

# KANSAS FARMER

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SIXTEEN TO TWENTY  
PAGES—\$1.00 A YEAR.

## BREEDERS' DIRECTORY.

### SWINE.

**DUROCS** Prize-winning strains. . .  
N. B. SAWYER, Cherryvale, Kans.

**D. TROTT** ABILENE, KANS., famous Du-  
roc-Jerseys and Poland-Chinas

**DUROCS.**

Registered stock all ages.  
H. ALBERTY,  
CHEROKEE, KANS.

**MAPLE AVENUE HERD**  
**DUROC-JERSEYS.**

J. U. HOWE,  
WICHITA, KANSAS.  
Farm 2 miles west of  
city on Maple Avenue.

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

**V. B. HOWEY, Box 103, Topeka, Kans.**

Breeder and shipper of Poland-China hogs,  
Jersey cattle, S. L. Wayndotte chickens. Eggs  
in season.

**MOUND VALLEY HERD POLAND-CHINAS.**  
Has some show gilts bred to L. B. Perfection (261725).  
Others bred to Black U. S. Best (21767). Also a fine  
lot of fall pigs for sale. Prices reasonable.  
W. F. WIMMER & SON, Mound Valley, Kans.

**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, Kansas.

**D. L. BUTTON, North  
Topeka, Kans., Breeder of  
Improved Chester Whites.**  
Stock for sale. Farm two  
miles northwest of Re-  
form School.

**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, or 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, Kansas.

**T. A. HUBBARD,  
Rome, Kans.**  
Breeder of  
**POLAND-CHINAS and LARGE  
ENGLISH BERKSHIRES.**  
Two hundred head. All ages. 26 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 cockerels for sale.  
MANWARING BROS., Lawrence, Kans.

**Sunnyside Herd**  
**PEDIGREED POLAND-CHINA HOGS.**

I now have for sale a fine lot of large, well  
matured early spring boars, two of them just  
past 1 year old; all fine, large, mellow fellows,  
broad backed, large boned and well marked.  
Write me for description and prices.  
M. L. SOMERS, Altoona, Kansas.

**PROSPECT PARK HERD**

—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,  
Telegraph address KANSAS.

**A RARE CHANCE.**

Six grand daughters of Frasers U. S., and 3 daugh-  
ters of Knox All Wilkes, bred to Ideal Black Chief,  
best son of Missouri's Black Chief, and Imperial  
Chief, first in class at Iowa State Fair. One Chief Te-  
cumseh 3d gilt safe in pig to Ideal Black Chief—she is  
a bird. Four fall boars good enough to head any  
herd. Good fall boars and gilts reasonable.  
"Poland-China Headquarters."  
DIETRICH & SPAULDING, Richmond, Kans.  
Farm one mile from station.

### SWINE.

**J. D. MARSHALL, Walton, Kansas.**  
For Sale: Thirty-five fine gilts, sired by "Miles  
Look Me Over (18879) prize-winner in 5 fairs in 1900;  
also a few fine boars. Call on me or write your wants.

**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. P. Maguire, Haven, Reno Co., Kas.

**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, Kansas.

**DUROC-JERSEYS**  
Prize-winning strain. Young stock for sale.  
WARE & POOKE, Station B., St. Joseph, Mo.

**PARKALE STOCK AND FRUIT FARMS**  
**THOROUGHbred HEREFORD CATTLE.**  
CHAS. A. SCHOLZ, Proprietor, FRANKFORT, KANS.

**DUROC-JERSEY SWINE—REGISTERED.**  
Some extra J's and August pigs at reason-  
able prices. Write us and get first choice.  
NEWTON BROS., WICHITA, KANS.

**PLEASANT HILL HERD POLAND-CHINAS**  
Twenty selected pigs of September farrow for sale.  
HERMAN ARNDT, Templin, Kans.  
Shipping station, Alta Vista.

**Maple Grove Herd of Registered POLAND-CHINAS**  
HIRAM SMITH, Colwich, Sedgwick Co., Kans.  
Headed by the grand boar, Black Chief 42357, Ideal  
U. S. 48269, and assisted by Perfect I Am Vol. XXIII,  
grandson of Perfect I Know 19172, granddam the great  
sow, Anderson's Model 43611, mated to a lot of choicest  
selected sows of the most noted prize-winning fami-  
lies. A fine lot of fall pigs ready to ship.  
Inspection or correspondence invited.

**R. S. COOK, - - Wichita, Kans.,**  
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 23441, Black Joe 22993, 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.

**33—PURE BRED POLAND-CHINAS—33**

For present sale, I have CHOICE SOWS,  
Bred to Logan Chief 2d 24427 and Proud Tecumseh  
24655. Most of the sows are sired by the 900-pound  
Corwin I Know 18448 and Hadley U. S. 20188. Also 60  
choice October pigs at \$8 and \$10 for the next 80 days.  
My hogs have good heads and small, fancy ears.  
Come and see them or write.  
JNO. BOLLIN, Kickapoo, Leavenworth Co., Kans.  
I ship from Leavenworth.

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**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 BROS.,  
Elmdale, Chase County, Kansas.

**IDLEWILD SHORTHORNS.**

The blood of Roan Gauntlet and Champion of Eng-  
land can be had direct through our herd bull, Godoy  
115675. His dam, Imp. Golden Thistle (Vol 25) is by  
Roan Gauntlet; his granddam, Golden lady by Cham-  
pion of England. Godoy is still active and a sure  
getter. A few years later you can not get this blood  
direct. Godoy transmits the old scale and substance  
produced only by Orulokshank. Thirty-five Orulok-  
shank females in herd; also Booths and Double Marys.  
Can offer Godoy Calves from these tribes.  
W. P. HARNED, Vermont, Cooper Co., Mo.

**SUNFLOWER HERD**

Scotch, and Scotch-topped  
**SHORTHORN CATTLE**  
**POLAND-CHINA SWINE.**

Herd bull, Sir Knight 12408. Herd boars, Black  
U. S. 3d 23283 S., and Sunflower Black Chief 28008.  
Representative stock for sale. Address  
ANDREW PRINGLE,  
Harveyville, Webster Co., Kans.

### CATTLE.

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

**MEADOW BROOK SHORTHORNS.**—Some fine  
young stock, 20th Earl of Valley Grove at head  
of herd, for sale; breeding of the best, in color unex-  
celled. Address F. O. KINGSLLEY,  
Dover, Shawnee County, Kans.

....ROSEDALE HERD OF HOLSTEINS....  
C. F. STONE, Proprietor. PRABODY...KANSAS.  
Home of Empress Josephine 3d champion cow of the  
world. Gerben's Mechtildie Prince at head of herd.  
....Young bulls and heifers for sale....

**Polled Durhams!** THIS little ad. will  
direct you to the  
largest as well as the  
best Scotch bred Polled Durham herd of cattle in the  
United States. \$150 fine Duroc-Jersey pigs.  
F. F. FAILOR, NEWTON, IOWA.

**Norwood Shorthorns.** V. R. Ellis,  
Gardner, Kas.  
Sir Charmin 4th at head of herd. Cruickshank top  
crosses on best American families. Young stock for  
sale.

**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-Ootswold buok. Address  
JAMES C. STONE, LEAVENWORTH, KANSAS.

**RED POLLED CATTLE.**  
Largest Herd in America.  
S. A. CONVERSE,  
Proprietor, Importer, and Breeder,  
Cresco, Howard Co., Ia.

**TWO CRUICKSHANK-TOPPED  
SHORTHORN BULLS FOR SALE**  
Both reds; 8 and 9 months old. Also summer  
and fall farrow POLAND CHINA PIGS—both sexes.  
Prompt response to enquirers.  
O. E. MORSE & SONS, Mound City, K

**D. P. Norton's Shorthorns**

Dunlap, Morris County, Kansas.  
Breeder of  
Pure-bred **SHORTHORN CATTLE.**  
Herd bull, Imported British Lion 133692.  
Young .. Stock .. For .. Sale.

**Sycamore Springs Stock Farm**  
**SHORTHORNS.**

M. M. HILL, Proprietor, La Fontaine, Kans.  
No Shorthorns for sale at present but will have  
a few young things in the spring. Personal in-  
spection of our herd invited.  
Correspondence solicited.

...SILVER CREEK HERD...

**SHORTHORN CATTLE.**

GWENDOLINE'S PRINCE 130913 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  
to Santa Fe, Frisco, and Missouri Pacific R. R.  
J. F. STODDER, Burden, Cowley Co., Kans.

**RECORDED HEREFORD BULLS**

**FOR SALE.**

The get of Marmion 66646 and Anxiety Wilton A-  
4611, 10 to 14 months old. These bulls are large, and  
good individuals, and of the best of breeding. Inspec-  
tion invited. FRED COWMAN, Lost Springs, Kans.  
Breeder (not dealer) of HEREFORD CATTLE.

**COBURN HERD OF  
RED POLLED CATTLE**

GEO. GROENMILLER & SON,  
Coburn, Franklin Co., Kans.  
Breeders of full bloods, and high grades. For sale  
a number of extra good high grade bulls from 6 to 12  
months old; also a few choice full blood. Herd  
numbers 91 head.

### CATTLE.

**BULLS AT ROCK HILL.**

We now offer for sale about 30 head  
of Shorthorn bulls, ten months to two  
years old; also 1 cross-bred Galloway-  
Shorthorn bull, 2 years old.

J. F. TRUE & SON, Newman, Kansas.  
On U. P. R. R., 12 miles East of Topeka.

**Polled Durham Cattle.**  
Edgewood Polled Durhams. The largest and best  
bred herd west of the Mississippi river. Scotch blood  
a specialty. Bulls for sale. Address....  
A. E. BURLIGH, KNOX CITY, Mo.

**ALFALFA MEADOW STOCK RANCH.**

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, Kans.

**Maple Leaf Herd of  
THOROUGHbred -- SHORTHORN -- CATTLE,  
AND POLAND-CHINA SWINE.**

JAMES A. WATKINS, Farm is two miles south  
of Rock Island depot.  
Whiting, Kans.

**BREED THE HORNS OFF BY USING A  
RED POLLED BULL.**

**CHAS. FOSTER & SON, FOSTER  
Butler Co., Kans.**  
Breeders of Red Polled cattle. Herd headed by  
Powerful 4582. Pure-bred and grades for sale.  
Also, prize-winning Light Brahmas.

H. N. HOLDEMAN, Girard, Crawford Co., Kans.,

—BREEDER OF—  
**PERCHERON HORSES,**

**HOLSTEIN FRIESIAN CATTLE,**

representing Josephine, Mechtildie, and Par-  
thenia 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.

**MT. PLEASANT**

**HERD OF SHORTHORNS**

Herd headed by Acomb Duke 18th 142177.  
Herd composed of Young Marys and Galateas.  
Young Bulls for sale. Sired by Phyllis Duke  
181828.

A. M. ASHCROFT,  
Atchison, Kan.

**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. J. Anderson, Manager, there, or  
ANDERSON & FINDLAY, Prop's., Lake Forest, Ill.

**Registered Herefords.**

**THOS. EVANS, Breeder,**

Hartford, Lyon County, - - - Kansas.

**SPECIAL OFFERINGS:**

**FOR SALE**—Six bulls and fifteen heifer  
calves, one 3-year-old imported bull, one year-  
ling bull, and 5 cows.

**PURE BATES SHORTHORNS.**

**M. W. ANDERSON, Independence, Mo.**

Wild Eyes, Craggs, Peach Blossoms, Duchess Craggs,  
Harts, Harringtons, and Bracelet, 16th Duke of  
Wildwood 14671 at head of herd. Can sell young of  
males, bred or open.



CATTLE.

PIONEER STOCK FARM.

J. H. McALLISTER, Proprietor. BREEDER OF PURE BRED GALLOWAY CATTLE, POLAND-CHINA AND CHESTER WHITE HOGS, JACKS AND JENNETS. STANDARD BRED STALLIONS AND MARES. AGE, HOLT COUNTY, NEBRASKA.

125 RAVENSWOOD :: SHORTHORNS 125

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. B. B. and Telephone Station, Buncoeton Mo. Ed. PATTERSON, Manager

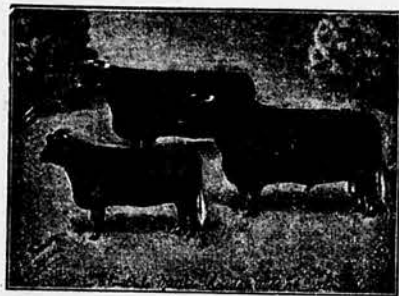
H. M. Satzler, Burlingame, Kansas, BREEDER OF.....

HEREFORD CATTLE, BERKSHIRE SWINE, COTSWOLD SHEEP. STOCK FOR SALE.

H. R. LITTLE, HOPE, DICKINSON CO., KANS., Breeds Only the Best Pure-bred

SHORTHORN CATTLE.

The herd numbers 135, headed by ROYAL CROWN 125698, a pure Cruickshank, assisted by Sharon Lavender 14902. For Sale just now 16 Bulls of serviceable age, and 12 Bull Calves. Farm 1 1/2 miles from town. Can ship on Mo. Pacific, R. I., or Santa Fe. Foundation stock selected from 3 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. O. F. WOLFE & SON, PROPRIETORS.



...GUDGELL & SIMPSON... INDEPENDENCE, MO., BREEDERS AND IMPORTERS OF.....

HEREFORDS.

One of the oldest and largest herds in America.

ANXIETY 4th blood and type prevail.

BOTH SEXES, IN LARGE OR SMALL LOTS ALWAYS FOR SALE.

VALLEY GROVE SHORTHORNS

THE SCOTCH BRED BULLS

Lord Mayor 112727, and Laird of Linwood 127149 Head of the Herd.

LORD MAYOR was by the Baron Victor bull, Baron Lavender 2d, out of Imp. Lady of the Meadow and is one of the greatest breeding bulls of the age. Laird of Linwood was by Gallahad out of 11th Linwood Golden Drop. Lord Mayor sired by Laird of Linwood for sale. Also bred 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.



PEARL SHORTHORNS.

HERD BULLS:

BARON URY 2d 124970. LAFITTE 119915

A FEW CHOICE YOUNG BULLS FOR SALE RANGING FROM 5 TO 20 MONTHS.

C. W. TAYLOR, - - Pearl, Kansas.

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PERCHERON HORSES, AND ABERDEEN-ANGUS CATTLE

GARRETT HURST, Breeder, Zyba, Sumner Co. Kans. For sale 1 young stallion, and 1 mare; also 3 cows, and 1 bull. All registered.

PERCHERON HORSES.

J. W. & J. O. Robison, Towanda, Kansas. Importers and Breeders. Stallions for sale.



...I HAVE... TWO FINE JACKS FOR SALE. For particulars write or call on

T. B. HUDSPETH, - Sibley, Mo

Lone Retreat Stock Farm



has 29 black mammoth jacks, 14 1/2 to 16 1/2 hands high, standard, 600 to 1,280 lbs., \$350 to \$1,200 All sound, all guaranteed. Reference, Commercial Bank. Cash deal.

J. C. RAY, Lawson, Ray County, Mo.

OAKLAWN FARM



AS ALWAYS, VASTLY IN THE LEAD.

PERCHERONS, FRENCH COACHERS, SHIRES.

ON HAND, HOME-BRED AND IMPORTED 270 STALLIONS, 235 MARES.

The greatest collection of stallions ever brought together. Our two large, recent importations for this year included the Principal Prize Winners at the WORLD'S EXPOSITION, PARIS, and at the Government Shows at Amiens and Mortagne, and the Top, first choice, purchased from the leading studs of France and England. The superiority of the Oaklawn Percherons was also shown at the

INTERNATIONAL LIVE-STOCK EXPOSITION at Chicago, December, 1900, pronounced by press and public the greatest live stock exhibition ever seen, where Oaklawn's Exhibit was awarded Three 1st Prizes, three 2d Prizes, three 3d Prizes, two 4th Prizes and two 5th Prizes in the three stallion classes; Championship, stallion, any age; Championship, mare, any age; 1st and 2d Prizes for collections; \$100 Gold Medal, best group, five stallions; \$100 Gold Medal, best group, three mares. Catalog on application. Prices reasonable.

DUNHAM, FLETCHER & COLEMAN, WAYNE, DU PAGE CO., ILLINOIS.



NEW IMPORTATION

Our new importation of FRENCH PERCHERON STALLIONS was landed at our barn, at Shenandoah, Iowa, September 16. Buyers will find at our establishment 60 head of first-class Percheron stallions from which to make their selections. Prices are made right. Come and see the horses. It will do you good. Mention Kansas Farmer when you write. M. L. AYRES, Shenandoah, Iowa.



THE LINCOLN IMPORTING HORSE CO., LINCOLN, NEBRASKA, Calls Attention to the Following Facts:

Our Percheron stallions are beautiful coal blacks. Our English Shire stallions are clean chestnuts and dark bays. Good bone, good back, good quarters, and GOOD ALL OVER. With moderate flesh, 2-year-olds weigh 1,675 to 1,900. They show action and style equal to an English Hackney. The exhibit made was at the Nebraska State Fair. They won first in their classes and sweepstakes over all ages. We boldly assert no better stallions in America.



Draft Stallions. PERCHERONS, SHIRES, AND CLYDES.

Cheapest collection of imported Black Percherons west of the Mississippi River. All horses personally selected by a member of the firm with the aid of our own private interpreter, and a first choice from the oldest and leading breeders of France. All fresh, young stock. If you want a Good Stallion we can suit you. Barns are in town. For further information, address

KEISER BROS., Keota, Iowa.

(On C. B. I. & P. Railway, 14 miles west of Washington.)

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 Bros., Winfield, Kans



AMERICA'S LEADING HORSE IMPORTERS.

We imported more prize-winners at Universal Exposition, Paris, and the Government Shows at Amiens and Mortagne than all others combined. Our Percherons won every first prize except one at the Universal Exposition at Paris. We imported more horses from France than any other three firms in America. We are the only firm buying in France without the aid of an interpreter, hence we get the best horses for the least money. More Coach stallions, more ton black Percheron stallions than can be found in the stables of all other importers.

If you want the best, call on or write McLAUGHLIN BROS., Sixth and Wesley Aves., Columbus, Ohio.

Norman Horses

SAMPSON No. 6866 is at the head of the stud. Present weight, 2,350 pounds, and for bone and quality he has no equal in this country.



We guarantee satisfaction and can undersell all competitors, as the purchaser pays but the actual producing price.

ALSO SHROPSHIRE SHEEP and POLAND-CHINA HOGS. PINE RIDGE STOCK FARM. L. M. HARTLEY, Proprietor. SALEM, IOWA.



ENGLISH SHIRE, and PERCHERON STALLIONS.

WATSON, WOODS BROS. & KELLY CO., Importers of..... DRAFT STALLIONS. Lincoln, Neb. Three Importations made in 1900.

