

KANSAS FARMER

VOL. XXXIX.
NO. 22.

TOPEKA, KANSAS, THURSDAY, MAY 30, 1901.

ESTABLISHED IN 1863.
\$1.00 A YEAR.

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.

CEDAR SUMMIT POLAND-CHINA STOCK FARM. Only choicest individuals reserved for breeding purposes. **J. M. GILBERT**, Busby, Elk County, Kans.

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. Also a few fine boars. Call on me or write your wants.

FAIRVIEW HERD DUROC-JERSEYS Contains breeders of the leading strains. We have some fine summer and fall pigs to sell at moderate prices. **J. B. DAVIS**, Fairview, Kans.

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

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

POLAND-CHINAS. Extra Good Fall Boars and Sows. **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. Young stock for sale reasonable. All stock recorded free. **M. O'BRIEN**, Liberty, Kans.

DUROC-JERSEY SWINE—REGISTERED. Three extra fine males left; one September, and two October farrow. Prices away down to close out. **NEWTON BROS.**, Whiting, Kans.

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.

D. L. BUTTON, North Topeka, Kans., Breeder of Improved Chester Whites. Stock for Sale. Farm is two miles northwest of Reform School.

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.

MANWARING BROS., Lawrence, Kans.

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. We can furnish herds not akin, of any of the fashionable strains. We have several that are good enough to fit for next fall's shows. Prices reasonable. Nothing but good ones shipped on orders. **WAIT & EAST**, Altoona, Kans.

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. The home of the greatest breeding and prize-winning boars in the West, such as Banner Boy 28441, Black Joe 28608, World Beater and King Hadley. FOR SALE—An extra choice lot of richly-bred, well-marked pigs by these noted sires and out of thirty-five extra-large, richly-bred sows. Inspection or correspondence invited.

SWINE.

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

A FEW POLAND-CHINA PIGS FOR SALE. Fine individuals. "Chief I Know" and "Look Me Over" strains. **R. J. CONNEWAY**, Edna, Kans.

Mound Valley Herd of POLAND-CHINAS Has some show gilts bred to I. B. Perfection (25172 S.). Others bred to Black U. S. Best (21787). Also a fine lot fall pigs for sale. Prices reasonable.

W. P. WIMMER & SON, Mound Valley, Kans.

Poland-China Hogs. Herd headed by I Know Perfect 49283 O., sired by Chief I Know 37187 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 Brokenridge. **W. E. NICHOLS**, Sedgwick, Kans.

STANDARD HERD OF Registered Duroc-Jerseys **PETER BLOCHER**, Richland, Shawnee Co., Kans. Herd headed by Big Joe 7363, and others. Choice pigs of both sexes for sale; pairs and trios not related. **S. C. B. LEIGHORN** 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. Write me for prices on what you want. **M. L. SOMERS**, Altoona, Kans.

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 48611, mated to a lot of choice selected sows of the most noted prize-winning families. A fine lot of fall pigs ready to ship. Inspection or correspondence invited.

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.** Telegraph address Pearl, Kans.

Pure Bred Poland-Chinas I have 25 choice October pigs that I will sell for \$10 and \$12 for the next 30 days, sired by Corwin I Know 18448, and Hadley U. S. 20186; dams equally as well bred, all good colors. I am also booking orders for choice spring pigs sired by Logan Chief 24247, and Proud Tecumseh 24655. My hogs have good heads, small fancy ears. Come and see them or write. **JOHN BOLLIN**, Kickapoo, Leavenworth Co., Kans. Express Office, Leavenworth.

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 Mechtchilde Prince at head of herd. Young bulls and heifers for sale.

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

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. **CORRESPONDENCE SOLICITED.**

CATTLE.

POLLED DURHAMS 10 bulls from 6 to 30 months. All stock recorded free in two records. Correspond at once before too late. **A. E. BURLEIGH**, 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. **17-150 Fine Duroc-Jersey Pigs.** **F. F. FAILOR**, Newton, Iowa.

SHORTHORN BULLS FOR SALE A few choicely bred young bulls, spring yearlings, for sale at very reasonable prices. Also 2 Shropshire and 1 cross-bred Shropshire-Cotswold buck. Address **JAMES C. STONE**, Leavenworth, Kans.

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. **O. B. WHITAKER**, Proprietor, Shady Bend, Kansas.

Norwood Shorthorns. **V. R. ELLIS** Gardner, Kans. Sir Charming 4th at head of herd. Crutchshank 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.

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. **O. E. MORSE & SONS**, Mound City, Kans.

Breed the Horns off by using a RED POLLED BULL. **CHAS. FOSTER & SON**, Butler Co. Kas. Breeders of Red Polled Cattle, Herd Headed by Powerful 4582. Pure-bred and graded 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.

Recorded Hereford Bulls FOR SALE. The get of Marmion 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, Mechtchilde 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.

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. Inspect 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.

Silver Creek Herd SHORTHORN CATTLE. **GWENDOLINE'S PRINCE** 180913 in service, a son of the \$1,100 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,** Sired 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. **J. R. HIGGINS**, Keswick, Keokuk Co., Iowa.

MT. PLEASANT HERD OF SHORTHORNS. Herd headed by Acorn Duke 18th 142177. Herd composed of Young Marys, Galateas and Sanspareils. Young bulls for sale. **A. M. ASHCRAFT**, Atchison, Kans. Inquire at **R. F. D. No. 3.** Ashcraft & Sage Livery Barn, Main Street.

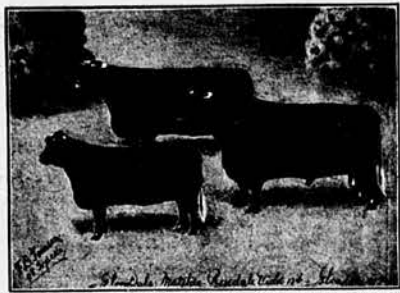
CLOVER CLIFF FARM. REGISTERED GALLOWAY CATTLE. Also German Coach, Saddle and Trotting-bred horses. World's Fair prize Oldenburg Coach stallion Habbo, and the Saddle stallion Rosewood, a 16-hand 1,100-pound son of Montrose in service. Visitors always welcome. Address **BLACKSHERE BROTHERS**, Elmdale,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

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

PURE BATES SHORTHORNS. **M. W. ANDERSON**, Independence, Mo. Wild Eyes, Croggs, Peach Blossoms, Duchess Craggs, Harts, Barringtons and Bracelets. 166th Duke of Wildwood 134671 at head of herd. Can sell young females, bred or open.

CATTLE.
H. M. SATZLER,
 Burlingame, Kansas,
 BREEDER OF
HEREFORD CATTLE,
BERKSHIRE SWINE,
COTSWOLD SHEEP,
STOCK FOR SALE.

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 Cruickshank, as-
 sisted by Sharon Lavender 143002.
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.



GLENDALE SHORTHORNS, OTTAWA, KANS
 Leading Scotch and Scotch-topped American families
 compose the herd, headed by the Cruickshank bull
 Scotland's Charm 127264, by Imp. Lavender Lad, dam
 by Imp. Baron Cruickshank. 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 regis-
 tered.
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.

R. E. EDMONSON, late of Lexington, Ky., and Tat
tersall's (of Chicago, limited), now located at 208
Sheldley Building, Kansas City, Mo., offers his service
 as Live Stock Auctioneer. All the Herd and Stu
 books. Wire before fixing dates.

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

**LIVE-
 STOCK AUCTIONEER**
Col. J. W. HARSHBERGER
 Lawrence, Kansas.
 Special attention given
 to selling all kinds of ped-
 greeed stock, also large sales
 of graded stock. Terms
 reasonable. Correspond-
 ence solicited. Mention
 KANSAS FARMER.

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

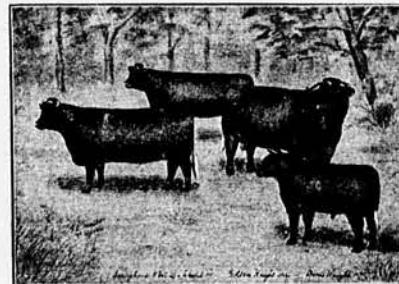
STEELE BROS., Belvoir, Douglas Co., Kansas.
 Breeders of **SELECT**
HEREFORD CATTLE.
 Young Stock For Sale Inspection or Correspondence Invited

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.

SCOTT & MARCH,
 BREEDERS OF PURE BRED
HEREFORDS,
BELTON, CASS COUNTY, MO.

BULLS in service, HESIOD 29th 66304, Imp. RODERICK 80155, MONITOR
 58275, EXPANSION 93682, FRISCOE 93674, FULTON ADAMS 11th 83731. HESIOD 29th 66304
 Twenty-five miles south of Kansas City on Frisco, Fort Scott & Memphis, and K. C., P. & G. Railroads



PEARL SHORTHORNS
 HERD BULLS:
BARON URY 2d 124970. LAFITTE 119915.
 Inspection Invited
C. W. TAYLOR, Pearl, Kans

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 stall-
 ion. In such a locality those farmers and breed-
 ers 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 ex-
 ist, 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.
McLAUGHLIN BROS.,
 Sixth and Wesley Avenues, COLUMBUS, OHIO.

Sunny Slope Herefords
 ...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.
G. A. STANNARD, Emporia, Kansas.



GUDGELL & SIMPSON,
 INDEPENDENCE, MO.,
 BREEDERS AND IMPORTERS OF
Herefords
 One of the Oldest and Largest Herds
 in America.
ANXIETY 4th Blood and Type Prevall.
 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.
 Address **T. P. BABST, Proprietor, Dover, Shawnee Co., Kans**

GALLOWAYS.
 LARGEST HERD OF REGISTERED GALLOWAYS IN THE WORLD.
 Bulls and females, all ages for sale—no grades. - - Carload lots a specialty.
M. R. PLATT, Kansas City, Mo. OFFICE AT PLATT'S BARN,
1613 GENESSEE STREET.

GALLOWAYS.
 Largest Herd of Registered Galloways in Kansas.
 Young bulls, cows, and helpers for sale.
E. W. Thrall, Eureka, Kansas

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.**

Tebo Lawn Herd of Shorthorns.
 —HERD BULLS ARE—
 IMPORTED COLLYNIE 135022 bred by Wm. Duthie.
 IMPORTED BLYTHE VICTOR 140609 bred by W. S. Marr.
 IMPORTED BAPTON MARQUIS bred by J. Deane Willis.
 ADMIRAL GODOY 133872 bred by Chas. E. Leonard.
 FEMALES are the best CRUICKSHANK families topped from the leading importations and Ameri-
 can 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 in-
 vite the attention of the public. Inspection and correspondence solicited. Address all correspondence
 to manager.
E. M. Williams, Manager.
G. M. CASEY, Owner,
Shawnee Mound, Henry County, Mo.

Agricultural Matters.

Seed Corn.

BY ARCHIBALD D. SHAMEL, INSTRUCTOR IN FARM CROPS, ILLINOIS COLLEGE OF AGRICULTURE AND SPECIALIST IN FARM CROPS, IN EXPERIMENT STATION, IN BULLETIN NO. 63.

Illinois' annual corn crop, about 240,000,000 bushels, is raised on nearly 8,000,000 acres of land. It requires almost 1,000,000 bushels of seed corn to plant the corn fields of this State.

If the character of the seed has any considerable influence upon the crop produced, then the production and use of the best possible seed corn becomes a matter of tremendous importance.

What is the quality of the seed corn planted by the Illinois farmers? To answer this question it will be necessary to study the character of seed corn under several different heads.

UNIFORMITY.

As a rule little attention has been given to the character of the seed corn; little examination has been made of the proportion of corn to cob, of the purity of color, the space between the rows, the filling out of ends, the length, circumference, or shape, or of any of the important points which go to make up a good ear of corn.

It has been found by seed corn growers that the length, circumference or shape of the ear can be varied at will by selection, and there is every reason to believe that these characteristics can be so fixed that practically all of the ears in a field grown from pedigreed, uniform seed will be of approximately uniform size and shape. Further, it has been found that the number of rows of kernels on the cob, the filling out of the ends, or other characteristics, can be improved by planting from seed having these characteristics.

It has been demonstrated that it is not good practice to plant small kernels of grain of any sort. Therefore, it is not good policy to plant the tip kernels. As the butt kernels usually vary greatly in size from the kernels on the rest of the ear, it is a good plan to shell off and discard both the tips and butts of the ears selected for seed. Again, as the butts of the ears mature first and the tips last, it is probable that these parts have been fertilized by pollen of an early or late variety from some neighboring field; so by shelling off the butts and tips, part of the danger of mixed seed can be avoided. In general, shell off the small and the extremely large kernels, so that the portion of the ear remaining for seed has kernels of approximately uniform size. With most varieties of corn, about 1/2 inch of butt kernels and 1 inch of tip kernels should usually be shelled off.

VITALITY.

Owing to a late spring or early frosts, it frequently happens that the seed corn does not fully mature. In this condition the ear is likely to mold and decay, thus destroying the vitality of the grain. As the majority of farmers in Illinois allow the seed corn to remain in the general crib during the winter exposed to the sudden and violent changes in temperature, such corn, full of moisture, will freeze, and consequently the life of the germ may be weakened or destroyed. The seed corn in central Illinois, selected from the crop of 1898, was so much injured in this way that the university tests of the vitality of seed corn sent in by farmers from this section of the State gave an average of only 76 per cent germination. Such seed was not fit to plant, but as no provision had been made by the farmers for drying and properly preserving seed corn, and as this was the only seed available, it was planted with a resultant poor stand, light crop, and loss of profits.

Immature seed should not be planted for several reasons: First, such kernels do not contain as much plant food as those which are fully developed, and thus do not provide as much nourishment for the young plants which, consequently, do not get so vigorous and healthy a start as those from mature seeds. Second, the excessive moisture in the immature seeds renders them liable to begin to germinate in the fall in the crib, and thus use up a part of their strength; or a sudden drop in temperature may freeze the corn and destroy the life of the seed.

Seed corn should test 95 per cent vitality; i. e., of the seed planted in the seed bed 95 per cent should grow. If the seed does not give this test of vitality, a poor stand will be the result. Nor is it wise for the farmers to try to make up for poor seed by planting a greater number of grains, because of

seeds which give a low test of vitality many of those which do grow lack strength and vigor and will consequently produce weak plants. Furthermore, an uneven stand will surely result, some hills being over-crowded (frequently with weak plants), and other hills being left with perhaps no plants at all because of the unequal distribution of the seed that will germinate. Seed of low vitality will inevitably tend to the production of a poor crop. It is important, therefore, that the farmer make a test of the vitality in order that he may know the quality of his seed. A most simple, effective, and practical method of testing the vitality of seed corn is as follows: Fill common dinner plates nearly level full of fine sand, pour water over the sand until it is more than saturated, shake gently to level the sand, allow it to settle, and then drain off the surplus water. Push 50 kernels into the sand in each plate, turn a smaller plate over the sand to prevent too rapid evaporation of moisture, and set both in a warm place. Keep the sand moist and in seven days all of the healthy kernels should sprout. By counting the kernels sprouted, the per cent of good seed can easily be computed.

PEDIGREE.

As a matter of fact the history of the development of most of the strains of corn now grown in the State, is very brief. With few exceptions no record has been kept of the various crosses, and but few varieties have been selected toward a particular type for a special purpose for any considerable length of time. There have been but few systematic or practical attempts at improvement, and the result is that we are, as a rule, growing mongrel or scrub varieties. A few varieties, however, have been carefully selected, in accordance with definite ideas as to improvements, for about a quarter of a century and have developed certain characteristics, distinguishing them from other varieties. In such instances it has been found that, if the corn has been selected toward a uniform standard type, the yield has been increased because of the production of uniformly better ears. The yields of varieties tested at this experiment station from 1888 to 1900, inclusive, show the same result. Also enough has been accomplished to prove that almost any characteristic desired in a variety can be fixed by persistent selection, and that these characteristics can be continually improved by further selection.

The development of the per cent of sugar in the sugar beet furnishes a splendid illustration of the possibilities of plant breeding. Starting with ordinary beets with about 4 per cent of sugar, the French and German seed growers by selection have increased the sugar content to an average of 12 to 16 per cent, making it possible to manufacture profitably sugar from this source. There is little doubt that there are as great or greater possibilities in the corn plant, and that these possibilities can be as easily developed as the increased sugar content of the beet. The development of our present breeds of cattle and other live stock plainly shows how careful, systematic, and intelligent selection and breeding have improved these breeds. We have developed the dairy type and the beef type from the same source; the light and draft horse from the same type by breeding and selection.

Corn responds to selection as readily as do beets and cattle, and there is no longer any doubt but that varieties of corn can be further improved by similar methods.

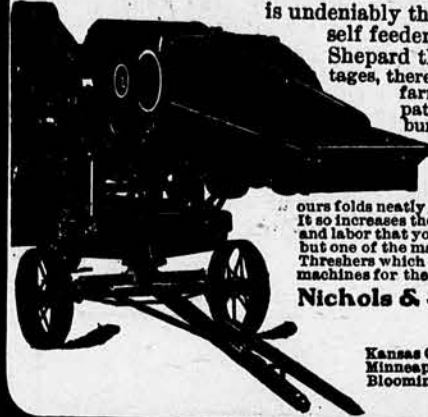
It has been found that the chemical composition of the corn kernel varies, and the experiments conducted by this station have conclusively shown that the proportion of the constituents of chemical composition can be varied at the will of the breeder (Bulletin No. 55, Illinois Experiment Station, "Improvement in the Chemical Composition of the Corn Kernel"). In other words, it has been found possible to increase or decrease the proportion of oil, or of starch, or of protein, by seed selection. When seed high in protein is planted, a product high in protein is the result and vice versa. The same thing holds true with seed high in starch, or oil.

What is true of the chemical composition, is eminently true of the physical characteristics of the ears; for instance, the shape of the Leaming kernel has been changed by twenty-five years of selection from the original shoe-peg shaped kernel to a broader, deep grain with a deep dent. Along with this variation in shape of kernel has gone an increase in length of ear and a slight increase in circum-

A Self Feeder that Feeds

Can you think of any attachment to a threshing machine that would save you more money than a good self feeder and band cutter that will do the work reliably and well? It's sure to save you the hire of one man, generally two and not infrequently three or more. You save their wages and board—no small item when you have a big job of threshing.

Our New Nichols-Shepard Self Feeder



is undeniably the most reliable and thoroughly good self feeder made. It is used on the Nichols-Shepard threshers only, and all of its advantages, therefore, accrue to the men who own and the farmers who employ them. Note the special patented double truss which supports the bundle carrier. It is strong, neat, easy to adjust and highly efficient. No legs, as in the case of all others, to sink into the ground, thereby twisting the feeder and preventing its working properly. Then ours folds neatly out of the way and carries perfectly in moving. It so increases the capacity of the machine, saves so much time and labor that your threshing becomes a quick and easy job. It is but one of the many points of superiority of the Nichols-Shepard Threshers which makes them the very best and most economic machines for the farmer to employ. If interested, write us.

Nichols & Shepard Co. Battle Creek, Mich.

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

ference. Again, in the case of the Boone County White variety, the tips of the original corn were poorly filled. This fact was due principally to the reason that the Boone County white ears are very long. As an ear matures from the butt towards the tip, the tip maturing last, it frequently happened that the pollen was all gone before the tips of some of these ears had been fertilized. By selecting for seed corn only those ears which were well filled, in other words, the ears all parts of which matured in time for the pollen to fertilize them, the best samples of this variety have become well filled at the tips.

The Golden Eagle corn was originally a medium to shallow grained corn, but by constant selection toward deeper kernels and deeper dent, the variety has developed a very deep kernel with an unusually deep indentation. It has been found at the university through five years of experimentation, that the amount of husks, length of shank, size of stalk, position of the ear on the stalk, the number of leaves, in fact, every physical characteristic can be varied by simple selection in a short space of time.

At present our meager records show only the incomplete history of the parentage of the varieties of corn. It is just as important that we know the character of every part of the corn plant, as that we know every characteristic of the animal. The size, shape, and characteristics of the stalk strongly influence the development of the ear; and it is probable also that we shall need to know the nature of the root development in order to breed intelligently.

HOW TO GROW SEED CORN.

The farmer who is especially interested in corn can well afford to grow his own stock seed. He can select for those qualities he particularly desires, adapt the corn to his peculiar conditions of soil and climate, and continue

to produce a constantly improving grade of corn.

The first essential in growing seed corn is, that one obtain from some reliable corn breeder 30 or 40 ears of highly bred seed of the variety desired. Corn suitable for growing seed is difficult to obtain. It does not exist in large quantities, because of the high standard of perfection which must be maintained in its selection, and so it must be very expensive, but the farmer can well afford to pay a high price in order to get it for breeding purposes. It is absolutely necessary that the farmer obtain this seed corn in the ear, because it is impossible to judge accurately the quality of seed corn after it is shelled.

An acre or more of good land should be selected which is located at a distance of about 40 rods from any other corn field (unless thick groves or hedges are between), and, if possible, further, especially in the direction of the most prevalent summer winds, in order that the corn may not be mixed by the pollen from other varieties or from low grade corn of the same variety. After the seed bed is well prepared and the field marked both ways, plant the corn from each are by itself, either in plots about 9 or 10 hills square, or in rows lengthwise of the field. The planting is best done by hand, and must be so done if the plot system is adopted. A square field of 36 square plots of 100 hills each is a little more than 1 acre; or 28 rows of 127 hills each make practically an exact acre, if the hills are 3 feet 6 inches apart each way. Discard all tips and butts and any other abnormal or mixed kernels and plant each plot or each row with corn from a single ear. What is left of the ears may be mixed together and used to plant a border around the acre field to further protect it from foreign pollen. This border is, of course, cultivated with the rest of the field. Keep each year a

No Telephone Trust

Controls our Instruments and Equipment. We are Absolutely Independent.



YOU can secure the saving of time and money; the opportunities for profit in close touch with the market; the convenience and pleasure that are only possible by having a telephone in your house.

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., 232 S Green St CHICAGO.

carefully selected typical ear for purposes of comparison and to show the changes effected year by year.

As soon as the ears begin to set and the character of the stalks can be determined, go through the field and cut out all of the poor, dwarfed, or barren stalks, and also any volunteer or accidental stalks which may appear in the field, so that the pollen from these inferior stalks can not fertilize the future seed. The same object may be accomplished by detasseling these imperfect stalks just as the tassels begin to peep through the leaves.

Husk each plot or row grown from a single ear separately. Examine the ears closely and select ears for the next year's seed acre from those plots or rows having the greatest proportion of ears true to type. The ears which produce this large proportion of ears true to type must have a prepotency for the production of ears of this uniform type, and by planting ears from such a crop, which has inherited this

sense and worth more to the farmers in the eastern part of the State than all the professors could know or tell in a year, but it won't work out here. In the first place it don't rain here in the fall and we have to sow in the spring, then our weeds are the sand-burr and the pig-weed and they sap the juice from the young alfalfa, thus killing it. I wish to add my bit of experience along this line. The professors told us to plow our ground 8 to 10 inches deep; we did and lost it of course. Why shouldn't we have harrowed it? It sprouted and came up some two days later and a dry wind killed it, for don't you see we brought up subsoil on the surface, plowing so deep, and the wind blew through it like a sieve and the ground dried out and blew the little roots away before they could reach down into fine soil. This is my plan and no failure; use common sense and let the professors use any old thing. Prepare your alfalfa ground a year in advance of the time you wish to sow

bank account; and does it all with one man. He sows 100 acres of rye, 60 acres wheat, pastures until grass and then lists it to corn. He has the best prospect for an immense crop of wheat this spring you ever saw. I asked him why he didn't leave it. He said he did not want to bother with it, too much expense getting it cut; raising chinch-bugs to eat up his feed; get his ground dry and hard. No, sir, he uses it for fall, winter, and spring pasture. No, I can not go fishing. As I came in today from across the ranch I saw corn 8 inches high to cultivate, fields upon fields of Kaffir-corn and cane to plant. There is that rye headed out ready to cut soon and oats; that dreaded alfalfa, 40 acres three feet high; those little Shorthorn calves; Poland-China pigs to look after; and 10 miles of fence. Go fishing! Too tired to. Ah, boys, do we not have too many irons in the fire? But they say mixed farming is the safest. Another neighbor raises alfalfa and sells it and hires his cattle out to winter. We were all cowboys once, but all manage our ranches differently. I have to raise these fifty dollar calves and pigs; they won't bother with them. Medicine Lodge, Kans. ELI BENEDICT.

"Clear as Honey" Sorghum Syrup.

As quite a number of your readers have asked for the modus operandi of making sorghum syrup that will be "clear as honey," I will try and explain how it has been done, not only making it the color of honey, but still clearer and lighter colored. This process also makes a difference in flavor as the strong sorghum whang is taken away and the pure "sugar drip" is there instead. An evaporator, which is also a self-skimmer, is almost a necessity, not only to make it a first-class product, but as a matter of economical production. One man, with a boy or girl as helper, can finish about five times as much as he can boil off in an old-fashioned pan. By the self-skimmer the scum is thrown overboard as fast as it forms, and no part of it is left to be boiled down into the sap to taint the syrup. This is very important. My evaporator is thirty feet long by thirty-three inches wide and eight inches deep. It is made with four different sections or boilers connected by flood gates. This size cost \$100, but any size would do as good work. This sap should always be kept boiling as fast as possible in the first pan. This will throw all scum to each side as fast as it collects and it will roll over the low side of the pan into the scum troughs and be carried off into a barrel or a hole in the ground. A stream of fresh sap is allowed to run into the first pan all the time, but is regulated by a faucet at the sap tank, which is on a level with the top of the pan. The front end of the thirty-foot evaporator is two and a half inches lower than the finishing pan. As the sap boils thicker it is allowed to run back into the next pan, and assisted to do so if need be, by a clean broom (a kitchen broom, costing 15 or 20 cents) in the hands of a "helper" who also attends to the fire, turns the damper when syrup is drawn out, and regulates the stream of sap from the tank. A mill with horizontal rolls is best, but a good supply of sap must be assured before starting the fire. Run the sap into a barrel or tank from the mill. For each seventy-five gallons of green sap, put in half a bushel of yellow clay and stir until it is thoroughly dissolved. Have four or five barrels or a big tank to stir it in. Let it settle five minutes and then draw off the clean, white sap into the evaporator. The clay takes every particle of green pomace out of the sap and it runs off clear as water. Wash out the tank and repeat the process. The syrup in the finishing pan should be stirred with a broom constantly, partly to guard against scorching and partly to lighten the color, as the more it is stirred from start to finish the lighter

it will be in color. This process will make a syrup far superior to the "nectar" or "lily drip" sold at the stores, and composed of cane syrup and glucose—10 per cent sorghum and 90 per cent glucose. The thirty-foot evaporator will boil and finish ten gallons per hour—eleven pounds to the gallon. I never strip the leaves off the cane, as the saving does not pay for the extra labor and it is much nicer to handle. I sold by the barrel for 45 cents, by the gallon for 50 cents. An acre of good cane, grown on sandy soil, will make about 100 gallons of syrup and fifteen to thirty bushels of seed. Cut when half of the heads are ripe and grind if possible the same day. Never set the cane on end at the mill.—George Purdy, in Prairie Farmer.

Manuring the Soil.

A bulletin treating of methods of manuring the soil has just been issued by the experiment station at Stillwater, Okla.

The following is a summary of the bulletin. Without going into details as to the various considerations that may affect the results of manuring, at the present stage of our agricultural practice, the chief points to be observed are:

1. To manure the soil. Use all the manure produced. Prevent losses by washing away, quit burning straw, haul the manure onto the fields somewhere, sometime, somehow.
2. Manure the highest and poorest spots, give a good application at one time—from 15 to 20 2-horse loads—and manure another place next time.
3. Manure with reference to the time of rainfall, to the next crop which is to be grown, and to the other work which must be done. Late fall and winter, when other work is not pressing, is a good time. Light top-dressings may be applied to wheat in the fall.
4. Growing crops for green manuring alone is not the most profitable method. Pasture them and plow under the remainder when about mature. This applies chiefly to cow-peas. If sorghum is to be plowed under, it should be while the stalks are green and juicy so that they will decay quickly.

