hoped that the contest of the financial giants will not be resumed, for it can not be hoped that another such commotion will pass without more serious disaster.

WHEAT CROP REPORTS.

This week's reports on the Kansas wheat crop are somewhat conflicting. The official reports, through the Government weather and crop service, give little cause for lowering the estimates which have prevailed. The injury from drought is not serious and may be largely recovered should rains come soon.

Ten days ago the editor of the KANSAS FARMER met a crop inspector from the Chicago board of trade, who was on a tour of Kansas. He stated that traders are unable to rely on reports current, and are in the habit of sending out inspectors to ascertain the conditions. At that time he thought the Kansas prospect most favorable for a record-breaking crop. Since that time he has continued his investigations through the southeastern counties. A dispatch from Independence, dated May 13, says:

"Mr. Rawlins spent four days in this vicinity and made a most thorough examination of the wheat conditions in this territory.

"His first report was a complete surprise and very discouraging to the farmers and grain people around here. He told them there was not a field of wheat but what was damaged to some extent by the Hessian fly. The worst damage so far, he states, is in the early sown wheat. He examined several fields north and northeast of this city and found them alive with the Hessian fly. He found the fly in all three stages. In some fields he found that the fly was in the first stage and had done no apparent damage.

"This stage is called the flaxseed stage, it being only an egg which resembles the grain of that name. These eggs are found at the conjunction of the roots with the stock of the wheat, in quantities of from five to fifteen eggs in one stock of wheat. They were deposited in the roots of the wheat last fall and remained there until warm weather.

"Mr. Rawlins found other fields where the fly had advanced to the next stage or the stage of the larva. In these fields the fly had advanced from the egg to the larva, which is a small worm about one-half inch in length, and they are found in groups of about ten. In this stage the fly has moved from the roots of the wheat up to the stock and is imbedded between the leaves and the stock of the wheat.

"It is in this stage that the fly begins to damage the wheat. It sucks out the juice from the stalk of wheat and the wheat begins to die. In all the fields where the fly has advanced to this stage the wheat has all turned yellow and sickly. As yet there are only one or two fields found here where the fly has advanced to the third or matured stage. The fly has not yet reached this stage because the weather has been unfavorable for it. As soon as warm weather comes they will change to the third stage and then their worst damage begins.

The late sown wheat is looking fine and is only damaged to a slight extent. This consists of only a few fields along the Verdigris valley, and they will probably be as badly infested with this fly in two weeks as the early sown wheat in all this time.

Mr. Rawlins also spent one day examining the big wheat fields in the Caney valley in Chatauqua County. He found the fields in this vicinity damaged more than in any part of the red wheat belt. In many of the fields in that valley the fly has advanced to the third stage and damaged the wheat to such an extent that they would not be worth the cost of harvesting them.

"Some of the wheat fields in Caney valley are being plowed up and the ground planted in corn. Mr. Rawlins estimates the wheat crop in that valley at not more than 50 per cent of last year's crop, and he says that what wheat is raised will be shriveled and small berry, and will not grade more than No. 3.

"The big wheat fields in Neosho County, along the Neosho valley, were also examined by Mr. Rawlins. These fields were also found to be badly infested with the fly, and the wheat fields which raised 30 to 40 bushels per acre last year, will not average more than 10 or 12 bushels this year. The farmers in that vicinity are the only ones who seem to realize the great damage that has been done to the wheat this spring by the Hessian fly, but the fields there are so yellow and are looking so bad that the damage is too apparent to be overlooked. The farmers in this county will not believe that the wheat is damaged by the fly to any extent, claiming that the light green or yellow color of the wheat was due to the dry

weather of two weeks ago, and that since the recent rains the wheat will come out all right.

"Mr. Rawlins places the average yield per acre in the southern Kansas red winter wheat belt at not more than 10 bushels per acre, and states that the wheat crop this year can not be more than 50 to 60 per cent of last year's crop."

The fact that a Chicago dealers' inspector gave an opinion to the public, instead of confining his information to his employers alone, smacks of interested motives and will impair the confidence of many in the sincerity of his statements.

It should be observed, however, that reports of damage had some effect on the Chicago market. The following is from Monday's market report:

"A sharp reaction towards a better level occurred in the grain market today, that in wheat being helped by damaged reports, profit taking by shorts was also influential.

"Weakness at the opening in wheat, which was 70 1/2 to 70 3/4c for July delivery was caused by heavy world's shipments and increase in the quantity on passage, liberal receipts and lower cables. When sellers, influenced by these matters, had disposed of their wheat it was found there were buyers in the market for more, and under light offering and profit taking by shorts, the decline of a shade to 1/4 @ 3/4c was recovered. The reaction caused shorts to apprehend some underlying force in favor of values, and this, together with reports of damage in the southwest, particularly in Kansas, gave a sharp rally to a market that had ruled steadily upward. Under this acute reaction of sentiment the price rose rapidly to 72c."

The indications point to considerable strength in the wheat market. The statistical position favors this view. Speculators are willing to influence the market either up or down, or alternately up and down, for on the changing market they make their profits. Too much dependence should not be placed on their reports. It is probable, however, that, as usual, the Oklahoma and Kansas wheat growers will find the early market as good as any during the first half of the crop year.

TO-DAY'S MEETING AT SALINA.

It matters less who called the meeting of grain growers, to convene to-day at Salina, than that the meeting shall act wisely on the problems which will come before it. The suspicions of political manipulations which have been voiced from some quarters should not be realized. There are economic problems for which there are possible none but political solutions. The problem before the grain growers of Kansas can be solved now, if there is any present solution for it, only in a business way. The politician who would boost himself into office on the interest in the question of getting grain to market at reasonable cost should have his abilities turned into a more unselfish channel.

The charge is made that shippers have formed a combination to control prices of grain, and to monopolize shipping facilities. This is essentially an age of combinations. These, by their power, can oppress. They can take more than a fair compensation for a given service and they can, sometimes, compel the public to accept their services at their own prices. If such a combination is being so used in handling the grain of Kansas there exists an oppression which ought not to be borne by a free people.

Such a combination is doubtless a conspiracy in the eye of the common law and might possibly be restrained by the courts. But while the legal mill would be grinding out its slow grist of justice the wheat crop would be going through the mill of the shipping combine, and paying heavy toll. Possibly, too, the court of last resort would find that this is an age of combinations and that therefore the law can afford no relief.

If, then, there is neither political nor speedy legal relief for the evil complained of, is there any remedy? In the more essentially business world combination is met by combination and the battle for supremacy is a contest of organizing and executive power. Is this remedy available to the grain grower? Those who oppose this method point to long lists of futile attempts and then declare that farmers are incapable of efficient organization; that they are lacking in the necessary confidence in each other; that somebody is sure to use, for political purposes, whatever organization shall be formed; that a \$1,200-a-year service will be wanted at a dollar a day; that if the thing gets

a-going, it will be necessary only for the grain combine to lose a little money in order to take the business of the prime movers and all.

The fact that several cooperative enterprises among farmers have been made to succeed, some of them for a quarter of a century, and that they are growing into formidable organizations, monopolizing a large share of the business of the communities in which they are located, demonstrates the possibility of cooperation whenever and wherever the extortions of those who serve the community in a business way become a sufficient incentive to induce the solid men to organize and put their executive ability, and money, into a cooperative enterprise.

SEEDING THE HOG-LOT.

EDITOR KANSAS FARMER:—I have 80 hogs (all sizes) in a 20 acre lot containing prairie-grass, timber, creek, and several vacant broken out patches. Can't make a division this year. Have an unfenced alfalfa patch close to piglot. What can I put in those patches that will be good for the hogs, and yet not be killed out by the hogs before the stuff gets a start? How would artichokes, sorghum, or oats do? Give directions for whichever you recommend. Shall I put cow-peas or oats in a 15 to 20 year old orchard, or would it be best to let it alone? JOHN FROST.

Schroyer, Kans. If there is any useful plant with which such a hog-lot may be successfully seeded, and at the same time occupied, the writer has failed to learn of it. If any reader has succeeded in seeding such a lot so occupied he will confer a favor by sending the plans and specifications to this office.

The best thing to do with our correspondent's orchard is, according to the generally approved practice, to seed it to red clover. Those who have grown cow-peas in their orchards have reported favorably upon that plan. Clover and cow-peas belong to that family of plants which are able to obtain nitrogen from the air. Their decaying roots leave this element in the soil in condition to fertilize the soil. Some advocate leaving the top growth also upon the soil as a mulch in a bearing orchard. This is doubtless good for the orchard. Where feed is an object it may be good economy to harvest and feed the hay or peas, returning the manure to the orchard.

There are some other legumes which may be used profitably in the orchards. Soy-beans are doubtless suitable. Alfalfa is a legume and a powerful agent in fixing nitrogen in the soil, but experience is against its use in the orchard. It is such a rank feeder that it robs the trees of the available moisture and other elements of fertility in the soil.

VALUABLE BOOK, THIS.

The year book of the United States Department of Agriculture for 1900, it is announced, will be ready for distribution about July 1. In addition to the report of the secretary and the appendix, this volume contains thirty-one articles on each division of the original work as represented. A new feature is the publication of requirements for admission to the agricultural department of the land grant colleges, and the cost of attendance.

The year book is a volume of 888 pages, illustrated with a frontispiece, 87 plates, of which nine are colored, and 88 text figures. The regular edition is 500,000 copies, of which 470,000 are by law reserved for the exclusive use of Congress and 30,000 for the department. All others than crop correspondents must apply to their senators or representatives in Congress.

The articles include: "Smyrna Fig Culture in the United States," "Amplification of Weather Forecasts," "Commercial Plant Introduction," "Forest Extension in the Middle West," "Influence of Rye on the Price of Wheat," "Mountain Roads," "Fungus Diseases of Forest Trees," "Rabbies," "The Scale Insect and Mite Enemies of Citrus Trees," "How Birds Affect the Orchard," "Hot Waves," "Potatoes as Food," "Practical Forestry in the Southern Appalachians," "Commercial Pear Culture," "Development of the Trucking Interests," "The Date Palm," "Practical Irrigation," "Free Delivery of Rural Mails," "Successful Wheat Growing in Semi-Arid Districts."

A MANUFACTURER'S EXPOSITION.

The greatest industrial event in Kansas City each year is the annual home products show, which will be held this year from May 27 to June 5 inclusive, in Convention Hall. It will be an exposition of the products of the factories of Kansas City, Missouri, and Kansas

City, Kansas, consisting in large part of exhibits showing articles in process of manufacture. Every nook and corner of the hall from arena floor to roof garden will be gorgeously decorated and will be alive with displays and amusements. On an immense stage in the center of the arena floor surmounting the displays the greatest vaudeville performance ever offered in the West will be given afternoon and evening in addition to two band concerts daily. The roof garden will be exclusively in the hands of the woman's auxiliary of the manufacturers' association, and here, aside from the displays of the art and handwork of women and special musical and vaudeville programs afternoon and evening, the woman's auxiliary will keep house, teach school, give art and cooking lessons, do many other things that only women can do. The roof garden offers one of the handsomest promenades of the country and a magnificent view of the city. It is always the first place sought by visitors to the exposition. All railroads have granted an open rate of a fare and one-third for the round trip.

Kansas School Land for Sale.

According to the figures prepared by State Auditor Cole, there are 670,187 acres of school lands in Kansas subject to sale. Of this amount, 321,997 acres are now under lease, while the rest is free of incumbrance. Of the total, about 38,000 acres is good wheat land, and the remainder is adapted to grazing. The wheat land is located in Sheridan and Grove counties. Following is the unsold land by counties:

| County, Quality. | Acres. | Value per acre. |
|------------------------|---------|-----------------|
| Anderson, fair | 40 | \$10.00 |
| Butler, poor | 1,120 | 5.00 |
| Parber, fair | 12,680 | 1.25 |
| Chase, poor | 700 | 3.00 |
| Cheyenne, poor | 28,080 | 1.25-2.00 |
| Cheyenne, good | 28,080 | 1.25-2.00 |
| Cowley, fair | 240 | 3.00 |
| Chautauqua, fair | 2,440 | 1.50-5.00 |
| Coffey, poor | 80 | 7.50 |
| Comanche, good | 23,000 | 1.25 |
| Hills, poor | 1,560 | 1.25 |
| Elk, fair | 1,000 | 3.00 |
| Ford, fair | 33,400 | 1.25 |
| Finney | 39,120 | 1.15-1.25 |
| Gray, fair to good | 25,880 | 1.15-1.25 |
| Graham, fair | 2,280 | 1.25-3.00 |
| Grant, fair | 18,000 | 1.25 |
| Greeley, fair | 23,600 | 1.25 |
| Gove, good | 28,960 | 1.25-2.00 |
| Greenwood, fair | 520 | 3.00-4.00 |
| Hamilton, fair | 22,720 | 1.25 |
| Lane, good | 120 | 1.25 |
| Harvey, poor | 16,160 | 1.25 |
| Haskell, good | 21,200 | 1.25-3.00 |
| Hodgeman, good to mod. | 26,720 | 1.25 |
| Kearney, good | 19,240 | 1.25-2.00 |
| Kiowa | 14,440 | 1.25-2.00 |
| Logan, fair to good | 14,440 | 1.25 |
| Lincoln, fair | 80 | 1.15-2.00 |
| Lane, good | 19,740 | 5.00 |
| Morris, fair | 40 | 1.25 |
| Meade, fair | 26,757 | 1.25 |
| Morton, fair | 22,600 | 1.25 |
| Marion, poor | 560 | 2.00 |
| Ness, good | 33,040 | 1.25-5.00 |
| Ottawa, fair | 80 | 6.50 |
| Osborne, fair | 120 | 1.25 |
| Pottawatomie, fair | 120 | 1.25 |
| Pratt, fair | 3,120 | 2.00-3.00 |
| Pawnee, fair to good | 2,780 | 3.00-5.00 |
| Phillips, fair | 160 | 3.00 |
| Rooks, fair | 10,000 | 1.25 |
| Rice, fair | 320 | 4.00-7.00 |
| Rush, fair | 400 | 4.00-5.00 |
| Stevens, fair | 22,120 | 1.25 |
| Sheridan, good | 9,000 | 1.25 |
| Stafford, poor | 1,600 | 1.25 |
| Smith, poor | 10 | 4.50 |
| Scott, fair | 20,000 | 1.25 |
| Sherman, fair | 18,000 | 1.25 |
| Stanton, good | 8,960 | 1.25 |
| Thomas, good | 14,520 | 2.00-3.00 |
| Trego, fair | 16,280 | 1.25 |
| Wallace, fair | 31,080 | 1.25 |
| Wichita, fair | 20,600 | 1.25 |
| Total | 670,187 | |

Impurities in the blood produced by digestive disorders must be driven out before hot weather sets in, otherwise sickness will appear at a time when a strong vigorous body is most needed. Prickly Ash Bitters will expel all impurities and put the system in perfect order.

Publishers' Paragraphs.

The Western Rock Salt Co., of St. Louis, have their mines and works at Lyons and Kanopolis, Kans. There is nothing better than their rock salt for stock, while the crushed product is valuable for ice cream factories, for salting hides, making brine, as well as an excellent salt for curing meats.

We call special attention to the advertisement of the Farmers' Mutual Hall Association, of Topeka, Kans. This is one of the companies that has compiled in every particular with the very stringent law passed by the last legislature covering hall insurance. The men connected with this company are practical men who stand well with the business interests of the city, and it is hoped that any of our readers who want hall insurance will not fail to give this company careful consideration. Look up their advertisement this week and write them for further particulars. Last year the farmers of Kansas insured crops to the amount of seven million dollars, and this season, owing to better guaranteed protection, will undoubtedly increase last year's amount.