All our horses are personally selected by Mr. Watson, who buys only of the best breeders in Europe. Mr. Watson was the World's Fair Judge of Draft Stallions. Our December importation is the 25th shipment made direct from Europe by him. OUR STABLES are located corner Ninth and E Streets. Our office on the ground floor of the Burr Block TWELFTH AND O STREETS. We invite inspection. No trouble to SHOW HORSES. Visitors welcome.



PURE PERCHERONS

The Richest Bred Herd in America, -AND THE- Oldest Breeding Establishment in the West

A limited number of choice young stallions for sale (including the herd stallion, Favorite 22937).

Correspondence Solicited. Inspection Invited.

HENRY AVERY & SON, WAKEFIELD KANS.

THE BLOOD OF AMERICA'S GREATEST CHAMPIONS, AND CHAMPION PRODUCERS AT AUCTION.

GRAND COMBINATION SALE!

126 - - 126

ABERDEEN-ANGUS CATTLE.

71 COWS AND HEIFERS, AND 55 BULLS



STOCK YARDS SALE PAVILION, KANSAS CITY, MO., WEDNESDAY AND THURSDAY, MARCH 20 AND 21.

FROM THE HERDS OF FOUR LEADING BREEDERS, REPRESENTING A SELECTION OF BREEDING AND INDIVIDUAL MERIT SUCH AS HAS NEVER BEFORE BEEN ASSEMBLED IN THIS COUNTRY.

Thos. Mattinson Jr. offers for the first time since his ownership of Gay Lad, sons and daughters of this famous bull, and 15 cows in calf to him or with calves at foot by him.

C. H. Gardner, Blandinsville, Ill., sells chiefly the get of his noted stock bull 2d Duke of Estill, from his best "Baby Beer" matrons, including 18 yearling and 2-year-old heifers that are very superior and in calf to the champion Rosegay, admittedly the best Angus bull that treads Uncle Sam's soil, and for which a higher price than was ever paid for an Angus bull has been refused.

M. A. Judy, Williamsport, Ind., contributes of the blood that produced the Heatherton "Royal" winners in 1897. He includes herd headers galore with fashionable pedigrees and superb individuality, and he also gives the public an opportunity to buy females that will produce this type.

W. B. Seeley, Mount Pleasant, Ia., offers mainly the get of 2d Mayor of Estill, champion of 1895 and 1896, and sire of the champion of 1899, and first prize-winning yearling bull at the International Sale-Show of 1900. Mr. Seeley also includes choice animals by Gay Lad and Black Knight 3d (brother to Black Knight).

Every animal guaranteed a breeder. All the famous families represented.

COLS. F. F. WOODS, and J. W. SPARKS, AUCTIONEERS. For Catalogue, address....

W. C. McGAVOCK, Mgr., MT. PULASKI, ILL.



SUNNY SLOPE HEREFORDS.

155 HEAD FOR SALE—Consisting of the imported herd bull, Sentinel, 7 2-year-old bulls, 73 bulls from 8 to 16 months old, 60 yearling heifers, and 10 cows.

MY ANNUAL SALE—Will be held at Kansas City in connection with W. S. Van Natta, and Scott & March February 26 to March 1, 1901, when 160 head will be sold from the three herds at auction.

C. A. STANNARD, - - - Emporia, Kansas.

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



BULLS in service, HESIOD 29th 66304; Imp. RODERICK 80155; MONITOR 58275, EXPANSION 93668, FRISCOE 93674, FULTON ADAMS 11th 63781. HESIOD 29TH 66304.

Twenty-five miles south of Kansas City on Frisco, Fert Scott & Memphis and K. C., P. & G. Railroads.

T. K. TOMSON & SONS, Proprietors of ELDERLAWN HERD OF SHORTHORNS DOVER, SHAWNEE COUNTY, KANSAS.

GALLANT KNIGHT 124463 in service. Females are pure Scotch and Scotch-topped on the best American families. 100 head in herd. A choice lot of young stock for sale. Correspondence and inspection invited.

GALLOWAYS.

Largest Herd of Registered Galloways in Kansas.

Young bulls, cows, and heifers for sale.

E. W. THRALL, Eureka, Kans.

GALLOWAYS.

LARGEST HERD OF REGISTERED GALLOWAYS IN THE WORLD. Bulls and females, all ages for sale—no grades. Carload lots a specialty. M. B. PLATT, Kansas City, Missouri. Office at Platt's Barn, 1613 Genesee Street.

A GRAND SALE OF KANSAS SHORTHORNS

The Annual Public Sale of a select draft of

50 Shorthorn Cattle

From the Bill Brook Herd of H. O. Tudor, Holton, Kans.

The sale will be held at the farm, near Holton, Kans.,

TUESDAY, MARCH 19, 1901.

The offering consists of 40 Cows and Heifers, and 10 Bulls. The cows and heifers are especially select, and all that are old enough to breed are safe in calf to Iowa Scotchman 2d 136861, or to Chieftain 148923, or will have calves at foot at time of sale. The females offered are a very attractive lot and are intended to make reputation for Bill Brook Herd, as the best lot offered at auction this year. The bulls are a strong lot of the blocky type of serviceable age and include 2 herd bulls, Col. Parker 124420, and Baron Kirklevington 134174, which headed the herd of J. L. Miller, Arrington, Kans., a herd purchased by me last fall.

Everybody cordially invited to be present as it will be a bargain day for buyers. Free conveyance to the sale for parties arriving on trains.

Sale will be held under cover in heated and comfortable quarters. Catalogues sent on application to H. O. TUDOR, HOLTON, KANSAS.

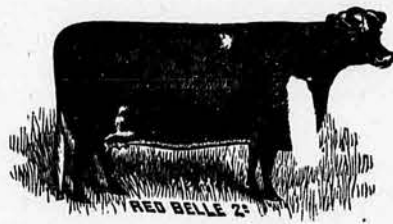
Auctioneers: COLS. WOODS, SPARKS, HARRIMAN, AND FISHER.

Attention is called to the Shorthorn Sale of Gifford Bros., at Manhattan, Kansas, Tuesday, March 12, 1901.

SEVENTEENTH ANNUAL SALE FROM THE ELMWOOD HERD OF Shorthorns

Tuesday, March 12, 1901, at Manhattan, Kans

We will sell a very choice lot of useful Shorthorns. Of the 35 head 22 are young bulls, from 12 to 21 months old, and good size for age. The balance will be young cows and heifers with calves at foot or bred to our Scotch bull, Red Knight 120752.



This offering will be of fine colors and choice breeding, being Rose of Sharon, Flat Creek Marys, Josephines, Lady Elizabeth, etc. We believe this will be the best lot of young bulls offered at public sale in the west this year. :

We should be pleased to have you come to the sale, or send mail bids to Col. J. W. SPARKS AUCTIONEER.

Catalogues sent on application to.....

Gifford Bros. Milford, Kansas.

Attention is called to the Shorthorn Sale of H. O. Tudor, at Holton, Kans., March 19, 1901.

TEBO LAWN HERD SHORTHORNS

—HERD BULLS ARE—

IMPORTED COLLYNIE 135022 bred by Wm. Duthle. 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 American herds. These added to the long established herd of the "Casey Mixture," of my own breeding, and distinguished for individual merit, constitute a breeding herd to which we are pleased to invite the attention of the public. Inspection and correspondence solicited. Address all correspondence to manager.

E. M. WILLIAMS, Manager. G. M. CASEY, OWNER, SHAWNEE MOUND, HENRY COUNTY, MO.

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

Have sold for, and am booking sales for leading stock men everywhere. Write me before claim 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.

**DAIRYING IN KANSAS.**

Papers Read at the Annual Meeting of the Kansas State Dairy Association.

It was the intention of the editor to publish promptly the full proceedings of the annual meeting of the state dairy association, but it has thus far been impossible to obtain copies of some of the papers. In this issue are presented most of the proceedings which especially interest producers of milk. The paper on the farm separator was given in the KANSAS FARMER of February 7, and is not repeated here. As other proceedings of interest to farmers become available they will appear in the KANSAS FARMER.

**The Breed Best Suited to the Grading Up of the Kansas Farmers' Herd for the Dairy—Holsteins.**

W. J. GILLETTE, ROSENDALE, WISCONSIN, BEFORE THE KANSAS STATE DAIRY ASSOCIATION.

It would seem a little queer that a man should be dragged from a warm dairy barn in the dead of winter and detailed to make the trip from Wisconsin to Topeka for the sole purpose of telling what I feel assured you already know, viz: "That the breed best adapted for the grading up of the Kansas herd for the dairy," is one that has been bred for hundreds of years along the lines of profitable milk, butter, veal, and beef production; one that has been developed by a people whose prosperity and livelihood has been entirely dependent upon the dairy cow and her produce; the one that claims Holland as the land of her nativity, but to-day the Holstein-Friesian of America.

I feel myself inadequate for the task of presenting to you to-day a paper upon so worthy a subject and despair of my ability to present to you the subject in its entirety, or to even do it justice, but in my feeble way I shall attempt to make clear to you some of my reasons for my admiration for the American Holstein-Friesian, in whose defense I am here to act as sponsor. Before entering upon the discussion of this subject I desire to assure you that I intend to offer no disparagement to the interests of others, whose tastes and judgments in the matter of breed selection may differ from mine. I respect the opinions of my fellow-men, and though our tastes and opinions may point in opposite directions, we have the consolation of knowing that there is room for us all, and while we look at different things in a different light our friendship the while may wax warmer.

I do not maintain that all good cows are Holstein-Friesians, nor do I claim that all Holstein-Friesians are good cows. In any of the breeds there will be found inferior animals, in fact whole herds that are of a very ordinary character, where it would be better for the owner, as well as for the breed, to consign them to the block rather than work with the object of profit.

I believe success with any breed largely depends upon the matter of selection of the proper type of animal and next the manner in which that animal is handled and developed.

**THE MILK AND THE DOLLAR.**

Some ingenious inventor of humor has figured a method by which he can distinguish the milk of the Holstein-Friesian from that of the other dairy breeds, and for fear that some thoughtful fellow in this audience may get the drop on me I think I had better tell the story myself. If we take a full pail of milk and into it drop a silver dollar, and if the transparency of the milk permits of our reading on the dollar, "In God we trust," the story goes, that we may feel assured that the milk is that of a Holstein. The other fellow, however, also has the trait of inventive genius and has devised a method of distinguishing the milk of the other dairy breeds. You take the dollar and throw it into the milk pail, and if there is not enough milk in the bottom of the pail to cover the dollar, you know that it comes from a Jersey or Guernsey. Remove the dollar and you will note that "In God we trust," has been transfixed with the single word, "despair."

**SIZE.**

The Holstein-Friesian in point of size is the largest of the distinct dairy breeds, and I believe that size is a

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very desirable characteristic of the dairy animal; not only this, but all other factors being equal, I believe that size is a desirable characteristic in different individuals of the different breeds. I believe that size has a bearing upon the economical production of milk and butter and that the relation of size to economy of production is favorable to the large breed. From "Feeding Animals," by the late E. W. Stewart, whose authority is recognized as being reliable, I quote the following: "It may be stated as a general law, that the food of support decreases proportionately with the increase of size in animals—this probably in proportion to the area of outside surface of the animal." He farther states: "We must conclude that size—all other things being equal—is favorable to the economical yielding of milk, that is actually takes less food to produce 100 pounds of milk with a cow of equal merit, weighing 1,000 pounds, than with one weighing 800 pounds." Mr. Stewart bases his conclusions upon data furnished by several prominent experimentalists of Europe, where numerous very searching trials were conducted for the purpose of determining the effect of size upon food of support and the relation of food to quantity of milk produced in dairy cows of different weights. This is certainly a point worthy of the careful consideration of the practical dairyman of this country, and that the Holstein-Friesian has a decided advantage in point of size no one can gainsay. Right along this line are two other points that must not be overlooked, namely, beef and veal.

**VEAL.**

The dairyman must bear in mind that 50 per cent of the increase of his herd will be males and must be disposed of as veal. And here I venture the statement that, as a rule, the Holstein-Friesian calf at birth is the largest calf in the world, those of none of the beef breeds excepted. This fact, together with their thrift and qualifications to take on flesh, makes them a very desirable and profitable animal for vealing purposes. Touching upon this subject, W. S. Carpenter says: "In my experience of seven years in the packing house markets and from various other sources, I find that the Holstein veal calf is considered one of the finest and most profitable carcasses to place upon the block." Of the other 50 per cent increase of the herd, 17 per cent will prove, for various reasons, undesirable for dairy purposes, and must be consigned to the block. Now, we do not claim that we have the best beef breed, but we do claim that of the dairy breeds ours is the best for beef, and this from the fact that they are large in size, broad in their conformation and take on flesh rapidly when not in milk. I do not claim that a first-class beef animal and a first-class dairy cow can be had in the same animal, but the fact still confronts us that about 67 per cent of the increase of the dairy herd is unfit for profitable dairy work. Injuries to udders, failures to breed, sorting out, and many other causes which render the cow undesirable for dairy purposes are constantly making inroads upon the best herds in the land, and it is not far out of the way to say that the best kept herds are revolutionized at least every ten years. Hence give us the general purpose cow. By general purpose I mean a good milch cow, a good butter cow, a good cheese cow, and a cow that can be sold for beef when her days of usefulness in the dairy are ended.

**BUTTER YIELDS.**

In years past there have been reported from the breeders of dairy cattle some very large yields of butter from cows of the different breeds, for periods of one week, one month, and one year. I exceedingly regret to say that a very large per cent of these so-called butter records give the dairyman no clue to the actual merits of the breeds, or even offer any substantial ground for accurate conclusions as to the merits of the cows from which these startling records have been reported. It is not my purpose to deal with any of these private butter records, and I will say it would be very beneficial to the dairymen of this country and to the breeds from which these fabulous yields have been reported, if they could be entirely obliterated from the pages of events in the history of dairy husbandry.

The Holstein-Friesian Association of America has adopted the Babcock test as a means of estimating the butter yields of cows of this breed, and as the term butter is an uncertain commodity, and may contain different percentages of butter fat, I shall confine myself to yields of butter fat only. Upon this subject, Prof. W. A. Henry says: "First,

basing my judgment on the results of the most carefully conducted dairy tests, I believe that records showing 30 pounds or more of butter in seven days are unreliable. I do not affirm that the parties did not get 30 pounds of something they called butter, but I am firmly convinced that a large part of these so-called records were not honest, merchantable butter. I believe that private tests with dairy cows, and those where the milk and butter are not analyzed, are no more reliable than private trotting tests would be with horses, for human nature is the same in the owners of both these animals. Second, I believe that the Babcock test, together with the scales combined, give us a far more correct method of estimating the butter capacity of a cow than the churn itself. This is true, because with these two instruments we can determine the total quantity of fat yielded by a cow in a given time, and when a cow has produced this fat she has done her part and is entitled to full credit. The churn is not a measure of a cow's butter productive capacity, because fat may be lost both in separation and churning, and the cow can not be held accountable for either of these losses. Again, unless butter is analyzed, it may not be a merchantable product, for which fault again the cow is not to blame nor, on the other hand, should she have credit for water, casein, extra salt, or all of these, which the worker, through his desire for a large production, may leave in excess in the butter."

Realizing the public demand for reliable dairy tests as a guide for weighing the productive capacity of the dairy cow, and appreciating the importance of furnishing reliable data as to the merits of the Holstein-Friesian as a butter producer, the Holstein-Friesian Association of America in 1894 offered in prizes the sum of \$1,000 for cows and heifers of the breed making officially authentic butter records. The competing animals in all cases to be tested for one week at the homes of their owners, and under the personal supervision of representatives of the experiment stations in the different states where cows were tested for this competition. These tests are all made with that friend of the dairy farmer and the enemy of the inferior cow, the Babcock tester. This offers a clear and comprehensive method to the dairy farmer from which he can draw accurate conclusions as to the merits of the herd from the standpoint of practical dairy work.

This prize list brought out officially authentic butter tests of 35 cows and heifers. Of this number 10 were 2-year-old heifers, and their yields ranged from 7.8 to 11.1 pounds butter fat per week. Ten were heifers 3 and 4 years old, the remaining 15 were of mature age, making a total of 25 over 3 years of age. Their total seven days' yield of milk was 11,242.6 pounds, or a daily average of 64.2 pounds of milk per cow per day. Their total week's yield of butter fat was 397.5 pounds, an average of 15.9 pounds per cow per week. Ten animals in the list made yields of better than 17 pounds butter fat per week and 4 of the number produced over 20 pounds, and 1 made the enormous yield of 21.6 pounds of fat for the seven days.

The Holstein-Friesian Association, assisted by the different experiment stations, has continued this method of conducting weekly official tests up to the present time, and the most flattering results have followed. In 1895 60 cows and heifers responded to the test.

Twenty-two of these were 2-year-old heifers and the yields ranged from 7.9 to 12.84 pounds of butter fat per week. Ten were 3 years of age, the lowest yield being 9.3 and the highest 14.6 pounds of fat per week. Nine were 4 years of age, ranging from 10.7 to 18.3 pounds of fat per week. The remaining 19 were of mature age and the lowest week's production was 12.9 pounds and the highest 18.7 pounds of fat.

In 1896, under the same conditions, there were 56 competing cows. Of this number 24 were heifers 2 years of age. The lowest week's production was 7.6 pounds and the highest 12.7 pounds of fat. Six were 3 years of age, the lowest being 12.6 pounds and the highest 19.3 pounds of fat in one week. Fifteen were aged cows and the lowest production was 12 pounds and the highest 21.3 pounds of fat.

In 1897, 68 females responded to the test. Of this number 23 were 2 years of age, ranging in production from 7.5 to 12.7 pounds of fat per week. Eighteen were 3 years of age, the lowest being 10.4 and the highest 17.6 pounds of fat per week. Eight were 4 years old and the lowest week's production was 14.2 and the highest 18.1 pounds of fat. Nineteen were of mature age

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and 13 was the lowest and 20.4 pounds the highest week's fat production.

In 1898, 200 cows and heifers were given official weekly tests. Of this number 82 were heifers, 2 years of age and their average was 9.4 pounds of butter fat per heifer per week, while the average daily milk production was 43.5 pounds per head. Forty-one were 3 years of age and their average daily milk production was 53.7 pounds per cow and their average weekly yield of fat was 12.6 pounds. Twenty-two were 4 years of age and their average milk yield was 57.2 pounds per cow per day, while their average production of fat was 13.6 pounds per cow per week. Fifty-five were mature cows and the average was 63.3 pounds of milk per cow per day and of butter fat 15.1 pounds per cow per week.