Failure and Success.

The failure of one man is often the beginning of another man's success.—Chicago Daily News.

Wanted

Every farmer and teamster to send us his address on a postal card and we will "do the rest!" Don't buy a Wagon until you hear from us.

TIFFIN WAGON CO.,
1203 Union Ave., Kansas City, Mo.

BUY ONLY THE BEST.

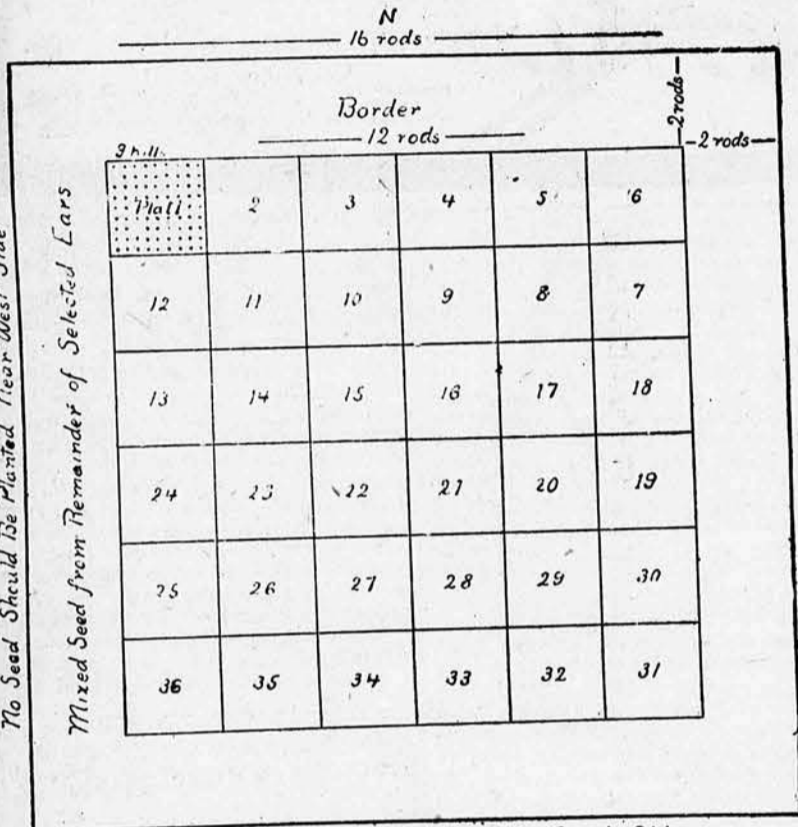
If you wish to bale the most hay in the shortest time; make the most compact and even sized bales; get the most in a car and thus save freight, USE THE



Long Feed Opening
"ELI" BALING PRESS.
Made in 38 styles and sizes. Made entirely of steel, combining lightness, strength & efficiency. Largest feed opening—perfectly safe to feed. Easiest to handle at work or on the road. Illustrated catalogue mailed free. COLLINS PLOW CO. 1120 Hampshire St., Quincy, Ill.

BALES 15 Tons a Day HAY

The Gem Full-Circle Baler, lightest, strongest, cheapest baler. Made of wrought steel. Operated by 1 or 2 horses. Bales 10 to 15 tons a day. Sold on 5 days trial. Catalogue free. Address GEO. ERTEL CO., Quincy, Ill.



prepotency, and by following this method of selection for a series of years, a rapid improvement will take place.

After the required number of the very best ears has been taken as described for the next year's seed acre, a considerable quantity of highly bred seed can be selected for common planting or for planting in a separate field to produce larger quantities of stock seed. This stock seed being but one or two generations removed from the highest type of seed, will naturally retain qualities and preserve characteristics of the highly bred corn.

The two systems of planting, which may be termed the "plot system" and the "row system," are both used and both will doubtless give good results. It is thought that the plot system may effect a closer in-breeding, but whether this is true, or whether, if it be true, it is desirable or advantageous, is not yet determined. For simplicity the row system is recommended. It has been used for several years at this experiment station in the above mentioned corn breeding experiments by which marked improvement has been effected in the chemical composition of corn, and it has been adopted by several breeders who are taking up similar lines of corn breeding.

"That Neighbor of Mine."

EDITOR KANSAS FARMER:—I receive many letters from subscribers of the KANSAS FARMER requesting me to write oftener for the "old reliable." I did not even dream that my letters would be appreciated, as I am nothing but a cattleman and farmer.

I will ask you and the boys to listen to me, as I have lately taken off my hat and scratched my head—so much to learn and so many different ways to run a farm and ranch—and I have made up my mind that that "neighbor of mine" leads an easy, contented life I am going to tell you all about it and you too can scratch your heads and give it thought. But first I want to speak about an article I read some time ago in the KANSAS FARMER about sowing alfalfa in the fall to get ahead of the crab grass. It was full of common

it. Plow the land now that you wish to sow in alfalfa next spring. Plow it 9 inches deep and harrow it good.

Get your wheat drill out and sow 1 1/4 bushels of Kaffir-corn; you will take off 8 to 10 tons better hay than your alfalfa hay would be. It will take you two years to raise that much alfalfa hay; at best it only yields 1 to 2 tons at a cutting. Next spring plow this 9 inches deep as your plow will want to turn in where it did this spring, and dry or wet you can plow it. Now harrow and sow your alfalfa, as the top soil has been turned back to the surface and the Kaffir-corn let no weeds go to seed—it is just like a garden.

But that "neighbor of mine" is what I started to write about. He don't do as most every Kansas man does; take up with every new thing, soy-beans, alfalfa, etc. Why, Mr. Editor, I believe every man in Kansas would marry a school ma'am if he could; for when there is anything new every one wants to try it. But this "neighbor of mine" is not bothered that way. No, sir. "He is that man with a lister, if he can't plant it with a lister he won't plant it at all." I saw him walking around the other day with his thumbs in his suspenders. He yelled out: "Eli come over here." I did, and he said: "Got my crop all in and been fishing, caught three bull-head, five bass and one catfish pretty near as big as one of Miss Best's black pedigreed Polled Galloway bull calves, and had lots of fun." He has in 200 acres of corn, 100 acres cane and Kaffir-corn listed. He feeds his corn—if a crop—buys his steers, gets them pastured for 20 cents per month, and buys his hogs. I asked him why he didn't raise his steers. He laughed and said, "Eli I would if every cow would have a steer calf, but as long as they have part heifers, and some die, and some can't raise a calf, it is too much bother." It made me think of us diversified farmers. With all of our machinery to wear out, headers, binders, mowers, rakes, drills, plows, and all we make goes to pay for repairs, hired help and expenses. He just has a lister, harrow, cultivator, \$3 corn sled, wagon, pitch fork, and a good fat

The Stock Interest.

THOROUGHbred STOCK SALES.

Dates claimed only for sales which are advertised or are to be advertised in this paper.

October 7, 1901—Newton Bros., Duroc-Jersey swine, Whiting, Kans.
 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.
 January 28 to 31, 1902, for Sotham's Annual Criterion Sale, at Kansas City.

Cross-bred vs. Pure-bred.—III.

EDITOR KANSAS FARMER:—In this, my third letter, I will take up and consider Mr. Glick's assertion that "Booth bulls were never crossed upon the Bates cattle, and they were never crossed successfully upon any other cattle."

This is a very broad assertion, indeed, and if I were not assured of the high character of the man who made it, I could not resist the impression that he is prejudiced. In 1867 there was a fine calf bred by Capt. Barclay, of Scotland, imported by M. H. Cochrane, of Quebec, and afterward sold to J. H. Pickrell, Harriestown, Ill. His sire was a pure Booth, and the bull carried about 70 per cent of Booth blood, the balance being of Bates and other sorts. His maternal grandsire was Lord Raglan (13244), a half Booth bull much used in Mr. Cruickshank's herd. His maternal grandam was got by Matadore (11800), a half breed Booth, much used in Cruickshank's herd. The name of this bull was Baron Booth of Lancaster 7535. Pickrell was a prominent and successful breeder of mostly Bates cattle, and he put this bull at the head of his herd, the cross proving a great success. He also showed him a great deal, and his winnings in the show ring amounted to \$4,320, besides what he won in Canada before Pickrell owned him.

Now as to the bull's success as a breeder, I presume I had better offer a little history on that point, which states that he was never defeated in showing with his progeny. Pickrell made a sale in 1875 at Decatur, Ill. I will only mention the produce of Baron Booth of Lancaster in this sale, giving prices they brought: Caroline Cochrane, \$1,800; her dam was a Bates cow by 11th Duke of Airdrie 5533. Louan Hill 4th, \$1,925, and resold after the sale for \$2,225; her dam was Louan Hill, a pure Bates, by 11th Duke of Airdrie. Louan Hill 5th, out of Louan Hill by 11th Duke of Airdrie, sold for \$2,000. Lady Bride, out of Bride 15th by Airdrie 2478, sold for \$2,850. All the cows mentioned were got by Baron Booth of Lancaster.

I will now make a quotation from Mr. Glick's speech at the breeders' meeting, viz: "Now, the cow Mazurka, for which Mr. Alexander paid \$3,000 in 1871, was a pure white cow. She left a long line of progeny in this country which are entirely depended upon to-day, their stock being promulgated by Bates bulls, being crossed on Bates cows." Is it possible that the gentleman made a bad break by this assertion, and unwittingly gave away his position and put a club in the hands of his opponent to enable him to flank him out of his position and utterly defeat him? Perhaps Mr. Alexander acted very wisely when he bought the cow Mazurka. He must have concluded his herd needed new blood, and a Booth cross would be advisable. The sire of Mazurka was the pure Booth bull Harbinger (10297) bred by Richard Booth at Warlaby. She has another cross of Booth in her pedigree, and I offer a reward to any person to prove that she had a drop of Bates blood in her veins. There is only one conclusion to come to. Mr. Alexander, the great breeder, thought he needed a Booth cross and got it in imported Mazurka, by Harbinger. According to Mr. Glick's own words, the cross proved eminently successful, as "she left a long line of progeny which are entirely depended on to-day." So it seems that "when they got beyond the second pair" it was all right in that particular case, and the produce did not deteriorate, but rather improved. If the great Alexander could make successful cross upon his herd with a cow carrying more than one-half Booth blood, what is to hinder anyone else from doing likewise, if he uses a good animal to make it?
 Dunlap, Kan. D. P. NORTON.

Feeding Trials.

The second steer feeding experiment in the series planned by the Oklahoma Experiment Station to compare the feeding value of Kaffir-meal, corn-meal, alfalfa, and Kaffir-stover for fattening

steers, was completed April 6, and the steers sold at Kansas City.

The steers used were 2-year-old grade Shorthorns raised around Stillwater. The 20 head averaged 1,026 pounds on November 6, the beginning of the experiment, and 1,409 pounds at the close—April 6. They were fed in 4 lots of 5 steers each as follows, for one hundred and fifty-one days:

Lot I—Kaffir-meal and alfalfa hay.
 Lot II—Corn-meal and alfalfa hay.
 Lot III—Kaffir-meal and Kaffir-stover.
 Lot IV—Corn-meal and Kaffir-stover.

The season was a very favorable one, and the steers did well. The following gains were made, per lot, in one hundred and fifty-one days:

Lot I, 410 pounds; Lot II, 413 pounds; Lot III, 352 pounds; Lot IV, 357 pounds. Daily gain per steer, 2.71 pounds, 2.73 pounds, 2.07 pounds, and 2.26 pounds respectively.

Pounds gain made by steers for each bushel of grain fed: Lot I, 7.34 pounds; Lot II, 8.44 pounds; Lot III, 5.52 pounds; Lot IV, 5.89 pounds.

ALFALFA VS. KAFFIR-STOVER.

In the comparison of corn-meal and alfalfa with corn-meal and Kaffir-stover, the corn-meal and alfalfa fed steers made 2.55 pounds more beef out of each bushel of grain than did the corn-meal and Kaffir-stover fed steers.

In the comparison of Kaffir-meal and alfalfa with Kaffir-meal and Kaffir-stover the Kaffir-meal and alfalfa fed steers made 1.82 pounds more beef out of each bushel of grain eaten than did the Kaffir-meal and Kaffir-stover fed steers.

KAFFIR-MEAL VS. CORN-MEAL.

Where like roughage was fed it will be noticed that there is but little difference in the gain made from corn-meal and Kaffir-meal. But it required much more of Kaffir-meal to satisfy the steers' appetites; consequently, those fed on Kaffir meal fall below in the comparisons.

When fed with alfalfa, a bushel of corn-meal made 1.10 pounds more beef than did a bushel of Kaffir-meal fed with alfalfa.

When fed with Kaffir-stover a bushel of corn-meal produced 0.37 pounds more beef than did a bushel of Kaffir-meal fed with like roughage.

Taking an average of the above results, a bushel of corn-meal produced, when fed to steers, about 3/4 pound more beef than did a bushel of Kaffir-meal.

In addition to requiring from a fourth to a third less grain to produce a pound of beef, the alfalfa fed steers made about 12 1/2 per cent faster gain than did the Kaffir-stover fed steers.

Another interesting fact determined was that a much larger per cent of the grain passed through the steers not fed alfalfa than those fed alfalfa, and much more of the Kaffir-meal passed through the steers than did of the corn-meal.

Each lot of steers was followed by 4 shotes that averaged 125 pounds in weight at the beginning of the experiment. The plan was carried out to make them subsist upon the droppings as much as possible, so the gains made were not large. For about half the time no grain was fed the pigs, and during the other half they received only 360 pounds of grain per lot.

For the period of one hundred and fifty-one days the gains per lot were as follows:

Lot I, 272 pounds; Lot II, 183 pounds; Lot III, 410 pounds; Lot IV, 226 pounds. These are small gains for pigs, but are almost all clear profit and add materially to the returns for each lot of steers. It is an open question whether it would have paid to have given the pigs more grain, as they would not have eaten as much of the manure.

In shipping to Kansas City the shrinkage per head was as follows: Lot I, 35 pounds; Lot II, 33 pounds; Lot III, 51 pounds; Lot IV, 48 pounds.

Lot I sold for \$5.40 per cwt. Lot II, \$5.40; Lot III, \$5.10; Lot IV, \$5.20.

Lot I dressed 60 per cent; Lot II, 60 1/2 per cent; Lot III, 59.9 per cent; Lot IV, same as Lot III.

The following figures are given so that anyone wishing to do so can compute the profit on these steers under these conditions:

Selling weights at Kansas City: Lot I, 7,010 pounds; Lot II, 7,000 pounds; Lot III, 6,640 pounds; Lot IV, 6,700 pounds.

Roughage fed per lot: Alfalfa, Lot I, 14,257 pounds; Lot II, 13,604 pounds; Kaffir-stover, Lot III, 17,892 pounds; Lot IV, 17,668 pounds.

Grain eaten per lot: Kaffir-meal, Lot I, 15,666 pounds; Lot III, 17,509 pounds. Corn-meal, Lot II, 13,711 pounds; Lot IV, 16,960 pounds.

The cost of marketing the 20 steers was \$92.56.

Dip & Wash (for Live Stock)



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.

PASTEUR VACCINE CO., 158 E. Huron St., Chicago.

Branch Office: 622 Whitney Building, Kansas City, Mo.

International Live Stock Exposition.

The second exposition is now all arranged for. The executive committee has not made any changes in classification to speak of, only increasing the classes for one or two breeds of draft horses. The only changes in rules of any moment pertain to the judges of beef animals on foot and in the carcass. A great deal has been said through the press by the able exponents of the industry on the question of rules that should govern such contests, and the committee believe that the changes effected will fill the bill. They are as follows:

Rule 75 was changed to read as follows: "Judges are instructed to prefer the highest degree of excellence obtainable, considering form, finish, quantity and quality of flesh and fat, also age and weight, to recognize the very highest quality of prime edible meat, and to object to the production of superfluous tallow; qualities that are indicated to the touch; to the end that animals that win prizes on foot shall ultimately be proven first quality of beef."

Rule 83 was changed to read as follows: "Judges of carcasses in competition are instructed to prefer the attractiveness of carcass, percentage of high class meat to total carcass, quality and quantity of flesh and fat."

Rule 76 was amended to include the Grand Champion to be slaughtered for carcass contest.

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 contest and display on Dexter Park grounds so that all of the exposition will be together.

The breeders, recognizing that the world will view the stock of the 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 lines 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 continued as originally planned, for the good of the live stock of the continent of North America.

Hereford Weights.

There has been an impression on the part of some people in the past that Herefords lacked size, and that their usefulness would be increased when this requirement was met. It has always been contended by the friends of the Hereford that while size was a most desirable feature, quality should not be sacrificed for its sake. In the early part of 1800 the Hereford breed was noted for the size of the oxen it produced. These were what the demand of that period required and the Hereford supplied that demand as successfully as they do the changed requirements of to-day.

But the time came when the big ox of the early days could not be used profitably as a beast of burden or draught, and the requisite quality for a purely beef animal was sought. The Hereford female had never approximated the size of the oxen, and it was through her that the breeders worked for the production of a steer that would have the early maturing qualities desired. The value of a beef animal must, however, depend on the butcher's block, and the representative Hereford

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.

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., 203 F Exchange Bldg., Kansas City Stock Yards.

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 Advertiser" Free. Zenger Disinfectant Co., 61 Bates St., Detroit, Mich.

BINDER TWINE. FARMERS wanted as agents. AUGUST POST, Moulton, Iowa

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.

250 High Grade Angora Does

All pure white, thin pendulent ears.

Will sell very cheap if taken soon.

W. T. McIntire, Live Stock Exchange, Kansas City, Mo.

GEO. W. NULL, Odessa, Mo., LIVE STOCK AUCTIONEER.

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.

of to-day can lay positive claim to the successful combination of size and quality that was reached only through years of careful selection and breeding.

In this respect, however, the Hereford's appearance is deceiving, for on its short legs it does not appear to have the pounds of its Shorthorn brother of the same weight. An interesting incident illustrating this was the comparison made by the interested spectators at the joint Hereford-Shorthorn show at Kansas City last fall, where Herefords and Shorthorns of the same ages were shown in adjoining rings. The general opinion of all but the most experienced observers was that the Herefords had the quality and uniformity but that they suffered in the comparison of size. Some trouble was taken to secure the official weights of all the exhibition cattle of both breeds, and the average weights of the animals in the various classes is herewith given. The cattle were weighed on October 15, 1900, but the classification by ages is figured from the base date of August 10, 1900.

	Average weights.		Difference.	
	Herefords.	Short-horns.	Herefords.	Short-horns.
MALE.				
Over 3 years old	2,201	2,285	84	
Two-year-olds	1,943	1,885	58	
Yearlings	1,637	1,381	256	
Junior calves	929	926	3	
Junior calves	705	648	57	
FEMALES.				
Over 3 years old	1,735	1,602	133	
Two-year-olds	1,537	1,401	136	
Senior yearlings	1,240	1,284	44	
Junior yearlings	1,122	1,022	100	
Senior calves	750	787	37	
Junior calves	583	542	41	

Without doubt the scale of the Hereford has been increased by the American breeders during the past two decades, and it has been accomplished without the sacrifice of the early maturing quality acquired by so many years of careful breeding, but which was absent in the huge specimens of the breed in the early part of the 19th century. The range demands scale and substance in their herd bulls and the Hereford undoubtedly has this quality in addition to the constitution and rustling ability that has won them such high favor in recent years.

The Small Flock of Sheep.

A limited number of sheep should be kept on every arable farm in America, says Prof. Shaw in Wool Markets and sheep, provided more or less of the land is enclosed with some kind of fencing. I am satisfied that from ten to twenty can be kept on every hundred acres of land without any cost to the owner for food except in the winter. They will sustain themselves, very largely at least, on what would otherwise be lost. They can be utilized in trimming up all by places on the farm. They may be made to do the work of scavengers. There are those who ridicule the idea of keeping sheep as scavengers. Even so, that is just the work I would have them do on every farm on which a small flock is kept. They will do this work in handsome fashion. The little paddocks around the barn, the lanes leading back into the farm, the grass rims beside strips of forest and all the corners and crannies about the whole farm they will trim up as though they were trying to prepare a lawn, if they are only given access to them at the proper season. Of course they must be allowed to graze these places closely. Such a flock of sheep would more than pay their way by the weeds and weed seeds that they would destroy. And while being thus fed they would keep in the pink of condition, since they are being furnished with just the kinds of food suited to their needs.

New Record for Herefords.

At the Hereford combination sale held at the Dexter Park amphitheatre of the Union Stock Yards, Chicago, May 21 and 22, a new record-breaking price was made for a Hereford cow, Dolly 2d 61799, owned by John Hooker of New London, Ohio, sold for \$5,000 to N. W. Bowen, Delphi, Ind. The Drovers Journal reports the incident as follows: "All during the day there were rumors of big prices when the Hooker cattle would appear in the sale ring. With the appearance of the prize-winning cow, Dolly 2d 61799, with four of her heifers, the applause was great. The record-breaking price of \$5,000 paid for Dolly 2d by N. W. Bowen of Delphi, Ind., as announced in a special edition of the Drovers Journal, established a new record for Hereford cows, the highest previous price being \$3,700 paid for Caranation at Kansas City by J. C. Adams of Moweaqua, Ill. Dolly 2d was started at \$1,000 by George Leigh of Aurora, Ill. This price was quickly raised to \$1,500 by Col. Wallace of Indianapolis. Two thousand dollars was bid by Mr. Bowen, and

Mr. Leigh raised the price to \$2,250, which was quickly raised to \$2,500 by Mr. Bowen. T. F. B. Sotham bid \$3,000, and Mr. Bowen said \$3,500. When \$3,800 was bid the record price of a Hereford cow had been broken, and the applause was great. The bidding ran quickly up to \$4,000, then \$4,400. Mr. Bowen bid \$4,500. F. A. Nave said \$4,600, and C. A. Jamison raised it to \$4,700. Mr. Bowen bid \$5,000, and became the owner of what is conceded by all competent judges the best cow in America, both as a show cow and breeder. Mr. Bowen also paid \$1,900 for Bell of Maplewood 3d 96171, and heifer Belle of Maplewood 4th 112152, both daughters of Dolly 2d and consigned by John Hooker. He also purchased for \$1,000 Belle of Maplewood 2d 87063, bred by Mr. Hooker, but owned and consigned to the sale by S. H. Godman."

The breeders who had consignments in this combination sale were: C. A. Jamison, Peoria, Ill.; S. H. Goldman, Wabash, Ind.; Lewis Bros., Geneseo, Ill.; Benton Babbert & Son, Dearborn, Mo.; Nathan Daugherty, La Gro, Ind.; George S. Redhead, Des Moines, Iowa; John Hooker, New London, Ohio; G. M. Naber, Treaty, Ind.; G. W. Harness, and William Kerby, Galveston, Ind. The heaviest consignors to the sale were S. H. Godman and C. A. Jamison. The four head sold by John Hooker brought \$9,100, an average of \$2,275. He had but one bull, Ike 77284, 3 years old, which brought the highest price for bulls, \$1,200, sold to B. & W. George, Aurora, Ill.

Ninety-eight Herefords sold for \$33,820; an average of \$345. The 32 bulls averaged \$204.85 and 66 females averaged \$409.

Stock Farms in Brisk Demand.

Probably no better reflection of the great prosperity of this country in general, and of the State of Texas in particular, is to be seen than in the unprecedented rapidity with which that immense body of land in the Panhandle of Texas known as the Farwell, or Capitol Syndicate, or X. I. T. Ranch is being sold. The controlling owners—Ex-United States Senator C. B. Farwell and Hon. J. V. Farwell, the wholesale dry goods merchants of Chicago—began advertising this ranch of 3,000,000 acres for sale in our columns in March last, and have since that time already sold 500,000 acres, or one-sixth of the whole tract, and they state that they have at present in sight prospective buyers for about as much more. The price of the land sold ranged from \$2 to \$4.50 per acre, and the land sold has passed into the hands of a number of different parties, although two were purchasers of large tracts.

There have also been sold to one purchaser of land 7,000 head of cows and 2-year-old heifers, and to another 5,000 cows with calves and 300 bulls.

Before these sales there were about 150,000 head of cattle on this vast tract of land, which in extent is about the size of the State of Connecticut, more than twice the size of Delaware, and about four times the size of Rhode Island. It is pretty hard for the average mind to fully grasp the magnitude of this ranching enterprise. It was one of the boldest undertakings of recent years for these Chicago gentlemen to accept the proposition of the State of Texas offering these 3,000,000 acres of grazing or agricultural lands for the construction of a State capitol at Austin. But the Chicago syndicate was equal to the occasion and erected a capitol commensurate with the extent and wealth of the great State of Texas. The building is of Texas red granite, containing 258 rooms and is second only in size in this country to the capitol at Washington, and is the seventh largest building in the world. The corner stone was laid in March, 1885, and the building was turned over to the State in May, 1888. There are few, if any, instances where a public building of such proportions has been erected so well and in such a short period of time. But Chicago enterprise is proverbial, and does things well and expeditiously. When the Messrs. Farwell came into possession of the land it was their intention to immediately put it on the market for sale in small tracts to stock farmers, but the tide of immigration had hardly then reached that country. Since then the land lying between their tract and the Mississippi Valley has been opened up, and is now all practically settled upon, and they, not being believers in monopoly in land, have thrown this fine tract upon the market. The avidity with which it is being purchased assures them that the time has arrived when it is needed for the home seekers intending to engage in stock raising as

the main undertaking, and farming as an adjunct thereto. For this purpose it is most admirably adapted. Its location, 34 miles south of the corner of the states of Kansas, New Mexico, and Colorado, its altitude varying from 2,000 to 4,700 feet, its wealth in natural grasses, its excellent quality of water, and its large proportion of clear, bright, bracing, sunshiny days, delightful and salubrious for man and beast makes it an ideal location for stock farming. The climate is said to be a most healthful one, not unlike that of Denver, Col., although the altitude is slightly lower.

The owners are prepared for a heavy rush of land seekers this season, but as there are yet five-sixths or 2,500,000 acres of the tract unsold, they are nearly all likely to be accommodated with land. The railways are selling on the first and third Tuesdays of the month home-seeker's tickets for one fare and \$2 for the round trip to this country, good for twenty-one days from the date of issue.

There has been printed a neat and comprehensive description of this land with maps, etc., which may be procured by writing to A. G. Boyce, agent, Channing, Hartley County, Texas; Wm. Boyce, agent, Amarillo, Potter County, Texas, or Geo. Findlay, agent, 148 Market Street, Chicago, Ill.

Live Stock at the Pan-American.

The premium list of the division of live stock at the Pan-American Exposition is issued by Frank E. Converse, superintendent of the division. Fifty thousand dollars in premiums is offered. The sock pavilion including the stadium or live stock arena, covers 10 acres of ground, accommodating 35,000 animals. The dates for exhibits of various classes are as follows:

- Swine—August 26 to September 7.
- Cattle—September 9 to September 23.
- Sheep—September 23 to October 5.
- Horses—October 7 to October 19.
- Poultry and Pet Stock—October 21 to October 31.
- Dog Show—August 27 to August 30.

Class A, Swine—All entries in this class will close July 1. Premiums will be paid September 7. There are 8 classes and sweepstakes. The prizes include 1st, 2nd, 3rd, 4th and 5th, ranging from highly commended to very highly commended in 5th and 4th classes, and from \$125 to \$25 for the 3rd, 2nd and 1st prizes in the other classes. A medal is offered for sweepstakes, boar and sow of any age. The same prizes are offered for Poland-Chinas, Chester-Whites, Duroc-Jerseys, Small Yorkshires, Essex, Cheshires, Victorias, Large Yorkshires, Tamworths, and Suffolks. The premiums on Victoria and Suffolk hogs range a little lower.