We are glad to call the attention of our readers to the ad. of Rippley's Fly Remover, which appears elsewhere in this issue. When we say that this preparation is put up and sold by Rippley Hardware Co., of Grafton, Ill., we need say no more to commend it to hundreds of our readers who have dealt with this firm in the past. Their reliable Feed Cooker, their many excellent patterns of sprayers, have been

widely advertised and sold. Fly time is coming, and every farmer and stock owner knows what this pest means in diminishing milk flow, loss of flesh and strength, etc., on the part of cattle and horses. A very simple and effective remedy is at hand, and one that is easily and quickly applied. Rippley's Fly Remover will both remove the flies, gnats, and mosquitos, and also, being antiseptic, is very soothing and healing. It not only drives away the cause, but it allays the effect. It is best applied with the Rippley sprayers; the hand sprayer for small herds, the 5-gallon compressed air sprayer for larger. Write to-day for full information and mention our paper.

A Twentieth Century Wonder.

We wonder what Kansas Farmer readers will think of a plow that has neither mould-board, landside, rolling coulters, weed hooks, or shares. A plow that is guaranteed not to break, wear out, or get dull inside of one year. Wonders, they say, never cease, and an implement of this nature would almost seem to be out of reason. Yet just such a plow is now within the reach of all, in the Hapgood-Hancock Disc Sulky and Gang, manufactured and sold by the Hapgood Plow Co., Alton, Ill. The Hapgood Plow Company need no introduction to our readers, they having used the Kansas Farmer quite extensively, and are among the few large manufacturers of farm implements who sell direct to the farmer. Their goods have a good reputation, and any article placed on the market and guaranteed by them will bear investigation and trial at least. The Hapgood-Hancock Disc Sulky and Gang is truly the wonder of the twentieth century. It is just as far ahead of the mould-board plow as that was ahead of the crooked stick, and it is only fitting at the beginning of a new century that they should take another step forward and present to you a plow both entirely new and novel, and on entirely new lines. Every one of these disc sulky or gangs are sold under the following guarantee by the Hapgood Company:

- "1. We guarantee it against wear or breakage for twelve months.
 - "2. We guarantee to cut a furrow 14 inches wide and 6 to 8 inches deep and with one-third to one-half less draft, and do better work than any other disc or mould-board plow on earth.
 - "3. We guarantee it to plow hard, dry ground where all others fail.
 - "4. We guarantee it to cut up and turn under without choking, cornstalks or any other vegetable matter.
 - "5. We guarantee it to scour in any land.
- "We do not guarantee it to plow very wet ground, timothy or blue grass sod satisfactorily, because the disc plow is a pulverizer as well as a plow, and of course sod or wet land will not pulverize."
- They say further: "We desire to get this plow introduced at the earliest possible moment. We have a large force of men now in our employ holding plow exhibitions, but that is not fast enough. We want every farmer to know what this plow is, and if you are ready to buy either a sulky or gang under the previous guarantee and are willing to hold a plow exhibition for us under our rules, we will furnish you with all printed matter, and you to be to no expense except furnishing the team and ground, we will pay you \$5 for your trouble. This offer is only made to the purchaser of the first plow in any neighborhood, and does not apply where exhibitions have been held or other agency established."

Their ad. will be found on the first cover page this week, and we would suggest that those interested write the Hapgood Plow Co., Alton, Ill., for full particulars, mentioning the Kansas Farmer when writing.

Pan-American Opening.

The Nickel Plate Road will sell excursion tickets from Chicago to Buffalo at \$13 for the round trip one each Tuesday in May the 7th, 14th, 21st and 28th), with limit of five days; namely, returning good on any train to and including midnight train from Buffalo on Saturday following Tuesday tickets are sold. They will be good going on all trains on date sold.

Daily train from Chicago at 10:35 a. m. arrives Buffalo 2:05 following morning; daily train from Chicago at 2:30 p. m. arrives at Buffalo 7:35 next morning; daily train from Chicago at 10:30 p. m. arrives Buffalo 4:45 next afternoon.

All trains carry through vestibuled sleeping cars. Individual club meals, ranging in price from 35 cents to \$1, and no meal in excess of the latter figure, are served in dining cars.

For sleeping car reservations and all other information call at Chicago Ticket Office, 111 Adams St., or write John Y. Calahan, General Agent, 111 Adams St., Chicago, phone Central 2067. Chicago depot, Van Buren Street and Pacific Avenue, on the Elevated Loop. (7)

St. Paul and Return, \$13.55.

For the Biennial Meeting Modern Woodmen at St. Paul, Minn., June 10-15, the Sioux City Route (Northwestern Line) will sell tickets June 8-9-10, Kansas City to St. Paul and return, at a rate of \$13.55. Write for descriptive folder of the northern hunting and fishing resorts. J. A. Buchanan, G. P. A., Omaha. A. L. Fisner, T. P. A., Kansas City.

Excursions to Buffalo Exposition.

Via Nickel Plate Road, on May 7th, 14th, 21st, and 28th, respectively, at rate of \$13 for the round trip from Chicago; good return five days from date of sale. Three through trains daily, with vestibuled sleeping cars and first-class dining car service. For particulars and Pan-American folder, write John Y. Calahan, General Agent, 111 Adams St., Chicago. Depot, Van Buren Street and Pacific Avenue, Chicago, on Elevated Loop. (8)

Leather Quarter Top Buggy, \$34.50

BUGGIES
\$34.50

Good Road Wagons, \$24

Send for our Free Vehicle Catalog Today

Montgomery Ward & Co., Chicago



Horticulture.

The Farmer's Vegetable Garden.

JOHN W. LLOYD, B. S. A., INSTRUCTOR IN HORTICULTURE.

PLANTING.

Beginning at the north end of the east row (three feet from the east boundary) the following vegetables were planted April 9th:

Row 1.—1/2 row asparagus, 1/6 row perennial onions, 1/6 row horse-radish sets, 1/6 row rhubarb.

Row 2.—1/2 row parsnips, 1/6 row parsley, 1/6 row salsify.

Row 3.—1/2 row onion sets, 20 ft. cress, 1/6 row lettuce, 1/6 row spinach.

Row 4.—Onions: 1/2 row extra early red, 1/6 row Australian brown.

Row 5.—1/2 row early beets, 1/6 row early carrots.

Row 6.—Left to be planted with late beets and carrots.

Row 7.—Peas: 1/6 row Nott's excelsior, 1/6 row Hosford's market garden, 1/6 row improved stratagem.

Rows 8 and 9.—Early potatoes.

Radishes were planted with the parsnips, parsley, salsify, onions, beets, and carrots to mark the rows so that cultivation could begin before the plants from the slower germinating seeds became visible.

All seed was dropped by hand. The small seeds were covered by means of a rake, and then the soil firmed over

boys. If a person is stingy with his melons, the boys are likely to help themselves. If they know they will be treated to melons if they call at the house, there is little danger of trouble in the patch at night.

The arrangement of the garden is shown in the accompanying diagram. It will be observed that, with the exception of rows 2 to 6 the whole garden was planted in rows far enough apart to admit of horse-cultivation. The perennial crops and those to be left in the ground over winter were together and at one edge of the garden, so that they would not interfere with the preparation of the land for the next year's planting. The crops were arranged nearly in the order of planting, so that the unplanted portion could be harrowed and thus easily kept in fine condition until it was needed for planting. The early maturing vegetables were planted in rows either alternating with those of later crops, or grouped so that when the early crops were harvested, the land could be cleared and a second crop put in.

CULTIVATION.

As soon as the plants were up so that the rows could be easily seen, cultivation was started. A one-horse cultivator with very narrow teeth was used, and was found to be just the tool for work among small plants, since it could be run very close to the row without destroying the plants by uprooting them or covering them with dirt. The soil was stirred with this tool as often

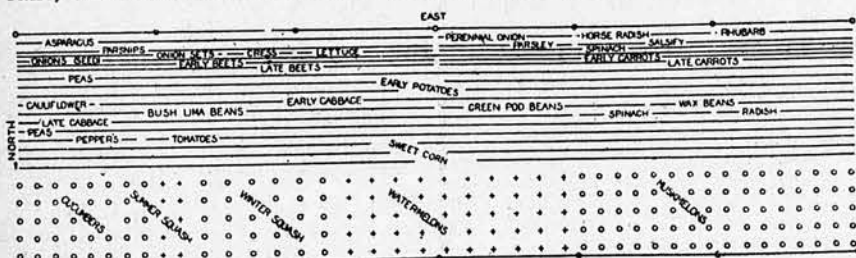


Diagram Showing Shape and Arrangement of Garden.

them with the back of a hoe or the ball of the foot. The wheel-hoe was used to cover the peas, and the one-horse plow, the potatoes.

Planting was resumed on May 1st, and the following vegetables put in:

Row 6.—1/2 row late beets, 1/6 row late carrots.

Row 10.—85 Wakefield cabbage and 19 cauliflower plants (1/6 row), 1/6 row and head cabbage (seed sown).

Row 11.—Beans: 1/2 row Henderson's bush lima, 1/6 row stringless green pod, 1/6 row saddleback wax.

Row 12.—1/6 row autumn king cabbage (seed sown), 1/6 row spinach, 1/6 row radish—the spinach and radishes to be followed by cauliflower set later.

Row 13.—Peas: 1/6 row of each variety as before.

Row 14.—Left for tomatoes and peppers.

Row 15.—Sweet corn: 1/2 row mammoth white Cory, 1/6 row Chicago market.

Radishes were planted with the beets and carrots as before.

May 23d, the unplanted area west of row 15 was harrowed, and the balance of the garden planted. Twelve pepper and 69 tomato plants were set in row 14. These plants were grown in a hot-bed, as were also the cabbage and cauliflower plants set out May 1st. If no hot-bed had been available, they could have been grown in boxes in the house. Rows 16 and 17 were planted to sweet corn, 1/2 row each of the four varieties. The rest of the garden, comprising rows 18 to 22 inclusive, was devoted to vine crops. The rows were made six feet apart, and the hills six feet apart for the cucumbers, summer squash, and muskmelons, and eight feet apart for the winter squash and watermelons. No special preparation was given the hills, in the way of fertilizer, compost or manure. The seeds were simply planted in the ground the same as corn or beans would have been. Better results would probably have been secured if compost had been used, and special fertilizing of some kind would have been necessary if the land had not been fairly rich; but the results obtained will indicate what can be done without an undue amount of labor at planting time. The plantation consisted of 40 hills of cucumbers, 10 of summer squash, 30 of winter squash, 50 of watermelons (25 each of the two kinds) and 80 of muskmelons.

It may seem to some that an undue proportion of the garden was planted to melons; but a melon patch to be worthy of the name should be large enough to furnish all the melons the family and the hired men can eat, and leave plenty to give to the neighbors'

as was necessary to keep the weeds in check and the top soil loose and open. Cultivation usually took place as soon as the soil was sufficiently dry after each heavy rain, and was continued throughout the season wherever the growth of the plants did not prevent it. Most of the vegetables in the garden were cultivated as many as six times.

Considerable hand hoeing was done between the narrow planted rows, and close about the plants in the case of cabbage, tomatoes, melons, etc. In fact, the whole garden was kept in a high state of cultivation regardless of the amount of time required, although the later was carefully noted and charged against the garden.

Weeding also was necessary, as it is in every garden, to some extent at least. All the smaller growing plants, such as parsnips, beets, carrots, onions, etc., were weeded once, while yet quite small; and somewhat later they were thinned.

THE FIGHT WITH THE STRIPED BEETLE.

Everything went smoothly until the cucumbers, squashes, and melons began to appear above the ground—and then the striped cucumber beetles came out in full force and proceeded to devour the patch. Paris green was applied by means of a dry powder gun, while the plants were wet with rain. It killed a good many of the beetles, but the plants soon began to show signs of injury, and within a few days it became necessary to replant the whole patch. Later on, air-slaked lime containing a little turpentine was applied to the plants when the beetles appeared; and it seemed to be at least partially effective in protecting the plants. Toward the end of June, when the beetles became exceedingly aggressive in their attacks, spraying with Bordeaux mixture was resorted to, and it seemed to be the most efficient remedy tried. This mixture, composed of four pounds of lime and four of copper sulphate (blue vitriol) to fifty gallons of water, is primarily a fungicide, but it seems either to kill or drive away the striped beetles better than do the usual insecticides.

OTHER INSECTS.

Few insects besides the striped beetle caused any very serious trouble. The cutworms nipped off a few newly transplanted cabbage plants, but were dug from their hiding places beside the destroyed plants, and killed. Cabbage worms were somewhat troublesome, especially on the late cabbage, but succumbed to two doses of hellebore mixed in water at the rate of one ounce to a gallon, and sprayed on the plants. The mixture was made stronger than usual because the hellebore was not very fresh. Squash bugs became numerous

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late in the season and were at least partially responsible for the almost total failure of the winter squash crop. Potato beetles were very scarce and it was unnecessary to spray the potatoes at all. A few tomato worms appeared, but were picked off and killed before serious damage was done.

TRAINING TOMATOES.

After the tomatoes had become well established and were beginning to send out side branches, a stake six feet long and two inches in diameter was driven firmly into the ground beside each plant. All the side shoots were cut off and the main stem tied to the stake. The pruning and tying was repeated as often as was necessary in order to keep the plant to a single stem and supported by the stake. In all, the plants were pruned and tied four times. This method of training keeps the tomatoes off the ground, and exposes them to the sun and air so that they ripen earlier than they would if the vines were allowed to spread over the ground. The crop is also more easily gathered, and in an unfavorable season there would be less rotting of the fruit than in the case of untrained vines, where considerable of the fruit comes in contact with the ground.

LATE CROPS.

After the early peas were picked and the potatoes dug, the land on which they were grown was cleared of vines, plowed with a one-horse plow, and pulverized by means of the narrow-tooth cultivator and a one-horse plow. It was then planted to late crops as follows: 1/2 row celery, 1 1/2 rows turnips, 1/2 row winter radish, 1/4 row spinach, 1/4 row lettuce. This was on July 23d. On the same day string beans were planted in the space previously occupied by the early planting of the same crop. This half row was not replowed; the old vines were simply hoed off and the ground hoed over. A few cucumbers for pickles were also planted in the vacant spaces among the early cucumbers.

For the celery, a furrow was opened with the one-horse plow, and the plants (which had been grown in a seed bed) were set in the bottom of the furrow. A few days after the plants were set, a heavy rain washed the dirt into the furrow and nearly buried them. The earth had to be loosened around each plant by means of a knife. Not many days later, another heavy rain necessitated a repetition of the operation. As the celery grew, the furrow was gradually filled up by means of the cultivator and hoe. When the plants were about a foot high they were "handled" and earthed up for blanching. The stalks of each plant were drawn close together and held with one hand while earth was packed about the base of the plant with a hoe until only the tops of the leaves were left exposed. Two weeks later it was necessary to again bank up the plants, since they had grown considerably in that time. It was then past the middle of October, and no further banking was necessary to blanch the stalks.

(To be continued.)

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Excursions to St. Paul.

Via the Sioux City Route (North-western Line), American Medical Association May 28-30 and 31, June 2-3; Biennial Meeting Modern Woodmen, June 8-9 and 10. Tickets for these meetings will be sold to St. Paul on above dates at one fare plus two dollars for the round trip. Perfect track and modern equipment make the Sioux City Route the best line between Kansas City and St. Paul. Write for a copy of "Outing," a new descriptive folder of the hunting and fishing resorts of Iowa, Minnesota, Wisconsin, and Michigan. J. R. Buchanan, Genl. Pass. Agt., Omaha. A. L. Fisher, T. P. A., 823 Main St., Kansas City.

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Grange Department.

"For the good of our order, our country and mankind."