In the series of 1899, there were 255 animals tested, 87 of which were 2-year-old heifers. Their average was 40.9 pounds of milk per cow per day, and 9.3 pounds of butter fat per cow per week. Fifty-two were 3 years of age and their average was 51.9 pounds of milk per cow per day and of fat 12.1 pounds per cow per week. Twenty-three at 4 years of age averaged 55.8 pounds of milk per cow per day and 13.1 pounds of fat per cow per week. Ninety-three were of mature age, averaging 60 pounds of milk per cow per day and 14.4 pounds of butter fat per cow per week.

So far this year there has been a large number tested and as the fiscal year does not close until May, 1901, we look for the number to equal or surpass that of any former year. Sensational of the records so far reported this year is one of a 3-year-old heifer owned in the state of New York and tested one week by the Cornell Experiment Station of that state. Her yield being 590.65 pounds of milk, containing 20.82 pounds of butter fat.

During the era of official testing as indicated above 80 cows have exceeded a yield of 16 pounds of butter fat per week, 49 have exceeded a yield of 17 pounds, 31 have made over 18 pounds, 11 have produced over 20 pounds, and 2 have exceeded a yield of over 21 pounds of fat per week.

This showing certainly reflects much credit upon the breed and demonstrates conclusively the ability of the Holstein-Friesian to produce large quantities of milk and butter.

**AT THE COLUMBIAN.**

I find that during the dairy tests at the World's Columbian Exposition, the best week's record of any cow of any of the breeds participating was that of Brown Bessie, with a yield of 20.16 pounds of finished butter. Reducing this to butter fat on the plan adopted by the association chemists, we find her yield for seven days to be 17.28 pounds of butter fat. During the period of Holstein-Friesian official tests this record has been surpassed 44 times, and the average seven days' production of these 44 tests is 18.94 pounds of butter fat, or a yield of 1.66 pounds of fat per cow per week in excess of the yield of the best cow at the World's Fair.

In the dairy tests at the World's Fair the best thirty days' production of butter was also that of Brown Bessie, with a yield of 77.32 pounds, or a daily average of 2.57 pounds. This record has been surpassed by 3 Holstein-Friesian cows owned at the Michigan Experiment Station and tested under the personal supervision of Profs. Smith and Mumford of that institution.

Rosa Bonheur 5th, in a six weeks' test, produced 135.95 pounds of butter, or daily average of 3.23 pounds. Belle Sarcastic, in a six weeks' test, produced 136.88 pounds, or a daily average of 3.26 pounds. Houwtje D, in a six weeks' trial, made 120.65 pounds of butter, or a daily average of 2.87.

It will thus be seen that these 3 cows at the Michigan station made an average of 3.12 pounds of butter per day for a period of six consecutive weeks, or .55 of a pound of butter per cow per day in excess of the best cow at the World's Fair.

**FAIR GROUND TESTS.**

In 1896 the different agricultural societies began a very important series

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of tests, popularly known as "fair ground tests," for the purpose of securing reliable data as to the relative merits of the breed as to butter production. Mr. Hoxie has collected the results of these tests made at the leading fairs and expositions up to 1898, and a summary of the comparative yields of the leading Jerseys and Holsteins follows:

The Jerseys were tested twenty-eight days for butter and the Holsteins thirty-one days. The average credit per day per cow of the Jerseys is 1.61 pounds of butter, and of the Holsteins 1.99 pounds, the excess in favor of the Holsteins being 23 per cent. The Jerseys were tested seventy-three days for butter fat and the Holsteins ninety-six days. The average credit per day per cow of the Jerseys is 1.44 pounds and that of the Holsteins 1.70, or about 18 per cent in favor of the Holsteins. If these butter fat records are changed to equivalent butter records and added to the butter records given, the average yield of the two classes combined per cow per day will be found to be about 19.5 per cent in favor of the Holsteins. In 1899 the reports of the "fair ground tests" show the equivalent of 84 Holstein-Friesians tested twenty-four hours for butter and fifty-five for solids not fat, the average of fat per cow is 1.53 pounds and of solids not fat 4.51 pounds. The Jerseys have an equivalent of 21 cows tested for fat and 9 cows tested for solids not fat. The average per cow is 1.56 pounds fat and 3.15 pounds solids not fat. Similar averages of the Ayrshires are 1.41 pounds of fat and 3.57 pounds solids not fat, and for the Shorthorns 1.22 pounds fat and 3.21 pounds solids not fat. Comparing the production of the leading Holstein-Friesians with those of the leading Jerseys, the average for the former is 1.91 pounds of fat and 5.36 pounds of solids not fat, and of the latter 1.67 pounds of fat and 3.52 pounds solids not fat. The average of the leading Holsteins in the production of fat, being about 14 per cent in excess of those of the leading Jerseys and a little over 50 per cent in excess of the leading Jerseys in the production of solids not fat.

Sensational among the "fair ground tests" of 1899 was that of a Holstein-Friesian cow at the London Dairy Show in a forty-eight-hour test, conducted by Prof. Day of the Ontario Agricultural College. This cow produced 6.79 pounds of butter fat, which has never been equaled by a cow of any breed when publicly or officially tested.

#### QUANTITY OF MILK.

That the Holstein-Friesian is unapproached by any breed of cattle in the production of large quantities of milk no one will deny. My observations lead me to believe that the most phenomenal yields of butter have been obtained from cows yielding the largest quantity of milk. This seems also to apply in case of the different individuals of the different breeds and the results of the official tests to which I have referred and the records of the Jerseys at the World's Fair only confirm this statement. This, coupled with the fact that in proportion to the percentage of fat in the milk, the product of the Holstein contains more solids not fat than that of any other breed, gives her the qualifications of being the greatest animal in existence for the economical production of cheese. I contend that milk testing over 4 per cent fat is not the milk best adapted to cheese making. First, because it costs more per hundred pounds for the dairyman to produce it; second, because in practical work we can not escape the unavoidable losses of fat escaping in the whey; and third, because casein is quite as important for the manufacture of cheese as butter fat and is a high test the percentage of solids not fat do not increase in proportion to a high percentage of fat in the milk. Touching upon this subject, Prof. Van Slyke of the Geneva, N. Y., Experiment Station, says of experiments under his direction: "First, the yield of cheese increases as the fat in the milk increases until the fat in the milk exceeds 4 per cent. With milk above 4 per cent a larger proportion of fat is lost and the increase of cheese is consequently less. Second, the yield of cheese is greater when the amount of

casein in the milk is equal or greater than the amount of fat. When the fat is largely in excess of the casein more fat is lost and less cheese is made." This coincides with the results obtained by Prof. Dean of the Ontario, Canada, Agricultural College, in his five years' experiments on the question of the relation of fat in milk to the quantity and quality of cheese made. Prof. Dean says: "As the average of five years' experiments we find that milk containing 3 to 3.6 per cent fat will make 2.8 pounds of cheese per pound of fat, and that milk containing from 5 to 5.5 per cent fat will make 2.3 pounds of cheese per pound of fat. Loss of fat per 1,000 pounds of milk was 1.8 pounds for the lowest and 3.4 pounds for the richest. Loss per 100 pounds cured cheese, 1.9 and 2.8 pounds respectively." He further says: "As to the scoring of cheese made from different percentages of milk, generally speaking, in milk of equal flavor, there would be little or no difference in the quality of cheese made from milk containing 3.4, 3.6, 3.8, and 4 per cent fat, supposing that all were equally well made. Our experiments indicate that milk containing such a large proportion of fat (referring to that testing about 5 per cent) had a marked tendency to softness or weakness of body and would not be considered a first-class export cheddar cheese."

From the milk and butter tests quoted, which is but a small part of the available evidence that might be brought to bear upon the subject, the only conclusion to be drawn is that the Holstein-Friesian is a producer of larger quantities of milk and butter and cheese, and I now propose to show that she has produced these yields economically.

#### FOOD TESTS.

A very important problem that confronts the dairyman is the one economical production and net profit over and above food cost of production. Since 1897 the Holstein-Friesian Association has adopted a plan known as "Food Tests," and offered prizes for cows in the different age classes, tested under the supervision of representatives of the different experiment stations, to determine the food cost of butter fat production of cows of the breed. A schedule of prices of the different food stuffs was fixed, based upon recommendations of the leading experiment stations, and the yields of butter fat and food consumed by competing animals during the seven days tested were under the supervision of and vouched for by experiment stations. As the value of any dairy cow is measured by the quantity of milk and butter or cheese produced in return for amount of food consumed, this was certainly a step in the right direction.

In 1897 16 cows and heifers responded to this test. Seven mature cows averaged 15.15 pounds of butter fat per cow per week and made the same at a cost of 9 cents and 1 mill per pound. Two 4-year-old heifers averaged 14.64 pounds of fat at a cost of 12 cents and 7 mills per pound. Three 3-year-old heifers averaged 13.47 pounds of fat at a food cost of 8 cents and 1 mill per pound. Four 2-year-old heifers averaged 10.31 pounds of fat and made the same at a food cost of 8 cents and 6 mills per pound. The entire list of 16 cows and heifers, which includes every animal tested, averaged 13.5 pounds of fat per cow per week at an average food cost of 9 cents and 3 mills per pound.

In 1898 20 cows and heifers were entered in this contest. Of these 4 were mature cows, averaging 14.82 pounds fat per cow at an average cost of 8 cents per pound. Four were 4 years of age and the average was 13.71 pounds of fat at a cost of 7 cents and 7 mills per pound. Four were 3 years of age and the average was 13.15 pounds of fat at an average cost of 8 cents and 3 mills per pound. Eight were two years of age and they averaged 10.55 pounds of fat per week at an average food cost of 9 cents and 2 mills per pound. Twenty cows and heifers in this test averaged 12.55 pounds of fat per cow per week and at an average food cost of 8 cents and 5 mills per pound.

In the tests of 1899, 12 cows averaged 15.31 pounds of fat at an average cost of 8 cents and 2 mills per pound. Three 4-year-old heifers averaged 13.83 pounds of fat at a cost of 9 cents and 6 mills per pound. Six heifers 3 years of age averaged 13.29 pounds of fat at a cost of 8 cents and 4 mills per pound. Four heifers two years of age averaged 10.91 pounds of fat at a cost of 7 cents and 1 mill per pound. Twenty-five cows and heifers in this test averaged 13.94 pounds fat per cow per week and the average food cost was 8 cents and 2 mills per pound.

## Another Knockout for the DeLaval by the United States

LAWTON, Wis., Jan. 31, 1901.

This is to certify that the Alpha DeLaval No. 2 and the United States No. 6 had a contest to prove the merits of the two at P. L. Place's farm at Lawton, Wis. The Judges were appointed by Mr. P. L. Place and points to be considered were:

- First—Cleanness of Skimming.
- Second—Durability and Workmanship.
- Third—Easy Running.

We, the undersigned, decide in favor of the United States. All three points having been given to the U. S.

A. S. BARG,  
PEDER HALVORSEN, } Judges.  
PEDER PEDERSON.

Witnesses:

HENRY A. HANSON, R. L. RASMUSON,  
CARL CHRISTOPHERSON, M. H. HANSON,  
A. H. HANSON, GEO. P. GROUT,  
MARTIN HANSEN, P. L. PLACE.



Note the Fact that the United States won on every point, also that the U. S. was a \$100.00 machine while the DeLaval was \$125.00, which proves again very conclusively the truth of our claim that the

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VERMONT FARM MACHINE CO., BELLOWS FALLS, VT.

We find in the tests of 1899, 25 cows and heifers produced for the week 9, 635.7 pounds of milk at an average food cost of 29½ cents per 100 pounds. The average per cent of fat in the milk was 3.62, or a total of 348.5 pounds of butter fat. Valuing this fat at 25 cents per pound, and not taking into account the skim-milk, which we all realize as being very desirable food for the young growing animals upon the farm, we have a credit of \$87.13, or 90½ cents per 100 pounds for the milk. Deducting the cost, which was 29½ cents per 100 pounds, we have a net return of 60 cents per 100 pounds over and above food cost of production.

These tests being conducted under a variety of conditions as to feeds and care, furnish reliable data from which can be drawn reasonably accurate conclusions as to the merits of the Holstein-Friesian as an economical producer.

In the food tests of 1899, 1 mature cow made 19.59 pounds of fat at an expenditure of 12.9 pounds dry matter in food consumed for 1 pound of fat. One 3-year-old made 13.02 pounds of fat at an expenditure of 7.8 pounds dry matter. One 3-year-old made 14.97 pounds fat at an expenditure of 11.1 pounds dry matter. Another 3-year-old made 15.21 pounds of fat at an expenditure of 12.7 pounds dry matter, and the leading 2-year-old made 12.52 pounds of fat at an expenditure of dry matter in food consumed of 9.4 pounds to 1 pound of fat.

In the seven days' dairy test at the Trans-Mississippi Exposition, 2 Holstein cows that had previously been showed at 5 different state fairs and covered a distance by rail of 2,500 miles, 1 makes 13.47 pounds of fat at an expenditure of 11.4 pounds dry matter in food consumed for 1 pound of fat; the other made 13.21 pounds fat in requiring 11.8 pounds dry matter for 1 pound of fat. Two Holsteins 2 years old, in the same test, one made 11.01 pounds fat for 11.17 pounds dry matter, the other making 8.5 pounds fat at an expenditure of 12.2 pounds dry matter for 1 pound of fat. This is a remarkable showing and I believe no cow of any breed under any conditions has produced like results when officially or publicly tested.

#### HEALTHFUL MILK.

The milk of the Holstein after the fat is extracted furnishes a quantity of skim-milk largely in excess of that of any other breed, and the feeding value of this product is estimated by experiment stations to be from 15 to 20 cents per 100 pounds. Of all the bovine race the Holstein is the greatest mother, because the elements of nutrition found in the composition of her milk conforms more closely to a well balanced ration for the health, thrift, and development of the young growing

animal. We hear much of the well balanced ration for the cow, the horse, the sheep, and the pig, but do we attach sufficient significance to the matter of a well balanced ration for infants and invalids of the human race? For reasons already specified and because of the vitality and constitutional vigor characteristic of the Holstein-Friesian breed, I venture the statement that her milk is most desirable as food for infants, invalids, and general hospital use, and this is sustained by some of the best medical talent of this country and others who have given the subject careful investigation and scientific research. Mr. H. B. Burler, a practical dairyman and a man of wide experience says: "I believe the vitality of the cow producing milk for babes is conveyed to the babies consuming the milk, and I believe none of the special dairy breeds have more vitality than the Holstein."

The Holstein-Friesian is in the hands of practical business dairymen, who appreciate her ability to convert large quantities of food into milk, butter, cheese, veal, and beef, and the growing popularity of the breed, in those dairy districts where her merits are best known, bespeaks the practical utility and adaptability to the needs of the dairy farmer.

I invite you, fellow dairymen, to look at the merits of the Holstein from an impartial, unprejudiced standpoint, and in consideration of the facts I have mentioned, I beg to propose to you as the breed best adapted for the grading up of the dairy herd of this Kansas or any other Kansas, the Holstein-Friesian of America, the formidable rival of all.

#### The Breed Best Suited to the Grading Up of the Kansas' Farmers Herd for the Dairy—Jersey.

BY A. E. JONES, BEFORE KANSAS STATE DAIRY ASSOCIATION.

It gives me great pleasure once more to raise my voice in behalf of the Jersey, a cow that is recognized the world over as the unrivaled butter-maker. Her standing among dairy breeds is on a level with the Shorthorn and Hereford among beef breeds, and I am tempted to say that she is almost as far in advance of other dairy breeds as the Kansas beef steer is ahead of the Texas long horn.

In accordance with the title of this paper, I am requested to name the breed best suited to the grading up of the Kansas farmers' herd for the dairy; and as a large percentage of the milk produced is either made into butter at home or sold to the creamery for butter and cheese, it must apply to the cow that is the most profitable for this purpose. One of the chief industries in our state at this time is the creamery business; and the logical conclusion is,

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that the cow that brings in the largest pay check at the end of the month is the one to receive our most gracious acknowledgments. The question raised in this discussion is not one of beef, but purely on dairy lines, and the intelligent dairyman should lose no time in experimenting with breeds that are wanting in this essential.

#### IDEAL DAIRY COWS.

No race of cows approaches as near the ideal dairy form as the Jersey; take, for instance, those famous old cows, Jersey Belle of Scituate, and Eurotas. Notice the thin neck, broad hips, high pelvic arch, and amidship the immense storage capacity for the elaboration of milk, rich in butter fat. In the true dairy form there are no straight lines, but the whole contour of the body is made up of graceful curves—just such a model as would be pictured by the skilled artist.

The horsebreeder well knows that it takes certain forms in the make-up of trotting horses to produce extreme speed, and any departure from this inexorable law of nature is sure to result in failure. And even the casual observer may notice the close resemblance in all the great race horses that have made themselves famous in the last few years. The same rule should apply to dairy cows—breed for form and milking qualities, use a pure-bred Jersey male, whose dam was known to be a butter-maker of repute. Then by weeding out those that fall below a certain standard, a herd may soon be obtained that will keep well above the 300-pound-a-year mark.

#### GREAT INTERESTS.

The dairy interests of Kansas are of enough importance at this time to induce farmers to pay more attention to the rearing of high-grade dairy animals, which will bring in handsome incomes every day and satisfactory prices when wanting to sell. It has been well said that the cow is the first friend of man. From her earliest history she has been associated with the march of civilization, and our success in a large measure has been due to this willing and obedient servant—ready at all times to do our bidding. Although abused and mistreated at times, she is still inclined to overlook our neglect and do her share in furnishing the tables of both rich and poor, such luxuries as can be obtained from no other source. The cow is the harbinger of better days; and the trend of centuries has established her almost as a member of the human family. The man that does not admire a good cow was born at the wrong time. He should be planted in the light of the moon in order to determine whether regeneration would effect any change in his views toward the queen of our domestic animals.

#### COLD WEATHER.

It is claimed that the Jersey cow is tender and can not stand cold weather. In one sense this may be so. From a physical standpoint we notice that she has very little fat as an outside covering. What is given her is on the inside, where the Great Architect has placed it in the economy of milk production. On the other hand the beef breeds have their fat largely on the outside, and hence this is done at the expense of milking habits. If the Jersey can not stand cold weather she is built that way and can not help it, and it behooves us to keep her warm, and the extra milk from so doing will well pay all expenses. Whenever we find cows showing the largest net returns at the creamery or at home we take it for granted that there are Jersey cows in the herd; and upon closer investigation this proves to be true.

By the skill of numerous breeders on the Island of Jersey, in England, and America, as well as by the influence of climate and feed, and also by various crosses, very marked changes have been effected in perpetuating features and peculiarities that were once very rare, or by fixing the characteristics of phenomenal animals so as to form distinct families.