Class B, Cattle—Entries in this class will close July 15. Premiums will be paid September 21. Premiums on Short-horns, Herefords, Aberdeen-Angus, Galloways, Red Polls, and Polled-Durhams are about as follows: There are 5 prizes on 9 classes, ranging from \$10 to \$80 on 1st, \$5 to \$40 on 2nd, \$2.50 to \$20 on 3rd, and highly commended and very highly commended on 4th and 5th. A medal is offered for sweepstakes, a bull and cow of any age. About the same prizes prevail for the other breeds, namely: Devon, Brown Swiss, Red Polled, Jersey, Holstein-Friesian, Ayrshire, Guernsey, Dutch Belted, French Canadian, and Polled Jersey. For the best fat steer or spayed heifer the prizes are as follows, \$40, \$20, \$10, highly commended, and very highly commended. The same is offered for the best single fat cow.

Class C, Sheep—Entries in this class will close August 1, and premiums will be paid October 5.

Prizes on the various classes of sheep including Cotswold, Leicester, Lincoln, Southdown, Shropshire, Oxford Down, Hampshire, Merino A and B, Delaine or Black Top Merinos, Rambouillet, Dorset Horn, Cheviot, Tunis, Suffolk, Highland Black-face, and Angora goats, are as follows: There will be 7 classes in each. The prizes range from \$15 to \$40 on 1st, \$7.50 to \$20 on 2nd, \$3.75 to \$10 on 3rd. Highly commended and very highly commended on 4th and 5th.

Class D, Horses—Entries in this class will close August 15, and premiums will be paid October 19.

Classification for an exhibit of harness horses is not made in this catalogue, but will be issued later. The various sections are Standardbred, Thoroughbred, French Coach, Hackney, Percheron, Clydesdale, English Shire, Shetland ponies, French trotters, Cleveland Bay, Oldenberg, Hanoverian, Trakehner, and Holstein Coach (these last four to compete together), Morgan, Ar-

A Really Easy Cream Separator
 Easy to Turn,
 Easy to Clean,
 Easy to Buy,
 Easy to Make Pay.
 That describes the
Empire Cream Separator,
 with its new bowl—the bowl which has solved the separating problem. It has very few parts; it is of small diameter, and is extremely light. It gives the milk several distinct separations.
 Send for our catalogue for 1901. It tells lots of things about Separators.
UNITED STATES BUTTER EXTRACTOR CO.,
 Bloomfield, N. J.

abe, Belgians, French Draft, Suffolks, Punch, jacks and jennets.

In the first 8 sections of the horse division the prizes are 1st, 2nd, 3rd, 4th and 5th for 7 different classes, ranging from \$5 to \$50. All following the first 8 sections of the horse division the prizes range from \$5 to \$40, on 1st and 2nd, with a diploma for 3rd and 4th.

Class E, Poultry and Pet Stock—Entries will close September 16, and premiums paid October 31. The prizes in this division are ample and varied. As our readers are more interested in larger stock, we will not at the present time go into details in this division.

A number of special prizes, consisting of medals, diplomas and cash, will be offered by the secretaries of the various pure-bred associations.

Preventive Measures for the Hessian Fly.

In discussing the insect enemies of wheat a recent publication remarks as follows upon measures for reducing the ravages of the Hessian fly:

"It is practically impossible to save a field once severely attacked by this fly, and under such circumstances it is better to plow the wheat under deeply and plant to corn or other spring crop. In case of mild infestation the best procedure is the prompt use of fertilizers, which may enable the wheat to tiller sufficiently to yield a partial crop. Pasturing in fall of early sown fields is also recommended, and may do some good by reducing the number of the pests. An experiment promising the most important results, made this spring by Mr. E. P. McCaslin, Seymour, Ind., indicates the possibility that fields which have escaped material injury from the fall brood, but which are being badly attacked by the spring brood flies, may be saved by cutting the wheat down with a mower as soon as the eggs of the brood are deposited. The time for this operation will vary with the season and its determination will demand an intelligent and close study of the habits of the insect."

From some portions of Kansas come reports of complete circumvention of the Hessian fly by pasturing the wheat in the fall as closely as it will bear. Farmers do not pretend to say what becomes of the enemy, but that in fields closely pastured the damage is averted.

Pullman Ordinary Sleeping Cars for Tourists

are the most comfortable, commodious means of travel for large parties, intending settlers, homeseekers, and hunting parties.

These cars are run on the Union Pacific daily from Nebraska and Kansas points, and are fitted up complete with mattresses, curtains, blankets, pillows, etc., requiring nothing to be furnished by the passengers. Uniformed porters in charge of the cars, are required to keep them in good order, and look after the wants and comforts of all passengers. The cars are new, of modern pattern, and are almost as convenient and comfortable as first-class Palace Sleepers.

For full information call on or address, F. A. Lewis, City Ticket Agent, 525 Kansas Avenue, J. C. Fulton, Depot Agent.

RAPE
 It pays to sow IOWA SEED Rape which has proved to be the most valuable forage plant in existence for Sheep, Hogs or Cattle. Sow in June or July. Costs only about 35 cents per acre for seed; yields 20 tons per acre. Our seed was grown in Essex, England, and is extra choice. Descriptive circular and sample free if you mention this paper. **IOWA SEED CO.,** Des Moines, Ia.

Experiment in the Improvement of Pasture and Range Grasses.

J. T. WILLARD, DIRECTOR KANSAS EXPERIMENT STATION, IN THE INDUSTRIALIST.

The Kansas Experiment Station, in cooperation with the division of agriculture of the United States Department of Agriculture, has inaugurated a series of experiments in Harper County which it is hoped will yield valuable information. The experiments are located on the farms of Mr. H. B. Waldron of Anthony, whose estate of over 12,000 acres lies chiefly in ranges 7 and 8, and just north of the Oklahoma line. Mr. Waldron is a young man of much enterprise and public spirit, and the location of these experiments upon his farm is due to his generous tender of the use of cultivated and pasture lands desired for the experiments as well as the labor and use of tools incident thereto. It may be of interest to state also that as the result of a similar offer the division of forestry is making extensive experiments in tree culture on Mr. Waldron's farms.

ON CULTIVATED AND ON WILD LAND.

The experiments with grasses fall into two distinct series, the first being on cultivated land with a few of the grasses and other forage plants most likely to succeed in a region of limited rainfall, and the second upon native sod which has been injured by excessive pasturing. The first series is not expected to lead to as valuable results as the second. No cultivated grasses have gone through the natural selection of thousands of years of growth in the region. The native grasses are pre-eminently adapted to drought resistance because they are the ones that have survived through ages of contest with adverse conditions, and we can scarcely hope to find species to introduce that will equal them. Certainly we can not plant with any prospect of success any of the grasses that are accustomed to a humid climate. Any introduction of value will be from a region of similar conditions, or will at least be able to adapt itself to adverse conditions in respect to moisture. On the other hand, the native sod produces but a scanty crop, and 7 or 8 acres are necessary for the pasturage of a single animal. The temptation to overstocking the range is very great, and much of it has become seriously impaired throughout the western part of the State. If this can in some way be renovated, and perhaps even be brought to a point superior to its original condition, and at an outlay that is not prohibitive, thousands of dollars will be added to the value of every one of our western countries.

THE KINDS SOWN.

In the series of experiments in the establishment of grasses on cultivated land, the following seeds have been sown: Tall meadow oat-grass, slender wheat-grass, perennial rye-grass, sainfoin, reed fescue, a mixture of reed fescue, redtop and orchard-grass, western wheat-grass, "Colorado grass," awnless brome-grass, alfalfa. In addition to these a plot has been planted with roots of Bermuda grass. All of these are true grasses except the alfalfa and the sainfoin, which are legumes. Alfalfa has not been grown much in that region, and the importance of leguminous forage is such as to make further experiments with it highly desirable, and several acres have been seeded, while an acre or less only has been given to most of the other species. Sainfoin is a legume much grown in Europe, but less known in this country. It is put on trial here because of its probable drought-resisting powers.

REVIVING THE PRAIRIE GRASS.

In the experiments in the renovation of worn out pasture, disking the sod forms the fundamental treatment. This procedure seems to owe its origin to an observation made at this experiment station by Prof. C. C. Georgeson, then professor of agriculture here, and described by him in Bulletin No. 48, December, 1894, the observation having been made two years previously. He wrote as follows:

"The prairie pasture on the upper farm had been gradually failing. Owing to a lack of pasture for the cattle, we had been compelled to keep the herd on it longer than ought to have been the case. Sunflowers and bull nettles began to spring up all over it, while the native grasses seemed to be dying. Under these conditions, it seemed desirable to attempt to establish some tame grasses on this prairie land. Accordingly, the surface was cut up with a disk harrow, weighted and driven over it in several directions, and a mixture of perennial grasses, consisting of orchard-grass, timothy, redtop, meadow fescue, blue-grass, with some clover and

alfalfa, was sown broadcast on the loosened surface, harrowed in, and rolled. A timely rain caused the seed to germinate promptly, and in three weeks there was a fine show of green from this seed nearly all over the field. The tame grass appeared to have obtained a splendid foothold, but by the middle of June it became apparent that the prairie grass was disposed to dispute with the tame grasses for the supremacy. It came in thick and grew vigorously and the weak seedling grass began to give way. By September the prairie grass had obtained complete mastery, now standing a foot high and very close in the ground, and none of the weeds which were common in the pasture the previous year were now present. The following year the prairie afforded as much pasture as it probably ever did. This, it appears to the writer, affords a lesson in renovating native pastures. Take off the stock, scratch the surface early in the spring, and leave it to itself. I believe our farmers in this section of Kansas frequently make a mistake when they attempt to substitute tame grasses for the native pastures. Tame grasses may afford more palatable feed and they usually yield a little feed earlier than the prairie, but they can not stand the hardships of drought as the prairie grass can, nor do they, with the same treatment as permanent pasture, yield any more or even as much feed. The prairie grasses are here because they are suited to the conditions, and if we avoid overstocking they will last indefinitely and afford feed even in the driest seasons."

"CHECK" EXPERIMENTS.

Treatment similar to that described above has since been tried elsewhere in experiments conducted with success by the Department of Agriculture. The object is not to establish tame grasses permanently, but to enable the native grasses which are adapted to the region to recover and resume ascendancy. The temporary growth of the cultivated grass serves to keep down weeds until the native grasses start. In the Harper County experiments the pasture chosen is one near the farm buildings, and badly worn out. It has been fenced so as to keep stock off at present, and for comparison a part is left without treatment other than this exclusion of stock. The remainder has been disking thoroughly. The natural toughness of the sod combined with the tramping of stock has rendered the sod very hard. Some parts were much harder than others. Most of the land was double disking twice, and then the seed put in with a disk drill. This loosened a good deal of the surface to a depth of about 2 inches. It did not, however, cut off all of the sod, but left it in little tufts surrounded by the loosened earth. The following seeds were sown on the several plots included in this series: Tall meadow oat-grass, awnless brome-grass, reed fescue, oats, millet, alfalfa, and sweet clover. One plot was left without any seed being sown on it after disking. The sowing of alfalfa and sweet clover is with the hope that they may become established and remain a permanent addition to the pasture, thus increasing its value. The trial with oats and millet is with the thought that in so far as the grasses sown serve merely to prevent growth of weeds, it may be possible to accomplish the purpose with these cheap sorts, which are readily available to all farmers, as well as by the use of expensive grasses.

TO PUT THE WATER INTO THE SOIL.

Another line of experimentation which is being tried aims toward the better conservation of the rainfall, and consequently increased product of grass. Furrows have been plowed at intervals following the slope of the land so as to keep the bottoms of them as nearly level as practicable. These furrows are short, so as not to allow water collecting in them to run very far, even if they are not level. They are expected to collect water which would otherwise run off, and which by absorption each side will serve to sub-irrigate the grass. It is a matter of common observation that a hard-tramped pasture will shed water almost like a roof. This treatment by plowing furrows has been tried by the Department of Agriculture in some experiments in Texas with very gratifying results, and the outcome with us will be awaited with much interest.

In connection with the experiments, meteorological observations as to rainfall and temperature will be taken, mechanical analyses of the soil will be made, and probably determinations of soil moisture. While the present articles of agreement between the experiment station of the division of

agrostology of the Department of Agriculture extend only to July 1, 1901, it is expected that they will be renewed, and the experiments continued for at least three years.

He Wanted His Boys to Honor Him.

The death by disease of a soldier in the Philippines brings to light the story of the ambition of one of Denver's young men which failed of fruition at the last moment, but which leaves in the minds of his family and friends the memory of an exalted name and a realization of the uncertainties of life.

Harry Wright, a stalwart man of 25 years, failing to get into action during the Spanish-American war, joined the Thirty-Sixth Volunteer Infantry and served in the Philippines from 1899 until within a few days of the sailing for home of his regiment. When the ship sailed he did not respond to the roll call of the captain. He had died in the hospital tent the night before.

When President McKinley called for volunteers after the destruction of the Maine, Harry Wright was employed in the Union Pacific freight office, this city. One morning Harry appeared before his foreman, Charles Johns, later than usual.

"Well, Mr. Johns," he said, "I guess I will leave you. I have found a better job."

Without any questions as to the new position, Johns handed Wright his time check, wished him success, and assured him that if the new position did not suit he would be glad to reinstate him. A few days later Wright left Denver with recruits, ostensibly to go to Cuba. Like hundreds of others, he got no further than Chickamauga Park, in Tennessee.

Some months later he turned up at the freight office. He said nothing voluntarily about where he had been. He had no boasts to make of any engagements. He carried with him a quiet reserve that did not belong to the once light-hearted chap. He had met with disappointment, but no one was told of it.

In a few days Mr. Johns put him to work. When the First Colorado Volunteers returned to Denver in 1899 from the campaign in the Philippines, Harry Wright was a silent observer of the plaudits, the vociferous greeting and the hearty handshakes that welcomed the heroes. There was a sadness in his eye that met no counterpart in any of the thousands that joined in the reception to the Colorado boys. With a suppressed sigh and with a new light of determination in his eye, he turned back to his work.

A proclamation issued from Washington for men to fill out the Thirty-Sixth United States Volunteers to go to the Philippines. Harry Wright, for the second time in the middle of a month, asked his foreman for his time check.

"Why, Harry," said Mr. Johns, "what does this mean? Going to leave us again?"

"Yes, I am going to join the Thirty-Sixth and go to the Philippines," said Harry.

"Well, I should think that one dose of soldiering was enough," said Mr. Johns.

"I have not had any soldiering, as you call it, and that's the trouble," replied Wright. "You see, it's this way. I expect to get married some day. I expect to have a family. When my boy says to me, 'Papa, were you in the Spanish-American war?' I will say, 'Yes, my son.' 'Were you in the battle of El Caney?' 'No, my son.' 'Were you before San Juan hill or the battle of Santiago de Cuba?' 'No, my son.' 'Well, if you were in the Spanish-American war, what did you do?' 'I lay out in Chick-

amauga Park in Tennessee for two or three months.'

"That would be a fine record for a man to give his son, wouldn't it? I never smelled powder, but only got fat on government rations. No, sir; I am going to the Philippines, and hope to see some warfare, so I may tell my son of exploits and engagements that will make him love and honor me as I know he will love and honor his country's flag."

Wright was a good soldier. He obeyed his commanders. No task was too arduous for him to undertake - nothing too perilous - for he wanted to tell his children what war was and what he did. - Denver (Col.) Times.

A Big Difference.

Johnny Smart—There's a big difference between my teacher and a streak of lightning.

Mrs. Smart—How so, dear?
"He strikes several times in the same place." - N. Y. World.

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 returning 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. Casaban, General Agent, 111 Adams St., Chicago. Depot, Van Buren Street and Pacific Avenue, Chicago, on Elevated Loop. (8)

The Smasher's Mail.

(Carrie Nation's paper.)

The only thing of the kind published anywhere in the world. Interesting because in earnest. Doing the Master's work, and inviting attention to the work of the devil. Get a hatbox. Sixteen pages every one of which is intensely interesting. Subscribe now. Price \$1 a year. Address CARRIE NATION, Topeka, Kans.

The Stray List.

Week Ending May 16.

Harvey County—John L. Caveny, Clerk.
HORSES—Taken up by Henry C. Koehn, in Halstead tp., (P. O. Halstead), on March 28, 1901, one bay gelding horse, 7 years old; valued at \$30. One grey gelding horse, with black spots, 11 years old; valued at \$30.
Marshall County—James Montgomery, Clerk.
MARE—Taken up by Walter Smith, in Murray p. April 27, 1901, one dark iron grey mare, 5 years old, weight about 900 pounds; valued at \$30.

Week Ending May 23.

Thomas County—Henry M. Thiel, Clerk.
MARE—Taken up by M. J. Guy, in Lacey tp., (P. O. Gem), May 2, 1901, one roan pony mare, weight 800 pounds, branded I E C on left hip; valued at \$25.
Russell County—Ira S. Fleck, Clerk.
MARE—Taken up by Robert Foster, in Center tp., (P. O. Bunker Hill), April 4, 1901, one bay mare, about 10 years old, weight 900 pounds, white spot in face, hind feet and one front foot white, shoes on front feet; valued at \$10.

For Week Ending May 30.

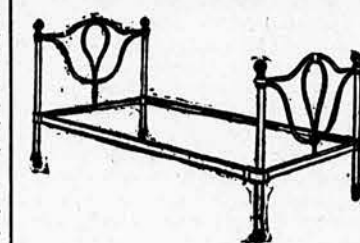
Lyon County—H. E. Peach, Clerk.
MARE—Taken up by G. E. Gorman, in Agnes Tp., (P. O. Allen), one black mare, 4 years old, weight 800 pounds, scars on both shoulders. Right hind foot white.
Marshall County—James Montgomery, Clerk.
MARE—Taken up by Ed Phillip, in Balderson Tp., on May 11, 1901, one sorrel mare pony, with four white feet, weight about 900 pounds, branded with the figure 21, small white spot on right flank, white strip in forehead, sweetened in both shoulders, value \$10. Brand on left hip.

FREE Send me your name and address on a stamped envelope and I will send you a sample of XOX Stomach and Indigestion Cure, the best and latest cure for stomach ills. Agents wanted. Gaylord Moseley, 401 Landis Court, Kansas City, Mo.

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

Kansas Seed House. F. BARTELDES & CO., Lawrence, Kans.

EVERYTHING in the SEED line. QUALITY and PURITY unexcelled. All SEEDS CAREFULLY TESTED. MOST Complete Establishment in the West. Headquarters for ALFALFA, KAFFIR CORN, CANE SEED, MILLET, and all other Field and Grass seeds. Introducing and growers of the KANSAS STANDARD TOMATO, the Earliest and Best variety known.
Send for our New Catalogue for 1901, now ready, Free for the asking.



When in need of

FURNITURE.

Be sure and see

G. W. MOFFITT at

533 Kansas Ave., Topeka, Kans.

Sells more, consequently sells cheaper than any other house in the state.

A Special Attention to Mail Orders. It will pay you to visit our store.

The Home Circle.

THE LOVER'S LITANY.

Eyes of grey—a sodden quay
Driving rain and falling tears,
As the steamer heads to sea.
In a parting storm of cheers,
Sing, for faith and hope are high,
No one so true as you and I,
Sing the lover's litany—
"Love like ours can never die."

Eyes of black—the throbbing keel
Milky foam to left and right;
Little whippers near the wheel
In the brilliant tropic night.
Cross that rules the southern sky,
Stars that sweep, and wheel and fly,
Hear the lover's litany:
"Love like ours can never die."

Eyes of brown—the dusty plain
Split and parched with heat of June.
Flying hoof and tightening rein,
Hearts that beat the old, old tune,
Neck and neck the horses fly,
Frame we now the *oia* reply
Of the lover's litany:
"Love like ours can never die."

Eyes of blue—the Simla hill
Silvered with the moonlight hoar;
Pleading of the waltz that thrills,
Dies and echoes round Benmore,
"Mabel," "Officers," "Good-bye,"
Glamour, wine and witchery—
On my soul's sincerity
"Love like ours can never die."

Maidens, of your charity,
Pity my most luckless state,
Four times Cupid's debtor I—
Bankrupt in quadruplicate,
Yet, despite my evil case,
And a maiden showed me grace,
Four and forty times would I
Sing the lover's litany:
"Love like ours can never die." —Kipling.

THE MAN OF THE WEEK.

Carolus Linnaeus.

(Born May 24, 1707; died Jan. 10, 1778.)

D. W. WORKING, DENVER, COL.

Sir Hans Sloane, whose library and natural history collection became the foundation of the British Museum, must have been greatly surprised and not a little amused the day he received from the hand of a young Swede a letter which read as follows:

"Linnaeus, who will present you with this letter, is as deserving of your notice as you are of his. Whosoever shall have the fortune to meet you both, will see two men whose equals can scarcely be found in the world."

Strangely enough, the Dutch botanist Boerhaave, who wrote the letter, was wiser than the British naturalist might have suspected, and flattered less the man who carried the letter of introduction than the one to whom it was addressed. Sloane was a great man in his day, but his influences upon the natural sciences is not to be compared with that of the great Swedish systematizer, who, in less than a lifetime, revolutionized the sciences of botany and zoölogy. In a way, Boerhaave judged both men correctly. Certainly there was no living equal of Linnaeus. Sloane has the honor of founding the greatest library and museum in the world.

Linnaeus was the son of a minister, and it was intended that he should follow his father's calling. With this object in view, he was put in charge of a private teacher when he was seven years old. Two years later he was sent to school, and later to another private instructor. At the age of sixteen he was sent to a seminary, or gymnasium. He was an unsatisfactory student, having no ambition to succeed in the studies thought necessary to train a young man for the ministry, but showing a very disagreeable enthusiasm for botany.

The elder Linnaeus became discouraged after two years, and consulted a physician concerning his own ailments and the failings of his son. This wise doctor suggested that Carolus, although he seemed to have no fitness to succeed his father as pastor, might be successful as a physician, and offered to take the young man under his instruction. This was agreed to, and the young botanist began to study physiology and botany, under the direction of his new friend. After about a year of this kind of study, it was thought that he ought to finish his medical education at a university; so he applied at the gymnasium, where he had previously studied, for a recommendation—and got the following, which is in striking contrast to the letter addressed to Sir Hans Sloane:

"Youth at school might be compared to scrubs in a garden, which will sometimes, though rarely, elude all the care of the gardener, but if transplanted into a different soil, may become fruitful trees. With this view, therefore, and no other, the bearer was sent to the university, where it was possible that he might meet with a climate propitious to his progress."

It is possible that the reference to

scrubs that sometimes "elude all the care of the gardener" was intended to apply in a double sense to the "scrub" the seminary professors were sending to the university at Lund; for it is said that the elder Linnaeus took his surname "from a large linden or lime-tree standing on the farm where he was born."

It was not the soil or the climate that kept the young linden from making proper growth. It was the stupidity and mismanagement of the gardeners. They thought the young man was fit only to be a manual laborer—so little were they able to appreciate the genius of the remarkable student they could not spoil! In their blind devotion to a rigid system of education, they could not see that their pupil was a born student of nature and that he made exceptional progress in the languages.

Through the kindness of an old teacher who introduced him as a private pupil and kept him from showing his recommendation, Linnaeus got into the university. A year later he went to the greater university at Upsala, and in another year was teaching botany in that great institution. Here many years afterwards he won his fame as a teacher, and made the university noted the world over. A few years after going to Upsala he explored Lapland for the Royal Academy, traveling not less than four thousand miles. Upon his return he published the results of his studies and fell in love with the daughter of an eminent physician. The father liked Linnaeus, but not his poverty, and the ardent lover was accepted on a three years' probation. This decided him that he must become a doctor himself in order to earn money; so he went to Holland to complete his medical studies. After an absence from Sweden of nearly three years, he returned, meantime having taken his doctor's degree. But he had learned more botany than medicine. However, he began the practice of his profession in Stockholm, where he soon built up an extensive and profitable business, and was able to marry the woman of his choice.

Linnaeus did not practice medicine many years. His fame as a botanist led to his appointment as physician to the navy; "and with a fixed salary, he was chosen to give lectures upon botany and mineralogy." From this time on he had opportunity to do his most important work—if it may be said that the results of a man's work are more important than the getting ready to accomplish them.

One of his biographers says that Linnaeus "was an intelligent agriculturist, since he produced a considerable number of treatises on rural economy." But these can have been of but little more than local interest. His claim upon agriculture is indirect. He invented the binomial system of naming plants and animals. It has been truly said that he created "a language for the natural sciences." He did not create the sciences of botany and zoölogy, but he made them intelligible. His

work was in living sciences, and there has been wonderful growth since his time. But with all the progress due to the labors of De Candolle, Jussieu, and other great workers, no one questions the profound influence of Linnaeus.

It hardly need be said that botany is servant to agriculture. The fact that every experiment station has its botanist indicates the intimate connection between the science of plants and the art of growing them profitably, which is the art of agriculture.

Strawberry Shortcake With Variations.

Mix two teaspoons of baking powder through three cups of flour and sift together. Add one tablespoon of butter and mix with enough milk to make a soft dough. Roll out and bake in two pie pans. Take out of the oven and butter the tops while hot.

Have the strawberries stemmed and washed. Mash with a wire potato masher and mix with sugar. Spread thickly over the buttered cakes and serve fresh with cream.

VARIATIONS.

Make a plain boiled frosting with one cup of sugar, four tablespoons water and the white of one egg. Cook sugar and water together till it will spin a thread and stir into the beaten white of egg. Stir till cool and thick. Spread this thickly over the top of the layer which is to be the lower one. Spread a thick layer of berries over this and secure them with the frosting. The top may be fixed with strawberries and whipped cream, or a whipped cream and strawberry filling may be used throughout. Another variation for a richer cake is to make a sponge cake in layers and fill with strawberries and whipped cream.

MARY WAUGH SMITH.

To Wash Rice.

The Chinese cook says American women do not know how to wash rice. Possibly many of them do, but others may not have as good a method as the one he employs. This is the way to do it: Place the rice to be cooked in a small granite pan and add to it about two tablespoonfuls of water. Then shake the pan with a motion that sends the kernels of rice over each other. They scour each other and cut off all the foreign matter. In a moment the water that has been added becomes thick and milky. Then add a small dipper of water, shake once or twice and pour off till two tablespoons are left. Repeat the first scouring process and rinse off as before. It will take from three to six waters to make the rice clean and white and leave the water clear. Rice can be more thoroughly cleaned by this method than by any method known to the writer and the hands never have to be put into the water.

MARY WAUGH SMITH.

Hurry the Biggest Mistake.

The most of our mistakes come from being in a hurry.—Chicago Daily News.

A Giant Cactus Grove.

This same cactus, by the way, is not one of the lesser curiosities surrounding the Phoenix. Among the numerous varieties none is so remarkable as the sahuaro, or giant cactus, which is peculiar to the southwest and grows to the proportions of a giant tree, attaining in some instances a height of 60 feet. A forest of these prickly monsters is so unlike anything occurring at any other point of the globe as to be almost indescribable. Rising like great fluted columns, the largest end pointing to the sky, with not a bud or branch of any description, the effect is grotesque, but on a desert gratifying. Arriving in Phoenix from any direction, one leaves a mighty desert and is immediately enveloped in a wealth of verdure and flowers. He meets everywhere the flora peculiar to the tropics. In private grounds and public parks the stately palm and the spreading canopy of the umbrella tree greet the eye, while the drooping, frond-like foliage of the pepper tree lends its softness to the scene. Alongside these flourish the olive and the almond, the eucalyptus and the oleander, all unconscious that they are performing something wonderful—transforming a recent desert into a garden of Eden.—Los Angeles Herald.

Relics from Babylon.

The German scientific expedition under Dr. Koldeweys has discovered in Babylon the ancient "procession" road of Marduk, says a Berlin correspondent. The large limestone flags of the roadway bear the inscription of Nebuchadnezzar and are inlaid with smaller squares of red and white stone. The German scientists state that the temple discovered last May in the interior of the Amrun hill is the famous national temple of the Babylonians, known to history under the name of Esagila. These questions concerning the topography of Babylon.—N. Y. Sun.