Conducted by E. W. Westgate, Master Kansas State Grange, Manhattan, Kans., to whom all correspondence for this department should be addressed. News from Kansas Granges is especially solicited.

NATIONAL GRANGE.

Master.....Aaron Jones, South Bend, Ind.
Lecturer.....N. J. Bachelder, Concord, N. H.
Secretary.....John Trimble, 514 F St., Washington, D. C.

KANSAS STATE GRANGE.

Master.....E. W. Westgate, Manhattan.
Lecturer.....A. P. Reardon, McLouth.
Secretary.....Geo. Black, Olathe.

Declaration of Purposes of the Patrons of Husbandry.

PREAMBLE.

Profoundly impressed with the truth that the National Grange of the United States should definitely proclaim to the world its general objects, we hereby unanimously make this Declaration of Purposes of the Patrons of Husbandry.

GENERAL OBJECTS.

1. United by the strong and faithful tie of agriculture, we mutually resolve to labor for the good of our Order, our country, and mankind.

2. We heartily endorse the motto: "In essentials, unity; in non-essentials, liberty; in all things, charity."

3. We shall endeavor to advance our cause by laboring to accomplish the following objects:

To develop a better and higher manhood and womanhood among ourselves. To embrace the comforts and attractions of our homes, and strengthen our attachments to our pursuits. To foster mutual understanding and co-operation. To maintain inviolate our laws, and to emulate each other in labor, to hasten the good time coming. To reduce our expenses, both individual and corporate. To buy less and produce more, in order to make our farms self-sustaining. To diversify our crops, and crop no more than we can cultivate. To condense the weight of our exports, selling less in the bushel and more on hoof and in fleece; less in lint, and more in warp and wool. To systematize our work, and calculate intelligently on probabilities. To discountenance the credit system, the mortgage system, the fashion system, and every other system tending to prodigality and bankruptcy.

We propose meeting together, talking together, working together, buying together, selling together, and, in general, acting together for our mutual protection and advancement, as occasion may require. We shall avoid litigation as much as possible by arbitration in the grange. We shall constantly strive to secure entire harmony, good will, vital brotherhood among ourselves, and to make our order perpetual. We shall earnestly endeavor to suppress personal, local, sectional, and national prejudices, all unhealthy rivalry, all selfish ambition. Faithful adherence to these principles will insure our mental, moral, social, and material advancement.

BUSINESS RELATIONS.

4. For our business interests, we desire to bring producers and consumers, farmers and manufacturers, into the most direct and friendly relations possible. Hence we must dispense with a surplus of middlemen, not that we are unfriendly to them, but we do not need them. Their surplus and their exactions diminish our profits.

We wage no aggressive warfare against any other interests whatever. On the contrary, all our acts and all our efforts, so far as business is concerned, are not only for the benefit of the producer and consumer, but also for all other interests that tend to bring these two parties into speedy and economical contact. Hence we hold that transportation companies of every kind are necessary to our success, that their interests are intimately connected with our interests, and harmonious action is mutually advantageous, keeping in view the first sentence in our declaration of principles of action, that "individual happiness depends upon general prosperity."

We shall, therefore, advocate for every state the increase in every practical way, of all facilities for transportation cheaply to the seaboard, or between home, producers and consumers, all the productions of our country. We adopt it as our fixed purpose to "open out the channels in nature's great arteries, that the life blood of commerce may flow freely."

We are not enemies of railroads, navigable and irrigating canals, nor any corporation that will advance our industrial interests, nor of any laboring classes.

In our noble order there is no communism, no agrarianism.

We are opposed to such spirit and management of any corporation or enterprise as tends to oppress the people and rob them of their just profits. We are not enemies to capital, but we oppose tyranny of monopolies. We long to see the antagonism between capital and labor removed by common consent, and by an enlightened statesmanship worthy of the nineteenth century. We are opposed to excessive salaries, high rates of interest and exorbitant percent profits in trade. They greatly increase our burdens, and do not bear a proper proportion to the profits of producers. We desire only self-protection, and the protection of every true interest of our land, by legitimate transactions, legitimate trade, legitimate profits.

EDUCATION.

We shall advance the cause of education among ourselves, and for our children, by all just means within our power. We especially advocate for our agricultural and industrial colleges, that practical agriculture, domestic science, and all the arts which adorn the home, be taught in their courses of study.

THE GRANGE NOT PARTISAN.

5. We emphatically and sincerely assert the oft repeated truth taught in our organic law, that the grange—National, State, or subordinate—is not a political or party organization. No grange, if true to its obligations, can discuss partisan or sectarian questions, nor call political conventions, nor nominate candidates, nor even discuss their merits in its meetings.

Yet the principles we teach underlie all true politics, all true statesmanship, and if properly carried out, will tend to purify the whole political atmosphere of our country. For we seek the greatest good to the greatest number.

We must always bear in mind that no one, by becoming a patron of husbandry gives up that inalienable right and duty which belongs to every American citizen, to take a proper interest in the politics of his country.

On the contrary, it is right for every member to do all in his power legitimately to influence for good the action of any political party to which he belongs. It is his duty to do all he can in his own party to put down bribery, corruption, and trickery; to see that none but competent, faithful, and honest men, who will unflinchingly stand by our interests, are nominated for all positions of trust; and to have carried out the principle which should always characterize every patron, that

THE OFFICE SHOULD SEEK THE MAN, AND NOT THE MAN THE OFFICE.

We acknowledge the broad principle that difference of opinion is no crime, and hold that "progress toward truth is made by difference of opinion," while "the fault lies in bitterness of controversy."

We desire a proper equality, equity, and fairness; protection for the weak, restraint upon the strong; in short, justly distributed burdens and justly distributed power. There are American ideas, the very essence of American independence, and to advocate to the contrary is unworthy of the sons and daughters of the American republic.

We cherish the belief that sectionalism is, and of a right should be, dead and buried with the past. Our work is for the present and future. In our agricultural brotherhood and its purposes we shall recognize no North, no South, no East, no West.

It is reserved by every patron, as the right of a freeman, to affiliate with any party that will best carry out his principles.

OUTSIDE CO-OPERATION.

6. Our being peculiarly a farmers' institution, we can not admit all to our ranks.

Many are excluded by the nature of our organization, not because they are professional men, or artisans, or laborers, but because they have not a sufficient direct interest in tilling the soil, or may have some interest in conflict with our purposes. But we appeal to all good citizens for their cooperation to assist in our efforts towards reform, that we may eventually remove from our midst the last vestige of tyranny and corruption.

We hail the general desire for fraternal harmony, equitable compromises, and earnest cooperation, as an omen of our future success.

CONCLUSION.

7. It shall be an abiding principle with us to relieve any of our oppressed and suffering brotherhood by any means at our command.

Last, but not least, we proclaim it among our purposes to inculcate a proper appreciation of the abilities and sphere of woman, as is indicated by admitting her to membership and position in our order.

Imploring the continued assistance of our Divine Master to guide us in our work, we here pledge ourselves to faithful and harmonious labor for all future time, to return by our united efforts to the wisdom, justice, fraternity, and political purity of our forefathers.

The Ideal School Ground.

MRS. JOHN B. SIMS, TOPEKA, R. R. NO. 2.

If I were a painter of pictures, I should present this subject to you in vivid colors on canvas. If I were only an artist with words, it should be presented to you in such truthful, forceful, and convincing phrases, that every district in the state would immediately call meetings and proceed to do, instead of talk, and before the children entered again the portals of learning, they would first pass through an "outer gate" that would be a symbol to the beauties to come.

My ideal school grounds would differ in a few things at least, from the one to which we have become accustomed. The schoolhouse should boast of a little architectural beauty; and not so nearly resemble a dry-goods box. It should be placed upon a slightly spot, though not sky-high, as many are, but well out of the hollow.

In this land of plenty, the grounds around the buildings can, and should, be large and roomy, from 1 to 3 acres being a good size. These grounds should be inclosed with a good looking, substantial fence, and there should be a gate—with a big G. Oh, the miserable, shiftless, unsightly excuses for schoolhouse gates that we have all seen. Anything, seemingly, will do—just so it is not a gate. And yet the gate is the first and most prominent feature of entrance. As parents, we are proud of our hospitality. We welcome the stranger within our gates and proffer the best, figuratively speaking, that we have. Our gates, we are pleased to say, always "swing in," but the home of the children for six hours a day has no gate forsooth to brag of. It neither swings in nor out. The children climb over, under, and around a stile—a horrid "style" I'm sure—or wiggle in, and out, and round about, through a maze of posts, set see-saw and presenting such an appearance that no self-respecting gate would recognize them. Sometimes they must let down a bar—a thing we all despise in Kansas. Sisters in the grange, we will have to hunt our hatchets, and with them hew our order to fame and glory by smashing the bars of prejudice, carelessness, and thoughtlessness, and erect gates, suitable, artistic entrances to the schools of learning, to which our children must ever turn. Here is a work for the grange woman to do. Don't be afraid to assume the responsibility; it is your privilege and pleasure—if so you wish—to make the schoolhouse and grounds something to be proud of and which the children will grow to love. After the gate, have a walk, not a board over the muddy spots, not a rock here and there in the path worn hollow by the tread of many little feet, but a walk of gravel, if available, otherwise of cinders or bricks. It should be broad enough that Mary and Martha can walk side by side, with their arms around one another's waists—the way of walking that school girls unquestionably hold the right of. Have it lead first to the deep, wide porch over the doors, along which is a long broad step. The walk should branch here and extend on both sides of the house; on one side it should lead to the well, where it should be very liberal in its width, for in these school grounds there should be a well, kept in proper condition and with a splendid pump in it. No going to the neighbors or to the spring after every bit of water needed or used. Plant a tree near the well, and fasten a strong bench under it, made to stay. Have flower beds. There! I knew you would say, "They would not do the children any good." That's nonsense. Just try it. Make two round beds this fall, 3 or 4 feet in diameter. In one put tulips, in the other narcissus and crocus. Just imagine the delight and surprise of the little beauty-loving tots next spring when the blooms peep out at them. Have a group of different varieties of the lilac, a clump of flowering almonds, a great bed of fleur-de-lis, and a wind-break of evergreens. Then have trees, trees, and more trees. Not all over the grounds, for we must leave a big space bare, flat, and hard, for base ball, basket ball, and croquet. Among the trees sow blue-grass and white clover. Have a variety of trees—elm, maple, hickory, birch, even cottonwoods. Have a rustic arbor. I supposed you would laugh, but don't you know how the little mothers at school love to play house? Have you ever visited the abode of two little maidens in the corner of the schoolhouse yard? They would soon make the arbor a mansion,

Feeble Pulse,

palor, fainting, smothering or sinking spells all point in the same direction—an impaired heart action. A heart that is weak or diseased cannot do full duty and the circulation of the blood is interfered with. There is a medicine that gives new strength to the heart, new power to the pulse and puts new color into cheek and lip.

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Dr. Miles Medical Co.,

and "Mrs. Vanderbilt" and "Mrs. McKinley" would exchange recipes and patterns until the administration changes. The schools usually are in session until the first or the middle of May; the bulbs and shrubs mentioned are all free and early bloomers.

We want our children to have the best there is, the best teaching in the schoolhouse, the best thoughts outside. The earth is beautiful, so is the sky; but a velvet carpet of green beneath our feet, and the blue sky between a fretwork of green leaves is still more beautiful. In the fall when school begins nature teaches its lessons of mother earth, gathering jealousy out of sight the growth of the summer to hold it fast until the resurrection. The spring teaches of life eternal, the growing and the renewal of the soul of man and of nature. The children feel the mysterious influences around and beneath them. Words can not teach them that which they will feel and know from the daily communion with nature every spring-time of their lives, so many days of which are spent in the schoolhouse and grounds. Make these same grounds so beautiful, so attractive, and withal so useable that every little child, and big ones too, will hasten to pass through the gate beautiful into the garden of Eden. Do it now.

Now is the high tide of the year, Whatever of life hath ebbed away, Comes flooding back with a rippling cheer, Into every bare inlet and creek and bay.

Now is the heart so full that a drop o'erflows it; We are happy now because God wills it. No matter how barren the past may have been, 'Tis enough for us now that the leaves are green.

We sit in the warm shade and feel right well How the sap creeps up and the blossoms swell. We may shut our eyes, but we can not help knowing That the skies are clear and the grass is growing.

Children's Day.

It is recommended that every subordinate grange set apart one day in May or June to be observed as Children's Day. In counties where there are several granges it has been suggested that different days be designated by the several granges, so that each one may have the opportunity of visiting their neighbors. Let these meetings be limited to the children of patrons, not to the members of the grange order. Let the children be prominent on the program and everything possible be done to show that the grange is in favor of everything that goes to advance the interests, success, and happiness of the farming community.
E. W. WESTGATE,
Master Kansas State Grange.

WEEKLY WEATHER CROP BULLETIN.

Weekly Weather Crop Bulletin of the Kansas Weather Service, for the week ending May 16, 1901, prepared by T. B. Jennings, Section Director.

GENERAL CONDITIONS.

A cool, dry week, with frosts on the 6th, 7th, and 8th in many of the counties. Scarcely any rain fell in the western half of the State, with only a few light showers in the central counties of the east half, but better showers occurred in the northern and southeastern counties in the east half.

RESULTS.

EASTERN DIVISION.

Wheat has begun to feel the drought, but very little rain having fallen since the middle of April; it is beginning to head in Montgomery. Corn planting is nearly completed in the northern counties; it is coming up in all parts of the division, but much of it is not a good stand, owing to the cool weather—some has not germinated yet, due to the cool, dry weather. Oats are not doing well, they need rain. Rye is heading in Crawford and Wilson. Pastures generally are good. Strawberries are ripening in Cherokee and Wilson. Blackberries are in bloom in Wilson. Alfalfa is in fine condition. The canker-worm is bad in Franklin and Morris. Allen County.—Entirely too dry for growing crops; corn has come up very poorly, the stand being the poorest for years. Anderson.—Drought continues; oats on thin, high ground dried up, on bottom land all right; wheat suffering badly, where thin chinch bugs taking it; corn in variable condition, owing to date of planting; pastures poor; flax, millet, and grass seed germinated poorly, and the young plants are in a critical condition; alfalfa growing nicely. Atchison.—A cool, cloudy week and little rain, unfavorable for germination; wheat and grass growing fairly well, but rain would improve them; all spring crops

Riley.—Dry, cool week; corn all planted; and coming up well; late oats are not doing well; a large acreage will be planted to Kafir-corn. Shawnee.—Corn being planted rapidly; potatoes up; wheat fine; oats fair; cattle doing well on pasture. Wilson.—Corn a good stand and growing rapidly; rye heading; wheat in good condition; potatoes look well; fruit prospects good; gardens doing well; strawberries ripening; blackberries in bloom. Woodson.—Corn planting finished; some corn fair, cultivation general; much of the wheat damaged by dry weather; chinch bugs in the oats; apples seem not to have set well.

MIDDLE DIVISION.

All crops need rain, but corn needs warm weather more than rain. Wheat, in general, needs rain, in some counties is suffering for it, in a few it is not needing it yet; the soft wheat is heading in Sumner and Harper, and beginning to head in Kingman. Corn planting is nearing completion in the north; the corn is coming up in all parts of the division, but, with some exceptions, is not doing well on account of cool weather. Fruits are generally setting well and promise good crops, but in Rice the apricots are falling. Strawberries are beginning to ripen in the extreme south. Oats are not doing well, too dry. Rye is heading in Barber and Sumner. Alfalfa continues in fine condition; it is beginning to bloom in Saline, and is being cut in Sedgwick. Pastures are good. Barber.—Cool, dry week; corn and wheat needing rain badly; rye heading out; cattle doing well on range. Barton.—Dry, windy week; wheat needs rain, the stand is so heavy it will require plenty of rain for next four weeks; stock generally on pasture, grass not as good as usual; light frost three nights did some damage to garden vegetables. Butler.—Crops are doing very well; corn a good stand, cultivation begun; millet and other small grains mostly in, but too dry to come up well; grass growing slowly; canker-worms still in orchards, and apple crop will be badly damaged.