#### BEAUTY.

The Jersey of to-day is the most beautiful of all bovine races, matchless for symmetry, variety of beautiful colors and shadings, and for that delicacy of frame and fineness of quality which makes the race attractive to the eye and taste of all lovers of animal beauty. At the same time the Jersey cow excels all others, not alone in amount, but in the quality of butter. Since the practice of testing cows for the butter has become more popular, upwards of 2,000 Jersey cows have produced 14 pounds of butter in a test of seven days, while reports show that over 100 of these have tested 20 pounds or over in a week, and 50 are classed in the list that

have produced 25 pounds or more in seven days. One cow has made by official test 46 pounds, another 39 pounds, another 36 pounds of butter in seven days.

The Jersey is of that spare habit of flesh consistent with the best dairy qualities, and the foods she eats so assimilated, and the secretive powers so highly developed as to fill the udder with all the fats and oils, instead of accumulating them upon the body. The Jersey is fine in bone, has rare powers to withstand old age, and has just enough muscular development for healthful activity and full digestive force. Most Jerseys are good feeders, and indicate a marvelous capacity for changing a large quantity of grain and forage into the best of dairy products.

#### RESULTS.

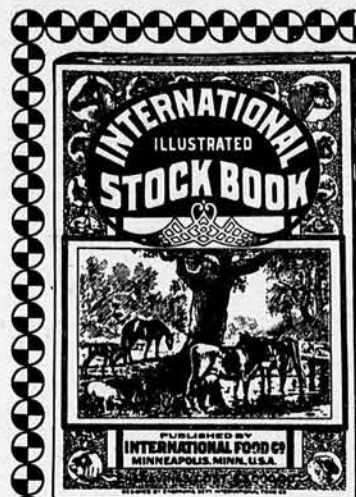
At the Minnesota Experiment Station they tested 6 dual purpose cows as represented by grade Shorthorns of the beef type, against 6 grade Guernsey and Jersey and 1 grade Holstein, all of the proper build for dairy cows, and gave out the following results: The 6 dual purpose cows gave an average of 5,077 pounds of milk in a year, which gave 229 pounds of butter, at a cost of 13.38 cents a pound. The feed cost \$30.64 per head and the net profit was \$10.37 each. The 7 others produced an average of 6,100 pounds of milk and made 446 pounds of butter per year at a cost of 8.43 cents per pound. The cost of food was \$37.60 per head and the net profit \$38.11 each.

But the comparison between the best of each sort was more plainly marked. The best dual purpose cow gave 274 pounds of butter at a cost of 12.14 cents a pound, with a profit of \$15.69. The poorest of the lot gave but 196 pounds of butter at a cost of 14.76 cents a pound and profit of \$5.81 for the year. The grade Holstein produced 530 pounds of butter from 11,726 pounds of milk at a cost of 10.6 cents a pound, having eaten \$55.23 worth of food, but showing net profit of \$38.26. This profit was exceeded by a grade Jersey, which produced 493 pounds of butter from 7,914 pounds of milk. Her butter cost but 6.08 cents a pound, she having eaten but \$30 worth of food, and the profit from her was \$54.45 for the year. A cross-bred Jersey and Guernsey was next to her, having eaten \$35.14 worth of food and yielded \$53.31 profit. She made 512 pounds of butter from 8,796 pounds of milk at a cost of 6.86 cents a pound.

#### TESTS.

The battle of the breeds at the World's Fair established the Jersey cow as giving larger returns for the feed consumed than any other breed. And this point should be well considered by the dairy farmer, to procure such cows as will produce butter at the lowest cost per pound. It makes a great difference whether the feed cost of butter fat is 18 cents per pound, or one-half that sum. If the butter fat costs 18 cents, and the creamery pays the same price the year through, viz., 18 cents, where is the profit on your labor, besides the wear and tear on the cow? Another point to be considered: The Jersey cow will milk eleven months in the year and some of them eleven and one-half months. Cows of many other breeds go dry two or three months.

Of the 2,000 tested Jerseys, as far as has been ascertained, more than 300 cows have made a pound of butter from less than 14 pounds, or 6½ quarts, of milk. A large number of Jersey cows have made 1 pound of butter from 3 and 4 quarts of milk, and Ethleel 2d, by official test, with first calf, yielded a pound of butter from 2 2-5 quarts of milk. If the dairy farmer of Kansas, by selecting and breeding, and by improved methods in feed and care, should increase the output of their cows one-fifth, it would put thousands of dollars additional into their pockets monthly; and what would be the result if the 150-pound-a-year cow took a record of 250 pounds? By using good judgment and grading up your herds with Jersey blood, all this can be accomplished. Too many farmers jump at conclusions and guess at results. The successful merchant knows at the close of business every day just how he stands, and at least once every year takes an inventory of his goods, that he may calculate exactly whether his ventures have been paying or losing. After all, the best cows on earth will not thrive under adverse conditions; with the treatment accorded by some farmers she may show profit, while handled by others become a losing investment. I have been interested in some of the late reports from the Kansas Agricultural College, wherein photographs were given of cows just in from the shelter of a wire fence and the difference after taking a short course at the college farm. Pitiful



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looking objects as they were, and certainly not built on profit producing lines, still the reverse shows that by housing and good feed some of them made a creditable showing. I presume that the portraits of these cows taken while yet fresh from the wind swept plains is but a sample of the average farmer's dairy herd, and the wonder is that they give milk enough during the cold weather to pay for the dry corn-stalks.

#### A MATTER OF TIME.

The improvement of the dairy herd is not a matter of a few years. There is no end to the advancement in that line. There is no half way place. No breeder of dairy animals has or ever will arrive at that point where he can say: "This is the apex of my ambition; it is the culmination of my efforts; there is the most perfect cow it is possible to produce." Good breeding, better care and feed should make each lot of young animals more valuable than their predecessors. A man is a benefactor to his race and a credit to himself who produces a highly developed and finished product out of crude material.

"We stood at the bars as the sun went down  
Behind the hill, on a summer day;  
Her eyes were tender, and big and brown,  
Her breath as sweet as the new-mown hay.

"Far from the west the faint sunshine  
Glanced sparkling off her golden hair;  
Those calm, deep eyes were turned toward mine,  
And a look of contentment rested there.

"I see her bathed in the sunlight flood,  
I see her standing peacefully now;  
Peacefully standing and chewing her cud,  
As I rubbed her ears—that Jersey cow."

#### DISCUSSION.

Mr. Priest:—We have listened to two excellent papers. I am glad they were given. I have been trying for five years to build up a herd of general purpose cows, and now these fellows come here and tell us about these 35 or 40 pound butter cows, and when I compare them with the herd I have been trying to build up, I ain't in it, and I can't imagine why the secretary asked me to open this discussion, unless he knew of that, and he thought I would give up the fight. I have been trying to build up a profitable herd of general purpose cows. I have had 41 cows in the last five years. I now only have 2 of those 41 that I am milking. I got rid of 11 last fall, a year ago last fall the others. Then I bought 9 cows, and out of those 9 I think I have 1 to-day. Five of them have gone to the butchers, 3 of them will go Friday. In building up this herd of general purpose cows, I have just simply failed, and I have got over on the other side of the fence, and the fact, is, I haven't any fight with these folks to-night at all. They stole my fireworks, for I am now a strictly special purpose dairyman farmer. Now, there is one thing I want to talk about just a minute. I would like to see out at the agricultural college at Manhattan representatives of each of these dairy breeds of cows. They have not got them. They have a scrub herd like I had. (Laughter). I would like to see the college have representatives of each of these breeds so that they can experiment, like they do in other sates, and give us data, so that we can profit by their experience. I saw a man to-day and he said: "How much alfalfa have you got, George?" I

replied "six acres." "How are you going to handle it this year?" I said "next year every time I cut it I will go through it with a disc harrow." "What for?" I said "out there at the college they did that, and they said it was a success; and what they do out there and tell me is a success, goes with me." If Prof. Otis tells me they did a certain thing, and it was a success, that goes with me. If we will not profit by these experiments, what is the use of having that kind of a college? But this idea of having this herd of cows of these different breeds that they can make tests for us is important, and I would like to have Prof. Otis follow right now with a little speech, and tell you a little about the needs at Manhattan.

Prof. Otis:—I have been very much interested in the papers that have been presented to-night. The fact of the matter is, I have been talking scrub cows until whenever I saw a person the second time, he thought I was a scrub man. (Laughter). The dairy interests of this state certainly demand that we shall take hold of this subject of breeds, and push it in such a way that the dairy farmer who will use anything except the first-class, pure blood sires in his herd is committing a crime against his own welfare. We have tried to show what could be done with common cows. We have taken a herd of 28 common cows and we have increased their yield from 90 pounds to 270 pounds of butter fat per head; but, notwithstanding that fact, counting in the cost of feed, and the cost of labor, 25 per cent of those cows run us in debt. There was another 25 per cent that only produced a profit of a little over \$3 per head. You have heard to-night what cattle can do that have been graded up along special lines for a series of years. If that is so, why do we while away our time upon cows of pure blood. I will admit that we can't buy a whole herd of pure blooded animals, but at the same time we must be satisfied with that for the present. We can be constantly improving, and I am thankful to see that the regents of our college are going to ask the legislature at this session for an appropriation of \$10,000 in order that we have representation of these special pure breeds, and also of the general purpose breeds, and carry experiments on with them, in connection with our common cows, and thus show what the value of the pure blood is; and, furthermore, to give the chance to these numerous students who come there to see these different breeds and give them an opportunity to determine their points of excellence. At the present time we have 71 dairy students at our college, and there is only 1 pure blooded animal

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on the farm. We have the largest agricultural college in the world. We have the best agricultural state in the world. (Applause). Is it right that we should have a college without representatives of our important breeds? Now, we want you to help us. Exert your influence that we may get representatives of these different breeds, that we may show you, show the students, the results obtained. And upon the energy that we put forward in demanding that we have that kind of stock will depend on whether we get it or not.

**Results of Calf Feeding Experiments at Kansas Experiment Station.**

H. M. BAINER, PLEASANT HILL, KANS.

Experiments with skim-milk calves in 1899: Thirteen calves were divided into three lots. One lot received Blackford's calf meal in addition to the skim-milk, another received flaxseed-meal in addition to the milk, while the third lot got no special feed. All of the calves were fed all the Kaffir-corn meal, hay and green alfalfa they would eat. Each of the three lots were again divided and one-half received sterilized creamery skim-milk and the other half hand separator skim-milk. At weaning time, or at 6 months of age, the calves which had received Blackford's calf meal made an average daily gain per head of 1.9 pounds; those which had received flaxseed-meal gained 1.55 pounds per head per day, while those which had received nothing but Kaffir-corn meal in addition to the skim-milk had made an average daily gain of 1.82 pounds per head per day, or .27 of a pound better than the lot getting flaxseed-meal and only .08 of a pound poorer than the lot receiving Blackford's calf meal. Blackford's calf meal, costing \$70 per ton in retail lots, would hardly be profitable as a substitute for fat removed from the milk when Kaffir-corn meal is almost its equal. The two kinds of milk were practically equal in this experiment. The six calves which had received creamery skim-milk gained 250 pounds each, while those fed on hand separator skim-milk gained 251 pounds each.

**COST TO WEANING TIME.**

Valuing the milk at 15 cents per 100 pounds and the other feeds at the average prices, we find that it cost \$6.29 per head to raise them to weaning time. The cost of the gain and roughness for these calves was \$2.54 per head, or the feed cost was \$2.50 for every 100 pounds gain.

In the experiments of 1900 there were three lots of calves, two lots of each. The first of these lots was fed sterilized creamery skim-milk, with a grain ration composed of equal parts corn and Kaffir-corn meal, with all the alfalfa hay they would eat. The second lot was fed the same grain and hay as the first, but they were fed fresh whole milk instead of skim-milk. Both lots had access to a small pasture and were treated the same as nearly as possible. They were weighed once a week and accurate records were kept of all weights and feed consumed.

**COMPARISON.**

Besides these two lots of ten calves each, the experiment station secured the privilege of weighing twenty-two head of calves which were running with their dams. These calves belonged to a prominent farmer near Manhattan who had them in a pasture near the college. They were high grade Herefords and from all indications were a little older and better than the calves in the other two lots. These calves were weighed but three times during the summer, once at the beginning of the experiment, then again at the close, and once half-way between the beginning and close of the experiment. The results were as follows, first considering the skim-milk lot: These calves were about 6 weeks old when the experiment began. Their average weight was 110 pounds. Up to 6 months of age the average gain per head was 233 pounds, or a daily average of 1.51 pounds per head. Figuring skim-milk at fifteen cents per 100 pounds and the grain and roughness at the average prices, we find that the total feed cost was \$5.23 per head. Counting the labor cost at \$2.75 per head we have a total cost for each calf of \$7.98 per head, or \$1.19 less than in the previous experiment.

The whole milk calves were about the same age as the skim-milk lot when the experiment began, their average weight being 94 pounds. They were kept on experiment the same length of time as the skim-milk lot. The average gain per head for the time of the experiment or until 6 months old was 280 pounds, or an average daily gain of 1.95 pounds per head, this be-

ing .44 pound better daily gain than the skim-milk lot.

Figuring the whole milk at sixty cents per 100 pounds and the grain and roughness the same as for the skim-milk lot, we find that the feed cost for these calves was \$15.72 per head. Counting the labor cost at \$2.75 per head makes the total cost of each calf \$18.47 or \$10.47 more per head than the skim-milk calves. The feed cost per 100 pounds of gain was \$5.46.

Comparing the two lots we see that they consumed 1,449 pounds less milk, 1,190 pounds less grain, but 194 pounds more hay. For each 100 pounds of gain the whole milk calves consumed 252 pounds less milk, sixty-four pounds less grain, but two pounds more hay. The value of the whole milk makes the total cost per 100 pounds of grain amount to \$3.22 more than the skim-milk lot.

**WEIGHTS.**

At the first weighing, of calves running with cow, May 28, these twenty-two calves averaged 175 pounds each. From all indications they were from six to eight weeks older at the first weighing than the calves in either of the other experiments. On July 31 these calves were weighed the second time, when their average weight was found to be 292 pounds, or they had made an average daily gain of 1.84 pounds per head. At the last weighing, October 15, their average weight was 422 pounds, or they had made an average daily gain per head of 1.77 pounds per head since the first weighing. The expense of raising the calf is practically no more than the cost of keeping the cow for the year. The owner of these calves estimated this to be \$1 per year, counting the cost of raising the calf at \$12. We find that the cost for each 100 pounds gained was \$4.41. This being ninety-nine cents more per 100 pounds gained than in the skim-milk lot and \$2.23 less than with the whole milk lot.

At weaning time these twenty-two calves lost 90 pounds the first week, while the ten skim-milk calves gained 220 pounds and the whole milk calves 77 pounds. Four weeks after weaning the calves running with the cow had gained 1.06 pounds daily per head, the skim-milk 1.86 pounds per head and the whole milk calves which averaged for three weeks only 2.5 per head.

**How the Work of the Kansas Dairy School is Beneficial to the Kansas Creameryman.**

E. W. CURTIS, COUNCIL GROVE, KANSAS, INSTRUCTOR IN BUTTERMAKING IN KANSAS DAIRY SCHOOL.

One of the most pronounced tendencies of the last decade of the nineteenth century among all classes of people and in all lines of thought and work, is the policy of specializing, concentrating all of our mind and energy upon one specific thing and making it our life work. Every young man starting in life to-day meets this fact. He soon finds some fellow rapidly outstripping him in the race, and unless he has the energy and ability to make a specialty of himself he is soon consigned to mediocrity. So it comes that the young man of to-day must be up and doing, he must lead a "strenuous life," he must get an everlasting hustle on himself or he will never amount to much. Now in order for the average young man of to-day to succeed he must train his mind and hand in the theory as well as the practice of his specialty; in other words, he must educate himself. He must be an expert in the practice of his work and he can only be one by being thoroughly familiar with the theory of his work.

The state of Kansas maintains at Manhattan the dairy school. She has spent \$30,000 in the erection and equipment of this dairy school. Here the young men of the state who have chosen to work in dairy lines can receive both a practical and a theoretical education in their chosen vocation. So in earnest is our commonwealth that she is providing this dairy school, its equipment and instruction free of cost to the residents of this state, and any young man or young woman with any gumption in them and an earnest desire for knowledge, can surely hustle around and get enough money to pay for his or her board and room at the rate of \$3 a week for a twelve weeks' term or two.

Not all the young men who take the dairy course, however, prove to be masters of their profession. It is a good bit undertaking to give 100 young men twelve weeks of instruction and turn out 100 practical buttermakers, skimming-station operators or cheesemakers. The student now taking instruction at the Kansas dairy school is the farmer's boy; he is a merchant's son

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who has been down to the creamery in his home town and thinks he would like the work; he is a skimming-station operator of perhaps only a few weeks' experience; or may be superintendent of a system of creameries and skimming-stations with years of experience. I would recommend to this association that the members use their influence as individuals to see that the course be so changed that instruction be given separately for men, first, who have had one season's experience in creamery, cheese factory or skimming-station; second, for those who have had less than one season's experience or no experience whatever. This will separate the experienced and the unexperienced men and both will progress faster.

It can not but be said, however, that our dairy school as it now stands is not proving to be of a vast amount of profit to the student for, indeed, those who have taken the course so have testified and the above is only a recommendation that I believe will improve the efficiency of the work done.

**ON THE BEST DAIRY FARMS.**

The students of the Kansas dairy school are to be found to-day on many of the best dairy farms of the state, in many skimming-stations, creameries and cheese factories, not only of this state but other neighboring states, and as far away as Utah and California, and as a rule we have found their work to be entirely satisfactory to their employers. The school in this way furnishes to our creamery and cheese factory men a large number of men who have had both factory and dairy school experience, or only the dairy school work. And our factory men who apply early are sure to get men that will not disappoint either their instructors or the man who hires them.

**NEEDS.**

The Kansas dairy school, in my judgment, has needs and in order to make the school more as the dairy and creamerymen of the state would have it, I suggest to the membership of the state dairy association a visit to the school. It is yours. Give us your suggestions and by careful advice and earnest work make it the best dairy school in the world, serving the best dairy state in the world.

Our creamery men in their daily work run into a great many vexatious problems, which they have neither the time nor the means to solve. A dairy school can be of material assistance to such in suggestions and advice, and carrying through experiments that will throw light on their difficulties.

I believe a dairy school should go further than this. I think the school should send their instructors to the stations and factories of the state once every year and stand ready to send them oftener should it be necessary. The experienced instructor would see that the factory is kept clean and the operator given instruction that would greatly enhance his effectiveness. What buttermaker has not felt the need of help and would not have been glad to have paid the expenses of a conservative, competent man who could have advised him around his difficulties. I believe such a plan would be of vast importance in improving the quality and maintaining the uniformity of Kansas butter and in developing the dairy interests of the state.