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. GIBBSON,
Notary Public.
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 FIFTY YEARS by MILLIONS OF MOTHERS for their CHILDREN while TEETHING, with PERFECT SUCCESS. IT SOOTHES the CHILD, SOFTENS the GUMS, KILLS all PAIN, CURES WIND COLIC, and is the best remedy for DIARRHŒA. 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.



The Young Folks.

THE UPWARD VOYAGE.

Far up on the river of life there stands
A stately city and fair;
And below it are shallows and rapids and
curves
And whirlpools that strain on the steadiest
nerves,
And many go blundering there;
And a few stately vessels pass upward and
and on,
Stemming with all their force
The current that now is terribly strong,
But to-morrow may glide like the lift of
a song,
Serene in its beautiful course.

And mark how the powerful packet pro-
ceeds,
With a rush and a roaring of steam,
Throwing up breakers that hiss in their
might,
And many a boatman is swept out of sight
And left to float with the stream!
And many and many a pitiful wreck
Is strewn on the rocks and the shores,
And many a boatman is calling for aid,
And few there are bold and many afraid,
And many lean limp on their oars.

And the banks of the river are barren
sometimes,
Or gracefully sloping and green.
And the winds that blow over them often
are wild,
And now and then fragrantly scented and
mild,
Where orchards bloom out on the scene;
And ever the river keeps winding about,
And the bars are forever unknown,
For the channel keeps changing by night
any day,
And the streams that flow in tempt the
many away,
While a few journey upward alone.

And the city men call by the name of Suc-
cess,
Is a beautiful city to see,
With domes that are lofty and gilded and
bright,
And walls that are graceful and splendid
and white,
And proud vessels moored at the quay;
And never from unexplored regions above,
Whence the waters eternally flow,
Has ever a craft floated down on the
stream,
To be moored where the columns and cu-
polas gleam
For those who toll up from below.
—Christian Endeavor World.

Herrmann.

"Herrmann always went fixed for an impromptu exhibition," said a theatrical press agent who was once associated with the famous magician, "and in the early part of his career he would go to extraordinary pains to 'lay his fences' long in advance for startling effects. In that way he was frequently able to do things that seemed next door to supernatural, and the result was no end of valuable advertising. In later years, when he became celebrated and systematic booming was no longer necessary, the old man, as we used to call him, would often refer to these exploits and laugh heartily over the mystification they had occasioned. On one occasion, to give you an illustration of his patience and forethought, he was in a popular bar in Pittsburg and chanced to notice a bank book lying on a desk behind the cigar counter. The cover bore a printed number, which was in plain sight, and when he got outside Herrmann quietly made a memorandum of it in his notebook, together with the address of the place. There was not more than one chance in a hundred that the information would ever be of any service to him, and he simply filed it away, so to speak, for possible months afterward, when he was playing a return date in the city, he piloted a party of friends one day into this identical bar, and the proprietor who was present was called up and introduced. All hands sat down at a table to have a bottle of wine and as usual Herrmann was urged to give an example of his skill. He performed several neat tricks, and remarking that he would wind up with a little exhibition of mind reading, asked the proprietor to think of some number that could afterward be verified. 'Take the number of your bank book,' he suggested, 'if you remember what it is.' 'I don't recall it offhand, but I can easily find out,' said the bar man, and going over to his safe he unlocked an inside compartment and privately inspected the book. 'All right,' he said when he returned to the table, 'I am thinking of the number now.' Herrmann took him by the hand, looked him in the eye in his peculiarly impressive fashion, and said: 'The number is 129,068.' 'That's right,' gasped the cafe proprietor in an awestruck voice. He was absolutely stupefied with amazement, and so, for that matter, were the others in the party. The fact that the book had been locked in the safe, and the apparent impossibility of Herrmann knowing anything about it in advance made the feat seem almost miraculous. It is talked about in the house to this day. At another time—I think it happened in Detroit—Herrmann 'planted' a playing card—the deuce of spades—in a vase containing some dried grasses

that stood on the mantel in the parlor of his hotel. He was intending to use it in some trick but the occasion did not arise and he forgot all about it. A long time afterward, certainly more than a year, Herrmann was again in the city, at the same hotel, and was asked to 'do something,' by some friends in the corridor. That reminded him suddenly of the hidden deuce and he called for a deck of cards. By a little simple manipulation he showed the group the deuce of spades and then made it disappear. 'You will find the card in a vase on the mantel in the ladies parlor,' he said. A rush was made for the spot, and to everybody's unbounded amazement, the card was discovered. Of course the old man took chances on the vase having been moved or emptied, but an ornament of that kind in a hotel parlor is pretty apt to stay right where it is until the house burns down or the furniture is seized by the sheriff.—New Orleans Democrat.

A True Horse Story.

A remarkable instance of equine sagacity was exhibited recently, which comes to us testified to by several reliable witnesses. Thomas Drummond, a teamster in our city, owns a horse which has been afflicted with lameness for two or three weeks. One morning Mr. Drummond turned him out upon the common, hoping that fresh air and exercise would benefit the animal. Upon gaining his liberty the crippled horse hobbled along on three legs direct to the blacksmith shop of William Eager, entered the shoeing department and stood there holding up his injured foot, with his head turned and his eyes intelligently fixed upon Mr. Eager. This peculiar act upon the part of a brute attracted Mr. Eager's attention and induced him to examine the foot held invitingly up for inspection. The result of that examination was the discovery of a long nail driven into the frog, which was the cause of the lameness. Of course Mr. Eager removed the nail. Mr. Drummond generally had his horses shod at Mr. Eager's shop, and the suffering brute undoubtedly reasoned that this was the place for him to go for relief. Equine intelligence, according to the common acceptance of the term, is not so rare, but when a horse deliberately concocts and executes a plan for relieving his injured foot of a rusty nail he certainly can lay claim to a small portion of the reasoning faculties which are supposed to elevate the human race above the level of brutes.—Janesville (Wis.) Gazette.

A Spring Catastrophe.

After the Trumbull avenue resident had answered an imperative call to the front door he returned to the bosom of his family, muttering between his teeth and looking like a thundercloud. No member of the household had the temerity to address him, so he took the initiative.

"See that man who called?" as he glared about the room. No one rallied sufficient courage to answer. "Face looked like a cranberry patch. Peeled and scratched as though he had been under a procession of brush harrows. He's wearing smoked goggles and thinks he's liable to lose the sight of one eye. It all comes from that fool freak of yours to raise a crop of sweet peas," and he transfixed the eldest daughter with a look of lightning flashes.

"Why, papa, what did that have to do with it?"

"Everything. He would be a well man to-day but for that. I told you that you couldn't raise flowers in the shade, but you think you know more than a whole agricultural college. I bought you a cartload of brush to stick the things with, but no, you must have wire netting. And of course your mother stuck up for you. If you wanted a barbed-wire fence twelve feet high all around the premises to keep the cats out, she'd say that you must have it.

"I economized by buying that netting second-handed, and brought it home on a street car. A smoker on the back platform got tangled up in it and would have thrown me on the asphalt when we were going thirty miles an hour, if it hadn't been for the conductor.

When I went to jump off at the crossing the end of the jagged roll stuck out ahead of me, the poor fellow who was just at the door ran into it head first. It took three men to extricate him without ruining his ears and I've just given him \$20 to settle the damages. What makes me as hot as anything else is that we will have to buy our sweet peas this summer, just as we have always done."—Detroit Free Press.

SALLOW WOMEN

A disordered digestion makes itself manifest in a muddy or blotchy complexion, nervous weakness and irritable temper. The right remedy is

PRICKLY ASH BITTERS

THE SYSTEM REGULATOR.

It is the best beautifier on earth because it goes to the root of the trouble, in the liver and bowels and removes it entirely. Imparts freshness and bloom to the complexion, brightens the eye, promotes good digestion and cheerful spirits.

SOLD AT DRUG STORES.

\$1.00 PER BOTTLE.

A Little Girl's Gift.

One evening toward the close of the war, while the Union soldiers lay in camp on a hillside near the Staunton river, in Virginia, the cry of 'Halt! who goes there?' from a sentry started every lounge to his feet and several of the more curious ran to the guard to find out what the trouble was. A minute later all knew that the night visitor who had been challenged was no enemy. A little girl about ten years of age, holding a white kitten in her arms, came forward into the light of the fires, conducted by two soldiers, who had told the sentry to pass her in, and who looked as proud as if they were escorting a queen. The whole regiment gathered, including the colonel himself, to look at the child and hear her tell her story. A very short story it was, scarcely a paragraph; but there was matter enough in it for a full chapter. She lived near by with her father, who was sick and poor; and they were Northerners, she said, and "Union folks." Her mother was dead and her brother had been killed while fighting in the Federal army. She "wanted to give something," and, when the Union soldiers came, she thought she would bring her pet kitten and present it to the colonel.

The colonel took the little girl in his arms and kissed her, and said he was not a bit ashamed of his weakness. He accepted the kitten with thanks, and its innocent donor was gallantly escorted to her humble home loaded with generous contributions.

The white kitten was adopted by the regiment, but it continued to be the property and the special pet of the colonel, and when the war was over he took it home with him. Like the white lamb that stayed and fed with the victor after the battle of Antietam, the little creature, during its short but stirring army life, was a daily inspiration to better feelings and thought in the presence of all that is worst—a living flag of truce gleaming among the thunder clouds of human passion.—The Watchman.

\$225 for One Egg.

A single bird's egg was sold recently in London for \$225. It is common for the eggs of rare birds to cost as much as a good horse. They are not bought for hatching, but merely to adorn the museums of egg collectors.

The most expensive birds' eggs at present are those of the graceful frigate bird. These are laid two in number on a crude platform of sticks which serves as a nest. The eggs are so rare that naturalists differ as to their exact size and color.

The egg sold in London, which was claimed to be a genuine frigate egg, was pinky white in color. Another specimen, which brought \$50, was grayish white, with faint mottlings at the thick end.

The eggs of the great northern driver, which are becoming scarcer every year, frequently bring \$25 apiece; especially fine specimens bring much more.

A number of enterprising collectors, it is said, are purchasing all these eggs to form a corner in the market. Within a few years their value is expected to be increased many fold. The northern driver is over three feet in length and its eggs are very large in proportion to its size.

The eggs of the great auk are almost priceless, no specimens having been found for many years. The bird is supposed to be extinct. It is hoped by naturalists that the auk may still be found in the remote polar regions.

The egg of the nutcracker crow is worth \$10, if found in England. A rav-

Awaiting Settlers



Thousands of FREE Grant Homesteads (160 acres) in the Hard Wheat Belt of Manitoba, Assiniboia, Alberta and Saskatchewan (Western Canada.)

Experience shows that the lands of Western Canada are unexcelled for Grain Growing, Mixed Farming and Dairying.

Railroads exist and are projected wherever settlement extends. Schools and churches convenient.

Taxes merely nominal, Climate the Healthiest in the World.

Crops always good, Wheat varying from 25 to 40 bushels to the acre. Oats 60 to 100 bushels, other grains in proportion.

CATTLE RAISING

more profitable than elsewhere on the Continent. Marketing produce at highest prices is particularly easy. Low figures asked for lands adjoining Free Homestead Lands. Write for pamphlets and copies of letters from settlers and delegates. Address F. Pedley, Superintendent of Immigration, Ottawa, Canada, or to

J. S. CRAWFORD,
214 W. Ninth St., Kansas City, Mo.

en's egg is worth \$5. The bearded tit's nest has become so rare that \$20 can be easily had for a single one of its eggs. These eggs are very small and are frequently mistaken for those of the common wren.

The crested grebe's eggs, which were very common a few years ago, are becoming extremely rare, being worth at least \$5 apiece.—New York World.

Possession.

Sallie was sitting on the floor, and the sun began to shine in her face. "Go 'way! Go 'way!" she cried. "Move a little, Sallie, and it will not bother you," said her mother. "No, mamma, it mus' move; I dot here first!"—Philadelphia Times.

Lonesome.

When small Bobby had worn his first pair of trousers for half an hour he went to his mother and begged to have on his kilt again. "What for?" she asked. "Because," replied Bobby, "I feel so lonesome in pants."—Lewiston Journal.

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.

Excursions to St. Paul.

Via the Sioux City Route (Northwestern 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., 828 Main St., Kansas City.

When writing to our advertisers please mention Kansas Farmer.

KANSAS FARMER.

Established in 1863.

Published every Thursday by the
KANSAS FARMER CO., - - - TOPEKA, KANSAS.

E. B. Cowgill.....President
J. B. McAfee.....Vice-President
D. C. Nellis.....Secretary and Treasurer

SUBSCRIPTION PRICE: - \$1.00 A YEAR

E. B. Cowgill.....Editor
H. A. Heath.....Advertising Manager



ADVERTISING RATES.

Display advertising, 15 cents per line, agate (fourteen lines to the inch).
Special reading notices, 25 cents per line.
Business cards or miscellaneous advertisements will be received from reliable advertisers at the rate of \$5.00 per agate line for one year.
Annual cards in the Breeders' Directory, consisting of four lines or less, for \$16.00 per year, including a copy of the Kansas Farmer free.
Electros must have metal base.
Objectionable 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.

The directors of the Farmers' Cooperative Grain and Live Stock Association will meet in Topeka, June 4, to transact important business. Secretary Butler expects that the association will be prepared to handle the present wheat crop. The work of organizing local associations is progressing rapidly in the wheat belt.

The Missouri State Horticultural Society will hold its summer meeting at New Haven, June 4, 5 and 6.

Missouri reports that while there is trouble in some parts of the State with the canker-worm, in others with the leaf roller, others with the dropping of the apple and peach, and others with the peach leaf curl, there is yet a very good prospect for the apple and peach crop.

The dry weather to which northeastern Kansas has been treated during the last several weeks is without precedent at this time of year in the memory of "the oldest inhabitant," unless indeed that worthy includes the year 1860. The weather office reports a "very good promise of rain" within the next twenty-four hours.

The damage from Hessian fly will be much less than was at one time feared. It is to be hoped that the economic-entomologists will find a method of so befriending the Hessian fly's enemies that the flies may be exterminated. The surest way to combat insect enemies seems to be to join forces with their enemies.

A subscriber at Pittsburg, Kans., writes that he has been told by several stockmen that to feed bone-meal to calves would prevent blackleg, and asks for definite information. The one recognized preventive of blackleg is vaccination. If any reader has had experience with bone-meal or any kind of medicine the KANSAS FARMER will be glad to have him state it in detail.

CELEBRATION AT THE SITE OF THE ANCIENT PAWNEE REPUBLIC.

The holiday to which patriotic Americans will next give attention is the Fourth of July, a day which is the small boy's especial delight and his mother's especial terror, in both cases on account of the noise and danger attending the usual celebration.

But the nation's birthday is more than an occasion for noisy demonstration; it is a day of historic reminiscence. At least one place in Kansas will engage in a celebration calculated to commemorate one of the important events in the history of the nation, an event especially interesting to Kansas because it took place on Kansas soil. This event was no less than the final taking down of the Spanish colors and the raising of the Stars and Stripes in the vast country known as the Louisiana Purchase. This event occurred in 1806, in what is now Republic county, Kansas.

The Kansas State Historical Society, which will have charge of the celebration upon the site where this memorable event occurred, has issued the following circular:

The Legislature of Kansas appropriated \$3,000 to fence and mark the site of the Pawnee republic in Republic county, where Lieut. Zebulon M. Pike, on the 29th day of September, 1806, first asserted and enforced national sovereignty over the territory now known as Kansas. The visible remains of the Indian village will be enclosed by a substantial iron fence, built by the Capitol Iron Works, of Topeka, and an elegant shaft of bary granite, twenty-five feet high, erected by C. W. Guild, of Topeka. The land was presented to the State of Kansas by Elizabeth A. Johnson, and the Legislature acceded to her request to fence and mark the same, without a dissenting vote in either house. The State Historical Society is charged with the care of this property, and also the duty of carrying out the purpose of the Legislature with appropriate ceremonies. On the anniversary of Pike's visit to this inspiring spot, September 29 next, the monument will be unveiled, with a program as full and interesting as that for July 4, participated in by the Daughters of the Revolution and the Grand Army of the Republic. The inscription on the monument will read:

Erected by the State of Kansas,
1901,
To mark the site of the Pawnee Republic, where
LIEUT. ZEBULON M. PIKE
caused the Spanish flag to be lowered and the flag of the United States to be raised,
September 29, 1806.

The location of this Indian village site, now assumed by the State of Kansas as the exact place where the heroic and inspiring deed of Pike was enacted, is in section 3, township 2 south, range 5 west, 10 miles from Courtland, on the Rock Island, 5 miles from Republic, on the Missouri Pacific, 8 miles from Lovewell, on the Santa Fe, and 15 miles west from Belleville, in Republic County. Ample conveyances will be furnished by the neighborhood.

PROGRAM—JULY 4, 1901.
11 O'clock a. m.
Assembly called to order by Hon. John Francis, of Allen County, president of the Kansas State Historical Society.
President of the Day—Hon. R. B. Ward, State Senator, Belleville.
Vice presidents—Hon. F. N. Woodward, Republic County; Hon. C. E. Adams, Superior, Neb.; Hon. J. C. Morrow, Washington; Hon. H. B. White, Jewell; Hon. Harry McMillan, Ottawa; Hon. E. R. Fulton, Marshall; E. B. Cowgill, Topeka; Hon. William T. Short, Cloud County; Hon. R. W. Maintz, Washington; Hon. John McKee, Clay County; Hon. J. W. Bogenrief, Jewell; Hon. John Schlyer, Ellis County; Hon. T. C. Honnell, Brown County; J. C. Postlewaite, Jewell County; Gomer T. Davies, Cloud County; W. H. Leigh, Hardy, Neb.; J. M. Doyle, I. O. Savage, C. W. Gulick, Thomas Schuler, T. W. Craft, and T. A. Lowe, Republic County.
Invocation—Rev. John A. Greer, Superior, Neb.
Address, presenting title to the land—J. C. Price, president of Pawnee Republic Historical Society.
Address of Acceptance—Hon. William E. Stanley, governor of Kansas.
Corner-stone Ceremony, by the Grand Lodge A. F. and A. M., under the auspices of Belleville Lodge No. 129.
2 O'clock p. m.
From Quivira to Kansas—Hon. Henry F. Mason, Garden City.
Music.
Lest We Forget—Mrs. Margaret Hill McCarter, Topeka.

Music.
Fraternity and Patriotism—Hon. John W. Haughey, Grand Master of the Grand Lodge, Independent Order of Odd Fellows, of Kansas, Wellington.

Application has been made for a troop of cavalry or a battery of artillery from Fort Riley.

Music will be furnished by the Belleville Military Band and the Courtland Band. The ladies of the Eastern Star will contribute some interesting minor features to this program.

THE STATUS OF PORTO RICO.

The much talked of decisions of the United States Supreme Court defining the relations of the newly acquired island of Porto Rico to this country, and defining the powers of Congress in relation thereto, were given out last Monday. The justices were by no means unanimous in their views, nor in the reasoning by which certain conclusions were reached. In such case the opinion of the majority prevails and the decision is as binding as if it had been unanimously concurred in. It is gratifying to note that, while the court contains both Republicans and Democrats, the divisions on these cases were not along party lines.

The cases considered by the court arose on account of the application of the tariff laws of the United States to imports from Porto Rico. Two cases involved the principal issues. The first of these questioned the right of the United States to collect duty on such imports after Porto Rico had been acquired by the treaty of Paris and before any legislation covering the case had been enacted by Congress. The second questioned the right of Congress to levy any duty on imports from Porto Rico.

In the discussion of the first case the majority of the court arrives at the conclusion that

"* * * by the ratification of the treaty of Paris the island became territory of the United States."

The Court then discusses the powers of Congress with reference to such territory and says:

"But whatever be the source of this power, its uninterrupted exercise by Congress for a century and the repeated declarations of this court, have settled the law that the right to acquire territory involves the right to govern and dispose of it."

Further on, and more specifically, the court says:

"Under this power Congress may deal with territory acquired by treaty; may administer its government as it does that of the District of Columbia; it may organize a local territorial government; it may admit it as a State upon an equality with other States; it may sell its public lands to individual citizens, or may donate them as homesteads to actual settlers. In short, when once acquired by treaty, it belongs to the United States, and is subject to the disposition of Congress."

Having in this first case decided that Porto Rico is a territory of the United States, and that it is subject to such dispositions as Congress may determine, the court in the second case considered the position of the territory under Congressional action. In this it makes clear the difference, under the constitution, between mere territory and States. After showing that many specific provisions of the constitution are not applicable to territories until their provisions have been extended there to by Congress, the court in its sixth special finding says:

"Where the constitution has been once formally extended by Congress to territories, neither Congress nor the territorial legislature can enact laws inconsistent therewith."

Taken in connection with the decision as to what Congress may do as to territories, this last declaration, which says that Congress having once taken a territory under the protecting wings of the constitution, can never retrace that step, is momentous.

That some Congress will find it desirable under these decisions to admit Hawaii to statehood, that another will admit Porto Rico, that Cuba will apply and be admitted, and that some parts of the Philippines will become States in the permutations of our politics, and that having once been "admitted" they can never be cast out seems an inevitable sequence of these decisions. These are more important than the affirmation of the power of Congress to levy import duties against Porto Rico or any other territory. Such duties will not probably be long con-

tinued by any Congress, but the enlargement of the country by the addition as States of territory in various parts of the globe, territory inhabited by strange races and having peculiar customs, all this at the caprice or in the interest of such political party as shall, for the time, have a majority in Congress, may present grave situations for this generation or the next. But such is the law of the land as laid down by the highest tribunal.

PHYSICS OF AGRICULTURE.

The fact that every year the farmer makes use of more of the results of scientific research, and that he is thereby enabled to use his opportunities more advantageously, has given occasion for the publication of many books embracing more or less of science. Numerous periodicals have also essayed to teach science, especially such science as may be thought applicable to everyday affairs in some branch of industry. So also some periodicals assume a scientific tone in dealing with pure fictions in the hope of making their readers believe they are reading of some of the "wonders of science." The respect for science and the desire to be "scientific" is so universal as to create a demand for scientific reading and to enable publishers to palm off a lot of fictions as real science. In discussing this subject in an editorial recently the Scientific American alluded to a classification of science as "science that is so" and "science that is not so," and then spoke of an intermediate which it proposed to call "magazine science." This latter, having a basis of real science, mixes in a lot of fiction so that the reader can not be certain whether he is being instructed or merely entertained.

Science—true science—is "knowledge gained and verified by exact observation and correct thinking." From this definition it is evident that no amount of imitation scientific diction can make science of that which "is not so," or of a discourse in which truth and error are mixed, however skillfully. But the fact that everything bearing the semblance of science is greedily read proves that there is a real demand for the real article. To have real science widely read it is only necessary to write it in such plain language that the person of fair education can take hold of it.

This may seem like an unnecessarily long introduction to a notice of Prof. King's new book entitled, "Physics of Agriculture." This book is in the strictest sense a book of science complying fully with the above definition, and yet it is written in language so plain that all who read can understand it. In the entire book of 604 pages there is nothing that "is not so;" there is no fiction mixed with the fact. It is a book of "knowledge gained and verified by exact observation and correct thinking." Prof. King is himself an investigator, an experimenter, who has contributed much from his original researches to the store of human knowledge. His labors have been largely with the soil, and he has sought and formed answers to many of the questions which confront the farmer in determining how he shall proceed under the varying conditions of his vocation.

The book begins with a clear presentation of elementary physics to the extent needed for application to the practical work of the farm. Then comes a chapter on "Physics of the Soil." This is followed by "Chemical and Mineral Nature of the Soil." Other discussions of the soil prepare for the subject of "Soil Moisture." On soil moisture Professor King has bestowed a great deal of experimental work, and should his book begin and end with that subject and contain nothing else but an account of his own work, it ought to be considered an indispensable part of every farmer's library. By the aid of this book the maximum benefit of our supply of moisture, be it scant or abundant, may be obtained. When the knowledge contained in this book shall be generally applied the number of disasters from drought will be greatly reduced.

Equally complete is the treatment as to excessive moisture. The subject of "Farm Machines" is treated not from the view point of the man who has them to sell, but from that of the competent and honest investigator.

It is impossible in this brief notice to give an adequate idea of the scope and value of the book. The fact that it is comprehensive, that it is practical, that it is readily understood; that it may be relied upon as accurate and up-to-date in every detail—these should place it in the hands of every farmer

who expects to make the best use of his opportunities.

The regular price of the book is \$1.75, but realizing its worth to readers of the KANSAS FARMER, we have made a special arrangement with Professor King whereby the full cloth bound book will be sent post paid to any subscriber of the "Old Reliable" for \$1.35 sent to this office.

The Water Problem of Kansas.

EDITOR KANSAS FARMER:—The courts are called upon to decide whether Colorado has the right to divert from her streams all the water she may want for irrigating purposes—the claim being made that Kansas is thus deprived of water which by right materially lessens the water supply for irrigation in Kansas, then there might be some plausible excuse for such movement, but all who have had experience in central and western Kansas know that all creek and river channels in Kansas have a more uniform flow of water throughout the year now than they had twenty-five years ago. The reason why this is so is apparent to all. The farmer who breaks up the sod and plows deep, thereby creates a reservoir beneath the surface, into which the water, as it falls in heavy rains, largely enters, instead of being forced off from the otherwise hard surface into water channels, causing oftentimes violent floods. A part of the rainfall which enters this reservoir is utilized in plant growth; a part, by evaporation, is returned to the atmosphere increasing its humidity; but by far the largest part, gradually, by seepage, finds its way into creek and river channels, thus tending to preserve a more uniform flow of water.

The diversion of water from Colorado mountain streams as well as from others while at flood tide, its storage in vast reservoirs, its flow in irrigation canals, and utilization in plant growth, all tend to the same end—to diminish the violence of floods and to increase the volume of water in Kansas streams during the hot months of summer. We conclude, therefore, that the more water that is diverted from Colorado streams and utilized for plant growth, the greater will be our water supply in Kansas when most needed for irrigation purposes. However, irrigation direct from Kansas streams on an extended scale, has been demonstrated to be a failure, the exceptions being just enough to move to prove the rule, and it is folly to waste any more time or energy in that direction. The underflow, however, is a mine of wealth, and is in reach of all wherever it exists. Every farmer, or other person, who has a good well and wind power may revel in the luxuries of a vegetable, fruit and flower garden nearly all the year round, and at a small cost, too. Luxuries did I say? These are necessities, if the highest degree of health is desirable. We may have health, but what we want is health and wealth.

M. MOHLER.

Topeka, Kans.

To Farmers' Shipping Associations.

EDITOR KANSAS FARMER:—I can see that our State organization, when completed, will benefit us in many ways. We can talk of them later. The thing to do now is push the work of your local organization. I believe there is a mistaken idea as to the cost of an elevator. I believe the farmers generally are of the opinion that a serviceable building would cost much more than it really does. It is not the object of our local organizations to store grain for speculative purposes. A large elevator is not necessary. The purposes for which the elevator should be built are: (1). To act as a store house for grain while cars are being secured. (2). To save the time and labor of shoveling. It is building high that makes an elevator cost. It costs because the height of a building makes a great pressure at the bottom and the great pressure necessitates the use of heavy timbers. Heavy timbers cost money.

Now a building 32 feet long by 16 feet wide with an average height of 12½ feet will hold about 5 cars (5,000 bushels). It could be divided into 3 bins for the different grades. A cupola could be built on top for elevating purposes and the dump, covered with a dry shed, arranged at one side near the middle of the building, and the railroad track at the other side. The Great Western Mfg. Co., of Kansas City, advertises a gasoline engine of 2½ horse power for \$150, which they guarantee to elevate 800 bushels of wheat per hour to a height (I forget the exact number of feet) sufficient for elevator purposes. The wheat could be elevated direct from the dump into the

car or run from bins into dump and then elevated into car. The cost of the above building, with 2 by 6 joists 1 foot apart and properly braced, with the engine mentioned and good serviceable office and scales complete, would be in the neighborhood of \$650, which, when distributed among 75 farmers, diminishes to almost nothing. A larger elevator on the same plan could be built for \$1,000.