8th; rain needed; corn being cultivated; strawberries ripening; rye and soft wheat in head; hard wheat soon will be; early vegetables large enough to use; good growing weather. Washington.—Corn mostly planted, some up, a little too cool for it; worms attacking corn in south part; frost on 11th, no damage; a good rain would help grains and grass.

WESTERN DIVISION.

Wheat continues in good condition over the larger part of the division, but is beginning to need rain, in some parts very much; it has jointed and is beginning to head in Ness; the late wheat was hurt by frost in the eastern part of Thomas. Corn planting is nearly finished and the corn is coming up, but owing to the cool weather it is not doing well. Oats and barley are in good condition. Rye is heading in Ness. Alfalfa is growing well, and in Ford is nearly ready to cut. The range grass is good and cattle are thriving on it. Finney.—A warm, growing week; alfalfa and grass making good growth; forage crops mostly in, but need a good rain to moisten the surface of ground; fruit all right. Ford.—Wheat looks fine; alfalfa nearly ready to cut; corn coming up slowly; light frost 7th and 8th on low lands, no damage; oats and barley very good; fruit prospect bright. Gove.—Wheat needing rain badly; oats up, but will suffer for rain soon; corn up and looking well; spring sowing nearly done; fruit, good promise; grass is fine. Grant.—Planting about half finished; live stock continues to improve; getting a little dry. Greeley.—Good growing week; ground in good condition; farmers busy. Kearny.—Dry; where ground has been well cultivated vegetation is growing rapidly and not suffering for moisture, where not well worked, crops are suffering; alfalfa growing rapidly; fruits promise well. Lane.—All crops needing rain; alfalfa and pasture, however, doing well yet; slight frost on the 8th, no damage. Morton.—Dry, but warm and growing weather; grass on the range is giving cattle a good start; planting fodder crops, not much corn. Ness.—Getting dry; frost on 7th and 8th damaged fruits, early gardens, and potatoes; rye heading; wheat jointed and beginning to head; some chinch bugs in wheat; corn worked over once, but making little growth; pastures good; a good rain needed. Rawlins.—Conditions not as favorable as last week, top of ground needing rain badly; wheat growing slowly; corn mostly planted, but it needs warm, sunny weather; two frosts this week damaged fruit a little. Sheridan.—Wheat looks well, but needs rain; corn coming up, looking yellow; light freeze on nights of 6th and 7th, killing mulberries; cut-worms bad in gardens.



SCALE IN INCHES.

ACTUAL RAINFALL FOR WEEK ENDING MAY 11, 1901.

needing rain; corn planting nearing completion. Bourbon.—Corn crop nearly all planted, retarded by dry weather, some ground too hard to plow; early corn is up and growing well; oats and flax did not come up as well as last year; everything needs rain. Brown.—About two-thirds of the corn ground planted, early planting coming up; wheat, oats, and grass much benefited by the last rain. Chase.—A cool, dry week; corn and oats in much need of rain; chinch bugs in the oats; farm work nearly up to the average for time of year; cattle doing well on pasture. Chautauqua.—Cool for season; all crops doing well. Cherokee.—Too cool for good growth; crops needing rain; corn planting completed, coming up, a good stand; too dry in parts of the county for oats and wheat; strawberries beginning to ripen. Coffey.—Cold and dry; corn planting finished, too dry and cool to germinate well; vegetation growing slowly; plums falling badly; flax needs rain, will not come up well without it; bugs in the oats. Crawford.—Cool week for corn; wheat in the boot and doing well; oats improving; rye heading; clover beginning to bloom; tame grasses doing well; apple, peach, and cherry trees full of fruit. Franklin.—Ground too dry for crops to start well, but fine weather for work; canker-worm defoliating trees badly in places. Jackson.—Corn planting progressing rapidly, much complaint of poor germination; some early corn making a good stand, some very poor—will require much replanting. Jefferson.—Dry week, good for planting corn; most of the corn is planted; some of the early sown oats have been plowed up and the ground put in flax; a good rain is needed. Johnson.—Good week for growing crops; wheat is now in good condition. Lyon.—Corn is doing well; wheat is in fine condition; needs rain some. Marshall.—A fine week for work; good growing weather, but a little too cool for corn; corn planting nearly finished; early corn coming up nicely, and an even stand; everything is growing well; a slight frost Friday night on bottoms, none on uplands, no damage. Montgomery.—A good week for grass and wheat, the latter is beginning to head; soil in good condition for cultivating corn; millet and other forage sown this week. Morris.—Cool, dry week; all crops practically planted; corn coming up slowly; too dry for all crops except alfalfa, which is fine; all fruit trees show a good set of fruit; canker-worms bad where not sprayed. Nemaha.—A cold week checked vegetation, especially corn; corn nearly all planted and some up, but growing very slowly; small grain is in good condition, especially fall wheat; pasture very good; fruit prospects fine. Pottawatomie.—A fine week for planting corn, which is nearly finished; much of the corn is up; fruit prospect is good.

Cloud.—Wheat is in good condition, but is beginning to need rain; oats not looking as well as early conditions promised. Cowley.—Cool, dry week; wheat needing rain; corn and oats at a stand still; alfalfa doing finely. Dickinson.—Wheat still improving; corn mostly planted, some coming up, needs warm weather; oats not doing well; much Kafir-corn and sorghum being sown. Edwards.—Hot days, cool nights; too dry to plow or break sod. Harper.—Wheat heading and generally in good condition; some complaint of dry weather; oats doing well; too cool for corn to grow well. Harvey.—Wheat showing effects of dry weather in many places, not seriously injured though; oats, generally, looking fairly well; much of the corn coming up very irregularly, owing to drought, some fields which came up fairly well are dying out. Jewell.—Corn planting nearly finished, first planting up and a good stand; rain badly needed to sprout alfalfa sown this spring, and for all growing crops. Kingman.—Very dry, need rain; some early wheat beginning to head, all of it beginning to suffer for moisture. Lincoln.—A fine week for wheat, but bad for other crops because of north winds much of the time; light frost 8th and 11th, no damage; corn planting being pushed since the rain. McPherson.—Crops suffering for rain; moisture below surface, but surface is hard and dry; lower blades of wheat turning yellow; corn up, but not growing. Ottawa.—Wheat is generally doing well, some yellow spots, a few reports of green worm in yellow spots; oats slow; pastures improving; alfalfa fine; potatoes a good stand; need a good rain. Republic.—Cool week; corn mostly planted, and coming up nicely; good prospect for fruit of all kinds. Reno.—Cool, dry week, with northerly winds; light frost 8th, no damage; wheat, oats, and alfalfa look fairly well, but rain is badly needed for everything; corn coming up well. Rice.—Need rain; corn planting about finished, coming up nicely; apricots falling off; peaches and cherries forming well; wheat, alfalfa, and oats all right. Saline.—Dry week, cool nights, warm days; wheat doing well; corn planted, but a poor stand; oats poor; alfalfa fine, beginning to bloom; fruit setting well; rain badly needed. Sedgwick.—Pastures looking well, but would be improved by rain; corn coming up, but much yet to be planted, too dry; rain is needed; earliest alfalfa being cut; cherries promise a good crop. Smith.—Cold, dry week, frost and ice on 8th damaged some gardens on low places; chinch bugs hurting some wheat; corn nearly all planted, first planting up nicely; pastures good; fruit all right; cane and Kafir-corn mostly sown; good rain needed. Stafford.—Very dry, windy week, but all growing crops continue to look well; grass very good. Sumner.—Cool and dry, frost on

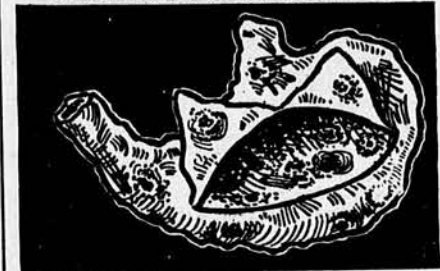
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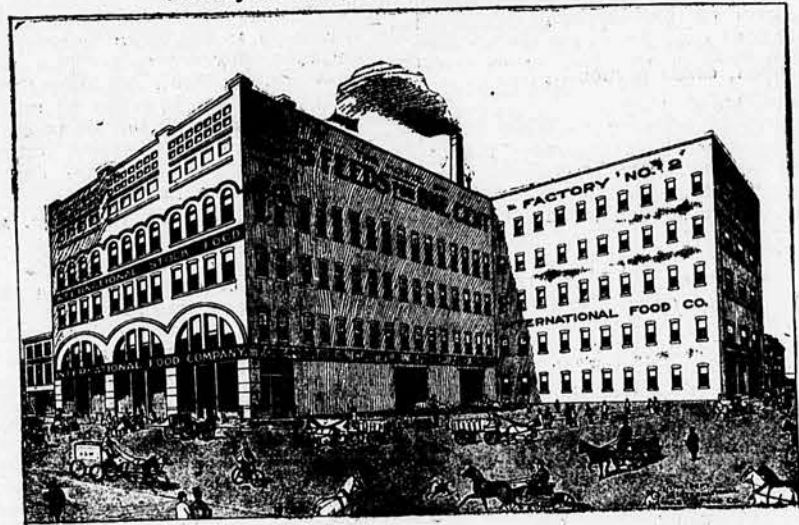


A Healthy Stomach and a Stomach Ulcerated and Shrunken from Tobacco Poison.

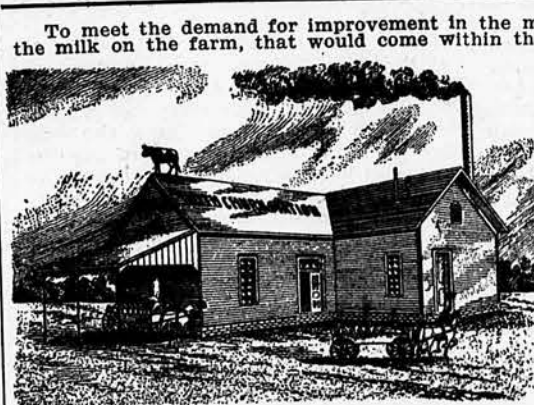


craving for cigarettes, spoils a cigar or pipe smoke and makes it impossible to chew tobacco. One good feature about this new remedy is the fact that it is tasteless so that ladies mix it in food, tea or coffee, milk or chocolate, and cure their husbands, sons or brothers without their knowing how it happened. Any man who desires to quit using tobacco may now do so in a very pleasant but thoroughly effective manner without any suffering or nervous tension. The remedy is perfectly harmless, and anyone may have a free trial package by sending name and address to the Rogers Drug & Chemical Co., 2325 Fifth & Race Sts., Cincinnati, Ohio.

Factory of the International Food Company.



In order to give our readers some idea of the magnitude of the business of the International Food Co., of Minneapolis, Minn., the Kansas Farmer presents herewith an illustration of the company's new factory, which was recently visited by our representative. The building occupies 15 floors, size 25 by 60 feet each. It requires 63 people to attend to the office work alone, including 25 typewriters. In all departments of the business are employed over 200 people, and more constantly being added to this number. The business has had a very large increase every year, but 1901 is showing a tremendous increase over any previous year. This is absolute proof that International Stock Food possesses superior merits, because stockmen would not use a preparation year after year unless it gave them paying results. Mr. M. W. Savage, manager and proprietor, says: "We have always sold our goods on a positive guarantee to refund any man his money if International Stock Food or our other preparations ever failed to give satisfaction, and we will pay anyone \$1,000 in cash to prove that we ever refused to fulfill our printed guarantee that is on every label." Every stock breeder or feeder should by all means secure a copy of the illustrated stock book now being advertised. It is a book of great value to every stock raiser, and can be secured free by simply answering 3 questions. See advertisement on the last page of this week's paper.



To meet the demand for improvement in the methods of handling and caring for the milk on the farm, that would come within the reach of the ordinary farmer as regards price and cost of operation, the Smith Cream Separator Company, of Des Moines, Iowa, have perfected and placed on the market a gravity separator that does not mix the milk and water, and the work is as effective as that done by the separator costing \$125, while the cost is less than one-tenth of that amount. The "Smith" is sold under a positive guarantee, and is sold for so low a price that the person having but 2 cows is justified in buying one. In the use of the "Smith" all your crocks and pans are dispensed with, and there is no sour milk from one year's end to the other. By the use of the "Smith" cream separator these cares and labors are transformed into mere pleasures; and it is one that every farmer can afford to buy. The advantages gained by using the "Smith" are very fully explained in their circulars. Write them at No. 113 West Locust St., Des Moines, Iowa, and they will be pleased to send you some. But this is not all that the Smith Separator Company is doing for the farmer, by any means. They not only furnish the separator by the use of which better butter and more of it can be made, but are also obtaining for the users of their separators the highest New York, Chicago, and Kansas City market price for their butter. And still more. They are establishing all over the country what is known as the "Twentieth Century" or "Smith Churn Station Plan" which secures to the patron the highest market prices, and yet there is no churning to do. You simply have the milk and cream to care for. Nothing else whatever. See their quarter page advertisement on first cover page this week explaining the plan, and write them for further particulars, if interested, mentioning the Kansas Farmer when doing so.

The Poultry Yard.

Eggs and Their Uses as Food.

FARMERS' BULLETIN NO. 128, U. S. DEPARTMENT OF AGRICULTURE.

(Continued from last week.)

DESCRIPTION AND COMPOSITION OF EGGS, SIZE.

The eggs of different kinds of domestic poultry vary in size as well as appearance, and there is also a considerable range in the size of eggs of different breeds; thus, hens' eggs range from the small ones laid by bantams to the large ones laid by such breeds as Light Brahmas. On an average, a hen's egg is 2.27 inches in length and 1.72 inches in diameter or width at the broadest point, and weighs about 2 ounces, or 8 eggs to the pound (1½ pounds per dozen). Generally speaking, the eggs of pullets are smaller than those of old hens, those of ducks somewhat larger than hens' eggs, while those of turkeys and geese are considerably larger. Guinea eggs, on an average, measure 1½ by 1¼ inches, are rather pointed at one end, and weigh about 1.4 ounces each, or 17 ounces to the dozen. Goose eggs weigh about 5.5 to 6.7 ounces each, or about 5 pounds to the dozen—that is, more than three times as much as hens' eggs. The eggs of wild birds are said to be smaller than those of the same species when domesticated. Wild ducks' eggs are said to be, on an average, 1.97 to 2.17 inches in diameter, domestic ducks' eggs 2.36 to 2.56 inches.

COMPOSITION.

The shells of hens' eggs constitute about 11 per cent, the yolk 32 per cent, and the white 57 per cent of the total weight of the egg. According to tests made at the New York State Experiment Station, white-shelled eggs have a somewhat heavier shell than brown-shelled eggs. The shell of a duck's egg constitutes about 14 per cent of the total weight, and that of a plover egg 10 per cent.