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**A Practical System of Feeding for the Western Kansas Dairy Farmer.**

PROF. D. H. OTIS, KANSAS AGRICULTURAL COLLEGE, MANHATTAN KANSAS.

This subject is not one of my own choosing. Your acting secretary, while in a frame of mind for propounding conundrums, sent me the above subject with the remark, "This, of course, has reference to milk production and is designated to be a help to the great part of Kansas farmers whose success with alfalfa and soy-beans has been very limited, or where each have been failures as crops." Had this statement included the names of one or two more crops the question would have resolved itself into a practical system of feeding without feeds.

**WESTERN CROP CONDITIONS.**

Considerable misunderstanding seems to exist even in the minds of Kansans as to the crop possibilities of the western half of the state. The statistics as gathered and published by our state board of agriculture for the quarter ending December, 1899, show some interesting facts. The average yield of oats for the state was 27½ bushels per acre. The returns from Ford and Kearny counties show a yield of 20 bushels per acre, and from Smith County 23 bushels per acre. The average yield of corn for the same time was also 27½ bushels per acre. The average of seven western counties, viz.: Decatur, Ford, Kearny, Logan, Rooks, Smith, and Thomas—taken at random show an average yield of 15 bushels of oats per acre. Decatur County produced 24 bushels per acre, Ford 23, Kearny 22, and Smith 19. The average for the seven counties was 18 bushels. These western counties seem to be very successful in raising barley, the yield running as high as 20 and 21 bushels per acre. The average for the seven counties mentioned was 16 bushels per acre, or 3 bushels per acre above the average of the state. The Kaffir-corn is measured in tons only, the average for the state being 3½ tons per acre, while the average of the seven counties mentioned was 3 tons. The average acreage of prairie hay for the state was 15,325 acres per county. The average acreage of the seven counties mentioned was 7,177 acres per county. The average acreage of sorghum for the

(Continued on page 242.)

**THE RUMELY**



**TRACTION ENGINES**

Should you be seeking the best thing in traction, portable and semi-portable engines, we have what you want. They are ideal for threshing, drilling wells, cutting and grinding feed, running saw mills, pumping water—anything requiring power. We have them from 8 to 20 H. P. They all excel as quick, easy steamers, require little fuel, remarkable strength, simplicity and durability. All boilers made of 60,000 lbs tensile strength steel plate. Fire boxes surrounded with water. Make also Thrashers, Horse Powers and Saw Mills. All fully described in our illustrated catalogue. Ask for it. Mailed free.

**M. RUMELY CO., LA PORTE, IND.**

The Hereford Program for 1901.

A meeting of leading Hereford men of America was held at the Midland Hotel at Kansas City, last week, Friday, March 1, and they mapped out a well considered plan of operation for 1901. It is proposed to hold national shows and sales of representative Hereford cattle at several places in the United States during the present year. The first show and sale will be held at Hamlin, Minn., September 1; the next will be at Louisville, Ky., later in the month. In October a big show and sale will be held at Kansas City, and the last national exhibition and sale will be held at Chicago, during the international live stock association, the first week in December.

The association duplicates \$2,000 purses offered by the Minnesota state fair at Hamlin and the same at Louisville, Ky. \$5,000 or more will be appropriated for both Kansas City and Chicago.

One hundred Herefords will be sold at Hamlin, Louisville, and Chicago and 150 head at Kansas City. Members of the association are allowed to contribute from three to five head but in no case will more than two males be allowed from a single contributor.



C. R. THOMAS, Secretary American Hereford Breeders' Association.

Superintendent of the national shows and sales in 1901, at Hamlin, Louisville, Kansas City, and Chicago.

Mr. C. R. Thomas, Independence, Mo., will be the general superintendent for each show. The association has also selected a strong and efficient committee to have full charge of the sale arrangements, consisting of W. B. Waddle, Lexington, Mo.; C. N. Comstock, Albany, Mo.; and Geo. Tuggle, Kansas City. Frank Rockefeller, president, and C. R. Thomas secretary, of the American Hereford Association, will also be advisory members of this committee.

It is evident that the great national shows and sales of 1899 and 1900 have been of immense benefit to every breeder of Herefords in America, and consequently the policy of aggressive action is to be continued, and the exhibition and public offerings are intended to eclipse all former efforts and maintain the prestige already achieved by this famous breed of cattle.

Rules and regulations have been prepared, covering entries for the different national shows and sales, and breeders who desire to be identified with either or all of these great Hereford events should make no delay in securing the necessary information from C. R. Thomas, Independence, Mo.

An Ideal Sale of Herefords.

The three days' sale of Hereford cattle from the herds of C. A. Stannard, of Emporia, Kans.; Scott & March, of Belton, Mo.; W. S. Van Natta & Son, of Fowler, Ind.; Steward & Hutcheon, of Greenwood, Mo., and Gudgell & Simpson, of Independence, Mo., which closed on Thursday evening, February 28, at the famous fine stock sale pavilion of the Kansas City stock yards, was an unqualified success and satisfactory to all concerned. It was an ideal offering from a breeder's standpoint and the results were highly satisfactory to all concerned—the buyers, the sellers, and the ring-side push.

The appearance of the amphitheater when the sale was opened by Colonel F. M. Woods, was prophetic of a successful sale. Cattlemen were there from all the states of the middle West, almost every pen was occupied, and the seats in the auctioneer's desk were crowded with newspaper men, among whom were representatives of most of the leading live stock and farm papers of the West and middle West. The auctioneers are the best known men in

their business, being Colonels F. M. Woods, of Lincoln, Neb.; R. E. Edmonson, of Kansas City; J. W. Sparks, of Marshall, Mo.; Carey M. Jones, of Davenport, Iowa; J. W. Judy, of Illinois, and Fred Phillips, of Rensselaer, Ind. In the crowd were a large number of women, who observed the proceedings with great interest. Most of them were the wives of breeders.

The 202 head of Hereford cattle which were sold in the Kansas City fine stock pavilion during the three days' sale brought an aggregate of \$58,640 and an average of \$292. Seventy-four head of bulls sold for \$19,185, an average of \$255.20, and 127 cows for \$39,755, an average of \$313. The highest price paid was \$1,010, which was brought on Wednesday by the cow Cleopatra, sold to W. S. Van Natta & Son, of Fowler, Ind., and the highest price brought by a bull was \$905, which was paid on Tuesday by John Gosling, of Kansas City, for the bull Pretorian, which was resold by him to B. E. Keyt, Wingate, Ind., for \$1,000. This bull was sold by D. L. Taylor, of Sawyer, Kans. Mr. Taylor did not originally have any cattle entered, but he desired to sell Pretorian and son Colorado, and Gudgell & Simpson withdrew two of their entries to make room for him.

W. S. Van Natta & Son bought the cow Browne 7th, sold by Gudgell & Simpson, for \$410. C. A. Stannard's cow Alene went to E. W. Creed, of Youngstown, Ohio, for \$445. Scott & March's bull Designer went to W. S. Allen, of Raymore, Mo., for \$455. The bull, May's Keep On, was bought by Miss Lou Goodwin, of Blue Rapids, Kans., for \$410.

What was probably the best bargain of the sale was secured by George B. Baker, Maryville, Mo. He bought for \$400 Rosemary, a half sister of the cow Dolly 5th, who was sold at Chicago in December for \$3,150. "You practically stole her," Mr. Stannard, her former owner, remarked to Mr. Baker, "but I am much obliged to you for paying more for her than anybody else would."

Rosemary was one of the best cows entered in the sale. She and Dolly 5th have different dams, but Java is the sire of both. Mr. Baker, who is cashier of the Real Estate Bank at Maryville, has one of the best herds of Herefords in northwest Missouri. Mr. Stannard was offered \$1,500 for Rosemary and two of her sisters a short time ago, and declares he thought she would bring not less than \$1,000.

At no time since the cattle show last fall have so many Herefords sold at one sale; and it is doubtful if, considering the size of the offerings, a better lot of pure-breds has ever been put on the market here. They were chosen from herds containing altogether 2,000 head. Their owners' object was to select their choice young animals and to make the most successful sale ever held in the pavilion. They did not receive the highest average price yet made here, but probably in view of the fact that but few fancy prices were paid, and they were not extremely high ones, it was the best average sale. Buyers were well pleased and each consignor made many friends and enhanced reputation as a breeder by reason of the high excellence of his entire offering.

The detailed result of each consignor's offering was as follows

C. A. STANNARD'S COWS.

- Tom's Beth 94244, 2 years, J. M. Kitcham, Camchester, Kans. \$260.
Climax's Matchless 94179, 22 months, J. Hatfield, McCook, Neb. \$250.
Rosemary 94210, 2 years, Geo. B. Baker, Maryville, Mo. \$400.
Allene 10214, 1 year, E. W. Creed, Youngstown, Ohio. \$455.
Tom's Grace 94224, 2 years, O. B. Whitaker, Lincoln, Kans. \$310.
Jewel 3d 102030, 1 year, J. J. Earley, Baring, Mo. \$255.
Emma May 4th 95194, 1 year, J. Hatfield, McCook, Neb. \$250.
Emerald 9th 98300, 2 years, Geo. W. Way, New Sharon, Iowa. \$205.
Gretchen 102026, 1 year, J. W. Wampler, Brazilton, Kans. \$190.
Countess Kodax 102022, 1 year, S. L. Standish, Hume, Mo. \$185.
Parlee's Pride 94206, 1 year, Mrs. C. S. Cross, Emporia, Kans. \$300.
Modest Mary 102044, 1 year, Miss Lou Goodwin, Blue Rapids, Kans. \$355.
Miss Cherry 102012, 1 year, Klaus Bros., Bendena, Kans. \$220.
Belinda 65879, 5 years, O. B. Whitaker, Lincoln, Kans. \$425.
Salisbury Lass 86083, 2 years, B. E. Keyt, Newtown, Ind. \$505.
Keep on Duchess 100288, 20 months, Clem Graves, Bunker Hill, Ind. \$195.
Keep On's Pride 102031, 22 months, L. L. Young, Oakland, Neb. \$280.
Lady Belle 102032, 18 months, L. L. Young. \$250.
Counter's Kodax 102022, 19 months, C. L. Standish, Hume, Mo. \$185.
Mamselle 4th 102037, 18 months, J. T. Allen, Windsor, Mo. \$180.
Miss Leona 94201, 24 months, L. L. Young, Oakland, Neb. \$390.
Miss Java 2d 94200, 23 months, Clem Graves, Bunker Hill, Ind. \$500.
Marietta 4th 89314, 2 years, W. W. Taylor, Sawyer, Kans. \$350.

- Countess 102021, 1 year, L. L. Young, Oakland, Neb. \$305.
Miss Hill 94198, 23 months, A. F. Corson, Ottumwa, Iowa. \$300.
Mary Broadguage 5th 106405, 1 year, W. B. Waddell, Lexington, Mo. \$350.
Sally 10th 03529, 13 months, O. Harris, Harris, Mo. \$300.
Sarah Beau Real 94215, 1 year, N. J. Fuller, Laurel, Neb. \$280.
Lady Bertha 102033, 1 year, Clem Graves, Bunker Hill, Ind. \$200.
Mary Grove 102038, 1 year, Kate Wilder Cross, Emporia, Kans. \$220.

C. A. STANNARD'S BULLS.

- Lord Benji 94193, 1 year, C. R. Rush, Coffeysburg, Mo. \$205.
Sentinel 2d 102048, 1 year, L. D. Anderson, South Omaha, Neb. \$225.
Sunny Slope Tom 11th 107812, 1 year, B. Creighton, Emporia, Kans. \$300.
May's Keep On 94197-22 months, Miss Lou Goodwin, Blue Rapids, Kans. \$410.
Helen's Kodax 102027, 1 year, E. R. Casfield, Princeton, Mo. \$225.
Lapping Jr. 102036, 1 year, John A. Holmes, Chariton, Iowa. \$225.
Harum 102053, 1 year, Fritz & Shade, Blakesburg, Iowa. \$220.
Java 2d 102023, 1 year, W. H. White, Council Grove, Kans. \$340.
Sunny Slope Prince 102051, 1 year, O. B. Whitaker, Lincoln, Kans. \$255.
Archibald Real 102015, 1 year, Fred B. Glover, Atwood, Kans. \$270.
Sir Java 94218, 2 years, J. H. Fellows, Fairfax, Mo. \$300.
Charmer Boy 10018, 1 year, Roy Lynds, White Cloud, Kans. \$305.
Prince of Wales 86324, 2 years, W. T. Hewitt, Leavenworth, Kans. \$300.
Charmer's Java 102019, 16 months, J. T. Rush. \$205.
Java's Best 102029, 15 months, Gudgell & Simpson. \$180.
Keep On 5th 107795, 16 months, Gudgell & Simpson. \$200.
Prince Keep On 102045, 15 months, Dean Bartlett, St. Marys, Kans. \$220.
Silver's Keep On 103897, 1 year, J. T. Rush. \$200.
Elvira's Java 103456, 13 months, Fritz & Schley, Fitchburg, Iowa. \$220.
Cherry 94178, 2 months, A. Lalonde, Florence, Kans. \$205.
20 bulls sold for \$5,270; average \$263.50.
29 cows sold for \$8,645; average \$298.10.
49 Herefords sold for \$13,915; average \$284.

GUDGELL & SIMPSON'S COWS.

- Sprite 12th 91606, 2 years, Peter Money, Orange City, Iowa. \$300.
Brown 7th 86767, 2 years, W. S. Van Natta & Sons, Fowler, Ind. \$410.
Martha 91589, 2 years, D. S. Taylor, Sawyer, Kans. \$340.
Penelope 1596, 2 years, Windsor Bros., Garden Plain, Kans. \$305.
Priscilla 3d 102854, 2 years, Windsor Bros. \$275.

- Bonny Lucia 86765, 2 years, Windsor Bros. \$420.
Sophia 91605, 3 years, Windsor Bros. \$285.
Marietta 14th 91906, 23 months, John F. Walker, Frederick, Kans. \$285.
Pepita 102851, 2 years, W. B. Devol & Son, Butler, Mo. \$290.
Donaldo 81631, 2 years, Tom Clark, Beecher, Ill. \$700.
Cleopatra 97904, 2 years, W. S. Van Natta & Sons. \$1,010.
Bright Lucy 109750, 2 years, W. S. Van Natta & Sons. \$380.
Correlina 91915, 2 years, J. A. McKittrick, Greenwood, Mo. \$490.
Bright Duchess 31st 91574, 2 years, B. F. Whiteley, Beverly, Mo. \$423.
Donation 16th 81633, 33 months, Geo. J. Anstey, Massena, Iowa. \$290.
Dorabella 91582, 2 years, W. W. Taylor, Sawyer, Kans. \$500.
Mabelle 13th 91587, 2 years, C. L. Bullard, Creston, Iowa. \$275.
Magdalene 91588, 2 years, J. A. McKittrick, Greenwood, Mo. \$305.
Bright Duchess 32d 109733, Clem Graves, \$500.
Dainty 11th 81623, 20 months, C. G. Comstock, Albany, Mo. \$300.
Donna Ada 09722, 16 months, W. W. Taylor, \$500.
Sylphide 81700, 35 months, H. B. Watts & Son, Fayette, Mo. \$420.
Mytilene 6th 81672, 2 years, H. B. Watts & Son. \$450.
Creamette 4th 86769, 2 years, B. E. Keyt, Newtown, Ind. \$360.
Maggie 9.4, 2 years, J. D. Gattey, Macon, Mo. \$290.
Rosella 86787, 2 years, J. D. Gattey. \$350.
Bright Duchesse 33th 109749, 2 years, W. B. Devol & Son, Butler, Mo. \$375.
Donna Felicia 91584, 2 years, F. A. Baylles, Des Moines, Iowa. \$250.
Bright Duchesse 27th 81612, 2 years, W. S. Van Natta & Son. \$540.
Norena 4th 81674 2 years, F. G. Oxsheer, Ft. Worth, Tex. \$435.

GUDGELL AND SIMPSON'S BULLS.

- Sempervireus 102855, 1 year, E. M. Casady, Whiting, Iowa. \$350.
Doncaster 102834, 1 year, Windsor Bros. \$325.
Simoon 102857, 1 year, Devol & Sons, Butler, Mo. \$445.
Matriculate 102848, 1 year, Barnes & Bircher, Pratt, Kans. \$475.
Burgomaster 109815, 13 months, W. E. Campbell, Kiowa, Kans. \$290.
Gipsy Chief 109820, 13 months, H. F. Lamb, Cairo, Mo. \$250.
Briseus 109814, 1 year, Peter Hill, Cartage, Mo. \$270.
Magistrate 109821, 15 months, Campbell Bros. Hickman's Mills, Mo. \$335.
Petitioner 109827, 14 months, F. G. Oxsheer, Ft. Worth, Tex. \$285.
Post Boy 109828, 1 year, Scharbauer & Aycock, Midland, Tex. \$300.
Dolphin 109817, 1 year, J. W. Ryan, Jackson, Neb. \$400.

PUBLIC SALE OF WELL-BRED, AND CAREFULLY-SELECTED Shorthorns FRIDAY, MARCH 29, 1901, IN THE NEW SALE PAVILION, KANSAS CITY, MO. Comprising 18 Bulls, and 42 Cows, and heifers. Ten head are Scotch, and many are Scotch-tops on excellent Bates foundation. B. O. Cowan, New Point, Mo., will offer 44 head; G. B. Rankin, Tarkio, Mo., 13 head, and G. Y. Haggard, Western, Neb., 3 head, including his fine herd bull. Terms, cash; but short time will be allowed by arrangement on day of sale. Auctioneers: Cois. F. M. Woods, J. W. Sparks, J. N. Harshberger For Catalogues, B. O. COWAN, NEW POINT, MO.



BIG COMBINATION SALE 20--Stallions AND Jacks--20 FULL BLOOD, AND REGISTERED. At My Livery Barn, WESTPHALIA, (Anderson Co.) KANS., ...THURSDAY, MARCH 21, 1901, Commencing at 1.30 P. M., as Follows: Imp. Shire, black Percheron, Cleveland Bay, Coacher (registered), standard-bred trotter, Saddle-goes the gait nicely, spotted Arabian—very handsome, good driver, and saddle seated. Mammoth Jack representing the leading families of Kentucky, and Missouri. A lot of 2-, 3-, and 4-year-olds of my own breeding that are as well bred as can be found in America; also one Imp. Catalonian Spanish Jack. Pedigree furnished with every Jack. Stock all well-mated. Good individuals, and serviceably sound, and in the condition to put on the stand. This is a chance to get a good one at your own price. Sale sure to go. Come early and look the stock over. TERMS: Cash. Reference: State Bank, Westphalia; First State Bank, Garnett, Kans. As it is too late to get out a catalogue I will gladly answer all inquiries by mail. Col. E. L. Harriman, Auctioneer. S. A. SPRIGGS.