If you can't build an elevator, put in scales and tester.

In addition to making arrangements for handling wheat at local points, I would offer the following as suggestive topics for consideration at your meetings: (1). The harvest hand question. Agree upon a maximum price for single hands. Import laborers if necessary. (2). The threshing machine question. Take the amounts that 10 or 12 wheat growers in your locality will pay for having their wheat threshed. Add them together. I think you will find it just about equals the price of a complete threshing outfit. Now if they would form a company, draw up their articles of agreement, elect their executive board and buy a machine, I believe the cost of threshing would be reduced considerably.

Don't forget to secure your share of the stock of the State organization. Remember there are only 2,000 shares; that is not very much when divided over Kansas. Yours truly,

Portis, Kans. R. M. HAMMOND.

Harvest Hands.

W. J. Black of the Santa Fe explains the harvest rate regulations as follows: "Tickets for bonafide harvest hands will be on sale from June 12 to June 20, inclusive, from the following Kansas ticket offices: St. Joseph, Atchison, Kansas City, Fort Scott, Ottawa, Chanute, Cherryvale, and Topeka. The destination may be any point in the territory west of a line drawn through the cities of Moline, Eureka, Emporia, Council Grove, White City, Junction City, Blue Rapids, and Marysville.

"The rates are very low—as low as the railroads have ever made for harvest traffic. Two persons, traveling on one ticket, will go for half fare. Three persons or more, on one ticket, at one-third fare. There is no reduction for a single passenger.

"The railroads will all work together to bring the farmers all the help they need for their harvest. The local railway agents in the wheat belt will be instructed to notify the farmers of the rates which have been made. The farmers will then be asked to notify the agents how many harvest hands they need. The local agents will report to the general agent of their road the number of men needed in that locality, and the general agents will keep the towns where tickets are sold posted on the needs of the various wheat raising localities."

The Grain Louse Versus Wheat.

PRESS BULLETIN, OKLAHOMA EXPERIMENT STATION.

It is appropriate at this time to notice this insect whose ravages in wheat in several counties of Oklahoma have greatly reduced the value of this year's crop. By extensive correspondence and by conversations with many wheat growers, uniform testimony is secured that throughout the regions named below the wheat or grain louse has greatly damaged this year's crop. In fact, the injury in some regions has been so great that farmers have preferred to replant the wheat ground to some other crop. A recommendation to this effect was inserted in some of the newspapers of the Territory some time ago.

The station received the first specimens of this louse early in April, and the entomologist has since that time given most of his time to a thorough investigation of the distribution and life history of the insect. It became at once apparent that the main damage was not due to the well known "grain louse" (*Siphonophora avenae*) whose structure and life history have been so well aired in the newspapers of late. Our form differs from the one mentioned in several details, and will soon be described as a new variety closely related to the true "grain louse."

The greatest injury to wheat has occurred in the following regions: Chickasaw and Cherokee Nations, and Cleveland, Canadian, Kingfisher, Lincoln, Logan, Noble, Oklahoma, Payne, Pawnee, and Potawatomie counties. In some cases it was noted that the general trend of the migrations of the insect was from south to north. The louse, like its better known relative, is capable of very rapid multiplication and this is favored by dry weather. Males are unknown and the reproduction is by the

process called parthenogenesis, or the giving birth to the living young. The viviparous females are wingless but enough winged females are produced to enable the species to migrate from one field to another in search of food. These winged females were present in large numbers from about the middle of April to the first of May.

There is no evidence that this louse has a true egg-stage. It is probably that it winters over in the adult stage and feeds upon the leaves of the wheat during favorable weather during the entire winter. The past winter was in some respects very favorable to the development of the louse in large numbers and it is not, therefore, a matter for surprise that such hordes of lice should have appeared so early in the spring.

There is no practical spraying method that can be recommended against this insect pest. Some have suggested spraying with the usual kerosene emulsion, and this would probably reduce their number if applied before they spread over so large an area as to make the plan quite impossible and too costly. Our greatest hope lies, however, in the rapid multiplication and energy of the natural insect enemies of this louse. The most abundant and useful of these enemies in Oklahoma is surely one of the "lady-bird" beetles (*Hippodamia convergens*). This is a nearly hemispherical beetle about three-sixteenths of an inch in length and of a reddish-yellow color with several black spots on the back. The head and thorax are black with reddish-yellow margins and the thorax has two elongated reddish-yellow spots.

The larvae of these beetles are even more rapacious and active than the mature beetles. The larva is a long, blackish, somewhat flattened, and very active larva with 6 legs of more than usual length. The larva when it reaches maturity, curls up on some leaf or stem and changes to the pupa from which the mature beetle emerges in a few days. The beetles live over winter in the mature stage in crevices of trees and boards. The "lady-bird" beetles have appeared in such large numbers in some parts of Oklahoma that farmers have written to the experiment station for some remedy to destroy them. Every wheat grower should look on these beetles as his best friend and in no case allow them to be destroyed.

Does Not Believe in Changing Seed.

In the Prairie Farmer for March 2 there is an article referring to change of seed corn. The article says that "farmers who will investigate their corn cribs or granary bins year after year, after using the same seed for successive years, will find that they have a light crop of this grain and of very bad quality." And furthermore it says: "The advantages of judicious changes of seed are manifold, but one needs to use his head to be able to make the best choice." Whoever produced that article of advice to farmers surely has seed corn to sell. I have been successfully raising a variety of white corn with a red cob for more than thirty years on the same sixty acres, and where advantages have been alike a noticeable improvement in quality has been plainly discernible each succeeding year. I have in crib now from the past season the best and most nearly perfect lot of corn I ever raised. Soon after the war I procured this variety 100 miles north of this locality. The first few years the ears were quite small and matured very early. Later on, they increased in size and ripened a little later in the season. This improvement continued, and now I have large ears that do not mature until the end of the season, but do so, however, before any injury from frost. I presented a sample of this corn at our Farmers' Institute, Nov. 26, 27, 1900, for inspection, by request of Hon. H. N. McMahan, secretary and treasurer of the Indiana Corn Growers' Association. He used the score card adopted by the State Board of Agriculture, and with his best judgment, the corn scored 91. Right here, allow me to say that I think the board made a mistake in requiring the length of ear, in Southern Indiana, to be eleven inches, and in disqualifying white corn with red cob. I notice in the variety I have that the clearest, brightest grains are almost invariably found on the cobs of deep red. I also think that the ears with the best red in the cobs mature earlier. Now after bringing this variety of corn up to its present perfection, I have no inclination to change seed. With proper rotation of crops on but sixty acres and with careful manuring, there is no need of going outside for seed. How is corn to be brought up to the high-

est standard of perfection by an exchange of seed? Should one farmer grow a variety for a few years and then swap with another, running the risk of getting impure seed? Several farmers have asked me for seed after seeing such as I had at the institute, corn grown on the same farm for thirty years. Does it look like "foolish policy" to plant seed from corn that improves in quality every year? Seed wheat need not be changed when properly rotated with other crops and judiciously manured. I have sown the same variety of Pool wheat for more than ten years and have that kind growing now. Last year I had a yield of eighteen bushels per acre, notwithstanding the injury from the Hessian fly to the extent, I think, of one-half the crop. Year before last I had a yield of thirty-five bushels per acre. Hence I have no disposition to change seed wheat.—Robt. Morris, in Prairie Farmer.

Water-glass for Preserving Eggs.

EDITOR KANSAS FARMER:—I read an article in the KANSAS FARMER of May 2 on "Preserving Eggs." I have been wanting a good, sure way of packing and keeping eggs. They get very cheap here, are now down to 7 cents per dozen. I see that the article recommends water-glass or soluble glass, but you do not tell how much or how to use it. Can you tell me how to prepare it for use and what quantity to use? In short, I want a recipe in full if it can be had. I am much interested in your paper, and as a subscriber I wish to learn just how to preserve eggs.

S. P. HARRIS.

Independence, Kans.

The article on preservation of eggs in the KANSAS FARMER of May 2 was clipped from another paper, and the editor is not informed as to more of the details or the method of preserving eggs with a solution of water-glass than is contained in the clipping. Mr. M. O'Donnell, Ph.G., pharmacist with the Swift & Holiday Drug Co., of Topeka, says that, while he has no experience in the preservation of eggs, judging from the manner of handling water-glass for other similar purposes, the proper proportion would be about 1 part of water-glass to 3 parts of water. The cost of water-glass by a single gallon at any drug store should be about 65 cents; in 5 gallon quantities, considerably less, probably 50 cents per gallon. The method of preserving eggs by means of water-glass would then be to put the water-glass in a suitable vessel, say a jar, keg, or barrel, add 3 times as much water and stir until thoroughly dissolved, then place the eggs in the water-glass solution, cover them up and set away. This method of preserving eggs with water-glass is rational, since the water-glass solution seals up the pores in the shells and prevents the entrance of any foreign matter that might produce decay. It is hoped that our correspondent will experiment with this method and report the results to the KANSAS FARMER.

Method of Reviving Drowning Chicks.

It is now the time of year when sudden showers are frequent, and sometimes a sudden downpour, and lots of us poultry raisers have found chickens and poults out on the range, and it is impossible sometimes for us to get them to shelter without a half hour's warning. Before this season we have brought in drowned chicks by the apronful or dozen after one of those showers, some dead, and others died because I didn't know how to apply warmth. I have been taught since by an elder head to double a piece of carpet or other thick cloth and cover the bottom of a warm oven with it, put the wet chick on this, and those that seem dead immerse all but their heads in warm water, have it so warm that you can barely hold your hand in it, and hold the chicks there until they can move themselves easily. You will be surprised to see how soon an apparently dead chick will survive, if you have never tried this remedy. But alas, this remedy will not bring a dead chick to life.

After you take them from the water wipe them with a dry cloth and put them in the warm oven to dry. We do not have all this bother with brooded chicks, for their mother is always in the same place, not a gadabout all over the farm, and the chicks know which way to run when they need protection. We intend to do away with hens for brooders as soon as possible, because artificial brooders are not half the bother and we raise the chicks.—Poultry Tribune.

Don't fail to take advantage of our "Blocks of Two" offer.

Horticulture.

The Castor Oil Plant and the Mosquito.

The following interesting contribution to a subject already occasionally touched upon in these pages comes to us from India. A correspondent of the Madras "Mail" observes that the suggestion to use the castor-oil plant as being distasteful to the mosquito is by no means new.

"It has long been the custom in Egypt to grow the plant about houses in order to drive the insects away. Many years ago it was suggested in 'Insect Life' that, for towns, a good plan is to have growing plants of Palma christi in pots and bring them into the house for a day or two at a time, but not keep them too long in the shade as the plant needs sun. It is believed that the mosquitoes are killed by a poison that they find on the under surface of the leaf, but at the same time it has been observed that if leaves of the castor plant are placed about a room that swarms with mosquitoes they will disappear without leaving any dead ones lying about. It is strange that though the castor-oil plant is common in many parts of this country the natives do not use it either fresh or in the form of a fumigant for the destruction or dispersion of the noxious insect. The leaves of Ocimum scanctum are commonly used as a fumigant for the purpose in Malabar. Besides the scientific methods now advocated for the destruction of the mosquito by destroying it in its earlier larvæ stage, one indirect way of getting rid of it is by getting rid of rank vegetation about houses. Mosquitoes seek the shelter of rank vegetation for the moisture and shade afforded. They can not endure the direct rays of the sun, and, furthermore, in open spaces they are hot likely to obtain food to sustain life. The present writer has more than once of late come in contact with mosquitoes on the seabeach at Calcutt. He mentioned this fact to friends and found that they had also noticed it. Mosquitoes in such a place were not known formerly and their presence is doubtless to be attributed to the fact that two rows of casurina trees have been planted along the beach road."—American Garden.

As the castor-bean plant is quite ornamental, it might well find a place in gardens and lawns, and particularly so if it has characteristics which drive away the troublesome mosquito.

The Pruning of Shrubs.

So many persons complain to me that their shrubs do not bloom satisfactorily, and in nearly every instance it is a case of ill-judged pruning. Sometimes it is because of too much shade, for shrubs will not flower without a good share of sunlight; but oftener it is the pruning which is at fault. About large cities, where idle men obtain employment to prune shrubs, which ignorant owners give them, the plants are often shockingly treated. These men know nothing whatever of shrubs, nor have they anything else in mind than that the subject to be "pruned" must be hacked to death. It is therefore cut back about one-half, ball-shaped or flat-headed, as the idea of the operator dictates, and the shrub is "pruned" and the loss of all flowers provided for effectually.

I have touched on this subject on previous occasions, and would say again that how to prune shrubs is easily understood when the knowledge of their habits of flowering is understood. By far the greater number of them flower from shoots made the previous season, and it does not need saying, that if these last season's shoots are cut away, there is nothing to give flowers. There is no objection to a little trimming back or of shortening shoots here and there, but be assured that if all young shoots are cut out, the crop of flowers is done for.

As a rule, all shrubs flowering in the spring and summer are of this class and the great majority of known shrubs are members of it.

There are a few shrubs which flower in late summer and autumn, and these are properly pruned in winter. The now well-known hardy hydrangea is in this group, so is the callicarpa and the Vitex agnus-castus; the verbena shrub, Caryopteris; the Spiræa bomaldo and a few others.

My own shrubs of the first class are pruned to some extent immediately after flowering. A good cutting out of old wood is performed, a shoot nipped here and there, to shapen the bushes, and towards the close of summer or earlier a further slight cutting, to bring the specimens into a desirable shape.

A desirable shape is not a close or rounded one, unless when the shrub is in some particular situation. An almost natural growth looks best in all other cases.

Look over your shrubs at the present time, noticing if they are well supplied with shoots of last year's formation. If they are, permit no one to cut them out or do more than cut off a small portion of the tops, and you will have an abundance of flowers.

Roses are in two divisions as well as shrubs. There are those that flower from last year's shoots, and those that may be closely pruned. The hybrid perpetual roses, such as the Jacque, must have very little pruning, while the tea, noisette, China, and Bourbon class may be closely pruned. Still, a partial cutting down of the hybrid perpetuals is as well, as it gives larger flowers instead of a greater number of them. The new Japanese roses of the rugosa type are of this class, requiring but little pruning.

Very little reflection will disclose the character of a shrub or rose, so as to admit of its being pruned properly. This will give pleasure instead of vexation; and there will be much surprise at the great change for the better in the well-doing of the shrubs.—Joseph Meehan, Germantown, Pa., in Country Gentleman.

The Strawberry Leaf Roller.

REPLY TO INQUIRY, BY PROF. S. J. HUNTER, KANSAS STATE UNIVERSITY.

EDITOR KANSAS FARMER:—The parent of the strawberry leaf rolling caterpillar is a small, reddish-brown moth, measuring about a half inch across the expanded wings. These moths emerge from their pupal cases in the spring. The eggs are laid in May; the caterpillars hatching from these eggs grow and develop until the latter part of June. At this time they pupate and form cocoons within the folds of the leaves. The adult moths emerge in a short time. The eggs for the fall brood are laid in September. The caterpillars from these eggs pass the winter in the pupal cases, or cocoons.

From this it will be seen that there are two broods in this locality and that the damage to the strawberry leaves is caused by the caterpillars. Just now the first brood is feeding actively. The caterpillars, when fully grown, vary in color from yellowish-brown to green, and in length from one-third to one-half inch. The caterpillar as it feeds conceals and protects itself by folding the leaf around it and fastening the edges with web-like cords. Sometimes the leaf is crumpled and rolled into a somewhat cylindrical case. Infested leaves appear dry and scorched.

Since the caterpillar so effectually protects itself within folded leaves, it is evident that arsenical sprays such as Paris green to be effective must be spread upon the leaves before they are folded. When the caterpillars of the spring brood have made known their presence among the strawberries by the burned and dry leaves, the only remedy is hand picking and burning the leaves. Just after the fruiting season, however, these same caterpillars, then in their cocoons within the folded leaves, can be destroyed by mowing the plants close to the ground and raking up and burning all the leaves. This will greatly curtail the numbers of the fall brood which likewise does much damage to the plants. By reducing the fall brood the brood of the following spring will also be reduced.

Important Inquiries.

EDITOR KANSAS FARMER:—May I ask a few questions which I hope some kindly subscriber will answer. I want to know if it is possible to raise currants in Kansas. I am told by some that they freeze out in the winter; by others that the burn out in the summer. What treatment should they receive? What kind of strawberry is best suited to our climate and when is the best time to plant? I want size and quality for family use. Do pears do well on high land? If so, what varieties are best? Do quinces do well in Kansas? I have planted quinces but after a year or so I do not find them. I am trying to fix a home on rather high land—soil a sandy loam. I planted an orchard here about twelve years ago. I have a few apple trees left but they have not made a very good growth. The peach trees are dead or nearly so; apricots are full of fruit; cherry trees have borne well for the past ten years, and are now loaded with fruit; pears, quinces, and currants disappeared. I never knew what became of them. As the orchard was a half mile from home I could not watch it; only knew when

- ARMSTRONG & McKELVY Pittsburgh.
- BEYMER-BAUMAN PITTSBURGH.
- DAVIS-CHAMBERS Pittsburgh.
- FAHNESTOCK Pittsburgh.
- ANCHOR } Cincinnati.
- ECKSTEIN }
- ATLANTIC } New York.
- BRADLEY }
- BROOKLYN }
- JEWETT }
- ULSTER }
- UNION } Chicago.
- SOUTHERN }
- SHIPMAN }
- COLLIER }
- MISSOURI } St. Louis.
- RED SEAL }
- SOUTHERN }
- JOHN T. LEWIS & BROS CO Philadelphia.
- MORLEY Cleveland.
- SALEM Salem, Mass.
- CORNELL Buffalo.
- KENTUCKY Louisville.

ARE you getting what you pay for? Not if you are buying Mixtures, Barytes and similar makeweights or adulterants falsely labeled "White Lead;" but you can get honest value for every dollar you expend for paint if you buy any of these brands of Pure "old Dutch process" White Lead (see margin). With Pure Linseed Oil they make the only paint that will give permanent satisfaction.

For any color or shade required, use NATIONAL LEAD COMPANY'S Pure White Lead Tinting Colors. Pamphlet sent free upon application.

National Lead Co., 100 William Street, New York.

I looked for them that no sign of them remained. Our orchard at home took all my time and attention. I planted this spring more currants—two dozen—and they are doing nicely—bloomed and full of green fruit now. I planted Jessie and Capt. Jack strawberries also this spring. We have no apples on our farm this year—last year there was an abundance.

What has become of the old-time women's column. I found it very interesting and got many a timely hint from it. I hope to see it revived.

MRS. L. W. TRUESDELL, Concordia, Kans.

Compressed Air Sprayers.

The spraying season is at hand. Many hold it to be a necessity to spray fruit and vegetables of all kinds, if one wishes to have them free from worms. The publishers have investigated the Rippley compressed air sprayers and believe that every farmer, fruit grower, stock breeder, poultry breeder, etc., ought to own one. The farmer or fruit grower that uses one with brains as well as wind will be repaid many times for the small amount of money that he spends for one, as he will have fine fruit and more of it, and when he takes his fruit to market he will have no trouble to dispose of same at a fancy price. It will spray trees 30 feet high. It is also a fine machine for whitewashing trees, barns, fences, spraying lice

sprayer, which is a great advantage over other compressed air sprayers, as the air enters at the bottom of the side of the air chamber and keeps the solution thoroughly agitated by simply pumping every few minutes. It is not necessary to remove pump from chamber when you wish to refill chamber with solution.

They are fitted with fine interchangeable spray nozzles and 4 feet of the best



RIPPLEY'S COMPRESSED AIR SPRAYER AND WHITEWASHING MACHINE

This Sprayer and Kansas Farmer 1 year, \$6.25, delivered.

hose, and are made to strap to the body, as shown in advertisement.

The Rippley firm also sell the finest line of large commercial orchard sprayers on the market. All goods sold by the Rippley firm are sold under a guarantee to be as represented, and do all the firm claims or money refunded.

The Rippley Hardware Co., Grafton, Ill., wants a good firm or a good agent in each locality to sell its sprayers, lice killer, fly remover, washers, and feed cookers. Address, Rippley Hardware Co., Grafton, Ill.



This Sprayer and Kansas Farmer 1 year, \$1.75, delivered.

killer in poultry houses and on stock. It is also useful for applying fly remover on stock during fly time. It is fine for spraying potato fields, berry patches, nursery stock, etc. It is constructed of copper and galvanized iron, and sells at a reasonable price, considering the value of same. The machines are tested at 60 pounds pressure, and have a positive acting safety valve, which prevents any chance of explosion. They are fitted with a fine brass cylinder pump attached to the outside of

STARK TREES SUCCEED WHERE OTHERS FAIL. Largest Nursery. Fruit Book Free. Result of 76 years' experience. STARK BROS., Louisiana, Mo.; Danville, N.Y.

ITALIAN BEES.... Full colonies shipped any time during summer and safe arrival guaranteed. It will pay you to try my stock of Italian bees in the Latest Improved Hives. Nothing will double in value quicker. A. H. DUFF, Larned, Kansas.

CIDER PRESS One-third more elder with the HYDRAULIC than with the old style press. Send for Catalogue. It's FREE. Davis-Johnson Co. Western Agents, HYDRAULIC PRESS MFG. CO. 41 W. Randolph St., CHICAGO.

J. G. PEPPARD, MILLET CANE SEEDS
1400-2 Union Ave., CLOVERS
KANSAS CITY, MO. GRASS SEEDS.

SEEDS: Early Amber Cane, Dwarf Essex Rape, just imported from Essex, England. Iowa-grown German millet seed, and Kaffir-Corn. Write for prices to-day. Address J. R. RATEKIN & SON, Shenandoah, Iowa

Grange Department.

"For the good of our order, our country and man kind."

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.

The Lecture Hour.

The lecture hour of our grange meeting must be made as indispensable as the opening ceremony. The most crying need of the grange to-day is to grasp grange principles and to work individually and collectively to further the interest of farmers. The social element is entering so largely into many of our granges as to completely shut out the more important feature—the educational. The social features may be termed the spice of life, but we can not live on pie and cake all the time, we must have the substantial. People with no work become tired and wearied of pleasure seeking. The history of the order shows that the development of the social features alone, or at the expense of its more real and practical work, may do for a time, may cause the grange to boom and flourish for months, but after a time a dullness comes, a sort of dyspepsia for want of solid food, that brings about a condition very far from the ideal, or that which the all-around, healthful grange enjoys. So let our granges have pleasures in their social enjoyments, but let them remember the grange injunction "our order was not instituted for enjoyment alone, but to accomplish great purposes."—Mrs. F. D. Saunders, Lect., Mich. S. G.

Improve the Home.

It is a poor plan for a farmer to get imbued with the idea that money-making is the only object worth attaining in life, and to scrimp and work himself and family into premature graves for the sake of leaving a large farm behind. It is well enough to provide a sufficiency for old age, but the dollar should always be kept subservient to manhood, for money is valuable only so long as it contributes to the welfare and happiness of humanity.

The farm home should not be simply a cheap shelter in which to recuperate sufficiently for the next day's drudgery in a constant effort to add more acres to the farm. On the contrary the aim should be to make the farm add to the comfort, convenience and attractiveness of the home. Comfortable shelter and an abundance to eat and drink being happiness to the farm animals, but the spark of divinity which dwells in the farmer should demand something more than the requirements of a brute. The farm (however broad its acres) which adds nothing to the mental and moral attainments of its owners is a miserable investment.

This question was discussed recently in the York Pomona Grange, Maine, in the following form: "What can we do to make our farm homes more convenient, comfortable, and attractive?" It would be a good question to discuss in every grange in the country.—Farmers' Voice.

Children in the Grange.

W. F. Hill, master of the Pennsylvania State grange, in his annual address, while speaking of the children of the farm, said: "We must interest ourselves in their school life and be sure to have them join the grange. Holding open grange occasionally during lecture hour and having them to take part is both helpful to them and entertaining to the older folks. The grange is helping children by improving the homes. The character of home determines that of the child, yea, of the nation itself. Man's ideals of home have grown more and more beautiful until the conviction came that woman should take her place by his side as his equal, and the culmination of this lofty conception had its first realization and perfect type in the grange organization. The boys and girls of to-day are the men and women of the future. Upon the nature of the impressions, habits, and education is founded the future policy of our government. Here, then, is a golden opportunity wherein fidelity to our principles will bring good results. The future member of the legislature and of Congress, as well as the future president, is a child now in training.

In our large membership are numbered some who will be called to fill public positions. They could be in no better preparatory school, as the grange aims to develop the moral, the useful and the intellectual with us. Humanity is growing richer in ideas and intellect, and the grange is contributing its share to this end."

With the large appropriation made by the last Congress for the extension of rural free mail delivery, \$3,500,000, which becomes available July 1st next, it is estimated that it insures the establishment of 8,600 routes in all. Who can estimate the good this will bring to hundreds of thousands of farm homes? This splendid fruit from the grange tree should of itself alone convince every farmer that he should be with his neighbors in the grange and helping on to still more benefits to the farm home.—Grange Bulletin.

In the notice for children's day, in this paper for May 16, the type made me say what I certainly did not intend to say. The meeting of that day should not be limited to children of Patrons of Husbandry. Let all the children of the vicinity have a rousing good time under the direction of the grange.

The Hon. N. J. Bachelder, lecturer of the National Grange, Patrons of Husbandry, under the direction of the master of the Kansas State Grange, will visit Kansas, for field work, commencing at Overbrook, July 17, going to Lyndon on the 18th; Topeka the 19th; Cadmus the 20th; Anderson County the 22d; Cooley County the 23d; Douglas County the 24th; Leavenworth County the 25th; Miami County the 26th; and to Olathe the 27th. A representative of the agricultural college will probably be present at all the meetings. The place of meeting in the several counties, where not already designated, will be decided upon by the Patrons in their respective counties. It is asked on our part only that both time and place be such as to allow us to make railroad connections. Let every reasonable effort be made to have as many at these meetings as possible, that we may get some substantial good, as well as pleasure, from the visit of the National Lecturer. E. W. W.

How to Organize a Grange.

F. A. Derthick, master of Ohio State Grange, gives the following directions for organizing a grange. They apply as well to Kansas as to Ohio:

Wherever there is a desire in any community to organize a grange, some one who is interested should secure the names of twenty-five or more representative farmers, all over 14 years of age, not less than four of whom must be women. A special effort should be made to include the young. Collect the fees, which are \$1, then write the State master for a date when he can visit you or send a deputy to perfect an organization. Should any special date be desired, an effort will be made to meet it. A deputy master is appointed in each county, who is the representative of the State master in that county. He will be glad to cooperate with any community in organizing a grange. When the name and address of the deputy master in your county is known, correspondence may be had with him. In the absence of such knowledge, write the State master.

Organization is the spirit of the age in which we are living, and is nowhere more needed than on the farm. The grange is the only organization that proposes to do anything for the farmer, as such; and no organization offers the opportunity for concert of action at so little cost. "The time has come when we must hang together or hang separately." Ask for literature.

The Apiary.

Conducted by A. H. Duff, Larned, Kans., to whom all inquiries concerning this department should be addressed.

Take Care of the Swarms.

When you lose a swarm of bees, it is just as good as five dollars gone, and it is nevertheless true, that many are thus lost. We should make it a point to make all arrangements necessary to take care of all the swarms, and lose none. The bees should be located in plain view of the walks we most often make about the house during the day. Swarms mostly issue from nine o'clock a. m. to two o'clock p. m., but occasionally come off earlier, or later, in the day. One thing is certain, that is, we do not need to lose any sleep watching them at night. Every one should be

Reliable Agents Wanted.