AVERAGE COMPOSITION OF EGGS, AND CERTAIN OTHER FOODS.

| | Refuse. | | Water. | | Protein. | | Fat. | | Carbo. | |
|------------------------------------|---------|------|--------|-------|----------|-----|------|-----|--------|-----|
| | Pc. | Pc. | Pc. | Pc. | Pc. | Pc. | Pc. | Pc. | Pc. | Pc. |
| Hen: | | | | | | | | | | |
| Whole egg as purchased..... | 11.2 | 65.5 | 11.9 | 9.3 | ..... |  |  |  |  |  |
| Whole egg, edible portion..... | 73.7 | 13.4 | 10.5 | ..... |  |  |  |  |  |  |
| White..... | 86.2 | 12.3 | ..... |  |  |  |  |  |  |  |
| Yolk..... | 49.5 | 15.7 | 33.3 | ..... |  |  |  |  |  |  |
| Cheese as purchased..... | 34.2 | 25.9 | 33.7 | 2.4 | | | | | | |
| Sirloin steak as purchased..... | 12.8 | 54.0 | 16.5 | 16.1 | ..... |  |  |  |  |  |
| Sirloin steak, edible portion..... | 61.9 | 18.9 | 18.5 | ..... |  |  |  |  |  |  |
| Milk..... | 87.0 | 3.3 | 4.0 | 5.0 | ..... |  |  |  |  |  |
| Oysters, edible portion..... | 86.9 | 6.2 | 1.2 | 3.7 | ..... |  |  |  |  |  |
| Wheat flour..... | 12.0 | 11.4 | 1.0 | 75.1 | ..... |  |  |  |  |  |
| Potatoes as purchased..... | 20.0 | 62.6 | 1.8 | 14.7 | ..... |  |  |  |  |  |
| Potatoes, edible portion..... | 78.3 | 2.2 | 1.1 | 18.4 | ..... |  |  |  |  |  |

COMPOSITION OF EGGS.

As is shown by analysis, eggs consist chiefly of two nutrients—protein and fat—in addition to water and mineral matter or ash. Carbohydrates are present in such small amounts that they are usually neglected in the analysis. The protein of nitrogenous matter is the nutrient which is needed to build and rebuild and repair body tissue, as already stated, while the fat is useful for supplying energy. Some energy is also derived from protein. Mineral matter is required by the body for many purposes, but less is definitely known concerning the kind and amount required than in the case of the other constituents.

In composition, eggs of all sorts resemble such animal foods as meat, milk, and cheese, more than such vegetable foods as flour and potatoes. Hens' eggs and those of other domestic fowls do not differ greatly in composition. Neither does the cooked egg vary materially in composition from the raw, though it varies markedly in texture. The yolk and white differ greatly in composition. The yolk contains considerable fat and ash, while the white is practically free from fat and has a very small ash content. The white contains somewhat less protein and about half as much water as the yolk. As is usually the case with our familiar foods, the water is not visible as such, but is combined or mingled with the other constituents, so that the whole food is more or less moist, liquid or juicy.

There is practically no difference in composition between hens' eggs with dark shells and those with white shells, although there is a popular belief that the former are "richer." This point was studied by the New York State and California Experiment Stations, many analyses of the two sorts of eggs being made. At the California Experiment Station the brown-shelled eggs were laid by Partridge Cochins, Dark Brahmas, Black Langshans, Wyandottes, and Barred Plymouth Rocks. The white-shelled eggs were laid by Brown Leghorns and Buff Leghorns, White Minorcas and Black Minorcas. The Michigan Experiment Station also analyzed the eggs of a number of different breeds, though the special object was not to determine whether there was any relation

between the color of the shell and the composition of the eggs. However, no constant variation in the eggs of the different breeds was observed. These tests and others like them justify the statement that the eggs of one breed, whatever the color of the shells, are as nutritious as those of another, provided they are of the same size and the fowls are equally well fed.

EGGS ARE NUTRITIOUS FOOD.

As shown by their composition, eggs are nutritious food. They are less concentrated—i. e., contain more water—than cheese, but are more concentrated than milk or oysters. In water content they do not differ greatly from the average value for lean meat. The kinds and amounts of nutrients in eggs indicate that they may be properly used in the diet in the same way as most other animal foods, and this belief is confirmed by the experience of uncounted generations.

THE WHITES.

Many studies have been made of the chemical bodies making up the different classes of nutrients. Egg white is sometimes said to be pure albumen. In reality it consists of several albumens, and, according to many observers, a little carbohydrate material. The phosphorus in the albumen of the egg white is equivalent to about 0.03 per cent phosphoric acid. The chief ash constituent is sodium chlorid (common salt).

A very extended investigation of the white of egg was made at the Connecticut State Experiment Station. The "albumen" or protein of egg white was found to consist of four bodies—ovalbumen, conalbumen, ovomucin and ovomucoid. The ovalbumen is the chief constituent and makes up the greater part of the egg white. The conalbumen has much the same chemical properties as ovalbumen. Ovomucin and ovomucoid are glycoproteids, and are present in small amounts.

THE YOLK.

Egg yolk contains a number of different bodies, including about 15 per cent

vitellin (a proteid); 20 per cent palmitin, stearin, and olein (the fatty constituents), and 0.5 per cent coloring matter, besides small amounts of lecithin (a fat-like body containing phosphorus), nuclein, etc. The total phosphorus in the yolk is equivalent to a little over 1 per cent of phosphoric acid. Besides phosphorus, the yolk contains such chemical elements as calcium, magnesium, potassium, and iron in the form of salts and other chemical compounds. The protein of egg yolk was studied extensively at the Connecticut State Experiment Station. According to these investigations it contains a large amount of proteid matter combined with lecithin. The name lecithin-nucleo-vitellin is proposed for this compound, which behaves like a globulin. It is soluble in a solution of salt. As prepared in the laboratory the lecithin-nucleo-vitellin contained from 15 to 30 per cent lecithin. A lecithin-free body insoluble in salt was also isolated. This was called nucleo-vitellin.

One of the constituents of egg albumen is sulphur. The dark stain made by eggs on silver is commonly and doubtless correctly attributed to the formation of silver sulphid. The albumens are readily decomposed with the liberation of hydrogen sulphid. The bad odor of rotten eggs is due largely to the presence of this gas and phosphureted hydrogen, which is also formed. The shell of the egg is porous, and the microorganisms which cause the egg to ferment—i. e., to rot or spoil—gain access to the egg through the minute openings. Like the mold spores, these microorganisms are widely distributed.

COMPOSITION OF SHELL.

The eggshell, of course, has no food value. The shell of the hen's egg is made up very largely of mineral matter, containing 93.7 per cent calcium carbonate, 1.3 per cent magnesium carbonate, 0.8 per cent calcium phosphate, and 4.2 per cent of organic matter. The shells of goose eggs, on an average, have the following percentage composition: Calcium carbonate, 93.5; magnesium carbonate, 0.7; calcium phosphate, 0.5, and organic matter, 3.5. The shells of ducks' eggs contain 94.4 per cent calcium carbonate, 0.5 per cent

magnesium carbonate, 0.8 per cent calcium phosphate, and 4.3 per cent organic matter. The shells of other eggs are doubtless of much the same composition.

(To be continued.)

Poultry Notes.

N. J. SHEPARD, ELDON, MO.

With poultry raising, as with almost every line of work, if the best success is realized good care and management are necessary. While almost any one can raise poultry, after a fashion, it is not every one who can make poultry-keeping a profitable business.

Good thrift is the best condition for the growing fowls and the laying hens. Excessive fatness leads to a suspension of egg production, and at the same time predisposes to certain forms of disease. There is less danger of pullets becoming too fat than of old hens, but with all there is nothing gained by keeping fat.

Even with the second hatched goslings, whether hatched under a hen or goose, it is best to keep confined in a good sized pen until ten days old. Goslings, if well fed, grow very rapidly and will be able to largely take care of themselves by the time they are two weeks old. With geese, as with all other kinds of fowl, it is best to breed one of the standard breeds.

Usually a fat hen is a poor layer and if she lays any eggs at all they will be infertile, or if they hatch will produce weak, deformed chickens. The laying of soft-shelled eggs, double-yolked eggs, or other irregularities, is an indication that the hens are too fat. On the farm where they have free range, with access to the barn and corn crib, as is often the case, they keep so fat as to be unprofitable.

A fresh egg has a somewhat rough shell while the shell of a stale egg is smooth. When cooked the content of a fresh egg stick to the shell and must be removed with a spoon, but a stale egg, when boiled hard, can be peeled off like the skin of an orange. Another way to tell a fresh egg is by the air bubble on the large end. In a fresh egg this should not be over one-eighth of an inch deep; the staler the egg becomes the larger the bubble.

For roup remove the fowl to warm, dry quarters, give a teaspoonful of castor oil into which has been mixed four drops of turpentine, wash the face and nostrils with tepid water and castile soap; then inject sweet oil into the nostrils. This will have to be repeated twice a day for three or four days. Mix sulphur in the food for the whole lot, being careful to keep the fowls dry. If the eyes and head swell up anoint with salty lard and if the mouth gets sore use salt and vinegar as a gargle.

As yet no specific has been found for cholera among poultry. All things considered one of the cheapest and best remedies is to add a teaspoonful of pure carbolic acid to one and one-half pints of water and then mix their soft feed with it, taking care to see that they have no other food in order that they get the full benefit of the remedy. If given at the first indications, before the disease has made such progress that they will refuse food, good results may be secured.

Cholera is indicated by great thirst, greenish droppings, changing to yellow and white color, great prostration, and a nervous and anxious expression. In nearly all cases the disease runs a rapid course and prompt treatment is necessary.

We have from the publisher, Prof. A. Corbett's book bearing the significant title "How to Make \$500 Yearly Profit with Twelve Hens," by A. Corbett, Professor of Galliniculture Science. Prof. Corbett has made a life study of poultry and poultry raising, and he has discovered a natural way of artificial incubation without the use of lamp, hot water or electricity. He thus not only hatches the chicks without the aid of the hen or artificial heat, but he constructs brooders on the same principle, and holds that chickens and all domestic fowls can be raised at a cost not to be compared with cost of raising them in the ordinary way. The method is strongly endorsed by the leading journals, scientific men, and exhibitions. By the latter he has been awarded forty-five gold and silver medals and diplomas. In addition to hatching and raising, the book contains plain and simple treatment of all known diseases of fowls, how to choose, how to market, etc. Published by the Scientific American Poultry Breeders' Association, Masonic Temple, Chicago. Further information sent on application.

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T. E. LEFTWICH, Larned, Kansas.

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In the Dairy.

Conducted by D. H. Otis, Assistant Professor of Agriculture, Kansas Experiment Station, Manhattan, Kans., to whom all correspondence with this department should be addressed.

Bill of Fare for a Kansas Dairy Cow.

This does not mean a discussion of theoretically balanced rations, but, so far as possible, a presentation and adaptation to Kansas conditions of rations that have been found by experience to be adapted to dairy cows. In some cases where the feeding value of a feed is known, substitutions will be made. For instance, the agricultural college has found that soy-beans will take the place of oil meal. If, then, we have a tested ration containing oil meal, and desire to use soy-beans in order to comply with Kansas conditions, the substitution will be made. In all the following rations "parts" means by weight.

Rations No. 1 and 2. Corn, or Kaffir-corn, is doubtless the cheapest grain to be used in connection with alfalfa, and furnishes a balanced ration, and, outside of succulence and variety, an ideal ration. The cows at the agricultural college, when fed this ration, consumed from 16 to 20 pounds alfalfa hay, and 8 to 10 pounds of corn. In Riley County the average yield of alfalfa is about 4 tons per acre. Counting 200 feeding days, and 20 pounds per day, a single cow would require 2 tons, or 1/2 acre of alfalfa. On the college farm (upland) the average yield of corn for the past eleven years has been 34 bushels per acre. Ten pounds per day per cow for 200 feeding days would require 2,000 pounds, or 1.05 acres. If desirable, Kaffir-corn may be used in the place of corn. In the central and western portions of the State Kaffir-corn outyields corn. On the college farm the average yield of Kaffir-corn has been 46 bushels. Feeding at the same rate as with corn, it would require three-fourths of an acre to keep a cow. In actual practice it has been found that a mixture of corn and Kaffir-corn gives better results than the one alone. Allow from two-fifths to one-half acre for each cow.

Ration No. 3. Alfalfa and corn alone do not furnish as much succulence and variety as is desired. If possible, it is well to feed from 15 to 20 pounds per day of either roots or corn ensilage. The subject of ensilage will be taken up later. If 20 pounds of mangels are fed, the allowance of corn can be reduced to about 5 or 6 pounds, and still furnish the nutrients required by the cow. The agricultural college has not grown mangels so very extensively, but when it has, the average yield has been about 25 tons per acre. According to these figures, it would require about one-twelfth of an acre to supply a cow for a 200-day feeding period, while the corn area required would be reduced to about six-tenths of an acre. Where alfalfa is scarce, and it is desired to utilize the corn fodder, millet hay, prairie hay, sorghum hay, or rough feed that contains less protein than alfalfa, the grain will need to be enriched with soy-beans or some other concentrated food rich in protein.

(To be continued.)

Time of the Greatest Yield.

JESSE M. JONES.

Cows properly cared for do not give their greatest yield of milk and butter fat the first month after lactation, as is generally supposed, and as several of the agricultural students of the college remarked in a discussion of the dairy cow in the "Feeds and Feeding" class this spring. The records of the college scrub herd confirm this statement, as

the table below shows. These ten cows were chosen at random from those which calved the last year and are a fair representation of the herd for this purpose:

| No. of cow. | Day of highest yield of milk. | Yield first mo. | Yield second mo. | Yield third mo. | Pounds butter fat first mo. | Pounds butter fat second mo. | Pounds butter fat third mo. |
|-------------|-------------------------------|-----------------|------------------|-----------------|-----------------------------|------------------------------|-----------------------------|
| 14...34 | 965.2 | 1,295.3 | 1,212.0 | 40.05 | 48.57 | 44.84 | 45.70 |
| 20...49 | 1,076.1 | 1,285.8 | 1,218.8 | 34.43 | 43.71 | 41.35 | 41.35 |
| 23...33 | 1,033.7 | 1,082.6 | 1,155.2 | 39.28 | 38.54 | 41.35 | 41.35 |
| 33...28 | 879.2 | 982.5 | 897.8 | 29.01 | 32.42 | 28.72 | 28.72 |
| 59...30 | 835.4 | 1,098.1 | 946.9 | 34.66 | 41.17 | 35.69 | 35.69 |
| 63...30 | 777.9 | 792.0 | 639.7 | 28.00 | 30.57 | 25.90 | 25.90 |
| 68...32 | 709.7 | 819.8 | 722.6 | 25.83 | 29.09 | 27.82 | 27.82 |
| 71...27 | 750.7 | 740.8 | 749.1 | 31.67 | 30.00 | 30.18 | 30.18 |
| 72...64 | 705.4 | 881.5 | 923.0 | 30.68 | 36.67 | 38.30 | 38.30 |
| 123...57 | 782.4 | 921.5 | 954.5 | 24.48 | 26.72 | 27.68 | 27.68 |
| Av..33.5 | 850.57 | 989.39 | 941.96 | 31.80 | 35.74 | 34.61 | 34.61 |

Exceptions will occur in well regulated herds, as with cow No. 71 and instances are quite common in a poor dairy district where this rule is not true, but where the cow gives her highest yield the first two weeks of her lactation. Being improperly cared for, she is forced to live as best she can on corn stalks, corn stover, straw, prairie hay, and kindred substances. It is no wonder that the owner is disgusted with dairying. When she becomes fresh she gets plenty of corn, but corn fed with such roughness would dry up the most persistent milker. Such cases may be exceptions but they do occur. Corn is all right when fed with such feeds as alfalfa, clover, cow-pea hay, or soy-beans, in the proper proportions.

The cow gives milk only because she is stimulated to do so by the birth of her calf, and the poorly kept one gives her greatest flow when the calf is weakest and gradually decreases in her flow as it grows older and stronger, until at six months she is giving but a few pounds.

The table shows the average cow comes to her highest yield a little over a month after calving. Individuals may reach their highest flow in three weeks, while others run for two months. The yield of the first three months is the highest in the period of lactation; the second is the highest of these, and the third is higher than the first.