Glencoe 102841, 1 year, J. W. Ryan, \$330. Swinburn 109741, 1 year, Geo. M. Johnson, De Soto, Iowa, \$300.

D. L. TAYLOR'S BULLS.

Colorado 95746, 20 months, Scharbauer & Aycock, \$360. Pretonian 71784, 4 years, Alex. Moffitt & Son, Mechanicsville, Iowa, \$905.

SCOTT & MARCH'S COWS.

Lavinia 101924, 22 months, J. L. Kay, Marsden, Neb., \$250. Helena 3d 101906, 2 years, J. W. Ryan, Jackson, Neb., \$255.

Winnies 101997, 2 years, D. L. Taylor, Sawyer, Kans., \$250. Adora 101865, 23 months, E. Gray, Waconda, S. D., \$230.

Adelaide 2d 94448, 2 years, J. L. Kay, Marsden, Neb., \$310. Sultana 4th 101674, 2 years, Wm. Humphrey, Ashland, Neb., \$25.

Happy Thought 101905, 22 months, L. H. Pettit, Greensburg, Mo., \$330. Constance 101890, 22 months, J. M. Kitchen, Chanchester, Kans., \$300.

Corona 2d 101892, 1 year, J. D. L. Jones, Belton, Mo., \$255. Loleta 101929, 2 years, A. C. Girard, Belton, Mo., \$230.

Dorothy 101896, 1 year, John A. Home, Chariton, Iowa, \$250. Villa 101990, 1 year, N. J. Fuller, Lawrence, Neb., \$300.

Isabella 4th 101914, 22 months, W. S. Van Natta & Son, \$300. Vineta 101991, 2 years, Geo. W. Way, New Sharon, Iowa, \$350.

Queen Hester 101962, 22 months, W. S. Allen, \$250. Colonel 118111, 1 year, C. J. Johnson, Grand Island, Neb., \$170.

SCOTT & MARCH'S BULLS.

Victor 5th 101986, 1 year, L. Godsey, Whiting, Iowa, \$400. Designer 101894, 2 years, W. S. Allen, Raymond, Mo., \$455.

Roxana 101968, 1 year, J. M. Ketcham, Manchester, Kans., \$315. Victor 6th 101950, 1 year, L. D. Anderson, South Omaha, \$240.

Nabob 93714, 3 years, W. S. Allen, Raymond, Mo., \$375. Misty Morning 101461, 1 year, John L. Kay, Marsland, Neb., \$310.

Lord Roderick 114645, 2 years, N. J. Fuller, Laurel, Neb., \$250. Sir Gibble 118112, 10 months, C. J. Johnson, \$160.

Whittier 118113, 10 months, C. J. Johnson, \$165. Licentio 101928, 1 year, W. S. Allen, \$265.

W. S. VAN NATTA & SON'S COWS.

True Joy 93017, 2 years, Geo. B. Baker, Maryville, Mo., \$290. Miss Fame 96989, 1 year, Geo. B. Baker, \$200.

Phoebe 94793, 2 years, Geo. B. Baker, \$230. Carrie 2d 94461, 2 years, J. L. Kay, Marsland, Neb., \$230.

Vixen 3d 104391, 1 year, J. M. Curtice, Independence, Mo., \$200. Adelaide 2d 94448, 2 years, Windsor Bros., Garden Plains, Kans., \$365.

Red Cherry 106681, 1 year, J. P. Allen, Windsor, Mo., \$155. Christine 69171, 4 years, J. J. Earley, Baring, Mo., \$365.

Miranda 94485, 2 years, J. J. Earley, \$290. Charlene 94463, 2 years, W. H. Armstrong, Maxburg, Iowa, \$425.

Miss Actor 94486, 2 years, O. H. Nelson, \$275. Lady Fame 2d 74225, 4 years, O. H. Nelson, \$330.

Lady March On 96529, 2 years, Makin Bros., Lees Summit, Mo., \$325. W. S. VAN NATTA & SON'S BULLS.

Maceo 3d 107701, 1 year, S. W. Tilly, \$140. Lord Scott 96532, 2 years, O. H. Nelson, \$190.

March On 4th 96535, 2 years, O. H. Nelson, \$200. The Gee Song 86745, 3 years, A. Stuckey, \$180.

Viscount 107705, 14 months, O. H. Way, Canton, Kans., \$125. Gomez 2d 104381, 1 year, C. J. Johnson, Grand Island, Neb., \$155.

March On 15th 107702, 1 year, T. P. Rush, Sweet Water, Tex., \$185. Chrispian 106667, 1 year, Henry Torbay, \$180.

Christopher Jr. 106669, 1 year, W. N. Binney, Cuba, Mo., \$250. Crispo 107697, 1 year, Geo. Horn, Glasco, Kans., \$175.

Red Rock 104389, 1 year, J. L. Kay, Marsden, Neb., \$175. Income 104382, 1 year, J. L. Hepburn, Gaynary City, Nev., \$150.

Bacon 4th 106665, 1 year, M. Spaight, Purcell, Kans., \$195. Sheldon 104390, 1 year, C. H. Way, Canton, Kans., \$100.

Cherry Bounce 104378, 1 year, C. H. Way, Canton, Kans., \$150. Phyllis 106680, 1 year, L. D. Anderson, South Omaha, \$165.

Crisp Cross 107699, 1 year, John Balgren, Morganville, Kans., \$170. Crisp Fowler 112035, 11 months, L. D. Anderson, South Omaha, \$175.

March On 14th 106676, 1 year, W. W. Gray, Fayette, Mo., \$305. Cherry Lad 106666, 1 year, John L. Ryan, Jackson, Neb., \$200.

March On 19th 112047, 1 year, J. A. Funkhouser, Plattsburg, Mo., \$200. 27 cows sold for \$6,870, average \$254.44.

21 bulls sold for \$3,770, average \$179.52. 48 Herefords sold for \$10,640, average \$221.66. STEWARD & HUTCHEON'S COWS.

Cosmo 97410, 23 months, J. Hatfield, McCook, Neb., \$190. Margild 2d 89425, 34 months, J. Hatfield, \$380.

Clemantine 63803, 6 years, Geo. J. Austey, Massena, Iowa, \$550. STEWARD & HUTCHEON'S BULLS.

Duke 91466, 1 year, L. Wolf, Kansas City, \$160. Cherry 94178, 1 year, A. Louetta, Florence, Kans., \$205.

Pet 60187, J. W. Ferguson, Topeka, \$33. Fanny M. B. C. S. F. O'Fallon, \$32. Nellie Golddust, Oviatt Bros., Kansas City, \$72.

W. P. GOODE'S CONSIGNMENT. Hadley You Know 3d 47855, Frank Winn, \$28. Hadley's You Know 47854, Frank Winn, \$38.

Lady You Know 2d 47732, Frank Winn, \$30. Hadley's Queen Faultless 55796, Harry Evans, \$32.

Ida Tamala 43604, W. M. Bickett, Olathe, Kans., \$24. Miss Tecumseh I Know 2d 59906, W. S. James, Concordia, Kans., \$32.

Miss Tecumseh I Know 2d 59907, J. W. Ferguson, \$36. Miss Hadley 2d 60113, Frank Winn, \$35.

Graceful Peerless 47224, Geo. W. Moffitt, Lawrence, Kans., \$34. Chief's Black U. S. Maid, A. B. Mull, Iola, Kans., \$36.

Black Chief's Beauty, E. E. Axline, Oak Grove, Mo., \$46. Chief's Best On Earth, J. M. Furley, Statestung, Mo., \$45.

Chief's Best on Earth 2d, S. F. O'Fallon, \$32. Miss Best Black U. S. 55810, C. P. Shelton, \$50.

Hadley's Chieftess 1st, J. F. O'Fallon, \$41. Chief's Mortgage Lifter, E. O. Callahan, \$150.

Chief's Mortgage Lifter, Kansas State Agricultural College, \$47. Chief's Ideal 126454, T. H. Mastin, Mastin, Kans., \$46.

Miss Peerless I Know, J. P. Shanahan, Stanley, Kans., \$30. Miss Hadley George, P. G. Cross, Merriam, Kans., \$24.

Chief's Choice Queen, John Schrader, Stanley, Kans., \$30. Miss McChief 53901, Oviatt Bros., \$31.

Daisy Wilkes I Know 55807, Frank Winn, \$37. T. H. MASTIN'S CONSIGNMENT.

Wanted You Know, E. A. Hostetler, Marysville, Mo., \$26. Best I Know, C. G. Mills, Pleasant Hill, Mo., \$23.

Lady Oakwood's Sister 54966, Harry Evans, \$25. Pride of Oakwood, J. Schrader, \$26.

Lady Oakwood 54965, Oviatt Bros., Kansas City, \$30. Queen Olga, Dietrich & Spaulding, Richmond, Kans., \$62.

Buttercup, E. E. Axline, \$71. Primrose, J. L. Stratton, Ottawa, Kans., \$39.

Wild Flower, A. M. Jordan, Alma, Kans., \$38. Lady Woldersee, H. W. Cheney, \$38.

An Iowa Breeders' Association Sale. The attention of our readers is called to the announcement on another page of the Clark County, Iowa, Breeders' Association's annual sale of Shorthorns to be held at Osceola, Iowa, on Monday and Tuesday, March 11 and 12, 1901, at which time and place, 112 head of choice Shorthorns will be sold at public auction at the new sale pavilion recently erected near the stock yards.



I Can Sell Your Farm. Residence or Business Property for Cash no matter where located. Send description and selling price and learn my successful plan of selling property. W. M. OSTRANDER, 1215 Filbert St., Philadelphia, Pa

1900, and hence will be only about 10 months old at sale day—a calf out of Maria 2d by Scottish Airdrie, and sired by Se ret of Oakland, a pure Scotch bull that sold at Geo. Woody's sale last spring for \$500. He is what would be called a low-down, blocky fellow, of pure Scotch breeding, and will make a good herd header for some one. It will pay you to keep your eye on him, and place your limit high. The other eight are Rose of Shamus, Young Marys, Desdemonas and other well-known families. It is not often that such a collection of choice young things are offered together.

The Touet offering consists of six cows, two of which are 4 years old, and two 3 years old—all bred to Wild Eyes Duke 5th or with calf at side by him, two yearling bulls by the same bull, and one yearling heifer also sired by Wild Eyes Duke 5th. One of these bulls deserves a special mention, viz.: Lord Roberts, out of one of the good and tried aged cows in the sale, Raclia 13th and now bred again to Wild Eyes Duke to produce another just like him if possible. Mr. Touet says he is undoubtedly the very best bull he has ever put in a sale.

The Keiser Bros.' herd, offered and being dispersed by A. Cooley & Sons, consists of Alice Mauds, Guinares and White Roses. The Keiser Bros. have been breeding Shorthorns for twenty years, and always looked very closely after individual quality, both as to beef and also to milk. They are all large, broad backed, low-down red cattle, and will well repay a close examination. They are Bates foundation, Cruikshank topped, the Keisers having used three or four Scotch bulls in the last ten years.

The Mordica Hill herd, now being closed out by Mr. Hill consists of Prides and Desdemonas, carefully bred for about twenty-five years. Mr. Hill has sold his place as before stated, and now places the result of his twenty-five years of selection and study on the market for what it will bring. This is almost the opportunity of a life time to some young breeder from which to get the stuff to build up a profitable herd and reap the benefit of Mr. Hill's experience.

Remember the time and place, and do not fail to write for a catalogue. Bids may be sent to C. E. Tuttle, care of J. L. Baldwin, Osceola, Ia., or the the auctioneers.

The Next Angora Show. A meeting of the directors of the American Angora Goat Breeders' Association was held at the office of the association, No. 227 Live Stock Exchange, Kansas City, Mo., on February 27.

Those present were T. H. Mastin, president; L. A. Allen, Horace A. Field, C. W. Gettys, W. H. Woodlief, J. M. Stewart, Dr. J. R. Standley, D. C. Taylor, W. G. Hughes, and W. T. McIntire, secretary. The report of the secretary was presented, showing that the association is in a flourishing condition, and that everything is working harmoniously. A motion was made that it be adopted. This motion, being duly seconded, was carried unanimously. Rules and regulations governing the exhibition of Angora goats, to be held at Kansas City, October next, were submitted by the secretary, which were adopted. Some amendments to the by-laws of the association were submitted by the secretary, and adopted.

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DAIRYING IN KANSAS.

(Continued from page 239.)

state was 4,427 acres per county; the average for the seven counties named was 3,622 acres per county. The most striking comparison is that of alfalfa. The average of the state is 2,652 acres per county; the average of the seven western counties was 3,320 acres, or 250 above the average of the state. It is also interesting to note that alfalfa is grown in every county of the state except Haskell and Stevens, in the extreme southeastern portion.

ALFALFA.

From a study of the crops grown in the western counties it will be seen that no system of feeding for this section would be complete without alfalfa. Instead of attempting to devise a system of feeding that would eliminate alfalfa, it would undoubtedly be better to devise means and methods by which a good stand of alfalfa can be secured. The fact that it is grown in practically every county in the state shows its adaptability to our Kansas conditions. During the last few years alfalfa has been made a success on soils and in conditions where heretofore it has been considered a total failure. Perhaps no harder task confronts the alfalfa grower than to attempt to secure a good stand on shifting, sandy soils. An alfalfa enthusiast in Kiowa County has succeeded, after fourteen years of experimenting, in getting a good stand of alfalfa on this kind of soil. The secret of his success seems to be in getting the soil thoroughly packed before seeding, and also after the alfalfa is up. It was noticed that his best stand was when the cattle were compelled to tramp the soil the most. The fact that alfalfa is grown in every county in the state except two, and a number of farmers have made it a success on some of our worst land, means a great deal to the agricultural interests of the state. Where this feed has been tested it has been found not only the cheapest, but the best milk-producer that we have outside of the high priced concentrated meals.

A prominent dairyman of Minnesota visited our agricultural college last winter and while viewing the dairy herd inquired, "What is this hay you are feeding?" When told it was alfalfa and that it contains 10.6 pounds of digestible protein in every 100 pounds, he exclaimed, "It does! Then you Kansas people have a Klondike." Another prominent dairyman who lives in one of the eastern states is said to have made the remark after an extended tour of the United States, that "sooner or later when competition becomes keener, and greater need is realized for lowering the cost of production, the dairy center of the United States is bound to shift to the alfalfa fields of the West." Since there is a greater acreage of alfalfa in the western part of the state than in the eastern, the prospects of western Kansas becoming a dairy district are encouraging. While the yield in this section may not be as large as in the central or eastern portion of the state, it should be remembered that the quality is fully as good if not better. In the eastern portion our farmers are well satisfied with a yield of two tons of clover hay per acre. For feeding purposes this clover is worth only about two-thirds as much as alfalfa, ton for ton. In other words, one and three-tenths tons of alfalfa is worth practically the same as two tons of clover hay. Alfalfa has also the advantage over clover in that it is a perennial and does not have to be re-seeded every two years. Furthermore, alfalfa is a drought-resisting plant, a silent subsoiler, a nitrogen gatherer, and sends its roots down to thirty, forty, fifty and even to over one hundred feet gathering plant food all the way. Considering its value as an improver of the quality of pork, and poultry products in connection with its value in the dairy, makes alfalfa an invaluable and indispensable boon to the western part of the state.

SORGHUM.

This feed can be grown readily in the western part of the state. Statistics show the average yield of the western counties to be over three-fourths of the average of the state. Sorghum is a heavy yielder and the saccharine varieties furnish more succulence than any other dry feed we have. Cattle usually eat the stalks as well as the leaves, which results in but little waste. The question is frequently raised by those who are milking cows, whether sorghum will cause them to go dry. The experience of our experiment station in feeding sorghum hay has been rather limited, but during the short time we fed it we found that our herd of twenty-four cows increased in

the total yield of milk from twenty to thirty pounds per day. They seem to relish the feed and eat it up clean. However, we were very careful to give other feeds rich in protein in connection with it.

No doubt sorghum hay, fed either alone or in connection with corn, will tend to lessen the milk yield, for the simple reason that the cow does not get the kind of raw material she must have to manufacture milk. Since sorghum is poor in protein it is practically impossible to get dairy rations with it without buying some concentrated feed. Doubtless the nearest approach to it is to give the cow what sorghum hay she will eat with eight to ten pounds of grain, composed of one part of oats, two parts soy-beans, three parts cottonseed-meal. Another grain ration to feed with sorghum hay is a mixture of equal parts oats, bran, and cottonseed-meal. The objection to this ration is that at least two-thirds of the grain would have to be purchased. Where circumstances make it desirable to purchase all the grain, eight parts bran and three parts cottonseed-meal can be used.

CORN OR KAFFIR STOVER.

The problem of how to utilize the fodder is an important question on many farms, where there is plenty of stock to "rough" the winter, the problem is comparatively an easy one, even with milk cows on a full feed of alfalfa. It is well to have stover in a rack in the yard from which the cows can eat at will. Where stover is the only roughness, it will require more grain to meet the cows' need than with any other kind of roughness except straw, and since grain is relatively scarce in our western counties, it is highly desirable to provide some other roughness where it is possible. Where stover is the only roughness available, a good grain ration would be twelve to fourteen pounds of grain daily per cow, composed of one part soy-beans, two parts Kaffir-corn, two and one-half parts cottonseed-meal and seven parts oats. Where oats are scarce, bran may be substituted.

PRAIRIE GRASS.

This is grown to some extent in many of our western counties, and although not especially desirable for cows, a fair ration can be had by feeding from eight to ten pounds of grain composed of equal parts of Kaffir-corn and soy-beans. An excellent modification of this ration would be to have the roughness half and half prairie hay and sorghum.

MILLET.

When cut in the hard dough stage, millet makes an excellent hay. It may be fed with the same kind of grain as prairie hay, but since it is somewhat richer, the amount may be reduced 15 to 20 per cent.

ENSILAGE.

There is no more profitable way of utilizing a Kansas crop whether east or west than by putting it into silo. More feed per acre can be produced in this way than by any other method. Ensilage, if well put up, can be kept in good condition for years. It can be stored in small space, is easily handled and is greatly relished by cows. It can be produced at about one-half the cost of roots. It may also be used as a soiling crop in summer and thus save the expense of cutting and hauling green feed every day. Other crops besides corn can be siloed successfully when desired; alfalfa, sorghum, soy-beans, or peas may be cut up and stored away in excellent shape for future use. If there is any place in this country where a silo is needed, it would seem as though that place is western Kansas. It would not only be the means of furnishing stock with a succulent and appetizing feed, but after the first cost of construction of the silo it would aid materially in reducing the cost of keeping. Out of twenty-four different rations best adapted to Kansas conditions, the best as well as the cheapest in both actual cost of feed and the number of acres required to produce it, is one composed of forty pounds corn ensilage, fifteen pounds alfalfa hay, three pounds Kaffir-corn, and one-half pound soy-beans, daily per cow. This ration is especially desirable for western Kansas in that it requires but three and one-half pounds of grain.