We want a good live agent to canvass, and sell Rippley's Compressed Air Sprayers, Lice Killer, Fly Remover, and Feed Cookers, Seed Sowers, Garden Cultivators.

RIPPLEY'S Compressed Air Sprayers

save one-half the labor and solution over others.
Made to trap on body, holds 5 gallons. Has fine Brass Cylinder Pump, 1 minute's pumping will force solution out in the form of the finest fog-mist, or will force a continuous stream 30 feet. Tested to 60 lbs. pressure, has fine Safety Valve to prevent over-pressure. Fitted with Rippley's Patent Filler handle, and Rippley's Interchangeable Spray Nozzle. This is not a machine made sprayer. All parts are double seamed and soldered. Guaranteed to be the best Compressed Air Sprayer on the market or money refunded. Weight of sprayer 15 lbs.

Made of heavy copper, 5 gal., price cash with order, \$10.00.
Made of heavy galvanized iron, 5 gal., \$6.25.

Fine machine for whitewashing buildings, trees, applying lice killer, spraying gardens, orchards, flowers and all plant life. Used and endorsed by the following leading firms: Green's Nursery Co., Rochester, N. Y.; Stark Brothers Nursery Co., Louisiana, Mo.; Chas. Mills, Rose Hill, N. Y.; West Disinfecting Co., N. Y. City, N. Y.; Zenner Disinfecting Co., Detroit, Mich. and hundreds of others.

Eclipse and Eureka Sprayers

For large orchards and potato fields, cotton fields, are guaranteed to be the best sprayers manufactured. All valves, cylinders, agitators, plate etc., are made of brass. Endorsed by leading State Experiment Stations. Place orders early and avoid delay.
We sell a complete line of sprayers for all large commercial work. Drop us a card. Get prices and circulars at once.

Rippley Hardware Co., Box 23, Grafton, Ill.

able to tell about the day swarms will come. This is very easily told by an examination in the hive. Queen cells are the sign, and if no queen cells are found, there is no danger of swarming for some time to come. If queen cells are found, then the bees will swarm, if nothing happens to them, in a few days. Just about the day they will swarm may be told by the progress of the cells. If just started, it will be about eight days, and if half way built it will be about half the length of time.

When a cell is sealed over, the bees are due to come, and nothing but bad weather prevents them, and the first nice day thereafter, they will surely come off. Bees laying out in large clusters about the hive is not an indication of swarming, other than they are strong and in condition to cast large swarms. But it is an indication that they need more storage room (if during the honey season) and it should be supplied at once. Let no hive remain in condition to throw off second swarms, for this does not pay. Better let them build up into a strong colony, and send out what is termed a first swarm again. This they often do in a good season. This is especially so with first swarms if they come early. If you have a few colonies, and wish to increase, to the utmost limit, divide them, and keep dividing them all summer, and feed liberally at all times that honey is not coming in from the fields. It is wonderful the number of colonies that can be made from one, by thus dividing.

When the first swarm comes off (providing you want first swarms) open the parent hive and examine for queen cells, removing all but one. Examine again in a few days, for upon first examination there may be a few cells just started, and you may overlook them. If there is more than one left, the bees will surely swarm again, so we must be thus particular to get all but one; this being to supply the colony with a queen. We must also be very particular to see that this one has not been lost, and that she has become fertilized and laying. Never give up looking in this particular, until you find eggs in the combs. Eggs thus found is sure evidence of her presence, and fertility, and the queen herself may not be looked up. If she becomes lost, you must hustle to get another in her place, for the colony will now run down very fast if left long queenless. In this particular, we should always have a few nucleus set out to rear queens, and thus supply these deficiencies.

While the bees continue to swarm, we have always a lot of good queen cells, that we may save by having a few of these miniature nucleus colonies set out to receive them, and it is very important that we have them on hand to supply lost queens that come up miss-

ing in full colonies. When a queen is gone, it will be but a few days until the colony will cease to store much surplus honey, and it is of the utmost importance that all queens are laying every day in the hives to their greatest limit during the fore part of the honey season. By taking a frame of bees and brooding the brood just hatched out, placing it in a hive alone, and inserting one of these queen cells in it, we will soon have a young laying queen ready to give any other colony that may have lost theirs.

Swarms may be readily put back in the hives they came from if we make a failure in preventing them issuing, but the cause must be removed or we are no better off than before. This means that we have overlooked a cell somewhere on the combs, and it must be hunted up, or the same thing will occur again. In some cases they may take it into their heads to settle the matter themselves. This they do by destroying the cells, or killing all the queens but one. They will not likely do this unless it is about the close of the honey season; when this comes, they will promptly close up all business in the line of swarming, and in a short time begin the destruction of the drones.

Have your hives in readiness to receive swarms when they come. Much may be lost by not having all the hives prepared. You may as well let your swarms go to the woods, as to put them in ordinary boxes picked up about the place, or even made of any other pattern than the standard hives. Every swarm you thus misplace, would have paid for a half dozen hives of the right kind before the honey season is out. Do not think that because it is a swarm that it does not need surplus boxes in it, for good early swarms will produce more honey than the colonies they come away and leave, but all should furnish a surplus if swarmed but once. Have a system of handling and hiving your swarms. Do not cut off limbs of the fruit trees that swarms settle upon, but have your swarming box with a good long handle attached so you can take off swarms anywhere on the fruit trees. Always shade the hive after putting the swarm in it, if the weather is very hot. Use a piece of strong canvass to lay down in front of the hive to shake the bees from your swarming box; this prevents the loss of many queens, and facilitates rapid transit of the bees into the hive. Always keep the queen in mind, and if possible try to find her, and at any rate lose no bees that belong to the swarm, for she may be with them. If the swarm is hived without the queen, they will promptly return to their old hive. Frequently, the swarm will come out without the queen, and she is yet safe in the hive.

THE FARMERS' MUTUAL HAIL ASSOCIATION, OF TOPEKA, KANSAS. INSURES GROWING CROPS AGAINST LOSS OR DAMAGE ...BY HAIL...

This Association has compiled in every particular with the new and stringent laws passed by the last legislature governing hail insurance, and furnished the State of Kansas with a \$50,000 bond, and is now fully authorized by the Superintendent of Insurance to do business in Kansas.
This Association offers you the protection you want at moderate cost. If our agent has not called on you drop us a line and he will do so. Address

Columbian Bldg. **THE FARMERS' MUTUAL HAIL ASSOCIATION, Topeka, Kans.**

Gossip About Stock.

The Iowa Swine Breeders' Association and the National Association of Expert Judges of Swine hold an annual session at Des Moines, Iowa, June 11 and 12, 1901. Geo. S. Prim of Oskaloosa, Iowa, is secretary.

G. W. Glick of Atchison, Kans., has offered a special cash prize of \$25 for the best pair of Kansas bred Berkshire pigs under 6 months old to be exhibited at the National Swine Show and Sale, to be held at Kansas City, October 7-11, 1901.

The report of a recent Hereford sale held at Sydney, Australia, shows that this breed are also in high favor in that country. The top price at the sale was 175 guineas, or about \$894, and a number of animals were disposed of at a figure not far below this.

Newton Bros., breeders of Duroc-Jersey swine, Whiting, Kans., claim the date of Oct. 7, 1901, for their next public sale. They report their spring crop of pigs as fine and believe that they will offer the best bunch of Durocs ever consigned to a Kansas sale.

At the combination sale of registered beef cattle held at Indianapolis, Ind., May 7 and 8, Herefords made the top price for animals of either sex, and 7 head sold for an average price of \$209.40. Forty-one Aberdeen-Angus averaged \$145; 38 Short-horns averaged \$130, and 10 Filled Durhams averaged \$124.

Every owner of cattle, swine, or poultry should be familiar with Moore's live stock remedies, and dipping tanks, which are now used and endorsed by leading stockmen and farmers. Write for free books on live stock to Moore Chemical & Mfg. Co., Dept. J., 1501 Genesee St., Kansas City.

A large deal in Galloway cattle was consummated at Dallas, Texas, last week when W. K. Bell of Palo Pinta, Texas, sold his entire herd of about 800 head of Galloway registered and pure-bred cattle to Charles E. Brown of Chicago, for his ranch at Willis Point, Texas. This is the largest sale of pure-blood Galloway and high-grade cattle ever made in Texas. The price was approximately \$32,000 for the lot.

A very satisfactory sale of red, white, and roan Shorthorns, the property of Martin Flynn of Des Moines, Iowa, was held at the Iowa State fair grounds May 23, and 48 head sold for \$15,390, an average of \$320.60. The top price was \$1,000 for Minnie Benson, sold to H. F. Brown of Minneapolis, Minn. H. W. Weiss of Sutherland, Iowa, paid \$1,000 for Gem of Gloster.

Since the first of January, 1901, there have been something over 1,200 registered Herefords sold at auction in the United States. It seems hardly possible that enough buyers could find time to attend these sales and take this number of cattle at fair prices, but they seem to have done so without much trouble. The total receipts from the sales amount to about \$290,000, or an average price of approximately \$240 for each animal sold.

Wait & East, Altoona, Wilson County, Kans., breeders of Poland-Chinas, of the Chief Tecumseh 2d, Black U. S., Wilkes, Free Trade, Corwin, and Short Stop strains report to the Kansas Farmer as follows: "We have about 200 head of hogs on the 2 farms. We have 125 spring pigs, with 6 more sows to farrow, also have 4 last October males as good as we ever raised, and the best lot of fall gilts we ever bred. All the fall pigs will be priced right for quick delivery."

A record was established in the combination sale of Herefords at the Union Stock Yards, Chicago, on May 22, when John Hooker, of New London, O., sold the 3-year-old Hereford cow, Dolly 2d, with heifer calf at her side, for \$5000. The purchaser was N. W. Bowen, of Delphi, Ind. The sire of the calf of Dolly 2d, catalogued as Ike, was sold for \$1,200. Maplewood 2d, a sow, sold for \$1,900, and three other cows sold for \$1,000 each. During the two days' sales 99 animals sold for \$35,620, an average of \$343. Sixty-six cows sold at an average of \$410, and 32 bulls sold at an average of \$205.

After the combination sale of Hereford cattle held at Chicago last week the Chicago Live Stock World sagely remarks that Indiana is coming to the front in Hereford cattle. The State now contains in the highest priced bull, Dale, that sold in Chicago at \$7,500, and the highest priced cow, Dolly 2d, which sold at \$5,000 in Chicago, and in a little while will have the highest priced English bull, Proctor, the Royal Show winner which cost Mr. Nave \$6,000. The Herefords are making great progress in breeding Herefords as well as other fine cattle of the beef breeds.

Mr. James McLaughlin, who is now in France selecting horses for another importation for his firm, McLaughlin Bros., Columbus, Ohio, writes very enthusiastically about his forthcoming importation, and says that he has already bought a better lot of horses than the 1900 importation. He also says: "We have been saving some of our best French Coach and Percheron horses to show this fall, but can do nothing go now that we have on hand in our stables, because this year's importation will be suitable for any American competition. They will be the best lot ever brought to America."

It is quite evident that bull buyers prefer to make their purchases during the late summer and autumn. At most of the public sales this year bulls have not sold well. On May 24 there was a sale of Short-horn bulls at South Omaha, of which the Journal-Stockman says: The sale of Short-horn bulls by A. Carrier & Son of Newton, Iowa, and C. S. Barclay & Son of West Liberty, Iowa, in the new sale pavilion at South Omaha was not the success that its promoters had hoped for. That fact, however, can be taken as no reflection upon South Omaha as a point for the holding of fine stock sales. The cause, or causes, for the want of success were very evident to the most casual observer. First and foremost was the want of proper advertising. Forty-one bulls sold for \$3,910, an average of \$95.36.

Black U. S. Best 21767, by Old Best On Earth, and out of Black U. S. Ideal 3d, heads the Poland-China herd of W. P. Wimmer & Son, Mound Valley, Kans. This herd sire is a heavy boned show animal with a model back, which qualities he transmits to his get. He is assisted by the young male, I B Perfection 25171, and was bred by E. H. Ware of Illinois. Messrs.

Wimmer & Son write the Kansas Farmer as follows: "We have a very fine lot of spring pigs sired by these boars, and we are ready to book orders. We have also a fancy lot of fall gilts sired by Black U. S. Best 21767 and Toby Prince 18126, that we will sell. Price reasonable—quality considered. Our sows are of Tecumseh, Look Me Over, Hadley, Wilkes, Chief I Am, Perfect I Know, Hidestretcher, Klever's Model, and Black U. S. strains. Our hogs are in the best of health and buried in alfalfa from morn until night."

Early this spring it was announced that the Hereford Association would send out a committee for the purpose of inspecting the animals entered for the series of sales to be held this fall under their auspices. The object in inaugurating this preliminary inspection was for the purpose of preventing the sale of undesirable animals at a place where the buyers would naturally expect a generally acceptable class of stock to be offered. But in view of the fact that the expense incurred by a committee visiting the numerous herds, scattered in widely separated sections, would be enormous, Secretary Thomas writes us that it was decided by the managing committee that the breeder offering to sell an inferior animal should stand the expense necessary for its ejection, and to this end the inspection of the offerings at their homes will be dispensed with, and a rigid inspection take place immediately after their arrival at the sale barns. Prospective Hereford buyers at the fall sales can thus be assured that each and every animal led into the sale ring will be of desirable quality and a fair representative of the Hereford breed.

Publishers' Paragraphs.

Mrs. L. C. Van Voorhis contributes to the June number of the Ledger Monthly a pleasant sketch entitled, "Children of Yesterday and To-day," in which the little ones of the first half of the nine-

ago, but dealers inform us that the trade is quadrupling every year. The usual time for sowing is in June or July, more perhaps being sown in corn at time of last cultivation and on stubble ground than in any other way. In this manner it gives two crops from the same ground, and really adds to the fertility of the soil. The seed has been rather scarce during the past few weeks, but the Iowa Seed Company of Des Moines inform us that they have succeeded in purchasing two car-loads more from the leading growers in England. This seed is now in transit, the first car-load is expected this week. Notice their advertisement in another column and be sure and write for prices.

The Buchey Stacker.

One of the best things ever done by the Topeka Commercial Club was securing for this city the location of the manufactory of the Buchey Stacker Co., which makes the very best stacker on the market. It stacks anything. No slings, forks or derricks, and no waste or delay in windy weather. Farmers and ranchmen who used the Buchey stackers last year are enthusiastic in their endorsement of it, on account of its simplicity, durability, and capacity.

To readers of the Kansas Farmer the manufacturers say: "Our stackers and powers are made of the best material, by skilled workmen. The wood is carefully selected and all is thoroughly painted. The result will compare favorably with that turned out by the best manufacturing concerns. We guarantee each machine to do all that we claim for it. With reasonable care they will last twenty years. They are so strong in construction and simple in operation that there is no wear out to them. Any old blind horse can run them, and do easily the work of 5 men."

"The Buchey Stacker is a Twentieth Century application of some of the oldest

of the Buchey Stacker throughout the West for the sake of comparison with other stackers, and to guarantee permanent future sales, therefore in their advertisement they offer special introductory rates to first buyers. Kansas dealers who want a first class seller that will please their customers should not fail to secure a contract with this company, as there is nothing on the market that has so many excellent features adapted to the practical needs of the western ranchman and farmer as the Buchey Stacker.

Another fact that should be of interest to Kansas farmers in general is that it is a Kansas product, being manufactured at Topeka by Kansas men and Kansas capital. The factory is located at No. 127 North Kansas Avenue, Topeka, Kans., and any further information wanted will be cheerfully furnished by addressing The Buchey Stacker Co., at that address. Write for their catalogue, mentioning Kansas Farmer.

Berkshires at the National Show.

The first great national show and sale of swine will be held at Kansas City, October 1-11, 1901. The managing committee for the Berkshire breed's show and sale consists of N. H. Gentry, Sedalia, Mo.; C. A. Stannard, Emporia, Kans.; and Chas. F. Mills, Springfield, Ill.

To Berkshire breeders the following is addressed: The cash premiums provided for the show of Berkshires largely exceed in amount the prizes heretofore given at any state fair or exhibition.

The exhibition has been provided with the best of accommodation for showing the stock.

The magnitude of the show will ensure the attendance of the largest numbers of swine breeders heretofore gathered together.

The large displays of other breeds of swine that will be on exhibition at the Kansas City show will afford an unusual opportunity for the comparison of the lead-

A HOME THRESHING OUTFIT.

The illustration herewith is an exact reproduction of a home threshing outfit. It is a familiar one throughout the West. The outfit consists of a Little Columbia Thresher and a portable Davis Gasoline Engine, two of the most popular farm conveniences that have been advertised in the Kansas Farmer during recent years. These two machines together make an ideal threshing outfit, which is within easy financial reach of the average farmer of Kansas or Oklahoma. The John Deere Plow Co., of Kansas City, is supplying this home threshing outfit and it is a big seller—a regular Twentieth Century necessity. Look up the advertisement in this issue and write them for further details and particulars.



The enthusiastic endorsement of the buyers and users of these home threshing outfits is convincing evidence of their adaptability to the present necessities of the western farmer. John Leader, Crisfield, Kans., says:

"I have run thirty-one days and have threshed 21,000 bushels of oats, wheat, rye, and millet. I have threshed for twenty years, and I never saw a machine do as much work with so little power."

Albert Peterson, of Illinois, says: "In my neighborhood there are 16 to 20 horse-power and steam threshing outfits doing their work rapidly and wastefully, requiring two or three neighborhoods of men to get the grain to and from them. Owing to their large number, they are a poor investment for the threshermen who own them, and a burden to the farmer and his better half. For the above reasons there is a rapidly growing demand among farmers for a threshing machine and engine that can be operated by a few hands and are simple enough for the average farmer to handle—an outfit that can easily be moved over the worst roads. The illustration shows in operation a small threshing outfit that I purchased two years ago. It was only intended to be used for my own threshing, but after overcoming the ridicule heaped upon it by years ago, it has met with such favor among the farmers here that I am unable to thresh for all that want me to. Instead of being called a 'coffee mill,' as at first, it is now called 'pet' and 'friend' by the farmer and his wife. The separator has a 24-inch cylinder, 26-foot straw stacker, wagon grain elevator, and all as complete as any large machine. It will thresh and separate any kind of grain or grass seed as perfectly as any other machine. The power is furnished by a portable gasoline engine, simply constructed and, being automatic in every part, after being started I can feed the separator and run the whole outfit alone."

"To say I am well pleased with it is expressing it mildly. Myself and two or three neighbors combine so as to form a working crew of 6 men and 1 boy. When threshing from shock we have 1 man to pitch bundles in field, 2 men with teams to haul from field to machine, 1 man with team to haul grain from machine to bins, 1 man on straw stack, and the boy to cut bands, myself feeding machine as well as tending separator and engine. In this way we average from 15 to 20 acres per day, and of oats 600 to 1,000 bushels per day."

"From a circuit of 10 miles, hundreds of persons came to see us thresh, and although everyone at first smiled, as if thinking the whole affair a plaything, yet not one has left us, to whom we had a chance to speak, but admitted that we had the best and neatest outfit they had seen, when cost of machinery, cost of running, and quality of work was considered. The cost of gasoline for a day's work has been from 50 cents to \$1, using from 5 to 8 gallons per day, according to the quantity and quality of straw and also how long we make a day."

"Last fall I threshed with this outfit 500 bushels of millet seed and clover from 10 acres, cutting for seed, using only 2 men besides myself, resting machine when getting the loads in the field. We move our rig over any road with 2 teams easily, the separator weighing 1,300 pounds and engine 3,200 pounds. I trust that my experience will benefit some brother farmer who, like myself, is tired of trading help for miles around when threshing."

teenth century are contrasted with the children of the first year of the twentieth century. The article is illustrated from drawings by W. L. Hudson, and photographs by the Misses Selby.

"Every Day Life in the Philippines," by Ramon Reyes Lala, with six photographic illustrations, is an interesting article in the June number of the Ledger Monthly by a native of the Philippine Islands, one who has an intimate knowledge of the people and their daily life, and whose views are entitled to respect. His account of the people and the country is full of promise for the future under the wise administration of their affairs by the United States Government.

Where the United States Began.

Some of the marvelous changes wrought by time in the appearance of four of the earliest settlements on our Atlantic coast are strikingly illustrated in a series of views which will shortly appear in The Ladies' Home Journal. The places are St. Augustine, Jamestown, Plymouth and New York. The forlorn indications of Jamestown's decay and death as a settlement offer a most interesting contrast to the varied evidences of the gradual development of St. Augustine and Plymouth, and of the gigantic growth of modern New York.

Without doubt the most popular forage plant to-day is Dwarf Essex rape. This plant was practically unknown seven years

principles of mechanics to the stacking of hay or any other forage crop. The stacker consists of an endless carrier composed of two linked chains, to which are attached cross slats of wood with steel teeth.

"It is very simple in construction and operation and very strong, and is as light as is consistent with the use and abuse to which such machines are put.

"It will build stacks of any shape or size, reaching to 25 feet in height. It will elevate, without any adjustment, equally well tame hay, prairie hay, alfalfa, millet, sorghum, Kaffir-corn, or any other forage crop that is loose at both ends. It is especially useful in the stacking of headed wheat, because it saves all the shelled grain and also the hard and exceedingly slow labor of pitching the loose, short headed grain to the top of the stack.

"It is worth the money for the following reasons: 1st. It will elevate about one-half more hay than any other stacker. 2d. You can stack in windy weather. 3d. You can build a higher stack on account of the length of the elevator. 4th. You can build round stacks as well as ricks. 5th. It drops the hay in the center of the stack. 6th. It delivers it on the stack evenly and continuously, and thus you can make a stack that will keep the hay better than when it is thrown on in large bunches. 7th. One of its greatest advantages is in the fact that you can top out a stack in first class shape."

The company are anxious to have as wide a distribution as possible this year

ing breeds competing for public favor. The vast packing industry, the great number of railroads interested, the incomparable energy of the managers of the stock yards, and allied interests, the irrepressible spirit of the press and business men of Kansas City, have been pledged to make the National Swine Show, to be held in said city next October, without precedent, in the high character, the great extent of the exhibit, and the large number of interested visitors.

No Berkshire breeder can be excused from exhibiting specimens of the breed that will reflect credit upon the breed at the Kansas City show.

No breeder of Berkshires can afford to absent himself from the show, or in any way detract from the importance of the occasion to the breed.

No breeder interested in the increased revenue from his investment in Berkshires will neglect the opportunity to contribute liberally to the fund being raised by the breeders of his State for the encouragement of a large and creditable State exhibit of Berkshires at the Kansas City show.

Will you not commence fitting up an exhibit for the Kansas City show without delay?

Will you not at once decide to attend said show, inspect the largest and best exhibition of Berkshires ever made, meet a host of your fellow breeders who will be delighted to greet you and renew old friendships, make new and desirable acquaintances?

Will you not more than meet the expecta-

tions of the breeders of your State by making a liberal donation to the fund being raised to encourage the residents of your State to make exhibition of Berkshires at Kansas City that will creditably advertise the breed and reflect credit upon all concerned? All subscriptions are payable on or before September 1, 1901.

About Western Canada.

To the Editor:—Mr. John Nickelson formerly lived in Ottawa County, Ohio, and in 1899 left for western Canada. A year afterwards he writes to a friend in Toledo and says: "With nearly a year in this country I have found everything as good as not better than you told me when I left the States. I am well pleased and satisfied that Alberta is a good country for farming and stockraising. Grain grows to the best, and the yields are very large. I have never seen better and heavier oats than I have seen here during the past season, never seen anything in the States to equal the oats or wheat. Vegetables grow very good and large in size as well as in quantity. I am situated 13 miles east from Lacombe, about half way between Buffalo Lake and Lacombe, and have a fine place. There is a long, wide valley—called Long Valley—which runs from Lacombe to Buffalo Lake, with belts of timber on both sides, and is a most beautiful country, a Garden of Eden or Paradise. I advise any young man who is interested in farming or ranching to come to this country. The climate is fine, soil rich, with plenty of fine water and fuel. Fish and game of all kinds are here in abundance. The winter has been fine so far. At this writing there is about 2 inches of snow on the ground; but it does not stay long. It has not been cold enough to amount to anything."

Information about new districts in Saskatchewan and Assinibola can be had from any agent of the government, whose advertisement appears elsewhere in the columns of your paper. OLD READER.

Farm Notes.

- Sow a good soiling crop. Keep the soil in good till. Do not pasture the grass down too close. Growing colts need plenty of muscle forming foods. There is no green manure that is superior to clover. The first six months of a calf's life all but make the cow or steer. Soil kept reasonably level in cultivating does not dry out rapidly. Growing pigs will thrive better if they have a feed of grain daily. If any of the horses or cattle have not shed well feed a little oil meal. With late planting, pressing the soil down upon the seed will be found advisable. In the garden, as in the field, level cultivation will give the best results. A bad panel or a broken rail may be a small affair, but may be the starting point for a breachy horse. Soils can be made rich by deep plowing and heavy manuring. The value of any kind of farm stock is very easily determined by its feeding the first year. In nearly all cases an easily fattened cow is a poor milker, she converts her food into flesh. If the pastures are arranged so that the stock can be given a change a larger number may be kept. With all young stock a much better growth can be secured if they have access to good water and shade. Hogs intended for market should be pushed now as rapidly as possible and marketed before hot weather sets in. During summer especially, one of the most prolific causes of swine disease is the filth in which the animals are kept. Much of the nutrient value of clover hay is lost by allowing the plants to become too ripe before harvesting. Generally with all newly set trees or plants it will be found a good plan to mulch not later than the middle of June. Cultivation is not only necessary to keep down the weeds, but the stirring of the soil helps to make the plant food available. Usually there is not much danger of giving too much cultivation. In a majority of cases better results would be secured if more cultivation were given. So far as possible everything should be put in readiness so that when the harvest work commences there will be nothing to interfere with it until finished. With all crops it is an important item to harvest at the best stage in order to secure the best quality of product. A little delay will often make quite a difference in the product. While no rule can be laid down, generally it will be a safe plan to continue the cultivation until the crop can be considered safe, leaving the soil when the cultivation is finished loose and mellow, and reasonably level.

Eldon, Mo. N. J. SHEPHERD.

...MEN...

Book for men only, explaining health and happiness sent free in plain envelope. Address CHICAGO MEDICAL INSTITUTE, 110 West Sixth Street, Topeka, Kansas.

WEEKLY WEATHER CROP BULLETIN.

Weekly weather crop bulletin of the Kansas Weather Service, for the week ending May 30, 1901, prepared by T. B. Jennings, Station Director.

GENERAL CONDITIONS.

A cool week with much cloudiness. Little or no rain fell in the extreme western and southwestern counties; fair to good rains occurred in the northwestern, northern, central, and southern counties, while light showers were reported from the north-eastern, eastern, and southeastern counties. Frost in the northern counties on the 26th.

RESULTS.

EASTERN DIVISION.

Wheat, generally, continues in good condition, though smut is affecting it in Anderson and the soft variety in Jackson, and there is complaint of the fly injuring it in Wilson. Corn is growing fairly well in the southern counties, but much replanting is being done in the central and northern, due to the unfavorable season. Oats are heading in Montgomery; generally they are not in good condition, too dry and cool; Cherokee and Jefferson report chinch bugs injuring the crop. Cherries are ripening in the south. Strawberries are ripe and abundant in the central counties. Apples set poorly in Atchison and are dropping badly in Doniphan, while in Bourbon they were badly damaged by the worms. Peaches are doing well in Bourbon and Wilson. Pears dropping in Riley. Alfalfa is cut in Chautauqua, is being cut in Morris and Pottawatomie, and is ready to cut in Anderson. Flax and potatoes are blooming in Montgomery.