The cow should be forced to her highest these months when she is capable of doing her best and the longer she is kept there the better. From the second or third month the flow gradually decreases and the slower it can be made to decrease the greater the yield for the year.

Variations in Butter Fat Due to Period of Lactation.

After the first few weeks there is a gradual increase in the per cent of butter fat. This is not always uniform as will be seen by the following examples:

| Cow. | Ave. Pc. for year. | TEST FOR 1899. | | | | | | | | | | | |
|-------------|--------------------|----------------|------|------|------|------|------|------|------|------|------|------|------|
| | | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| No. 6..... | 3.79 | 5.6 | 5.6 | ... | 3.2 | 3.6 | 3.5 | 3.8 | 3.3 | 3.9 | 4.0 | 4.1 | 4.4 |
| No. 8..... | 4.11 | 5.5 | 7.8 | 4.5 | 3.7 | 4.0 | 3.8 | 3.8 | 4.0 | 4.3 | 4.5 | 4.4 | 4.7 |
| No. 9..... | 4.56 | 5.1 | 5.7 | 5.6 | 4.9 | 5.0 | 4.8 | 5.2 | 3.7 | 4.3 | 4.3 | 4.2 | 4.4 |
| No. 11..... | 4.73 | ... | ... | ... | 4.5 | 4.6 | 4.4 | 4.2 | 4.5 | 5.2 | 5.0 | 5.3 | 5.2 |
| No. 24..... | 3.31 | ... | ... | ... | 2.8 | 3.3 | 2.9 | 3.4 | 3.1 | 3.7 | 3.5 | 3.6 | 4.0 |

It will not be difficult to tell from the above table when these cows became fresh. While the average test of cow No. 6, for the month of February, was 5.6 per cent, her last test for the last two weeks was 6 per cent. When she freshened in April she tested 3.2 per cent. The same variation is noted in case of cow No. 7. Cow No. 9 gave milk up to the time of calving and yet we find her test fell from 5.2 to 3.7. Cow No. 11 represents a high testing cow and No. 24 a low testing cow. In both cases we find the same gradual increase with slight fluctuations.

In connection with the variation in per cent of butter fat it is interesting to note also the variation in yield of milk and total fat. The following record of Zacona and Zastona serves as a good illustration:

| ZASTONA. | | | | |
|-----------|------------|-----------|------------------|--|
| Date. | Milk. lbs. | Test. Pc. | Butter- fat-lbs. | |
| 1899-00. | 474.8 | 3.5 | 16.62 | |
| June | 1,250.1 | 3.5 | 43.75 | |
| July | 1,124.1 | 3.4 | 38.22 | |
| August | 1,054.6 | 3.9 | 41.13 | |
| September | 909.1 | 4.4 | 40.00 | |
| October | 904.4 | 4.1 | 37.08 | |
| November | 875.5 | 4.45 | 38.97 | |
| December | 691.3 | 4.7 | 32.49 | |
| January | 641.5 | 4.75 | 25.72 | |
| February | 385.5 | 5.8 | 22.41 | |
| March | 337.5 | 5.3 | 17.88 | |
| April | 125.9 | 6.0 | 7.55 | |

| ZACONA. | | | | |
|-----------|------------|-----------|------------------|--|
| Date. | Milk. lbs. | Test. Pc. | Butter- fat-lbs. | |
| 1899. | 175.0 | 4.6 | 8.05 | |
| February | 706.8 | 4.6 | 32.51 | |
| March | 682.2 | 4.15 | 28.31 | |
| April | 622.0 | 4.6 | 28.61 | |
| May | 481.1 | 4.6 | 22.13 | |
| June | 376.0 | 4.5 | 16.92 | |
| July | 298.9 | 4.1 | 12.25 | |
| August | 276.8 | 4.55 | 12.59 | |
| September | 244.0 | 4.65 | 11.35 | |
| October | 242.9 | 4.2 | 10.20 | |

Zacona calved the middle of June.

Her highest yield of milk as well as butter fat occurred the next month. She maintained an excellent yield until the end of the sixth month when she began to gradually decrease. She fell off very rapidly in the eleventh month of her lactation period. She was fresh again in July.

Zastona's test is an exception to the general rule, in that there is very little variation during the ten months. Her yield of milk and butter fat falls off rather rapidly after the third month. If she had not been sold her test would probably have gone up near the close of her lactation period. Her previous year's record shows a test as high as 6.4 per cent. Zastona is one of those beefy types of cows that give a good flow of milk when fresh but do not keep it up long.

D. H. O.

Some Thoughts for the Private Butter Maker.

ELEANOR M. WHITE.

In caring for milk, as soon as it is drawn, strain into a can and cover until all is ready to remove to a milk room where it can be aerated, cooled, and separated, in as pure air as possible. The hand separator, or farm separator, is bound to supersede the old methods of shallow pans creaming, or deep-creaming setting. The cream from the separator should then be cooled down to about 45° F., and kept at this temperature, as the lactic acid germs will work very slowly at this temperature; and as these are the principal causes of milk souring they can be controlled pretty well. Another plan, if whole milk is set to raise cream, is to heat milk up to about 160° F., then cool it down rapidly and hold at low temperature; this destroys the action of the germs to a large extent.

In ripening the cream for butter it is important that the correct pure acid fermentation be obtained as it makes the best quality and highest flavored butter. This can be done by souring good milk, or use of pure culture starters which are now commercially sold. In making butter attempt to supply what the market demands. Aim to make a first-class article then have your own brand and keep it standard. Use package to suit your trade. The extra care, time, and labor you spend to produce a No. 1 article will secure you a better price, and even in the dullest of times it will readily find a market.

For utilizing skim-milk, or separated milk, the calves, hogs, or pigs will take care of it and with a little thought of what and how to feed other things with it, excellent results can be secured. Butter-milk is usually fed to hogs.

Cheese can be made by the private dairymen, but unless you specially fix to make it, it is best at present to allow

the cheese factories to do more work along that line.

One other thing of importance to successful dairying is a good milk-house, so constructed as to secure perfect ventilation, pure air, can be kept cleaned, and temperature pretty well controlled. You may or may not use ice, but in Kansas it can not always be obtained. It has been found by experiments that a good cold well will answer the purpose admirably. The water surrounding the milk cans or vats, should be changed twice a day usually; in very warm weather three times. If a person has a good well and windmill it is usually little trouble to change water. It can be piped to milk-house and piped away at a small cost.

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Cow Sense

The editor has just received a catalogue, illustrative and descriptive of the

New Improved EMPIRE Cream Separator.

The author of this book refers to it as "A Treatise on the Application of Cow Sense to the Conduct of the Dairy," which very briefly yet expressively describes it. This catalogue is a departure from the general rule. It contains a fund of information and "Common Sense" suggestions which cannot help but prove of profit and interest to every owner of one or more cows. A copy is sent free upon request to

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U S U S U S U S U

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U S U S U S U S U

The Soy-Bean as a Forage and Seed Crop.

(Continued from page 461.)

other years. No soil was added for the purpose of introducing the germs, and no fertilizers were used during the three years. Samples were taken each year from the seed grown where no imported soil was used. The results of the analyses are shown in the following table:

| | In Water-free Substances. | |
|-----------------------------------|---------------------------|-------|
| | Nitro. | Prot. |
| 1893, no root nodules..... | 6.28 | 39.25 |
| 1894, few root nodules..... | 6.24 | 39.00 |
| 1895, abundance root nodules..... | 7.08 | 43.25 |

The results of this test seem to indicate that the presence of the nitrogen gathering bacteria, as indicated by the abundance of nodules, increased the percentage of nitrogen and of protein in the seed. This experiment would seem to show that the presence of the nodules is not only accompanied by an increase in the amount of the crop, but, in this case at least, by an increase in the proportion of protein as well. The only other experiment similar to this that has come to our attention was made by D. H. Otis, and reported by the Kansas station in Bulletin No. 96. In this experiment, however, the ripe seeds were discarded and only the stems and leaves were analyzed. The plants that had become inoculated and developed nodules showed 1.44 per cent of nitrogen in the stems and leaves, while those not inoculated and without nodules showed 1.40 per cent of nitrogen. The results in either experiment are not conclusive. One or two experiments are not enough to establish a fact. The results simply show that further study is necessary before any definite or practical conclusions can be drawn regarding the influence of the nitrogen gathering organisms on the composition of the crop.

SUMMARY AND DEDUCTIONS.

The soy-bean is a large, leafy plant, growing from 3 to 4 feet in height and having foliage much like the common field bean. It is well adapted to the climate of Connecticut and should be grown on rather light, loamy soils, such as are suitable for corn. It will produce from 10 to 12 tons of green fodder per acre under good conditions of culture. It grows best in drills from 2 to 2½ feet apart, and requires but little cultivation after the crop is well started by the warm weather of the summer.

It is a leguminous fodder plant of high value as a forage crop or for its seed, when used in feeding dairy cows or growing animals. Its chief points of merit are its economy for use in rotation with cereal crops or grasses, as a means of conserving the nitrogen of the soil; its value as a soiling crop to supplement pasturage; its value for silage when mixed with corn fodder; and the high value of the seed as a grain feed for milch cows, on account of the large proportion of protein it contains.

When used as a soiling crop to supplement pasturage the soy-bean fodder should be fed, in this latitude (central Connecticut), between August 15 and September 15-20. When used for silage it will be ready to harvest when the pods are from one-half to three-fourths grown, or not far from September 10. Corn and soy-bean silage, made by mixing these two fodders in the proportion of 2 parts corn to 1 of beans, is superior to corn silage alone for milch cows. The mixture contains from 75 to 100 per cent more digestible protein, in a given weight, than does corn silage. The large proportion of protein in the mixed silage will allow a reduction to be made in the amount of bran, cotton seed, gluten, or linseed meals needed to give a well balanced ration, from what is needed when corn silage is fed with these concentrated feeds.

The soy-bean will yield, under good conditions of cultivation, from 25 to 40 bushels of seed per acre. The seed is especially valuable because it contains a large amount of protein which is highly digestible. The meal of the entire seed can be used as a substitute for cotton seed, linseed, or gluten meals in feeding milch cows. The effects of the soy-bean meal on the milk and butter have not been sufficiently studied, but the indications are that no bad results will follow the use of 2 or 3 pounds a day with other grains. Its high protein content indicates that the same care should be exercised in its use as is needed in the use of other highly nitrogenous grain feeds. It should always be fed with bran, middlings, corn-meal, or other grain feeds relatively low in protein but high in carbohydrates.

In growing the soy-beans on a field where the crop has not been grown before, better yields will usually be ob-

tained if some means is taken to introduce the nitrogen gathering germs peculiar to this plant. This may be done by scattering soil from an old soy-bean field where nodules were present on the previous crop, into the drills with the seed, when planting a new field. Or similar results may be obtained by sowing the dust and dirt from the threshing floor where soy-beans have been cleaned into the drills with the seed when planting.

How to Build His Silo.

EDITOR KANSAS FARMER:—I notice in your issue of May 9 a subscriber from Pittsburg, Kans., contemplates building a silo, and asks for information or suggestions.

A silo 30 by 60 feet, and 20 feet high, will hold about 700 tons of silage, and will carry with a reasonable amount of roughness, about 200 head of cattle through the winter in fine shape. I don't know about the soil at Pittsburg, but in this section a silo could be built in a bank to advantage and cheaply. For instance, find a place sloping south and free from springs. In some places by removing 15 or 20 feet the perpendicular or bank would be 20 or 30 feet high, and the dirt firm enough to receive a heavy coat of cement good enough for the north side of silo. The south side of silo should have a heavy wall not less than 2 feet thick if 20 feet high, and 2½ feet thick would be better. The east and west ends of silo I should prefer to have all stone laid in mortar, and if well banked pretty high up, 1½ feet in thickness will do. On the south side of silo there should be an opening large enough to admit a horse and some such wagon as they use in the stock yards at Kansas City to pass in and out of silo to haul out the ensilage. The wall on each side of doorway should have projections of stone to support the heavy pressure from inside when silo is filled. The bottom of soil should not be lower than the ground on the south side of silo. It is hard work to lift up the ensilage from a pit.

If the earth is used for one side of silo, care should be taken to prevent surface water from roof or ground from running into the silo. Put up spouting to carry water from roof and have good ditch south of wall or silo to prevent water from destroying the side of silo made of earth bank and cement.

It is advisable to lay up wall in good mortar or cement and give inside of wall a covering of cement to make sides smooth and tight.

The bank silo is convenient in filling. It saves in power in elevating at time of filling. I would not put in the middle wall. I would prefer silo in one room unless it held more than a thousand tons.

Your correspondent from Pittsburg should get a cutting machine to handle about 100 tons per day. It will not take

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a large force to do that if cane is handy to silo. A self-binder should put the cane in bundles which will facilitate handling. Forty acres of good cane ought to fill the silo I have described, and it ought to be worth, to a good dairyman or stock raiser, \$50 per acre, or at least twice as much as handled in any other way.

One word more to our farmer friend from Pittsburg. Dehorn your cattle, make feed boxes in a line in the middle of barn for ensilage, and racks on the sides for hay or roughness, with some room overhead to hold feed through a storm at least, or better, to hold feed for most of the winter. The barn should have doors to allow wagons to enter and clean out or haul in feed, and for good ventilation.

A barn 30 by 100 feet would accommodate 200 head of stock or more, and they could be comfortable and improve every day in the winter.

One man in silo when filling, with the aid of a chute can keep all parts of the silo fairly even in the mixture of cane and stalks.

The round corners are all right, but the cutting of the stone will add some to the expense. If the man in silo when filling will take a little pains in tramping ensilage at corners it will keep all right. The doors of silo should be heavy double doors, and open outward and fixed and barred so as to open easily when ensilage is wanted. A small window above doors would be convenient to throw out ensilage from the top. I notice your subscriber will put on a shingle roof. On my first silo I covered it with corrugated iron, which made the building almost fire-proof. Any kind of a silo on a farm is better than no silo. There is no better place for silos

than in Kansas. There is nothing better than corn to put in a silo. Corn even with no ears, or small ears such as they raise in western Kansas and Nebraska, put in a silo will make excellent ensilage, and be worth to the farmer twice as much as used in any other way. I think experts claim that 55 per cent of the nutritive properties of corn is in the stalk now wasted, and sometimes worse than wasted, because cattle die from the effects of being turned into stalk fields. Now, Mr. Subscriber, if you build a silo, let me know how you like it.

A. C. PIERCE.

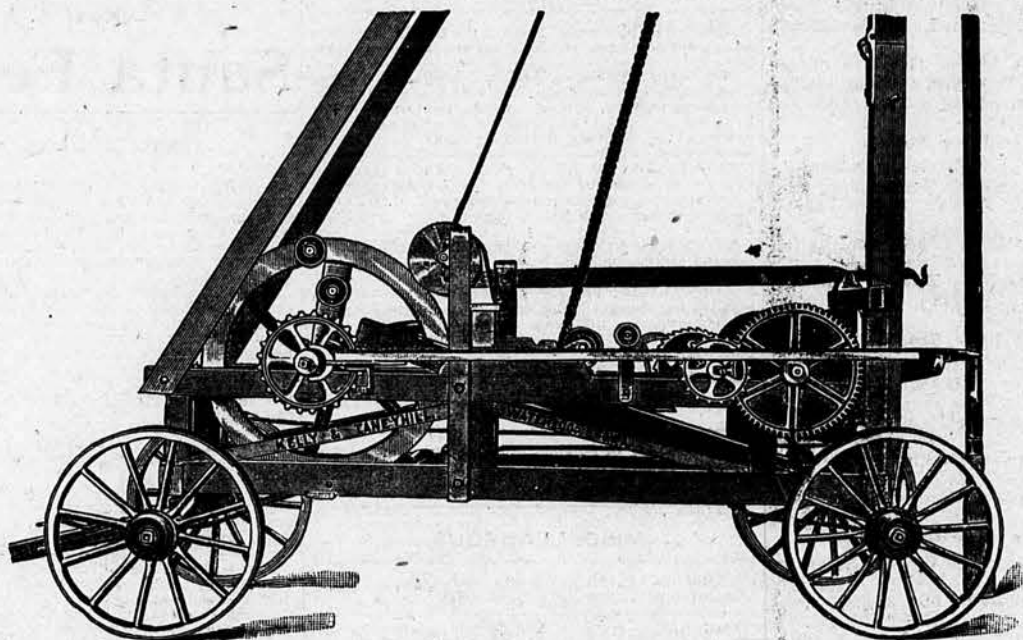
Junction City, Kans.