CORN OR KAFFIR-CORN.

Statistics show that a fair yield of corn can be obtained even in our western counties. The yield averages from one-half to two-thirds of the average of the state. No figures are given as to the yield of grain from Kaffir-corn. Eleven years' of experience at the Kansas agricultural college farm (upland) shows that we may expect about twen-

ty-five per cent greater yield from Kaffir-corn than from corn. In the drier sections this percentage of yield will doubtless be greater for the reason that Kaffir-corn is a drought resister and matures a crop when corn is a complete failure. Corn or Kaffir-corn is an ideal grain to use with alfalfa and experience has shown that it is one of the most economical combinations known to the modern cow feeder. Alfalfa and Kaffir-corn are the salvation of our western country. A western Kansas farmer in a location, if there be such, where he can not grow either one, has little hope of success along dairy lines, and it is to be questioned whether he has hope along any other agricultural lines.

SOY-BEANS.

This is comparatively a new crop. The yield is not so very large, which has a tendency to discourage some farmers from growing them, but it should be borne in mind that the grain is richer, pound for pound, than oil-meal and in feeding operations can be made to take the place of oil-meal. Soy-beans can be raised anywhere corn will grow, and since corn is produced in every county in the state, soy-beans ought to be raised wherever a highly concentrated meal is needed. Where alfalfa is abundant there is less need for soy-beans, although they are then sometimes desirable for variety's sake, but where alfalfa is not abundant they should become a staple crop to supply the nutrients required by the cow.

OATS.

In 1899 oats were grown in every county in the state except one. Oats are excellent feed for any kind of stock and can usually be made to take the place of bran. The only objection to them is that they are liable to be too high priced for cows.

BARLEY.

We have had no experience at the Kansas Experiment Station in feeding barley to cows, but judging from its composition and from the experience of those who have fed it there is no doubt but that it is a most excellent feed.

After a study of the conditions that exist in western Kansas a person realizes that very fair crops can be raised, and with the adoption of new methods applicable to western conditions, such as windbreaks and subsurface packing, which not only firms the soil but greatly lessens its liability to drift with the wind, there is no doubt but that these yields can be greatly increased. Follow this with the erection of a silo, a persistent and determined effort to grow alfalfa in connection with sorghum, Kaffir-corn and barley, and western Kansas will be a land that will flow with milk and honey, and while the cow owners may not all become millionaires at once, they will make a very comfortable living and at the same time live in a climate that is unexcelled as a health resort, which is more than thousands upon thousands of our city friends are able to do.

Utilizing Skim-Milk on the Farm.

M. L. DICKSON, EDGERTON, KANS.

In the discussion of this question we will first notice the composition of whole milk. It is my opinion that if the farmer thoroughly understood the composition of whole milk, he would be in a position to handle skim-milk more profitably. Many farmers apparently believe that whole milk consists simply of butter fat and water. The chemists tell us that milk is composed of the following substances: Water, 87.4 per cent, fat 35; casein and albumen 34; milk sugar 5; ash 7; and a few other minor substances which are of little importance and will not be considered in this paper.

The components of milk, less the water, are known collectively as the total solids and make up from 12 to 15 per cent of the whole milk. The total solids less the fat, are known as the non-fatty milk solids.

The milk serum includes all components of milk less the fat. Thus the skim-milk is milk serum, plus a very small portion of fat, which varies according to the manner of skimming. The total solids of skim-milk equal about 9.75 per cent.

REPLACING THE BUTTER.

The question arises with the farmer, what to do with the skim-milk, and is answered by saying, replace the fat and feed same as whole milk. In fact the farmer must skim off the fat and replace it with cheaper feed, for it is impossible to produce beef or pork at a profit with feed worth five times as much per pound as the beef or pork.

What will take the place of butter fat? There are a great many substitutes, some manufactured and a great

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many more substitutes that are cheaper and home grown. I see that many writers on this subject recommend flaxseed jelly for very young calves, while others recommend Blackford's stock food. The Kansas experiment station reports raising just as good calves without these preparations as with them, however, if whole milk can not be obtained for very young calves, i. e., calves less than a week old, I would feed flaxseed jelly, which is made in the following manner: Mix the ground seed with cold water, making a thick gruel, then add boiling water and allow to steam a few hours with cover on pall. A teaspoonful is enough at first, but it may be increased gradually to 1/2 pound of meal daily per head. Oil-meal, bran, Kaffir-corn, corn-meal, and oats are some times used. I prefer Kaffir-corn or corn-meal on account of the effect on the bowels.

I have raised some excellent calves on skim-milk and oats, but oats are usually too expensive. I raised a fine bunch last spring on bran, but had to be very careful not to overfeed and cause scours. These calves sold, when seven months old, for an average price of \$15.20 per head. Four steers brought \$18 each.

Calves at two months old will eat shelled corn. We are now feeding skim-milk, shelled corn and mixed hay, and the calves are doing nicely. I am in doubt whether it will pay to grind corn for calves after they reach that age.

In addition to the feed named, calves should have free access to clean water and salt. They will drink a little water when only a few days old, and the feeder should not be deceived by the notion that the milk furnishes all the water necessary. I don't believe in feeding any kind of patent stock feeds to anything unless it is sick. A well man does not care to have medicine

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mixed in his food; neither does a well calf or pig care for such. The balanced ration fills the bill; then why add anything more.

My advice to the Kansas dairyman is—arrange to raise all your feed—then arrange to feed all you raise.

**SKIM-MILK FOR VARIOUS ANIMALS.**

Skim-milk may be fed with more or less profit to all domestic animals. Even my milk cows and horses drink it with a relish, though I don't make a practice of feeding it to horses. Every farmer must decide for himself what class of animals will return the greatest profit for food consumed.

The profit per hundred pounds of skim-milk, of course, varies according to the market price of the animal. I believe that the best plan for the Kansas farmer is to raise all the calves from his own cows and feed the surplus milk to hogs.

This brings us to a subject I have had considerable experience with in the past four years.

Some two years ago I bought at public sale 33 head of hogs, averaging 85 pounds each, for \$3.42 per hundred weight, or \$93.93. These hogs were fed just 65 days and consumed during that time 250 bushels of corn, worth 28 cents per bushel, or \$70, and 50 gallons skim-milk per day, costing 1/2 cent per gallon at creamery, or \$16.25. The total cost of feed consumed was \$96.25 and the hogs weighed 200 pounds each; sold for \$3.10 per hundred pounds, or \$204.60 for the whole lot.

**HOG'S GAINS.**

The figures show that these hogs gained 18 pounds daily per head for the feeding season, and while the gain is not an extraordinary one, I know many farmers who are pleased with a gain of 4 or 5 pounds per head per week and think they are making money. The profit in this transaction may be figured as follows:

Selling price .....	\$204.60
Purchasing price .....	\$95.93
Cost of feed .....	86.25
Total cost of hogs .....	132.18

Actual profit ..... \$ 22.42

These figures show that with skim-milk comparatively high priced corn can be fed to 3 cent hogs with a profit.

**BALANCED RATION.**

I was not satisfied with the small profits, so determined to feed something approaching a balanced ration, for I was convinced that hogs putting on the second hundred pounds should gain at least 2 pounds per head daily. About a year ago when hogs were high in the Kansas City market, I had 24 head that averaged 200 pounds each. The hogs were doing so well that I concluded not to sell them, but make them weigh 300 pounds. I had heard many times that it did not pay to put on the third hundred pounds and was anxious to try it for myself.

The hogs were fed forty-five days longer and consumed during that time 120 bushels of corn at 25 cents, and 1,000 pounds shorts worth 70 cents per hundred pounds, also a little salt, wood ashes, and 4 gallons skim-milk per day worth 90 cents, and plenty of water. At the end of forty-five days the hogs weighed 308.33 pounds each and sold for \$3.70 per hundred pounds. The following is the result:

Selling price .....	\$273.80
Value at beginning of forty-five days .....	\$199.20
Cost of feed .....	37.90
Total cost of hogs and feed .....	237.10

Actual profit ..... \$ 36.70

It will be noticed that in forty-five days the market fell 45 cents per hundred, a speculative feature of the business which greatly reduced the profit of the operation.

By compounding this result with that of the first, these heavy hogs gained the third hundred pounds quicker than the light hogs gained the second, which is contrary to the rule. The first lot gained 1.8 pounds daily per head at a cost of 2.3 cents per pound, while the second lot gained 2.4 pounds daily per head at a cost of 1.5 cents per pound. But why this great difference? How did we get such a remarkable gain? I confess I was very much surprised myself and only regret that I am unable to furnish the gain and cost of feed for the second hundred pounds.

**COMMON HOGS.**

I am often asked the question, can we expect such results from common hogs? i. e., hogs of no particular breed. My answer is, "No." The idea of getting good results from scrub hogs is just as erroneous as getting good results from scrub cattle. The hogs in question were high grade Poland-

Chinas and were prepared for full feeding by having three months pasture with a swill made of skim-milk and water, with no bran, shorts or grain of any kind. This gave them large, lean frames with very large, capacious stomachs. I believe a hog needs a large stomach in order to consume large quantities of feed and convert it into fat, and I have yet to find anything equal to skim-milk for that purpose.

**PRODUCE YOUR OWN PROTEIN.**

Again I am asked, is it possible to reduce the cost of producing a pound of pork below the figures given? I answer, "Yes."

"How?" By producing your own protein. Instead of buying shorts, raise alfalfa, soy-beans, or red clover, and produce all the skim-milk possible. The true dairy farmer leads all others in the cheap production of pork. Mr. H. B. Gusler, the well known Illinois dairyman, has proven beyond a doubt that 16 pounds of skim-milk fed alone to pigs will make one pound of gain. This at present price of hogs, would make the milk worth 28 cents per hundred pounds.

All authorities on skim-milk feeding are agreed that there is a greater gain where skim-milk is used in a combination ration and my own experience just recited convinces me of the truth of this statement. As a rule good, thrifty pigs will make about double the gain on a combination ration as against skim-milk alone. For an example, I borrow from "Gusler's American Dairying" the work done by Mr. C. P. Goodrich, of Fort Atkinson, Wis: "A bunch of six months old pigs weighing 125 pounds each were divided into 3 lots as nearly equal as practicable. Lot one was fed entirely on skim-milk and made 5 pounds growth from 100 pounds skim-milk. Lot two was fed entirely on corn and made ten pounds growth from one bushel of 170 pound ear corn. Lot three was fed skim-milk. This combination produced 8 pounds of growth. This illustrates very nicely the economy of feeding a combination ration. When the bushel of corn and the 100 pounds of skim-milk were fed separate they made 15 pounds growth. When combined they made 18 pounds of growth. Here is 20 per cent better results obtained from the combination of feeds."

Mr. Gusler further writes: "And this is not all the meat in this nut by any means, as the farmer can feed three times as many pigs when he feeds 1 bushel of corn to 100 pounds of skim-milk as he can when he feeds clear skim-milk, as the bushel of corn has in this case twice the feeding value of the 100 pounds of skim-milk."

**WARM SKIM-MILK.**

Skim-milk should always be fed warm and sweet to calves. A man's own judgment ought to tell him this. It is not necessary for the milk to be either warm or sweet when fed to hogs, though I prefer it sweet if not warm. If it is to be fed sour, feed just as soon as it reaches the loppered or coagulated stage. The only reliable work that I have been able to find along this line was done by the Vermont Experiment Station. At that station Cook fed sweet and sour milk to pigs, there being 3 animals in each lot in the first trial and 4 in each lot in the second. The sour milk was allowed to reach the coagulated stage before feeding.

In the second trial the results were practically equal; in the first trial the pigs getting sour milk gave better returns, says Prof. Henry, in "Feed and Feeding."

Of these trials Cook writes: "It was evident within three weeks after the pigs were put on the separate diets that those having sour milk were eating their feed with a better relish, were looking slicker and growing faster, although both lots ate their food up clean." In commenting on this Prof. Henry writes: "The evident superiority of sour milk over sweet milk for pigs—feeding in most cases at least—awaits explanation from the investigators."

For my part I came to the conclusion long ago that the sooner milk was fed after being drawn from the cow the better for the animal consuming it.

**DISCUSSION.**

Mr. Otis:—I would like to ask if there is any greater advantage to be derived from the use of flaxseed jelly than straight corn-meal?

Mr. Dixon:—I have had no experience with flaxseed jelly. I had it recommended to me by different parties. I have heard of it, but have never used it. I am satisfied to use corn-meal and Kafir-corn meal. I understand that flaxseed jelly answers the same purpose and is a great deal cheaper feed.

Mr. Priest:—Up to probably a year ago, I fed Injun meal and bran in connection with skim-milk to calves, but after our Prof. Curtis was here to our butter-makers' convention and addressed us on the subject of calf feed, I discarded bran and went to feeding pure corn-meal, or corn and cob meal, in connection with the skim-milk, and I like it just as well and it is cheaper. We raise it ourselves; raise the corn, grind it ourselves. It saves the expense of buying the bran, and I think it just as good.

Mr. Dixon:—The fact that a man raises anything, don't necessarily make it the cheapest feed. We can have a balanced ration for cattle, horses and hogs, or the human family can be fed on a balanced ration, but we must take into consideration the cost of a balanced ration. Corn is considered pretty cheap, but a good dairyman will not feed corn to his cows; for my part, I do not feed it at all when it is 30 cents a bushel.

Mr. Priest:—When corn is worth 30 cents, you do not feed corn to cows?

Mr. Dixon:—No, sir.

Mr. Priest:—What do you feed?

Mr. Dixon:—We are getting a little off the subject just now, but if the gentleman wishes me, I will say we are feeding bran, cottonseed-meal and sorghum hay. Of course, we change our feed at times, but at the present time we have that for a basis. We make it 3 pounds of bran, 3 pounds of cottonseed-meal, and 20 pounds of sorghum hay.

Mr. Priest:—I would like to ask what he would feed in place of bran if he had plenty of alfalfa hay for feeding.

Mr. Dixon:—I haven't fed any alfalfa hay. I have a piece on the farm and expect to feed it another year; expect to feed corn with it; in that case corn makes an excellent compliment to go with alfalfa.

Mr. Priest:—At 30 cents a bushel?

Mr. Dixon:—I don't know. I haven't figured on what it will be worth a year from now.

Mr. VanLeeuwen:—I would like to ask in regard to cottonseed-meal. I was talking some our patrons into it. They say they are afraid of having trouble with it, or that their stock will be injured. I desire to ask if Mr. Dixon had any injurious effect, and how much he feeds, and whether he feeds it to young stock and calves.

Mr. Dixon:—We don't feed it to calves as a general thing. I feed my calves a little bran and cottonseed-meal, and we have never had any ill results of any kind. I don't aim to feed over 4 pounds a day to any one animal, but I know of where they fed 13 pounds without any ill results. When I got it the whole community told me the cattle would go blind and would die, and that I would lose my calves. I haven't had any of these things happen so far. If a man wants to investigate this he can get a bulletin upon the subject.

Mr. Borman:—I have fed an average of 6 pounds a day without evidence of any ill results. I have fed 8 pounds of cottonseed-meal a day to 1 cow with no result except a big milk flow. That is what we are looking for. The Texas Experiment Station has been making very extensive experiments on that line. They have fed 14 pounds of clear cottonseed-meal. Cottonseed-meal is one of the principal feeds in Texas, for there it is cheap.

Mr. VanLeeuwen:—I want to get some information on that question. Right at the present time cottonseed-meal is one of our cheapest feeds. I was down in Texas a short time ago, and I took a great deal of pains to inquire. I talked to as many as I could about the feeding of cottonseed-meal down there, and I found some that said they had had injurious results from feeding it, and I may have jumped to the conclusion that it will cause trouble when it will not, but we can get in car-load lots, cottonseed-meal laid down in Kansas for about \$21.50. I got prices of that kind. We can use cottonseed-meal for \$1.20 per hundred. It contains from 27 to 30 pounds of protein to every 100 pounds of meal; that is about 40 per cent protein. If it costs \$1.20 per hundred, that is protein for 2 cents a pound. On that basis, corn is worth from about 16 1/2 to 17 cents a bushel for feeding milch cows.

Nothing so thoroughly removes disease germs from the system as Prickly Ash Bitters. It gives life and action to the torpid liver, strengthens and assists the kidneys to properly cleanse the blood, gives tone to the stomach, purifies the bowels, and promotes good appetite, vigor and cheerfulness.



**PURIFY THE BLOOD**

If you would have health and energy in hot weather you should see to it in the early Spring that your blood is pure and vital organs strong and active.

**PRICKLY ASH BITTERS**

**IS THE GREATEST BLOOD PURIFIER ON EARTH.**

The efficacy of this remedy in purifying the blood and putting the system in order is without a parallel in the medical world. So thorough and far-reaching is it that it carries its great cleansing and regulating influence to every part of the body, casting out impurities that have resulted from Winter diet, purifying the bowels, strengthening the kidneys, liver and stomach, and preparing the entire body to resist the disease germs which come with warm weather. Those who use this great purifier during the Spring months will stand the heat better and be free from the debilitating ailments which invariably attack the body that is clogged up with impurities.

**SOLD BY ALL DRUGGISTS.**

**PRICE, \$1.00.**

**Wonderful Values IN PARLOR ORGANS.**

The world's largest music house, Lyon & Healy of Chicago, to sharply reduce stock is offering unprecedented values. Fine Lyon & Healy Organs formerly bringing \$65, now \$35; Organs formerly \$75, now \$42.50.



**Note How This Organ is Made.** It has 5 full octaves and 11 stops; the action contains 2 full sets of reeds, embracing 122 reeds in all. The 11 stops are as follows: Principal Diapason, Dulciana, Principal Flute, Diapason-forte, Cremona, Medoda, Celeste, Vox Humana, Treble Coupler and Bass Coupler. These are capable of producing the greatest possible varieties of tone with various degrees of modulation. There are no "blind stops" on this organ; they are all active and important. There is also a Knee Swell and a Grand Knee Stop. The case is a model of neatness and beauty and is made of finely finished solid Oak. It is 60 inches high, 28 inches deep and 43 inches wide. We make the terms of payment so easy that anybody can buy one. Ask your dealer for our Parlor Organ Style 100. If he does not have it write direct to us and we will see that you are supplied. Catalogue of Parlor and Church Organs FREE. Used Organs from \$10 up. The freight on an organ is a very small matter. We ship organs everywhere. Remember when you buy an organ from us genuine musical worth is assured. Be careful to avoid the imitations now on the market. Don't fail to write today for bargain list.

**LYON & HEALY, 15 Adams St. CHICAGO, ILL.**

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. Neills.....Secretary and Treasurer

SUBSCRIPTION PRICE: \$1.00 A YEAR.