Allen County.—Wheat, oats and clover promise well; cherries and strawberries are good crops; all fruits looking well. Anderson.—Cool, cloudy; unfavorable for corn; wheat badly affected with smut and hurt by drought and insects; pastures good; alfalfa ready to cut. Atchison.—Dry and cool; spring crops make slow progress; wheat good; all fruits promising but apples (except a few varieties) did not set well; blackberries in bloom. Bourbon.—Corn being cultivated, a good stand; canker-worms have damaged the apple trees, now going into the ground; peaches and all small fruits are doing well; oats and flax have improved. Brown.—Corn coming well; fair stand; oats not doing so well; wheat is fine; pastures very good. Chautauqua.—Cold week; corn well ad-

good; strawberries ripe and abundant; cherries beginning to ripen; gardens look fine.

MIDDLE DIVISION.

Wheat is in bloom in Barton and Sumner, and the May wheat is in the dough in Cowley; it is somewhat improved in Cloud and Smith; some damage by fly reported in Dickinson, Harvey, McPherson, Ottawa and Rice. Corn is still retarded by unseasonable weather; it is being cultivated in many counties and for the second time in Sumner. Apples were injured by frost in Phillips and worms are eating the leaves in Washington. Cherries are ripening in Barber, Cowley and Sumner. Grapes are in bloom in Barber. Strawberries are coming to the market in Barton, Reno and Rice. Alfalfa is nearly ready to cut in Barton, Rice, and Saline, and has been cut in Barber. Oats are heading in Sumner and Butler. Potatoes are in bloom in Sumner. The first cutting of prairie hay is on the market in Sedgwick. Chinch bugs are damaging oats and corn in Butler.

Barber.—All growing crops in fine condition; early planted corn ready to plow; cane and kafir-corn being planted; first crop of alfalfa cut; grapes in bloom; cherries coloring; range grass fine, cattle fattening.

Barton.—All crops benefited by late rains; wheat in bloom; oats and barley doing well; corn cultivation begun; all fruit doing well; strawberries on market; pasture grass abundant; alfalfa almost ready to cut.

Butler.—A little rain, not sufficient for permanent good; oats heading short; corn not growing, too cold; chinch bugs doing much damage to oats and corn; alfalfa doing fairly well; frost 26th.

Cloud.—Wheat in slightly better condition; corn hurt by cut-worms and cool weather.

Cowley.—Fine week for wheat, but cool for corn; May wheat in the dough; alfalfa very heavy; early cherries ripening.

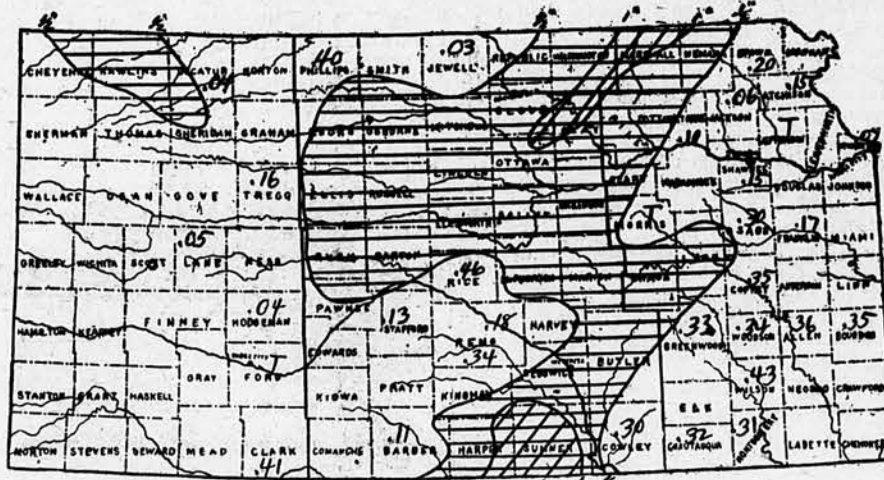
Dickinson.—Some wheat in southwest part damaged by hail, some in north part by fly; wheat promises a heavy yield; alfalfa being cut; cold retarding corn.

Edwards.—Wheat headed; rye in bloom; grass doing finely; stock in good condition; alfalfa cutting begun; forest trees doing well.

Havey.—Wheat generally looking fairly well; corn needs rain and warmth; oats are not doing very well.

Jewell.—Last week's rains brought up the spring sown alfalfa; corn coming up well; more rain needed for all crops.

Kingman.—Wheat in fine condition, though short in west part; corn growing rapidly; all small grain doing well.



SCALE IN INCHES.

Less than 1/4. 1/4 to 1. 1 to 2. 2 to 3. Over 3. T, trace.

ACTUAL RAINFALL FOR WEEK ENDING MAY 25, 1901.

vanced; wheat nearing harvest; alfalfa cut; large crop strawberries being harvested. Cherokee.—Wheat doing well; chinch bugs damaging oats; corn and grass need rain badly; fruit in good condition. Coffey.—Cool weather good for wheat, but hard on corn, which is small but of good color; strawberries abundant in market. Doniphan.—Frost Saturday night probably injured wheat on bottoms; corn yellow and backward, some being replanted; apples dropping. Elk.—Cool week, but everything growing since the rains; early cherries ripening, a fair crop. Franklin.—Much corn being replanted on account of mice and other pests. Greenwood.—Corn needs rain, some fields already destroyed by chinch bugs; pastures good but short; cattle doing well. Jackson.—Cool and dry; corn has made no progress, much replanting done; soft wheat full of smut. Jefferson.—Chinch bugs injuring oats; replanting some corn, too cool; rain needed. Johnson.—Everything at a standstill but wheat; rain needed. Lyon.—Cool, good for wheat and grass; corn doing fairly well, but needs warmth; rains have kept the ground in fine condition. Marshall.—Good rains; crops doing well though cool for corn; some corn damaged by worms will be replanted; grass and small grain very good; fruit promising. Montgomery.—Corn being cultivated second time; all crops doing well; oats heading; flax and early potatoes in bloom, but crops need rain; wheat heading, but chinch bugs are numerous; alfalfa being cut, good crop; fruit prospects very good. Osage.—Plenty of water and grass and everything doing well. Pottawatomie.—Wheat doing well; oats and pastures need rain; alfalfa haying begun; sweet-potato planting finished. Riley.—Cold week; pears dropping badly. Shawnee.—Corn coming up, growing slowly, requires much replanting; oats poor; wheat fine and heading; fruits promising good crops; rain needed. Wilson.—Complaint of fly injuring wheat badly; corn doing well; pastures fine and cattle doing well; peach trees full of fruit. Woodson.—Wheat heading; corn prospects

Lincoln.—Corn good stand, but too cold to grow, oats in same condition; wheat is heading, much of it has been plowed up; stock doing well.

McPherson.—Wheat heading nicely, some report of fly; corn being cultivated and growing; rye short; grass good; alfalfa fine.

Ottawa.—Wheat promises good crop, though fly bad in some fields—some fields being cut for hay and some plowed up; worked potatoes in fine condition; corn fair stand, but growing slowly; alfalfa best crop for years; fruit in promising condition.

Phillips.—Wheat doing finely; apples injured by frost; alfalfa fine; cold and cut worms damaging corn some.

Reno.—More rain badly needed; wheat and oats look fair; alfalfa beginning to bloom; corn growing slowly and being cultivated; kafir-corn all in; potatoes doing well.

Rice.—Fly reported in some wheat; corn growing; alfalfa being cut, fine crop; fruits growing nicely; strawberries ripening.

Rush.—Some parts needing rain badly; oats and barley look well; corn still backward; wheat heading, harvest in four weeks.

Russell.—Had a good rain 22d; nights very cool.

Saline.—Good growing week; alfalfa cutting progressing; bad hailstorm in west part of county on 22d.

Sedgwick.—Cold week; crops looking well, but retarded by cool weather, would be improved by rain; pastures good, stock doing finely; first cutting of prairie hay now on market.

Smith.—Grass and small grain doing well, too cool for corn; wheat improving since the rain; some corn replanted.

Stafford.—Dry; wheat in fair condition, but needs rain.

Sumner.—Ground in good condition; oats beginning to head; alfalfa to bloom; cherries to ripen, and early potatoes to bloom; wheat in bloom; corn being cultivated second time.

Washington.—Fine week for grains and grasses, too cool for corn; a worm eating foliage of apple trees except those sprayed.

WESTERN DIVISION.

Wheat, generally, is in good condition, but in Thomas and Rawlins it is weedy; it is in boot in Ness, and the early sown is heading in Sheridan and east part of Trego. Corn is in good condition, though growth is retarded by cool, cloudy weather.

er. Oats and barley are doing well. Rye is heading in Sheridan and east part of Thomas. Alfalfa is generally in fine condition; it has begun to bloom in Lane, is about ready to cut in Decatur, and is being cut in Clark and Ford. Range grass is very fine. Potatoes are large enough for table use in Ness.

Clark.—Forage crops growing well; alfalfa being cut; cattle in good condition.

Decatur.—A great week for wheat; some complaint of poor stand of corn; alfalfa cutting begins next week.

Finney.—Cold, cloudy week; too cold for good vegetable growth; ground getting dry; pasture good.

Ford.—Pasture and cattle in fine condition; wheat, rye, oats, barley, and corn are all in very good condition; alfalfa haying begun; fruit prospects very fine this year.

Gove.—Good rains, fine week, but cool; alfalfa fine, soon be ready to cut; pasture fine, cattle doing well; wheat coming as well as possible; oats very fine this year.

Greeley.—Cold week, crops fair, but rain would benefit everything.

Hodgeman.—Cool weather is beneficial to small grains; corn doing well; kafir-corn coming up; feed sowing stopped, too dry to plow; cattle doing finely.

Kearny.—Too cold for crops to grow rapidly, also needing rain.

Lane.—Ground in fine condition, but week too cool and cloudy for corn and forage crops; alfalfa beginning to blossom.

Ness.—Corn looks fine; wheat and barley in boot; early sorghum and millet growing nicely; gardens good; grass fine; stock fattening; new potatoes large enough to use.

Norton.—Cool week, light rains, frost on night 25th; worms doing some damage to fruit and forest trees; wheat in good condition, but needs rain.

Rawlins.—Plenty of rain this week with cold and cloudy weather; grass growing rank; some corn rotting in the ground; weeds in wheat.

Sheridan.—Rye and early sown wheat heading; alfalfa and grass fine.

Thomas.—Fine week for wheat, rye, barley, oats, alfalfa, and grass, too cold for corn and forage; corn fair stand; kafir-corn poor stand; much wheat weedy; grasshoppers numerous, just hatched last week; rye good height, heading in east part; range grass very good.

Trego.—Crops in fine condition; ground moist; wheat heading in east part.

Where Poultry Raisers Win.

W. T. WITTMAN.

Tolerate no confinement of your chicks this summer. A chick raised in confinement is a slow grower, an expensive boarder, and is rarely or never the equal of his free range brother. After June 1st chicks should be at liberty to leave the coop at break of day even, for if allowed to worry in the coop two of three hours every morning, they are sure to suffer and lose the best hours of the day in which to forage.

Feeding little or new born chicks on such things as bread and milk may seem like a lot of bother, etc., but year after year demonstrates the fact that these things push little chicks so that at the end of the first week or month they are the equals of those fed on cracked corn, wheat, millet, at twice that age. The man who is raising fancy stock, show birds, can ill afford to give his chicks a slow start, and if little Leghorn chicks particularly would for the first two weeks of their lives get nothing save rolled oats, bread and milk, as the main feeds, with pin-head oatmeal and millet seed as a change, together with what they may pick up, there would be 30 per cent less of them that would droop their wings.

I have said it yearly, and wish to repeat that it is not the wings that grow too fast, but the chicks growing too slow both in body and strength. Clipping the wings on the first sign of it and removing the cause, be it improper food, irregular feeding, or heating of brooder, or too much exercise by a too restless hen, may save the chick, but the chances are that such chicks will never amount to much. They may live and approach or reach maturity, but next fall or winter these chicks are the first to be sick or out of condition and be of no account, if not actually the medium of introducing rouse and kindred diseases into your flock.

Next to bad feeding, lice kill off more chicks than any other cause. Very frequently we read that if you will thoroughly dust the setting hen when first putting eggs under her, and again ten days later, you will have very few lice on small chicks, and yet are you doing this?

After you have very thoroughly realized the importance of the above, you will think that setting a hen without the eggs is no more foolish than setting her without dusting.

Very frequently setting hens are not dusted because the owner foolishly believes he has attained the impossible, in other words a flock of hens free from lice. Often a borrowed broody hen is extra lousy. For such it is a good plan to dust weekly, besides carefully going over the feathers at vent and throat and pulling all those with nits or eggs at base of feathers.

Liquid lice killer, greases, coal oil, etc., are too radical for the setting hen or newly hatched chicks, and the simple dusting will be found to do the work admirably.—Ohio Poultry Journal.

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.

A Statement Concerning Kaffir-Corn and Poor Butter.

J. M. G. of Wakefield, Kans., writes: "I read your letter in the KANSAS FARMER of May 2 and must beg leave to differ with you. When Kaffir-corn hay and grain are fed alone I find after experimenting with them twice, that they make the butter white and give it a bitter taste. It also makes the butter hard to gather, the butter coming in small particles about the size of Kaffir-corn grains and it seemed impossible to press them together and mold them into shape. But by mixing the Kaffir-corn hay with oat straw, that is a ration of each, and feeding bran and corn-meal instead of Kaffir-corn chop, I found that it took the bitter taste out of the milk and consequently the bad effect on the butter.

I would like you to test what I have, that is to feed the Kaffir-corn hay and grain alone with water and no other ration, and then let me have the benefit of your experience in the KANSAS FARMER. For myself I am confident and will never try it again unless it is a case of necessity."

The experience of our correspondent is interesting in more ways than one. In the first place no up-to-date dairyman should be content to feed his cows on Kaffir-corn hay and Kaffir-corn grain alone, no matter what the effect on the flavor of the butter. Such a ration contains only about half of the protein required by a cow in order to do her best. A successful contractor, anxious to get his work done with the utmost speed and efficiency would not think of supplying his men with all the stone and sand needed but only half the amount of lime required in making mortar for each day's work. Such management would mean that the men would not work to advantage and the building would rise only half as fast as it ought. In a similar manner the dairy cow takes the protein, carbohydrates, and fat and combines them in a way to make milk. The only nutrient likely to be deficient in a cow's ration is protein. If only half enough is supplied, the cow can not be expected to manufacture more than half the amount of milk she is capable of doing.

Our correspondent also complains that Kaffir-corn causes the butter to come in small particles which are very hard to press together. This is a characteristic of the feed and is not due to any bitter flavor that it might cause. It is a well-known fact that the consistency of butter can be regulated by the feed. Cottonseed-meal, for instance, will cause butter to be hard in a similar manner to Kaffir-corn, while oil-meal bran, or soy-bean meal will cause the butter to be soft.

The Kansas Experiment Station has never tested Kaffir-corn fodder and Kaffir-corn chop alone and it is doubtful if the experiment would be of any great practical value if we had, for the reason they should never be fed alone, flavor or no flavor. If it does cause a bitter flavor when fed alone, the testimony of our correspondent is valuable in that it tells us that when fed in combination with other feeds it will cause the bitter flavor to disappear. In reference to feeding Kaffir-corn alone it is to be hoped that all readers of the KANSAS FARMER will agree with our correspondent when he says he "will

never try it again" not simply for any bitter flavor it might impart, but because it is deficient in the raw material which produces a large flow of milk. D. H. O.

Bill of Fare for a Kansas Dairy Cow.

(Continued from last week.)

What Shall We Raise to Feed With Red Clover?—Ration No. 6.—This is a problem that confronts many of the farmers in the eastern part of the State where alfalfa is not available. Twenty-five pounds of clover hay with from 8 to 10 pounds of grain composed of one part corn and three parts oats make an excellent ration for a dairy cow. This would mean per cow about one and a fourth acres of red clover, one-fourth acre of corn, and one and one-half acres of oats, figuring oats at 28.5 bushels per acre, the average yield of seven years at the agricultural college.

Ration No. 7.—Another good grain ration with clover hay is six parts corn and one part soy-beans. This would require nearly one acre of corn. Soy-beans being a comparatively new crop the reports of yields vary greatly, but judging from the experience at the agricultural college and from reports of farmers the yield in clover districts would be at least 12 bushels per acre. From these figures it would require two-thirds of an acre to supply a cow the two hundred days' feeding period.

In each of the above rations no account is taken of succulance. Roughly speaking 20 pounds of mangles or ensilage will take the place of 2 pounds of oats or corn and will greatly increase the palatability of the ration.

Clover and Timothy—Ration No. 8.—It is a common practice in many places to seed clover and timothy together. Where these are used as hay it will be necessary to enrich the grain ration, as timothy contains less than half the digestible protein than clover does. While the following ration contains too much fat it is a very fair one and is probably as good as can be had from crops grown on the farm:

Twenty to 25 pounds of clover and timothy, with 8 to 10 pounds of grain composed of 7 parts oats and 3 parts soy-beans. Figuring the yield of clover and timothy the same as clover, the area required for roughage would be one and a fourth acres, for oats one and a half acres, and for soy-beans four-fifths of an acre.

Ration No. 9.—In the absence of soy-beans a grain ration composed of a mixture of one part bran, 2 parts corn and 2 parts oil-meal may be used. This would necessitate buying three-fifths of the grain. D. H. O.

Keeping Books of the Farm.

H. J. RICH.

The man who keeps a record of his herd, of their milk and their feed, and has a milk-tester and posts himself in the manner of properly handling milk to the creamery and back to his stock—or better still has a hand separator and does the whole thing right at home—I am sure will find it very interesting as well as remunerative, and the knowledge he will gain by so doing is beyond the price of money. I am sure it is just as essential for the farmer to keep a record, have labor-saving devices, in fact be up-to-date if not more so than it is for any other business man. In fact I believe the time has come when it is absolutely necessary for the farmer to keep books and know what he is doing, if he expects to be successful among his kind. I do not believe there is anything like dairying to bring this about on the farm.

Notes From the College Dairy.

F. F. UHL.

The college herd numbers 28 cows, seven being dry at present. Two of these had to be dried up by keeping from pasture and feeding only prairie hay. Two of the herd gave over 1,000 pounds of milk each during April.

The college cows have not increased in milk yield as a consequence of being turned to pasture. They gave an increased supply the second day, but the yield quickly dropped to normal. At the present time it is even less than at the first of the month, in spite of the fact that they are in luxuriant pasture and getting from three to five pounds of bran and ground corn mixed in equal parts. This shows that the winter ration contained plenty of protein.

The routine of the cows at present is, milking begins at five a. m.; out to pasture (composed of English and Kentucky blue-grass, orchard grass and a sprinkling of clover) at about 7 a. m.; brought in from pasture at 3 p. m.; turned into the lot where they have access to alfalfa hay and water until the

next morning. As soon as the nights get warmer and the flies more pestilent the cows will have pasture at night. The orchard grass is not relished by the herd, it being probably too coarse.

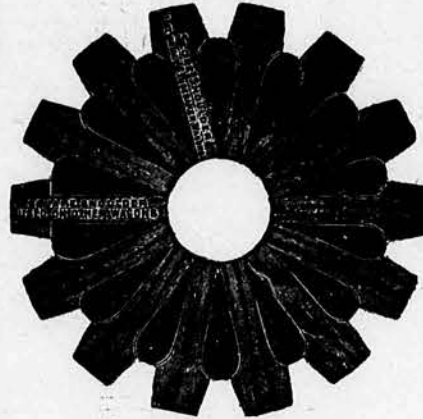
Twenty calves are being started on skim-milk preparatory to an experiment to test the relative feeding values of whole and ground Kaffir-corn. During last week these calves gained from four to sixteen pounds each, an average daily gain of over one pound. An older lot averaged 2.4 pounds daily gain.

The new calves number from 167 to 188, showing the number of cows and calves which have entered college since the first arrival of the famous 28 cows from Lincoln County, Kansas.

The Importance of Cleanliness in Handling Milk.

Last November an outbreak of typhoid fever occurred at the Iowa Agricultural College at Ames. Forty-two cases were developed, and two deaths ensued. The authorities instituted a rigorous investigation to determine the source of the infection. It was finally traced to a farmer who was furnishing milk to the college. A member of the family of this farmer was ill with typhoid fever. The milk had been twice rejected before, on account of its poor keeping qualities. An analysis of the water in the well where this farmer washed his milk cans, showed sewage contamination. The State board of health that made the investigation, concluded that the milk was infected through washing the milk cans with this infected water.

The evidence piles up almost mountain high, to show that the greatest cleanliness, as well as intelligence, must be used to keep milk pure. It will not do to rail out against boards of health, and call them "cranks," as some men do. As a rule they are men who have made a study of these questions. The business reputation of the man who is furnishing milk is at stake, and that, if nothing more, ought to make him vigilant and intelligent in this important work of keeping milk pure.—Hoards Dairyman.



The Building of a Wagon.

It is not at all strange that one's mind turns instinctively to the name Studebaker whenever the subject of wagons is mentioned. This is as it should be and entirely within the eternal fitness of things. This is so for many reasons. The Studebaker Bros. Mfg. Co., of South Bend, Ind., have been longer in the business of making wagons than any firm in the country. They have made and sold more wagons than any similar institution in the world. They were bred, born, and brought up in the wagon making business, and should accordingly know more about it than anybody else engaged in the business. And they do know more about it. Should you doubt this statement, just make them a call at their factory at South Bend. Nobody could treat you nicer or show you more attention than they will, and we prophesy that when you come away, you will be ready to indorse everything we have said. Somebody may say that other people

DAVIS CREAM SEPARATORS ARE THE BEST.



THOUSANDS of Dairy Farmers pronounce them as such.

Simple in Construction, Perfect in Separating, Built for Durability, Sold on Its Merits, Simplest and Most Perfect Bowl Made.

SEE CATALOGUE. Agents Wanted.

DAVIS CREAM SEPARATOR COMPANY,

88-90-92 W. Jackson St., CHICAGO.

GEO. W. HATHEWAY DISTRICT AGENT, TOPEKA, KANS.

Box 15.

can build just as good wagons as the Studebakers. Possibly so, but the fact remains that nobody does it. In all the long years that the Studebaker wagons have been on the market, it has remained at the top of the now long list of wagons, as to quality of material, workmanship, durability, finish, and long continued wear. These things are true and we feel that our readers know it to be a fact. We need, therefore, to submit but one instance as proof of Studebaker superiority. Look at the cut we show herewith. This is a Studebaker hub sawed right through the middle of the spokes. Note that on the left side of the hub they have set in one square shoulder spoke to show how it—the spoke used by other wagon manufacturers—compares with their world famous slope shoulder spoke. Can't you see the difference at a glance? Can't you see that the slope shoulder spoke has more wood in it; that it is in no way weakened, and that it, and consequently the whole structure, is infinitely stronger? Well, it's just that way with Studebaker wagons all over. Of course, it has taken more than fifty years of study, practice, and experience to bring about these present perfect results, but the man who buys a Studebaker wagon gets all that for nothing. You may not be able to see it in looking casually at one of the wagons, but it is there, as you will realize after using one for ten years or more. In short, the Studebaker wagon is made in their factory, in their way, with their selected material, and with their matured experience. These things being true, with what you have observed and already know about Studebaker wagons, do you not see that it is simply impossible to get anything better? Ask your dealers or write to the factory. Address, Studebaker Bros. Mfg. Co., South Bend, Ind.

Accommodations.

"Did you hear about their preaching sermons on Sunday trains?"

"Yes, but how would they go about it?"

"First collect all the passengers in the sleepers, of course."—Philadelphia Times.

Realism.

Ethel—"Yes, we played husband and wife. I kissed him and said he was the handsomest man in the world, and he said, 'Here's \$40; go and buy some gloves.'"—Life.

The Difference.

Boy—"Is this instrument called a fiddle or a violin?"

Professor—"Ven I blay it it is a violin. Ven you blay it it's a fiddle."—Tit-Bits.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" and Catalogue 287 free. West Chester, Pa.

LESS WORK AND MORE MONEY IN THE DAIRY



De Laval Cream Separators

A boon to The Farmer's Wife 250,000 now in use Earn \$10.- extra per cow each year Highest Award at Paris Write for catalogue

THE DE LAVAL SEPARATOR CO.

CHICAGO 74 Cortlandt Street NEW YORK MONTREAL PHILADELPHIA

Trade-Marks



"BLACKLEG."

"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.

The Poultry Yard.

The Development of the Business.

There are a few breeders in the entire country who can look back twenty-five years and think what the poultry business was then. There are a great many farmers who can look back for the same length of time and remember that they always had "hens" on the farm, more or less. But none of these men ever guessed that poultry, whether fancy or common, would be developed as to-day, or, that so many millions in pounds of carcass, dozens of eggs, or dollars, could possibly come out of the business.

IMPROVED STOCK.

Pioneer fanciers deserve much credit for the beginning of the improvement. I mean by this, that in the neighborhood of each fancier the common farm stock is bound to improve by mixture with the better blood of the fanciers' fowls; hence the common farm fowl got its better qualities from these fanciers, and thus, from this start, better blood in general was distributed throughout certain sections.

It was hard picking for these fanciers, however, as first-class specimens were not then appreciated as they are to-day, and buyers were scarce and prices low. In fact, there was no great boom in poultry culture, and things went a little slow. What a difference there is to-day! The poultry industry is the largest we have in this country, surpassing all the crops and manufactures. [?] Fanciers who have stuck to the pursuit, and have worked honestly to improve their stock each year, have been rewarded for their skill and hard work by a large demand and high prices. They have been enabled to live comfortably and bring up their families in proper fashion, with advantages of education, and have also been able to put at little money in the bank. It is quite difficult to trace the sudden demand for high quality and high-priced stock. That the demand has been rapidly increasing for the last ten years, I think there is no doubt. We all have seen it and have felt the benefits of it. A great many wealthy men have recently been fascinated by poultry. They have been ambitious to have the very best quality of birds for fancy summer places. Whether to look at and admire, themselves, or whether to point out to their friends, it matters not—the demand is there.

THE SHOWS.

I attribute this sudden fancy partly to the improvement in the specimens

**Sit up
in bed.**

When it becomes necessary to sit up in bed to get your breath; when the least exertion such as walking, sweeping, singing, talking or going up and down stairs, causes shortness of breath, fluttering or palpitation; then it is time to do something to brace up and strengthen your failing heart. Take Dr. Miles' Heart Cure. It is best of all.

"I had palpitation of heart, my left side became enlarged and I could not sleep at night. Had to sit up in bed and often walk the floor to get my breath. All of these troubles were cured by Dr. Miles' Heart Cure."

Mrs. E. V. TUBBS,
Mt. Carroll, Ills.

Dr. Miles' Heart Cure

stimulates the digestion, increases the circulation and makes weak hearts strong. Sold by druggists on guarantee. Dr. Miles Medical Co., Elkhart, Ind.

put on public exhibition and also to the great improvement in the exhibitions themselves. Seeing fine birds, finely cooped in an attractive hall, certainly leads men to covet them. When New York and Boston can afford to hold such "shows" as they held last winter, I do not wonder that any man would wish to improve his stock, or that a man who never kept a "chicken" would want to. Poultry exhibitions are among the greatest factors in poultry culture, and should be encouraged to the utmost. They are really necessary, and are bound to teach us our most valuable lessons. The competition is the thing for the fancier, and the view and inspection of the birds is the attraction for the amateur.

THE INCUBATOR.

But there is something which has done more than anything else in the world to boom poultry culture, and that is the modern incubator, or the process of raising chickens artificially. This has started the ball rolling, and it looks as if it would have a long roll before it stops. To artificial incubation can be attributed almost all our improvements. We have acknowledged the work of the fancier with the hen for a sitter, and have no objection to his still using her; but we have gone him one better. We are in the wholesale business, and leave to him the retail branch. He undoubtedly makes sufficient profit from his standpoint, but we are dealing in large numbers. We expect him to fall in line some day, and we notice that many of his friends are using both methods.