What for Pasture?

EDITOR KANSAS FARMER:—I should like to hear through the columns of the KANSAS FARMER from any one, especially in northern Kansas, who has experimented with Bermuda, or Broom grass. I have seen the statement that Jewell County has more acres of alfalfa than any State except Kansas. But we are getting in a bad way for pasture, some farms not having an acre of wild grass. Alfalfa is all right for hay, but I don't think it can be successfully pastured. Continuous grazing is sure to kill alfalfa, and the alfalfa is liable to kill the cattle, at least until some inventive genius finds the means of applying to a cow's paunch some such mechanical device as a governor on a steam boiler.

Burr Oak, Kans. L. S. WELLS.

Warm spring days produce a feeling of drowsiness if the body is loaded with the impurities of winter diet. Cleanse the blood, liver and bowels with Prickly Ash Bitters. It creates energy and cheerfulness.



Thirty-four years of active and successful manufacturing of well-drilling machinery is certainly a strong testimonial, in favor of the Kelly & Taneyhill Co., of Waterloo, Ia. This firm have been constantly improving their machines, enlarging their factory, and working on new styles of drills, until to-day they are putting out 38 different kinds of machines, and many sizes of each kind, so that they supply the demand in all parts of the country, having machines suited to all conditions. We show on this page a cut of the latest improved well-drill put out by them, the Climax. It will be readily observed from the cut that this machine eliminates all of the objectionable features of portable well-drills, namely: balance wheels, cog wheels, and pinions, yet by the ingenious method of construction, and perfect balance, it furnishes all the steady motion of the balance wheels. In place of these numerous cogs, pinions, and balance wheels, with their continual friction and liability of breakage, one large wheel with propelling rollers attached to the rim is used. This wheel is of sufficient weight to furnish momentum to operate the drill tools with a steady and continuous motion, yet doing away with almost all of the friction which makes the machine run with much less power. All process of drilling is controlled from the end of the machine where the driller stands by means of levers, so it will be seen this machine is very simple in construction, doing away with possibility of delay from breakage and furnishing the most complete success in drilling manufactured to-day. In no sense is it an experiment. It has been thoroughly tested and more than meets expectations. Hundreds of them are being shipped to all parts of the country. Six cars go to Oklahoma Territory the first week of May. The drillers have confidence in this machine. It is made in ten sizes. The most common is the No. 3 for drilling wells from 300 to 500 feet. Any further information may be had by writing the company, at Waterloo, Iowa.

MARKET REPORTS.

Kansas City, May 13.—Cattle—Receipts, 2,602; calves, 33. The market was steady to 10 cents higher. Representative sales: SHIPPING AND DRESSED BEEF STEERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include various cattle lots and their prices.

TEXAS AND INDIAN STEERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Texas and Indian steers.

WESTERN STEERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include western steers.

SOUTHWEST STEERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include southwest steers.

IOWA STEERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Iowa steers.

MINNESOTA STEERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Minnesota steers.

IOWA COWS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Iowa cows.

WESTERN COWS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include western cows.

MINNESOTA COWS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Minnesota cows.

SOUTHWEST COWS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include southwest cows.

TEXAS AND INDIAN COWS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Texas and Indian cows.

NATIVE HEIFERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include native heifers.

NATIVE COWS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include native cows.

NATIVE FEEDERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include native feeders.

NATIVE STOCKERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include native stockers.

STOCK COWS AND HEIFERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include stock cows and heifers.

Hogs—Receipts, 9,122. The market was strong to 5 cents higher. Representative sales:

Table with columns: No., Av. Price, No., Av. Price, No., Av. Price. Rows include hog sales.

Chicago Live Stock.

Chicago, May 13.—Cattle—Receipts, 18,500. Good to prime steers, \$5.10@6.00; stockers and feeders, \$3.15@5.00; Texas steers, \$4.25@5.40.

St. Louis Live Stock.

St. Louis, May 13.—Cattle—Receipts, 2,500. Beef steers, \$4.50@5.75; stockers and feeders, \$2.75@4.85; Texas steers, \$3.50@5.20.

Omaha Live Stock.

Omaha, May 13.—Cattle—Receipts, 2,200. Native beef steers, \$4.25@5.50; western steers, \$4.00@4.85; Texas steers, \$3.50@4.25; stockers and feeders, \$3.25@5.00.

Kansas City Grain.

Kansas City, May 13.—Wheat—Sales by sample on track: Hard—No. 2, 69 1/2 @ 70c; No. 3, 68 @ 69c.

Chicago Cash Grain.

Chicago, May 13.—Wheat—No. 2 red, 73 1/2c; No. 3, 69 1/2 @ 72c; No. 2 hard winter, 71 1/2 @ 72c; No. 3, 71 1/2 @ 71 1/2c.

Butures: Wheat—May, 71 1/4 @ 71 3/4c; July, 71 1/4 @ 72c. Corn—May, 61 1/2c; July, 44 1/2 @ 44 1/2c. Oats—May, 27 1/2c; July, 27 1/2c.

St. Louis Cash Grain.

St. Louis, May 13.—Wheat—No. 2 red cash, elevator, 72 1/4c; track, 75 @ 75 1/4c; No. 2 hard, 72 1/4 @ 73c. Corn—No. 2 cash, 44c; track, 44c. Oats—No. 2 cash, 29 1/2c; track, 29 1/2 @ 30c; No. 2 white, 31c.

Kansas City Produce.

Kansas City, May 13.—Eggs—Fresh, 9 1/2 doz.

Butter—Creamery, extra fancy separator, 16 1/2c; firsts, 14 1/2c; dairy, fancy, 14c; packing stock, 10c; cheese, northern full cream, 11 1/2c; Missouri and Kansas full cream, 11c.

Poultry—Hens, live, 7c; roosters, 17 1/2 @ 22 1/2c each; spring chickens, 10c; ducks, young, 5c; turkey hens, 6c; young toms, 5c; old toms, 4c; pigeons, \$1.10 doz. Chicks scalded dressed poultry 1c above these prices.

Potatoes—New, \$2.25@2.50 per bushel, sacked; old, home grown, 35 @ 40c; Colorado, 95c; northern, 50 @ 55c; mixed, 35 @ 40c. Fruit—Strawberries—\$2.00 @ 2.25 per crate; blackberries, \$2.00 @ 2.50 per crate; apples, fancy, \$4.00 @ 5.50 per barrel.

Vegetables—Tomatoes, Florida, \$2.50 @ 4.00 per six-basket crate; navy beans, \$2.25 @ 2.30 per bushel. Cabbage, Texas, \$1.50 @ 1.75 per cwt. Onions, \$2.50 per bu. Cucumbers, 40c @ \$1.50 doz. Egg plant, \$1.00 per doz.

Special Want Column.

"Wanted," "For Sale," "For Exchange," and small or special advertisements for short time will be inserted in this column, without display, for 10 cents per line, of seven words or less, per week. Initials or a number counted as one word. Cash with the order. It will pay. Try it!

SPECIAL.—Until further notice, orders from our subscribers will be received at 1 cent a word or 7 cents a line, cash with order. Stamps taken.

CATTLE.

FOR SALE—A few Shorthorn bulls ready for service. A. C. Rait, Junction City, Kans.

FOR SALE—Three registered Shorthorn bulls, 18 to 26 months old. John J. Thorne, Kinsley, Kans.

FOR SALE—Two registered, yearling, red polled bulls; good individuals, best of breeding. Charles Morrison, Phillipsburg, Kans.

FOR SALE—Five registered Holstein bulls, also high grade Shropshire rams and ram lambs. E. W. Melville, Eudora, Kans.

HORSES AND MULES.

LEAVENWORTH COUNTY JACK FARM.—Seven mammoth jacks for sale. O. J. Corson, Potter, Kans.

PROSPECT FARM—CLYDESDALE STALLIONS, SHORTHORN CATTLE and POLAND CHINA HOGS. Write for prices of finest animals in Kansas. H. W. McAfee, Topeka, Kansas.

BIG JOHN.—Black jack, 15 1/2 hands high, with white points. Will make the season of 1901 at the gas works, corner Quincy and First streets, Topeka. We think he stands without a peer in this part of the country. Come and see him. Cowdrey & Hull.

HEIRLOOM.—All lovers of fine horse flesh should come and see the great pacing stallion, Heirloom, record 2:15 1/4, before breeding. He will serve the coming season at my new stables, corner First and Quincy streets. R. E. Cowdrey.

FARMS AND RANCHES.

160-ACRE improved farm in eastern Kansas; snap; \$16 per acre. G. E. Winders, Ottawa, Kan.

FOR SALE—330 acres, fine two story house, large barn, and other buildings, 190 acres in cultivation, balance in pasture. Plenty of fruit and shade trees. Price \$20 per acre, or will trade for 160 acres near town. Address L. N. Kentner, Herington, Kans.

ALL KINDS OF LAND FOR SALE—Farms and ranches, all sizes and prices, in Kansas and Colorado. Some fine ranches here and farther west. E. W. Voorhis & Co., Russell, Kans.

I WANT TO BUY—A good farm in eastern Kansas. Box 346, Herington, Kansas.

FOR SALE OR TRADE—160-acre farm—100 acres in cultivation; 6-room house, outbuildings, 3 miles from Florence, Kans., first-class spring water. Price \$16 per acre. For full particulars, write Jno. Fox, Jr., New Cambria, Kans.

SWINE.

A NICE LOT of Poland-China fall pigs of both sexes for sale. Quality high—prices low. H. W. Cheney, North Topeka, Kans.

MISCELLANEOUS.

FARM HAND WANTED—On dairy farm. Write with reference. Box 166, Clifton, Kans.

FOR SALE—Six pure bred Lewelling and Irish Setter pups; also a fine Lewelling bitch, 2 years old, well bred for quail. Thomas Brown, Route No. 1, Clifton, Kans.

CATALPA POSTS FOR SALE—Well seasoned, light weight posts from trees 16 years old, butt cut, full seven feet long; 2,500 fill one car. Price 6 cents each f. o. b. Wiley, Morris Co., Kans. Address Geo. W. Tinscher, Topeka, Kans.

DOGS—Do you want a good farm dog? Try one of A. P. Chacy's Scotch Collies. They will please you. Price \$4 to \$6. North Topeka, Kans.

SCOTCH COLLIE PUPPIES—Of pure breeding. Will be sold cheap if ordered at once. Write now to O. A. Rhoads, Columbus, Kans.

One skimming plant for sale, nearly new. W. J. Wedd, Lenexa, Johnson Co., Kans.

UNION PACIFIC LANDS—Fifty cents to \$10 per acre, in Kansas, Nebraska, Colorado and Wyoming. E. W. Voorhis & Co., Russell, Kans.

TRACTION ENGINE FOR SALE—Cheap. Address Gresham Bros., Bucklin, Kans.

SILBERMAN BROTHERS advertisement featuring a sheep illustration and text: 'If You have Wool to Sell and will correspond with us, we can demonstrate to your entire satisfaction that we can handle it to your best advantage and profit. Ours is the largest and best equipped wool house in the west.'

WOOL SHIP DIRECT! advertisement with text: 'There is no way to get full value for your wool except by shipping direct to market. The fewer hands your wool passes through before reaching the manufacturer, the more profit there is for you.'

Epworth League California Excursions advertisement with text: 'Account Fifth International Convention of Epworth League, San Francisco, July 18-21. San Francisco is an ideal summer resort—weather always cool.'

MISCELLANEOUS section containing various notices: 'WANTED—TRUSTWORTHY MEN AND WOMEN to travel and advertise for old established house of solid financial standing. Salary \$780 a year and expenses, all payable in cash. No canvassing required.'

The Stray List advertisement with text: 'CHEROKEE COUNTY—S. W. Swinney, Clerk. MARE—Taken up by Mary M. Jones, in Crawford Tp. (P. O. Columbus), on February 11, 1901, one bay mare, 15 1/2 hands high, star in face, shod all round, harness marks showing it had been worked; valued at \$50.'

PILES advertisement featuring 'HERMIT REMEDY CO.' and text: 'Fistula, Fissures, all Rectal Troubles quickly and permanently cured without pain or interruption of business. Mr. Edward Somers, Castleton, Ill., suffered with bleeding, swelling and protruding piles for many years.'

Trade-Marks

"Blacklegging"
"Pasteur Vaccine"
 SAVES CATTLE FROM
BLACK LEG

Nearly 2,000,000 successfully treated in U. S. and Canada during the last 5 years. Cheap, safe and easy to use. Pamphlet with full particulars, official endorsements and testimonials sent FREE on application.

Pasteur Vaccine Co., Chicago.
 Branch Office: 622 Whitney Building, Kansas City, Mo.

A Sure Preventive of Blackleg

Is Parke, Davis & Company's Blackleg Vaccine Improved. Ready for Immediate Use. No Expensive Outfit Needed.

All you have to do is to put the Vaccine in your syringe, add boiled water according to directions, and inject into your cattle. It will positively PROTECT your cattle from the dread disease, Blackleg, the same as vaccination prevents Smallpox in the human family. Specify Parke, Davis & Co.'s Blackleg Vaccine Improved, and get the kind that is sure to be reliable. EVERY LOT IS TESTED ON CATTLE BEFORE IT LEAVES OUR LABORATORIES. Write for Literature and Full Information, Free on Request.

FOR SALE BY ALL DRUGGISTS.

PARKE, DAVIS & CO., Detroit, Michigan.
 BRANCHES: New York City, Kansas City, Baltimore, New Orleans, Walkerville, Ont., Montreal, Que., and London, England.

PAGE
ALONG THE ROAD
 PAGE 13 wire 58-inch Highway Fence is giving splendid satisfaction. It's so NEAT and STRONG. PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

Save Money
 —that is, save the per cent which you have to pay the dealer when you buy fence from him. The ADVANCE FENCE is made for farmers, direct from our factory at wholesale prices. It's so good you will order the second and third time. Special prices, etc., free. ADVANCE FENCE CO., 180 Old St., Peoria, Ill.

Build A FENCE
 Get a Steel King Fence Machine. Set a boy at work. In less than two days he can build 100 rods and pay for the machine. A constant money maker. Catalogue, full of fence facts that will be a revelation to you, free. KOKOMO FENCE MACHINE CO., 74 North St., Kokomo, Ind.

HORSE-HIGH!
 ... BULL-STRONG ...
 With our Duplex Automatic Ball Bearing Woven Wire Fence Machine, any farmer can make 100 styles, and from 50 to 70 rods a day of the best and most practical fence on earth at cost for the wire to make it of from 20 to 30c. per rod. We sell Ornamental Fence and Gates, Farm Fence and Gates, Plain, Barbed and Coiled Spring Wire direct to the farmer at wholesale prices. Catalogue free. KITSelman Bros., Box D37, Muncie, Ind.

KIRKWOOD FOR 1900
 STEEL WIND MILLS, STEEL TOWERS, PUMPS, and CYLINDERS, TANKS, and FITTINGS OF ALL KINDS
 —Address—
 Kirkwood Wind Engine Co
 Arkansas City, Kans.

DO NOT BUY WELL DRILLING MACHINERY until you see our new Catalogue No. 41 We will furnish it to you FREE. Write to our address, either Harvey, Ill., Chicago, Ill., or Dallas, Texas.
F. C. AUSTIN MFG. CO.
 Factories at Harvey, Ill.

Do you want a WIND MILL?
 Do you want a FRED MILL? We have them the best made and at prices that CAN NOT BE EQUALLED. Write for further information, circulars, etc.
OUR BIE WINDMILL CO., Topeka, Kans.

\$25 ON 5 TON IS WHAT YOU CAN SAVE We make all kinds of scales. Also B. B. Pumps and Windmills. **BECKMAN BROS., DES MOINES, IOWA.**

SPECIAL PRICES 50 Days' Trial. Guaranteed. Double and Combination Beam. OSGOOD, 53 Central St., BINGHAMTON, N. Y. Catalog Free. Write now.

ROSS ENSILAGE CUTTERS
 EXCEL ALL OTHER MAKES. We can prove it, if given a chance. Send for Cat. No. 49 tells all about it. **THE E. W. ROSS CO., SPRINGFIELD, O.**

LIGHTNING WELL MACHY
 THE STANDARD M LUM. AIR LIFT. LINE ENGINES. THE AMERICAN WELL WORKS. CHICAGO - DALLAS TEX.

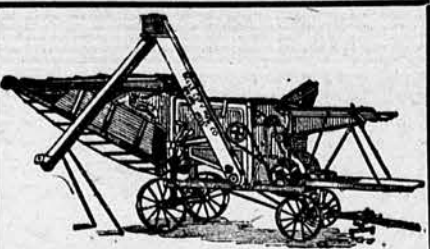
WELL DRILLING Machines
 Over 70 sizes and styles, for drilling either deep or shallow wells in any kind of soil or rock. Mounted on wheels or on stils. With engines or horse power. Strong, simple and durable. Any mechanic can operate them easily. Send for catalog. **WILLIAMS BROS., Ithaca, N. Y.**

WINTER WATER.
 When the stock goes into winter quarters you will want to be sure of a reliable and constant supply of water. A bored well is the safest and surest. Our Well Machinery doesn't heat and doesn't freeze. Drills 25 to 1500 ft deep. We make all appliances. Have stood the test of 13 years. We also have Gasoline Engines for all purposes. Send for free catalog. **W. M. Thompson Co., Sioux City, Iowa.** Successors to Stinson City Engine & Iron Works

"AVENARIUS CARBOLINEUM" PAINT.
 Guaranteed to preserve all wood-work against rot. Radical Remedy against Chicken-Pox. Successfully used for 25 years. **CARBOLINEUM WOOD PRESERVING CO., Greenlawn, Wis.**

THE POTATO DIGGER
 A perfect machine containing improvements found in no other. Separates potatoes from vines and weeds. Rapid, clean worker. Warranted. Dirt proof brass boxes, side hill spurs, special shovel, front and side levers. **HOOPER, PROUT & CO., Avery, Ohio.** Catalog free.

Grindstones.
 Direct from maker to user 75-lb. stone, diameter 20 inches, \$2.80. 100-lb. stone, diameter 24 inches, \$3.30. Either size stone mounted, \$1.25 extra. The prices include cost of delivery at nearest railroad station. Write for circular. **P. L. COLE, Lock Box 381, Marietta, Ohio.**



THE FARMER'S FRIENDS.
 A COMPLETE THRESHING OUTFIT
 Small in Size, Small in Cost, Large Capacity.
 A Portable Gasoline Engine for Any Work—Any Time—Anywhere.
 Write for Catalogue of our Machinery Department.
John Deere Plow Co., KANSAS CITY.

AN INDIAN... SCOUT'S RECIPE

For exterminating Prairie Dog villages and other rodents. Greedily eaten; it causes instant death.

I will send this valuable recipe to any address for a ONE DOLLAR BILL.

It is highly recommended by all who use it.

Address **A. A. LOOMIS, PRAIRIE VIEW, ILLINOIS.**

ECONOMY CREAM SEPARATOR.
 Pays for itself in a few days. Separates in 40 minutes automatically and gets all the cream. AGENTS WANTED. Big pay—every farmer buys. Where we have no agent we will send a Separator at agents' prices, to introduce it. Write for catalogue, prices, etc. to **ECONOMY SUPPLY CO., 562 Main St., Kansas City, Mo.**

RECTOR'S IMPROVED CREAM SEPARATOR
 The greatest time and labor saver of the century for butter makers. Separates AUTOMATICALLY in 40 minutes. Gain in cream from 5 cows in one month pays for it. Agents wanted. 100 per cent profit. Women successful as men. For catalogue and wholesale prices address **J. A. RECTOR, T 107 K. & P. Bldg., KANSAS CITY, MO.** Reference: Western Exchange Bank.

CREAM SEPARATOR FREE
 This is a genuine offer made to introduce the Peoples Cream Separator in every neighborhood. It is the best and simplest in the world. We ask that you show it to your neighbors who have cows. Send your name and the name of the nearest freight office. Address **PEOPLES SUPPLY CO., DEPT. X, KANSAS CITY, MO.**

Farmer and Capital,
\$1.25.

The Semi-weekly Capital, published twice a week at Topeka, Kansas, is an excellent 8-page Republican newspaper. It is issued Tuesday and Friday of each week and contains all the news of Kansas and the world up to the hour of going to press. To a farmer who cannot get his mail every day it is as good as a daily and much cheaper. . . . By a special arrangement we are enabled to send the Kansas Farmer and Semi-weekly Capital both one year for \$1.25. This is one of our best combination offers and you can't afford to miss it. Address: **THE KANSAS FARMER CO., TOPEKA, KANSAS.**

C. F. MENNINGER M. D., CONSULTING PHYSICIAN
 727 KANSAS AVENUE, TOPEKA, KANSAS
 Specialties: Chronic, and Obscure Diseases. Heart and Lungs.

OKLAHOMA OPPORTUNITY.

HOMES FOR THOUSANDS in the **KIOWA, COMANCHE, AND APACHE RESERVATIONS** which are to be opened for settlement in 1901.

...THE GREAT...
ROCK ISLAND ROUTE
 is the only line running to, through, or near the RESERVATIONS.

"OKLAHOMA OPPORTUNITY"
 A book describing these lands and conditions of entry, SENT FREE.
 Address... **E. W. THOMPSON, A. G. P. & T. A., TOPEKA, KANSAS**

THE AGRICULTURAL PROBLEM....

Is being solved in a most satisfactory manner, along the line of the.....

MISSOURI PACIFIC RAILWAY

...AND....

IRON MOUNTAIN ROUTE
 All sorts of crops are being grown, and they are large crops, too. Reduced rates are offered the first and third Tuesdays of each month, and these events are called low rate Homeseekers' Excursions. Literature on Missouri, Kansas, Arkansas, Texas, and on.....
Zinc and Lead Mining,
 will be mailed free on application to **M. C. Townsend, General Passenger and Ticket Agent, St. Louis.**

ONE FARE FOR THE ROUND TRIP
 —VIA—

THE UNION PACIFIC
 FOR Annual Meeting German Baptists (DUNKARDS)
 Lincoln, Neb., May 24-31, 1901,

From points east of Denver, Cheyenne, and in Kansas and Nebraska. In order to give those attending this meeting an opportunity to visit points of interest, an open rate of one fare, for the round trip, will be made to all points in Nebraska from Lincoln. For further information call on **F. A. LEWIS, City Ticket Agent, 525 Kansas Avenue; J. C. FULTON, Depot Agent.**

WHEN IN CHICAGO, STOP...
 at the newly furnished and decorated hotel. Steam heat and electric elevators. Formerly the Clifton House, but now the
 ... WINDSOR-CLIFTON HOTEL,
 Corner of Monroe Street and Wabash Avenue. Located most central to the wholesale and retail stores, theaters and public buildings. The prices range from 75 cents and upwards per day. European plan. Visitors to the city are welcome.
SAMUEL GREGSTEN, Proprietor.

CENTROPOLIS HOTEL
 KANSAS CITY, MO.
KUPER, CAMPBELL, MEYER, PROPRIETORS.
 HEADQUARTERS KANSAS STOCKMEN
 The Centropolis has been remodeled entire and refurbished complete. American and European plan. Prices very reasonable. Take surface cars in front of Union Depot direct to hotel.



PIG SEASON IS HERE

"INTERNATIONAL STOCK FOOD"

3 FEEDS FOR ONE CENT

MAKES SOWS RAISE MORE AND BETTER PIGS AND ONLY COSTS 3 FEEDS FOR ONE CENT. IT MAKES SOWS GIVE MORE AND RICHER MILK. IT PREVENTS HOG CHOLERA BY MAKING THE PIGS STRONG AND KEEPING THE BLOOD PURE. IT GIVES PIGS A QUICK START AND MAKES PIGS WEIGH 300 POUNDS AT 6 MONTHS OF AGE.

16 PIGS TO ONE SOW.
CATLIN, ILLINOIS.
 DEAR SIR: I had a sow five years old last fall that was very sick, would not eat and could not get up. She was reduced to skin and bones and was almost dead. A neighbor recommended "International Stock Food." I began by drenching her with it. She began to get better the first day, soon had an appetite and was soon well. On the 25th day of May she had sixteen pigs, but as she had but fourteen teats, she could only raise fourteen of the pigs. The sow and pigs are healthy today. I wish to recommend "International Stock Food" to all stockmen. [Sworn Statement.]
THOMAS E. JONES.

15 PIGS TO ONE SOW.
ELLSWORTH, INDIANA.
 International Food Co., Minneapolis, Minn.
 DEAR SIR:—One of our sows had a litter of 15 pigs in January, and they were all well and strong for two months, when two of them were killed by accident. We commenced feeding the sow "International Stock Food" in September, and fed it regularly while she was with pig, and while she was suckling the pigs, and they grew rapidly. We also use "International Stock Food" at the present time for our brood sows.
 [Sworn statement.]
THOMAS G. ELLIS.

SOWS RAISE MORE PIGS.
PRINCETON, INDIANA.
 International Food Co., Minneapolis, Minn.
 DEAR SIR:—I have been in the hog business as well as farming for twenty-five years, and during that time have paid considerable attention to swine, and Hog Cholera. This great disease has swept our neighborhood time after time. In 1881 I commenced using "International Stock Food" as a preventive. I use three pounds of this to one barrel of slop. After mixing it well, I allow the herd to drink freely of it once per day, especially during the Cholera epidemic. I have never lost a hog since using this system of prevention. Also I find that pigs thrive much better when fed this food. A sow, nine times out of ten, will rear her entire brood when "International Stock Food" is fed as a conditioner. Yours truly,
HARVEY SCOTT.

TWO LITTERS OF PIGS PER YEAR.
GARDEN CITY, MISSOURI.
 GENTS:—After a long siege of Hog Cholera I have, by the use of "International Stock Food," waded through without the loss of a hog, while it has swept off hundreds and hundreds all around me. One of my neighbors, one mile away, lost over 100; my nearest neighbor, 40 rods away, some 20, and so on. At the same time some of their stock was on my place, running with my hogs. "International Stock Food" kept my hogs healthy all the time. By feeding "International Stock Food" my sows litter from 8 to 16 healthy pigs twice a year. I recommend "International Stock Food."
T. H. ALLISON.

MAKES SOW AND PIGS FAT.
WEST MILLS, NEBRASKA.
 International Food Co., Minneapolis, Minn.
 GENTLEMEN:—I have fed "International Stock Food" for over two years and I consider it a good medicated food for hogs as well as for other live stock. It has prevented Hog Cholera and made my hogs grow faster than anything that I ever used. I had an old sow that would not eat and starved her pigs. After giving her "International Stock Food" I never saw anything eat so greedily in my life. The sow and pigs are gaining flesh very rapidly.
S. WALKER.

EXTRA GOOD FOR BROOD SOWS.
CAMBRIDGE, ILLINOIS.
 International Food Co., Minneapolis, Minn.
 GENTS:—I have used "International Stock Food" for brood sows and young pigs. It made a great improvement in the sows and caused the pigs to make a remarkable growth. It certainly pays feeders.
WM. DENGEL.

A \$3000. STOCK BOOK FREE

We will Mail You a Copy Free, Postage Prepaid, if You Answer 3 Questions

1st. Did you ever use "International Stock Food" for Horses, Cattle, Sheep, Hogs, Colts, Calves, Lambs or Pigs? 2d. How many head of each kind of stock do you own? 3d. Name this paper.

THIS BOOK CONTAINS 183 FINE, LARGE, COLORED ENGRAVINGS OF HORSES, CATTLE, SHEEP, HOGS, POULTRY, ETC.

DESCRIPTION: The engravings were made by our own artists and cost us over \$3000. The book is 164 pages and the cover is a beautiful live stock picture printed in brilliant colors. In Horse Department are fine engravings of Imported Messenger, Mambrino, Abdallah, Rydyke, Hambletonian, Nutwood, 2:28 1/2, Robert J., 2:31 1/2, Dirotum, 2:55 1/2, Nancy Hanks, 2:51, Star Pointer, 1:59 1/2, Johnson, 2:06 1/2, George Wilkes, 2:22, Alix, 2:43 1/2, and many others. It contains 20 large engravings of draft and coach breeds. Also the largest 4-year old horse in the world, weighing 2500 lbs. and 19 hands high. He is owned by International Food Co., and they also own the following stallions: Buttonwood, 2:17 by Nutwood, 2:18 1/2, International King B., St. Vincent, 2:18 1/2, International Stock Food by Hartford, 2:22 1/2, and International Prince by Island Wilkes, 2:13 1/2, besides their brood mares, colts, etc. In Cattle Department are large engravings of the leading prize winners of the different breeds, at the Trans-Mississippi Exposition. Also the Largest Cow in the world, weighing 2370 lbs. and 6 feet tall. Also largest 8-year old steer, weighing 3100 and 5 feet tall. Both owned by International Food Co., Minneapolis, Minn. In Hog Department are engravings of the different breeds and the latest scientific facts in regard to Hog Cholera. Also the Largest Hog in the world, weighing 1621 lbs. In Sheep Department are extra good engravings of the prize winners, of the

different breeds, at Trans-Mississippi Exposition. In Poultry Department are engravings of the different breeds. Your special attention is called to the fact that the book also gives a description and history (and other valuable information) of the different breeds of Horses, Cattle, Sheep, Hogs and Poultry. The Veterinary Department is very practical and contains extra fine veterinary illustrations. It gives the different diseases for Horses, Cattle, Sheep, Hogs and Poultry and tells what to do for each. The Veterinary Department will be a great addition to your live stock library and will save you hundreds of dollars. Our 2000 dealers give away "International Stock Food" free. You cannot buy a book for \$10 that will give you as much practical information and as many fine colored engravings of noted animals. WE WILL GIVE YOU \$14.00 WORTH OF "INTERNATIONAL STOCK FOOD" IF BOOK IS NOT AS STATED. "International Stock Food" is endorsed by over 100 leading "Farm Papers" and is used and endorsed by over 500,000 stockmen and farmers. Established 12 years and has the largest sale. Included in the United States Government exhibit at Paris and won the highest award and medal at that Exposition, 1889. The editor of your "Farm Paper" will tell you that "International Stock Food" is one of the best illustrated books ever published. Most of the illustrations are of noted animals.

Largest Stock Food Factory in the World. Capital Paid in \$800,000.00.

Answer the 3 Questions and Write for this Book to

INTERNATIONAL FOOD CO., MINNEAPOLIS, MINN. U. S. A.