We can see where the shoe pinches him when, at this time of the year, he is looking for young birds to sell for the fall shows, and he finds they will not be large enough because "biddy" was not broody early enough in the spring, and he had to wait for her. Then again she was nervous and did not sit well and spoiled her hatch, or only brought out four chickens from thirteen of his best eggs. The demand is strong, and he must meet it, but his birds won't grow. He declares next season he will try one machine just for these early birds. He will try one and he will find that it is always broody; it remains with him to produce from his fine stock eggs strong enough in fertility to give him strong chicks. The machine will do the rest if the eggs are all right.

THE DEMANDS OF LUXURY.

Our country grows rapidly. Immense fortunes are being made every year and old ones increased; money is being more generally distributed. Our people live more luxuriously every day. There is a demand for better quality in almost everything, and it includes poultry. We must meet this demand; we must have eggs, broilers, roasters, turkeys, and ducks enough to supply our own people. Thus far, we have not been obliged to import poultry or eggs largely. There is, therefore, plenty of room for all of us to make money out of the business. We need not feel that the market will be overstocked. Our little mite will be but a small portion, but we will be able to get good prices for first-class quality. Artificial incubation has solved the problem of this demand. By it an unlimited supply can be obtained.

EGGS FOR HATCHING.

The most important point to consider, however, is eggs. We must produce good, hatchable eggs, and to do this we must learn to care for the parent stock so that a large percentage of the eggs will be fertile. It must be distinctly borne in mind that hens or fowls from which such eggs are obtained can not be fed the same as those intended for the table. The two are entirely different. Layers must be kept in prime laying condition, which is not too fat, and table fowls must be in prime table condition, which means carrying considerable flesh. Laying hens can not be both layers and table fowls at the same time. They may be fattened for the table before or after they lay.

This matter of hatchable eggs is the weakest point among even our largest breeders, and if it is not remedied it will give a bad setback to the artificial method. I think, in a general way, breeders put too many females with each male. They tax his capacity too much, and hence the germ is weak and the chick dies. On the other hand, our extreme up-to-date fanciers are using very small matings of one, two or three females to a male. This is well enough provided the male is removed from the pen and not allowed to waste himself. The middle course is the safest, giving each male a small number of females, and if the pen is not mated for fancy points, changing males once a week.

We have met the demand so far, and

let us not leave any stone unturned to continue it. The incubator men are for our advantage as well as their own; and let us at least supply good fuel in the shape of fertile eggs, that the supply may always meet the demand.—E. O. Roessle, Heslach Farm, Albany, N. Y., in Country Gentleman.

Eggs and Their Uses as Food.

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

(Continued from last week.)

EGGS READILY DIGESTED.

As regards the time required for digestion in the stomach it will be seen that in this investigation eggs compare favorably with other common foods. It must be remembered that digestion continues in the intestine, and that no data are furnished by these experiments for judging of this factor. This is an important matter, as food material which escapes digestion in the stomach may be thoroughly digested later in the intestine. This fact seems to have been often overlooked in the discussion of Dr. Beaumont's work.

HARD AND SOFT EGGS.

Among later experiments on the digestibility of eggs by artificial methods, the work of the Minnesota Experiment Station may be cited. The object was to study the thoroughness as well as the ease of digestion. Five experiments were made by means of a pepsin solution with eggs cooked under different conditions. Eggs were cooked for three minutes in water at 212° F., giving a "soft-boiled" egg, and for five minutes and 20 minutes at the same temperature. The egg boiled three minutes and digested for five hours in pepsin solution, compared with one boiled twenty minutes and treated in the same way, showed 8.3 per cent undigested protein in the former, against 4.1 per cent undigested protein in the latter. Under similar treatment the egg boiled five minutes gave 3.9 per cent undigested protein. In all cases the egg was quite thoroughly digested. Another trial was then made in which the eggs were cooked for periods of five and ten minutes in water at 180° F.—that is, the albumen was coagulated at a lower temperature than that of boiling water. In both of these cases the protein was entirely digested in five hours. These results would indicate that while the time and the temperature of cooking has some effect upon the rate of digestion, it does not very materially affect the total digestibility.

As regards the general deduction that eggs cooked for different lengths of time for digestion under the experimental conditions, the results agree quite closely with those obtained by Dr. Beaumont.

THOROUGHNESS OF DIGESTION.

Experiments have also been made with man to learn how thoroughly eggs are digested. In such cases it is usual to analyze the food and the feces, the latter being assumed to consist principally of undigested food. Deducting the amount of the different nutrients in the feces from the total amount consumed, shows how much of each nutrient was digested. Such an experiment was made at the Minnesota Experiment Station with a healthy man. A very considerable portion of the nitrogenous material and fat of the ration was furnished by eggs, the other foods eaten being potatoes, milk, and cream. About 90 per cent of the total nitrogenous material and over 90 per cent of the fat consumed were digested. In experiments at the University of Tennessee with healthy men on a diet of bread, milk, and eggs, from 93 to 95 per cent of



Chew
Wetmore's
Best

The chewing tobacco with a conscience behind it.

No Premiums!
Wetmore's Best sells on its merits.

Made only by
M. C. WETMORE TOBACCO CO.
St. Louis, Mo.

The largest independent factory in America.

both the protein and fat were digested. The conclusion therefore seems warranted that, as shown by composition and digestibility, eggs possess the high nutritive properties which are properly assigned to them.

(To be continued.)

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.

POULTRY BREEDERS' DIRECTORY.

EGGS—S. C. and R. C. B. Leghorn; and S. Sp. Hamburg. Strictly pure. Shoemaker's strain. \$1.00 per 15. Satisfaction guaranteed. Vira Bailey, Kinsley, Kans.

FOL SALE—Choice Single Comb White Leghorn hens, one year old. \$4 dozen. Ella F. Ney, Bonner Springs, Kans.

POULTRY—Don't order, but write. I have pure bred, from laying strains. It pays to have hens that lay, and that is what I can boast of. Write C. L. Hollingsworth, Coffeyville, Kans.

GEM POULTRY FARM—C. W. Peckham, Proprietor, Haven, Kans. Buff Plymouth Rocks, 2 flocks. Eggs from best flock \$2 per 15. A few choice Burdick cockerels for sale. Pea Comb W. Plymouth Rocks, 2 flocks. Eggs from best flock \$2 per 15. A few choice cockerels for sale. M. B. Turkeys, 2 grand flocks. Eggs \$2 per 11. Young toms for sale.

EGGS FOR HATCHING—White Holland turkeys, Barred Plymouth Rocks, Rose Comb White Leghorns, Single Comb Brown Leghorns, Black Langshans, Golden Seabright Bantams, Imperial Pekin ducks. Write me for prices. J. C. Curran, Curran, Kans.

HIGH-SCORING, PRIZE-WINNING, Cornish Indian Games, W. P. Rocks, Black Langshans. Eggs \$1 per 15. Mrs. J. C. Strong, Moran, Kans.

EGGS AND STOCK.

Barred Plymouth Rocks, White Plymouth Rocks, Partridge Cochins, Buff Cochins, Light Brahmas, Black Langshans, Silver Wyandottes, White Wyandottes, Silver Spangled Hamburgs, S. C. Brown Leghorns and Belgian Hares.

First Class Stock of

Standard Birds of Rare Quality.

Fine Exhibition and Breeding Stock. Write me your wants. Circulars free.

A. H. DUFF, Larned, Kans.

EGGS .. For .. Hatching.

From Pure-Bred, High-Scoring, Prize-Winning, WHITE AND PLYMOUTH ROCKS BARRED... 18 for \$1; 30 for \$2; 50 for \$3; 75 for \$4; 100 for \$5. Recipe for making and using Liquid Lice Killer, 25 cents. Write for descriptive circular.

T. E. LEFTWICH, Larned, Kansas.

WEALTH FOR YOU hatching chickens with incubators 6 months Free Trial. ONE INCUBATOR FREE to good agents. Half price to introduce them in your neighborhood. Catalogs free. National Incubator Co., Dept. DF, Chicago.

HENS Setting 6 days instead of 21, and how to make \$500 yearly with 12 hens. 45 Medals, etc., for Wonderful Discovery in horse manure heat. Particular Scientific Poultry Breeder's Association, K. Masonic Temple, Chicago.

200-Egg Incubator for \$12.00 Perfect in construction and action. Hatches every fertile egg. Write for catalogue to-day. GEO. H. STAHL, Quincy, Ill.

HOLLYHOCK POULTRY FARM 56-page Illustrated Poultry Catalogue. The secrets of successful poultry raising told in plain language; all about incubators, brooders, poultry houses, how to hatch and raise every chick, what, when and how to feed, forcing hens to lay and hundreds of valuable subjects contained in no other catalogue. Tells of 35 varieties popular throughout Iowa and quotes extremely low prices. Send 4c in stamps for postage. Hollyhock Poultry Farm, Box 1425, Des Moines, Ia.

MARKET REPORTS.

Kansas City, May 27.—Cattle—Receipts, 7,271; calves, 499. The market was 5 to 10 cents lower. Representative sales:

SHIPPING AND DRESSED BEEF STEERS. Table with columns: No., Ave. Price, No., Ave. Price.

TEXAS AND INDIAN STEERS. (Quarantine division.) Table with columns: No., Ave. Price, No., Ave. Price.

NATIVE HEIFERS. Table with columns: No., Ave. Price, No., Ave. Price.

NATIVE COWS. Table with columns: No., Ave. Price, No., Ave. Price.

NATIVE STOCKERS. Table with columns: No., Ave. Price, No., Ave. Price.

STOCK COWS AND HEIFERS. Table with columns: No., Ave. Price, No., Ave. Price.

Hogs—Receipts, 10,109. The market was 2 1/2 to 10 cents lower. Representative sales:

Table with columns: No. Av., Price, No. Av., Price, No. Av., Price.

Chicago Live Stock.

Chicago, May 27.—Cattle—Receipts, 24,000. Good to prime steers, \$5.30@6.00;

Hogs—Receipts, 47,000. Mixed and butchers, \$5.55@5.82 1/2;

Sheep—Receipts, 24,000. Good to choice wethers, \$4.35@4.60;

St. Louis Live Stock.

St. Louis, May 27.—Cattle—Receipts, 4,200. Beef steers, \$4.40@6.00;

Hogs—Receipts, 4,800. Pigs and lights, \$5.60@5.70;

Sheep—Receipts, 3,000. Natives, \$4.00@4.60;

Omaha Live Stock.

Omaha, May 27.—Cattle—Receipts, 4,200. Native beef steers, \$4.40@5.60;

Hogs—Receipts, 4,700. Heavy, \$5.60@5.70;

Sheep—Receipts, 3,000. Common and stock sheep, \$3.00@3.75;

Kansas City Grain.

Kansas City, May 27.—Wheat—Sales by sample on track:

Hard—No. 2, 69 1/2c; No. 3, 68 1/2c. Soft—No. 2, 70@71c; No. 3, 69 1/2c.

Chicago Cash Grain.

Chicago, May 27.—Wheat—No. 2 red, 75@76c; No. 3, 72@73c;

Oats—No. 2, 29 1/2@30c; No. 3, 28 1/2@29c.

Futures: Wheat—May, 73 1/2c; July, 73 3/4c.

Kansas City Produce.

Kansas City, May 27.—Eggs—Fresh, 9 1/2c

Butter—Creamery, extra fancy separator, 16 1/2c;

Poultry—Hens, live, 7c; roosters, 17 1/2c each;

Potatoes—New, 85@90c bushel, sacked;

Fruit—Strawberries, \$1.50@1.75 per crate;

Vegetables—Tomatoes, Florida, \$3.00@3.50 per six-basket crate;

FOR SALE—Registered Scotch Collie and Great Dane pups.

JERSEY BULL CALF FOR SALE—A grandson of Exile of St. Lambert 13857;

Special Want Column.

Wanted, For Sale, For Exchange, and small or special advertisements for short time will be inserted in this column...

CATTLE.

FOR SALE—Fifteen young Hereford bulls, from 6 to 16 months old, equally as good as the best in the land.

FOR SALE—Three registered Shorthorn bulls; solid reds, 14 to 22 months old.

FOR SALE—A few Shorthorn bulls ready for service.

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

FOR SALE—Five registered Holstein bulls, also high grade Shropshire rams and ram lambs.

HORSES AND MULES.

LEAVENWORTH COUNTY JACK FARM.—Seven mammoth jacks for sale.

PROSPECT FARM—CLYDESDALE STALLIONS, SHORTHORN CATTLE and POLAND CHINA HOGS.

FARMS AND RANCHES.

FREE A book of statistics, information, and 200 E. Kans. farm descriptions.

FOR SALE—820 acres, fine two story house, large barn, and other buildings.

ALL KINDS OF LAND FOR SALE—Farms and ranches, all sizes and prices, in Kansas and Colorado.

FOR SALE OR TRADE—160-acre farm—100 acres in cultivation; 6-room house, outbuildings, 3 miles from Florence, Kans.

MISCELLANEOUS.

WANTED TO HIRE—Man and his wife to work on cattle ranch, that has had experience in farming and taking care of stock.

FOR SALE—Scotch Collie pups; registered stock; cheap.

FARM HAND WANTED—On dairy farm. Write with reference.

FOR SALE—Six pure bred Lewelling and Irish Setter pups; also a fine Lewelling bitch, 2 years old, well broke on quail.

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.

SCOTCH COLLIE PUPPIES—Of pure breeding. Will be sold cheap if ordered at once.

UNION PACIFIC LANDS—Fifty cents to \$10 per acre, in Kansas, Nebraska, Colorado and Wyoming.

WOOL WANTED—We want, and will pay the highest market price in cash for 500,000 pounds of wool.

EARLY YELLOW SOY BEANS—For sale at \$1.65 per bushel, sacked on track at Vera, Kans.

FOR SALE CHEAP—Four Great Dane pups, 3 months old. Pure-bred and fine individuals.

FOR SALE—Feed mills and scales. We have 2 No. 1 Blue Valley mills, one 600-pound platform scale, one family scale, and 15 Clover Leaf horse scales, which we wish to close out cheap.

HEREFORD BULLS FOR SALE.

Five registered bulls, choicely bred, their sires being Lincoln 47095 by the great Beau Real and Klondike 72001 by the Beau Brummel Bull, Senator.

We Sell Farms for Cash

No matter where located. Send price and description and we will send you our plan.

Grand Island Investment Company, Grand Island, Nebraska.

Given Away.

One hundred and twenty-five acres, Texas county, Mo., 5 miles east of Sargeant, on Memphis R.R., 6-room 2-story house, barn, 3 springs, 200 bearing fruit trees;



Do you want a WIND MILL? Do you want a FEED MILL? We have them the best made and at prices that CAN NOT BE EQUALLED.

CURRIE WINDMILL CO., Topeka, Kans.

SILBERMAN BROTHERS YOUR WOOL... will pay you just in proportion as you are able to market it well and to your advantage.

WOOL SHIP DIRECT! There is no way to get full value for your wool except by shipping direct to market. WE GUARANTEE FULL MARKET PRICE, FULL WEIGHT AND PROMPT RETURNS.

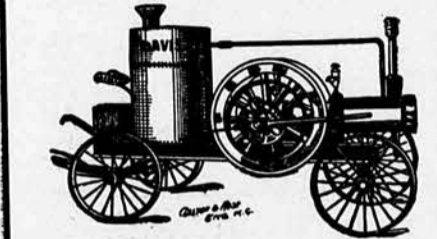
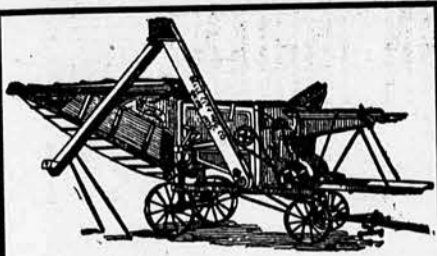
BINDER TWINE It affords us great pleasure to quote prices for our famous and well-known grades of binder twine as follows: Pure White Sisal, 8c per lb.

CENTURY MANUF'G CO., East St. Louis, Ill. It will pay you \$31.50 to send for our Catalogue No. 6, quoting prices on Buggies, Harness, etc.

Fifteen Men Wanted who together can pump more water, grind more feed, shell more corn or saw more wood than this little GASOLINE ENGINE. 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.

WHEN WRITING ADVERTISERS MENTION KANSAS FARMER.



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.

THE POTATO HOOVER DIGGER

A perfect machine containing improvements found in no other. Separates potatoes from vines and weeds. Rapid, clean worker.



HOOVER, PROUT & CO., Avery, Ohio.

BUGGIES



Leather Quarter Top Buggy, \$34.50
Good Road Wagons, \$24

Send for our Free Vehicle Catalog Today

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, 1107 K. & P. Bldg., KANSAS CITY, MO.

LIGHTNING WELL MACHY IS THE STANDARD

WATER PUMPS, AIR LIFTS, GASOLINE ENGINES. WRITE FOR CIRCULAR TO THE AMERICAN WELL WORKS, AURORA, ILL. - CHICAGO - DALLAS, TEX.

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 does it best and cheapest. 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 Sioux City Engine & Iron Works.

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.

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 sills. With engines or horse powers. Strong, simple and durable. Any mechanic can operate them easily. Send for catalog. WILLIAMS BROS., Ithaca, N. Y.

ECONOMY CREAM SEPARATOR.

Pays for itself in a few days. Separates in 40 minutes automatically and gets all the cream. Only costs a trifle and lasts forever. 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.

PAGE
IF YOU NEED
a Portable Fence, try the PAGE. It can be taken down and re-stretched any number of times.
PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

THE BUSINESS FARMER
—the man who knows how to make and save money is the man we're after. We sell him
Advance Fence
at wholesale prices, from our factory direct. He thus saves the dealer's profit and at the same time gets the best fence made entirely of wire. Many heights. Special discounts, 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.

Pig-Tight 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 a 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 D87, Muncie, Ind.

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.

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.

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.

"AVENARIUS CARBOLINEUM" PAINT.
Guaranteed to preserve all wood-work against rot.
Radical Remedy against Chicken-Ice. Successfully used for 25 years.
CARBOLINEUM WOOD PRESERVING CO., Milwaukee, Wis. Circulars free.

BUTTER AND EGGS.
Sell to us at highest market prices. We will always pay you more than your local dealer can. We furnish this package to ship in. Also, Cream Separators. Write for prices and particulars.
O. F. CHANDLER & CO., 1430 Walnut Street, Kansas City, Mo.

Grindstones.
Direct from maker to user. 75-lb. stone, diameter 20 inches, \$2.80. 100-lb. stone, diameter 24 inches, \$3.80. 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.

\$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.

WE GUARANTEE TO SAVE YOU
From 15 to 75 per cent on any of the 15000 articles listed in our large catalogue of drugs, medicines, home remedies, extracts, paints, oils, trusses, etc. Send 10c for catalog, amount refunded on first order. "The Only Mail Order Drug House in the World."
Heller Chemical Co., Dept. 47, Chicago, Ill.

Epworth League California Excursions

Account Fifth International Convention of Epworth League, San Francisco, July 18-21.
San Francisco is an ideal summer resort—weather always cool. Trip thither in summer, across high tablelands of New Mexico and Arizona, is pleasant—air bracing, no oppressive heat or dust. Best way to go is via Santa Fe Route, only line under one management, Chicago to San Francisco; daily trains to California, Fred Harvey meal service, personally-conducted excursions. On the way visit Indian pueblos and petrified forest, also Grand Canon of Arizona—world's greatest scenic spectacle, now easily accessible. See southern California—its noted resort hotels, idyllic valleys, majestic mountains, smooth beaches and lovely islands, its old missions, its semi-tropic fruits and flowers, its great oil wells. This important section reached via Santa Fe Route cheaper than most other lines and with greater comfort. Extremely low round-trip rates; liberal stop-over privileges; choice of routes returning; open to everybody. All ticket agents sell via Santa Fe Route. Descriptive literature on request.

Address W. J. Black, Gen. Pass. Agent, A. T. & S. F. Ry., Topeka, Kansas
Santa Fe Route.

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 FAVORITE LINE
TO THE
Epworth League Convention,
San Francisco, Cal., July, 1901,
WILL BE
THE UNION PACIFIC.

ALL COMPETITION DISTANCED.
The fast trains of the Union Pacific reach San Francisco thirteen hours ahead of all competitors. If you are in no hurry take a slow train by one of the detour routes, but if you want to get there without delay take the historic and only direct route, the Union Pacific.
\$45.00
from Missouri River, with corresponding low rates from interior points on the Union Pacific.
F. A. LEWIS,
CITY TICKET AGENT,
525 Kansas Avenue.
J. C. FULTON, Depot Agent.

BIENNIAL MEETING,
General Synod Evangelical Lutheran Church,
Des Moines, Ia., May 29-June 10, 1901.
For the above meeting
THE UNION PACIFIC
has made the
Very low Rate of One Fare and One-third
on certificate plan, from Denver, Cheyenne, and points east thereof.

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 H. C. Townsend, General Passenger and Ticket Agent, St. Louis.

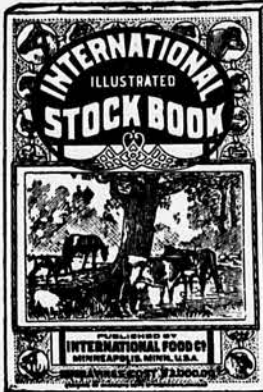
Ripley's Fly Remover
Instantly removes all flies, mosquitoes, lice and other insects from cattle, horses and other animals sprayed with it. It is healing to any sore. Animals rest easy and feed quietly all day. Cows give 1/2 more milk, which is a big saving. 1 gal. will protect 500 cows. Money refunded 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. 5 gal. Compressed Air Sprayer to apply same on large herds, \$6.25. Address, RIPLEY HARDWARE COMPANY, BOX 23, GRAFTON, ILL. Branch Offices: 34 Merchants' Row, Boston, Mass.

PILES 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, doctors had given his case up as incurable; he was completely cured by our treatment in three weeks. Thousands of pile sufferers who have given up in despair of ever being cured, have written us letters full of gratitude after using our remedies a short time. You can have a trial sample mailed FREE by writing us full particulars of your case. Address
HERMIT REMEDY CO.,
Suite 736 Adams Express Bldg., Chicago, Ill.

HEADACHE
DR. MILES' ANTI-Pain Pills.
At all drug stores. 25 Doses 25c.

PILES Sure cure, quick relief, simple treatment Red Cross Pile and Fistula Cure and Book mailed free. DR. REA & CO., Dept. 41, Minneapolis, Minn.
I will send free to any mother a sample of Bed Wetting, a simple remedy that cured my child of bed wetting. Mrs. G. Summers, Box C, Notre Dame, Ind.
Ladies Our monthly regulator never fails. Box FREE. Dr. F. May, Bloomington, Ill.
BED-WETTING CURED. Sample FREE. Dr. F. E. May, Bloomington, Ill.
When writing advertisers mention this paper.

A \$3000-00 STOCK BOOK FREE



We will mail you a copy Free, POSTAGE PREPAID,
 If you write us and answer 4 questions: 1st—Did you ever use "International Stock Food" for Horses, Cattle, Sheep or Hogs? 2nd—Is it for sale in your town in 25-lb. pails? 3rd—How many head of stock do you own? 4th—Name this paper.
 This book contains 183 Large Colored Engravings of Horses, Cattle, Sheep, Hogs, Poultry, etc., with a description of the different breeds. The editor of this paper strongly endorses book. It also contains a very finely illustrated and valuable Veterinary Department.
 This engraving shows the beautiful design of outside cover which is printed in 6 brilliant colors. The size of this book is 9 1/2 by 6 1/2 inches, and the engravings cost us over \$3000.00.
WE WILL GIVE YOU \$14. WORTH OF "INTERNATIONAL STOCK FOOD" IF BOOK IS NOT AS STATED.
 "International Stock Food" is a perfectly safe vegetablestimulating tonic and blood purifier. It fattens Cattle, Hogs, Sheep or Horses in 30 days less time and saves grain, because it greatly aids digestion and assimilation so that each animal obtains more nutrition from all grain eaten. It is extra good for stallions, brood mares, bulls, cows, rams and ewes, as it permanently strengthens and invigorates the entire system. 600,000 stockmen endorse it. Many use 2000 lbs. per year. It makes Colts, Calves, Lambs and Pigs grow very rapidly even in the winter, and only costs 1/2¢ Feeds for One Cent.
 Guaranteed to make Hogs weigh 300 lbs. at 6 months, and to save your Hogs from Hog Cholera, because it is a peculiar stimulating tonic, blood purifier and general system strengthener.
 "International Stock Food" won highest award and medal at Paris 1900.
 Your money will be refunded if it ever fails. Beware of inferior substitutes.
 OUR 20,000 DEALERS GIVE THIS BOOK FREE WITH "INTERNATIONAL STOCK FOOD" IN 25 LB. PAILS.
 Largest Stock Food Factory in the World. Capital Paid in \$200,000.00. **International Food Co.,** We occupy 15 floors, size 100x22 feet each. And our new addition, 6 floors 60x25 each. Minneapolis, Minn., U. S. A.

Greatly Reduced Design of Book Cover. Our Stallions **Buttonwood 2:17** by Nutwood (600) and **International Stock Food** by Hartford (3574) eat "I. S. F." every day. We own the **Big Horse** that is 19 hands and weighs 2500 at 4 years. We own the **Big Cow** that is 6 feet tall, 10 feet long and weighed 2270 at 6 years. Our **Big Short-Horn Steer** weighed 3100 at 3 years. We have fed "International Stock Food" for years to our stallions, brood mares, colts, driving horses, work horses, cattle and hogs. "International Stock Food" is harmless even if taken into the human system. We refer to this paper.

CURES SCOURS IN CALVES.

O'Neill, Nebraska.
 International Food Co.
 GENTLEMEN:—I have just tested "International Stock Food" on a very bad case of scours. The calf was still with the cow but was so bad that it would not suck and was so weak that it staggered. I gave it 3 or 4 feeds of "International Stock Food" in some milk and yesterday it took nearly all of the cows milk and was able to run and kick up its heels. **SAMUEL WOLF.**

Trent, South Dakota.
 International Food Co.
 DEAR SIR:—I am a firm believer in "International Stock Food." Have had very good results in feeding your food, in connection with creamery skim milk, to calves. Have as fine a lot of thrifty calves as anyone could desire. **CHAS. H. LOUCKS.**
 Editor, Dairy Department, Dakota Farmer.

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.**

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 furnished complete. American and European plan. Prices very reasonable. Take surface cars in front of Union Depot direct to hotel.

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. **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.

Only \$40 THE GREATEST BARGAIN ON EARTH Keeps our competitors awake nights to tell how we do it.
DESCRIPTION—Selected second growth hickory wheels and gears; Norway iron clips and bolts; inch axle double collars, full length body loops, long body, any width. Solid spring bellows back, with ideal spring cross bar (spring cushions furnished in place of cross bar if preferred) trimmed in dark green, tan or maroon leather, cloth or plush. All wool top lining, leather quarters and back stays, curved top joints (see out), complete with storm apron, side curtains, boot and full length carpet. Nickel dash rail, hand rail and lazy back rail. Send for Big Free Catalogue of Vehicles and Harness in Colors. A buggy factory selling direct must pay all of their expenses, salaries, etc., out of a few thousand buggies. Our expenses are all paid out of our agricultural implement factory. A buggy factory would starve to death on the small profit we get on a buggy. Write us before buying. The only plow factory in the world selling direct to the consumer. **HAPGOOD MANUFACTURING CO., Box 326, ALTON, ILL.**

The Three Million Acre FARWELL 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.



THE BUCHEY STACKER

Is the Latest and Best.
 No Slings. 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.
 To introduce our Stacker in new localities we offer special prices to first buyers.
BUCHEY STACKER CO., 127 NORTH KANSAS AVENUE, TOPEKA, KANSAS.

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, etc. 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.

LIGHTNING HAY PRESSES
 HORSE AND STEAM POWER CATALOGUE
KANSAS CITY HAY PRESS CO
 129 MILL ST KANSAS CITY MO
THE OLD RELIABLE.