E. B. Cowgill.....Editor H. A. Heath.....Advertising Manager W. B. Roby.....Circulation 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. Electrotype 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 W. 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. Come, let us immediately double the circulation of the "old reliable" KANSAS FARMER. Address, Kansas Farmer Company, Topeka, Kans.

The legal battle in Kansas against the joints is likely to be waged more successfully than in the past on account of the drastic new laws just enacted.

The date selected for the Nebraska State Fair is August 30 to September 6, 1901. Under the management of Secretary Robert W. Furnas, the Nebraska fair is always a success.

The Kansas semi-centennial proposition received what will probably prove its death blow when the legislature a few days ago defeated its bill calling for the appropriation of \$300,000 to its promotion.

The great exposition to be held at St. Louis in 1903 celebrating the Louisiana purchase secured an appropriation of \$5,000,000 at the hands of congress. Five hundred thousand dollars was appropriated to the Buffalo exposition and \$250,000 to that at Charleston in the same bill.

Congress adjourned without passing the annual river and harbor bill appropriating \$50,000. This has of late been frequently called the "river and harbor steal." It was talked to death during the closing hours of congress.

THE NICARAGUA CANAL.

One of the measures of great public importance which has thus far failed to receive final favorable action in congress is the Nicaragua canal bill. This canal has a peculiar interest to the middle west. Aside from the probability that a considerable part of the agricultural exports of this part of the country will likely find a cheap route to market through this canal, the existence of the canal will so develop Gulf commerce as to add greatly to the importance of southern trade centers. The consequent development of transportation routes to the Gulf will cheapen rates from the food-fields to tide-water. Herein lies the greatest advantage likely to accrue to the farmers of Kansas; and herein lies an adverse interest which may be potent in delaying action on the canal proposition. Transportation companies have their routes to the East well established, and they are

strongly supported by Eastern commercial and financial interests.

There is also a foreign diplomatic impediment to immediate action on the great canal. About a half century ago the United States entered into a treaty with Great Britain. This is generally referred to as the Clayton-Bulwer treaty. It declares that the contracting parties will not erect fortifications on the banks or in the vicinity of the proposed canal, they will not assume dominion over Nicaragua, Cost Rica, the Mosquito coast, or any part of Central America.

It was thus expected that the canal would be constructed by a corporation. It now appears that when built the work will be done at the cost and by direction of the Government of the United States, and that this country will own and control the property when completed. This will make fortifications necessary.

But here the Clayton-Bulwer treaty arises to plague the canal promoters. Some have declared this treaty inoperative and have advocated building and fortifying the canal without reference to Great Britain's supposed rights or interests in the matter. The President has, however, taken a different view and has had negotiated a new treaty for the purpose of adapting foreign relations to present conditions. This new treaty was, by its terms, to have been ratified by March 5, 1901, otherwise to lapse. No attention has been given to the question of its ratification, in England. Possibly an extension of the limit may be obtained so that the work will not have to be gone over from the beginning.

It will thus be seen that while the Congress of the United States doubtless feels rich enough to appropriate the hundred or more millions necessary to build the canal there are many artificial obstacles raised which have thus far prevented more than the preliminary surveys.

Possibly the apathy in England in respect to the treaty may be suggested by English capital invested in American transcontinental railways. If this is the case the policy is shortsighted to a degree not generally chargeable to John Bull. Through traffic on railroads is much sought and is desirable. But experience proves that the enduring prosperity of railroads is most promoted by the development to the highest degree of the localities through which the railroads run. Nearer markets always develop the industries of a country and cause increase of population. On these the volume of local business and the origination of through business in these localities depends. The Englishman will do well to invest his money in enterprises leading towards the Gulf, and withdraw his objections to the big canal, a work needed by all the world, but which in the nature of the case must be built, owned, operated and defended by the United States.

HOW MANY PIGS PER ACRE OF CLOVER?

EDITOR KANSAS FARMER:—Will you please tell me through your valuable paper how many acres of clover it will take to pasture about 50 head of spring pigs through the summer, with some grain, and what would be the best to sow in an old pasture, to pasture hogs on this summer? A SUBSCRIBER, Eudora, Kans.

In Subscriber's part of Kansas, clover on good land is expected to pasture about 10 head of pigs per acre under conditions named. As the pigs increase in size it will be profitable to increase the allowance of grain. If there shall come a very long dry spell the clover may need protecting by the liberal use of grain.

One of the best ways of renewing an old pasture is to sow clover, English blue-grass, orchard-grass and perhaps other seeds and loosen the soil. The old grass roots are usually benefited by the cultivation and the seeds are enabled to start. It is better to keep stock out of such pasture until the grasses have started well, and to pasture but lightly the first season.

Mr. J. G. Haney, who has been the efficient assistant in field and feeding experiments at the Kansas Experiment Station, has accepted the position of agricultural expert for the Chihuahua and Pacific Railroad Company in Mexico. He receives a much larger salary than the state paid him for his services at Manhattan. The removal of Mr. Haney to Mexico will deprive readers of the KANSAS FARMER of many valuable contributions with which he has favored this paper. Agriculture along the line of the Chihuahua and Pacific railroad will be greatly benefited by his labors.

Wheat Fields in Asia.

A group of German, a group of French banks and a syndicate of Belgian capitalists are at present occupied with the opening of the vast territories of Turkey in Asia by the construction of railways. The aim in view is as in the past, Minnesota, Dakota and Buenos Ayres were converted by the construction of railways into great grain-producing countries from being waste prairie land, so in a similar manner to call into existence the dormant agricultural wealth of the Euphrates Valley, by providing an outlet for its produce on the international market. It would appear that Asia Minor is destined to rival, or, perhaps, displace the United States as the great grain producing country of the world. According to a German authority in Babylonia, renowned of old for its fertility, there are 60,000,000 acres of rich alluvial soil admirably adapted for the production of cereals. The same writer calculates that when the railway is open and the agriculturist has a ready market for his produce, in good years the latter will be able to sell wheat at 20 cents per 100 pounds without loss. In order to realize the consequence of this low price on the international market, we must remember the distance the goods have to be transported by rail is only very moderate, the average being about 320 miles, while the distance of Dakota from New York is more than six times as great. The sea voyage by the Mediterranean is also shorter than that from any of the other great grain shipping ports of the world. Another German writer, Dr. Ruhland, calculates that wheat from the fertile plains of the Euphrates will not cost more than \$20.50 per ton delivered to central Europe, to which, he says, if we add the duty—\$13.50 in France and \$8.50 in Germany—we shall have respectively \$34 and \$29 per ton as the market price, whereas \$48 are required at present if the farmer is to pay his expenses. Dr. Ruhland recalls the example of Argentina; financial groups in Europe boomed the country; millions of pounds were borrowed and gaily spent, until at last the terrible crisis came; the exchange went up to 364 per cent, and in the years 1893 to 1894 the international value of wheat receded in a manner that could never have been anticipated, for an inflated depreciated paper currency operates as an export premium. In Anatolia and Mesopotamia the capitalists are pursuing the same methods, and should they be followed as would appear probable by a similar crash when Babylonia is one of the granaries of Europe, who can say "what will be the effect of a great crisis involving the whole of the commercial community?" The learned doctor conjectures that under such circumstances the price might sink to \$14.25 per ton.—Bradstreet's.

Wheat-raisers are not likely to take sudden nor violent alarm at the prospect of the rejuvenation of Babylonia, nevertheless readers of the KANSAS FARMER would like to hear from Mr. C. Wood Davis on the above representations.

OUR SPECIAL OFFER.

Some farmers not regular subscribers will receive a copy of the KANSAS FARMER this week complimentary. We do this to make your acquaintance, and when we do we want you to read the FARMER if you like it. We also want you to ask your neighbor to read it. Don't you believe it will be money in your pocket to read it? Don't you believe by improved methods in farming you can grow more and better crops?

Then get 50 cents from your neighbor, put 50 cents with it, send us \$1.00 and we will send you both the KANSAS FARMER one year. At least one of you must be a new subscriber.

Ft. Worth Stock Show.

The special prizes of \$25.00 each offered by the Pasteur Vaccine Company for the best Texas bred and raised Hereford and Shorthorn yearling in the show were won by Messrs. W. S. & J. B. Icard, of Henrietta, Texas, with their yearling bull, Warrior 5th, and by Col. J. V. Burgess, of Fort Worth, Texas, with his Shorthorn heifer, Cambridge Rose 8th.

The special prizes of \$10.00 each offered by the same company for the best grade Hereford and grade Shorthorn yearlings, Texas bred and raised, were won by Mr. Tom Hoben, of Nocona, Texas, and Mr. V. O. Hildreth of Aledo, Texas.

The Pasteur Vaccine Company is well known among cattle raisers on account of its celebrated blackleg vaccine which was first introduced into this country in 1895. Since that time over two million calves have been successfully treated in the United States and Canada with "Pasteur Vaccine." The company is just issuing some fresh literature which should be

read by every cattleman. It will be mailed free on application to its head office in Chicago, or to its branch offices at New York, Omaha, Kansas City, Fort Worth, and San Francisco.

Zeigra Bros.' Poland-China Sale.

The second annual Poland-China sale by Zeigra Bros., McCune, Kans., on February 27, was in all respects a decided success, as the writer prophesied from the first it would be. Seventy-two head were sold under the hammers of Col. Geo. W. Null, Odessa, Mo., and Col. J. C. Bogard, McCune, Kans. There were 27 yearling bred sows, 13 young boars, and 32 fall gilts, sold open. The 72 head sold for \$1,683.50, an average of \$23.38. The highest price, bred sow was No. 17, by Western Wilkes, out of Sander's Lady, bred to Crawford County Chief, a Tecumseh-Wilkes boar of grand proportions and excellent breeding qualities, that went to E. E. Axline, Oak Grove, Mo., for \$75. The highest priced boar was No. 64, by Crawford County Chief, and out of Actress Corwin; Seely Brown, Coffeyville, Kans., being the buyer at \$51.

Many of the animals went for less than their actual value, but, nevertheless, a good healthy average was maintained. A notable feature of this sale was the fact that a great many of the offerings and many of the good ones at that, went to the farmers adjoining McCune, showing that they are alive to the fact that it pays best to raise good hogs, and was evidence of the missionary work which has been done in that section by Zeigra Brothers, who made the sale.

The following were the buyers at the sale: James Carey, B. B. Jordan, Ed. McDaniel, J. J. Walter Hartman, J. A. Elliott, W. J. Shaw, Chas. Westfall, M. A. Coblantz, McCune, Kans., W. A. Mathis, 3, Braunsdorf Bros., R. R. Baldrige, Parsons, Kans., A. A. Morgan, J. M. Morgan, 5, Chetopa, Kans., A. D. Mathis, 2, C. G. Boore, Dave Shafer, Monmouth, Kans., W. L. Scammon, 2, Cherokee, Kans., W. P. Weymes & Son, Mound Valley, Kans., R. W. Preston, Walnut, Kans., H. B. Henderson, 4, Joseph Jackson, Frank Hoover, 2, Columbus, Kans., Wm. H. Warters, Shannon, Kans., J. E. Ledford, J. W. Brown, Mineral, Kans., Adam Andrews, 2, Girard, Kans., J. S. Foutz, Labette City, Kans., Oscar Darr, 3, Magda, Kans., E. E. Axline, Oak Grove, Mo., W. O. Wayman, Odessa, Mo., A. M. Duncan, 2, Weir City, Kans., F. D. Kinworthy, Avon, Ia., H. A. Braunsdorf, 2, Dennis, Kans., Henry Stucky, 2, Pleasant View, Kans., G. B. Roney, 2, Hallwell, Kans., Seeley Brown, 2, Coffeyville, Kans., Casper Christensen, Cokedale, Kans.

Gossip About Stock.

E. E. Axline, Oak Grove, Mo., has secured judgment against the U. S. Express Company for \$1,000 for the herd boar, which died in transit.

Notice advertisement of J. F. Davidson, of Hannibal, Mo. He offers a Sphinx stallion for sale; he also offers six finely bred mares. Write him for complete descriptions.

The Woodard & Shanklin sale of trotters closed last Friday afternoon, February 23. During the four days 333 head sold for \$80,838. Seventy-two head were sold for an average of \$161.

D. V. Turner, of Frederick, Rice County, Kansas, has sold his entire herd of Hereford cattle to Scharbauer & Aycock, Midland, Texas. This firm first purchased 12 calves for \$1,300 and afterwards 15 heifers and the herd bull for \$4,000.

Kansas Farmer readers will bear in mind the fact that Gallant Knight is now the chief herd bull in the Elderlawn Herd of Shorthorns at Dover, Shawnee county, Kansas, owned by our old friends and advertisers, T. K. Tomson & Sons.

Mr. G. W. Brown, of Indianola, Iowa, says that he and Randolph Bros., have purchased the Scotch Cup bull that Mr. Milton E. Jones, of Illinois, has had at the head of his herd. Mr. Brown also secured Fancy Cup, a son of Scotch Cup, out of one of Mr. Jones' Fox Glove cows.

As an example of what can be done by properly caring for and breeding a single animal, we point to the studs of John Warner, of Manhattan, Kans. Mr. Warner has a bunch of draft, saddle, and roadster-bred horses, several of which are sufficiently graded up to make them eligible to registry, and all descended from one mare.

J. D. Marshall, of Walton, Kans., has the following valuable animals for sale: Two 10-month-old boars by "Miles Look Me Over" and "Fingers Off," prize winners at Wichita, Eldorado, Burden, Newkirk, O. T., and Newton the fall of 1900. Two "Elm Lawn Maid" boars, September farrow, extra nice. Twenty "Look Me Over" gilts, some bred, some unbred. All a choice lot.

Hog stealing has been so prevalent in this county for a couple of years that farmers in the vicinity of Otego and Burr Oak decided to make an effort to locate the thieves. As a result of the efforts of Frank McGrath, who was put on the trail, warrants were served on five young men, Harry Bond, Lewis Bunker, Rush Castor, Omer Douglas and Jack Molcin are the five suspected.

The two-days' combination sale of Short horns at Manning, Iowa, resulted in the sale of 103 head for \$11,545, an average of \$110.91. The highest price paid was \$1,000 for the show heifer, Rose Sterne 4th, but as she was not catalogued the price does not appear in the average. She was sired by Gallant Knight and out of an imported Thistletop dam. She was purchased by C. L. Marston, of Mason City, Iowa.

The C. N. P. Bowsher Co., South Bend, Ind., call attention to the forty-four head of cattle sold on the Chicago market by C. C. Palmer, of Eddyville, Iowa, on February 21. They brought \$6,000, which was thirty cents higher than any other sale quoted that day. Mr. Palmer says they were fed on corn-and-cob-meal ground on a No. 8 Bowsher mill, and they had had no special cattle feeds of any kind.

Mr. J. P. Maple, Jr., is a prominent

breeder of Shorthorn cattle at Schuyler, Neb., who made some good purchases at the Clarinda and Shenandoah sales of last week. Mr. Maple also breeds the best class of Poland-Chinas. He secured the two best sows in the Moffit & Priest closing out sale at Shenandoah, Iowa. Mr. Moffit's young but valuable and well trained Scotch Collie dog fell to Mr. Maple's bidding at \$18.50.

We are very glad to call attention to the "ad." of Heesen Brothers & Co., which appears elsewhere in this issue, offering their "Wolverine" Hog Ringer. By owning and using one of these inexpensive affairs, it is possible to absolutely prevent the hogs rooting when turned out. The season for this will soon be here, and we advise all hog owners to write to Heesen Brothers for prices and free circulars. In doing so, kindly mention this paper.

Among the buyers at the recent closing out sale of Moffit & Priest at Shenandoah, Iowa, Kansas was well represented by M. K. Nichols, of Holton, who secured "Sir Wallace," a young Princess bull at \$200, and two Mazurka cows at \$200 and \$150 each respectively, to add to his herd. Kansas breeders will go a long way to get these good things and are satisfied only when they are in possession of them. "The best is none too good" for Kansas.

Messrs. Stewart and Brown, Newton, Iowa, are making a special offering of Cotswold ewes. They also have on hand some gilt-edged Shire stallions and young Shorthorn breeding stock. At the recent Shorthorn sale held at Audubon, Iowa, this firm bought the highest priced animal, \$232.50, the Crocus cow Red Rose 2d, a 6-year-old, and easily one of the largest females of the breed in Iowa. In good form her weight approximates a ton. She was sired by the Golden Drop bull, Golden Shield, of Col. Harris' breeding.

It is not always that wrong is made to be right by the courts. An instance of this fact is, that E. E. Axline, Oak Grove, Mo., on Monday, February 25, secured judgment in Judge Henry's division of the Jackson County, Mo., district court, against the United States Express company for \$1,000 and costs. A year ago this spring Mr. Axline sold to E. H. Ware of Douglas, Ill., the famous Poland-China sire, Missouri's Black Chief, for \$1,000, and shipped him via the United States Express company. The hog died in transit and Mr. Axline brought suit to recover the amount with the above result. This is in line with another decision about a year ago in favor of Bob Young, of St. Joe, in a very similar case.

No breeder of Shorthorn cattle in the West is more favorably known as a conscientious and skillful breeder of thoroughly up-to-date Shorthorns than Mr. B. O. Cowan, New Point, Mo. It will be remembered that he was selected by the American Shorthorn Breeders' Association to inspect the cattle offered for sale, to go in the first annual sale held under the auspices of the association at Kansas City last November. He is also known as the successful exhibitor at leading western state fairs. In this week's Kansas Farmer he makes announcement of a public sale of well-bred selected Shorthorns to be held at Kansas City on Friday, March 29, 1901. Address him for catalogue at New Point, Mo.

The last call for the next great Kansas sale of Shorthorns is the 17th annual by Gifford Bros., to be held at Manhattan, Kans., on Tuesday, March 12, 1901. It is the best offering they have ever made, and is especially strong on the 21 bulls, probably the very best bull offering to be made in the West this season. This lot of bulls is divided about as follows—five from 10 to 13 months old; eight fall yearlings and nine last summer yearlings. It is an extraordinarily good lot and worth going to see. The offering of heifers is not so large in numbers, but those sired by the herd bull, Red Knight 12072, and Waterloo Regent 117669, will be considered very attractive when seen. It is safe to say that Kansas will not let a single animal of the entire offering go outside of the state.

Trade in Poland-Chinas grows more brisk and satisfactory all the time, as shown by the following from Wait & East, of Altoona, Kans., who in making a change in their advertisement say: "Trade has been the best the last year of any year we have been in the business and we are entirely out of everything but our fall crop of pigs. We have the best grown out lot of fall pigs that we have ever owned. They are probably no better in breeding, but owing to the mild, dry winter, they have grown like spring pigs and we have developed some extra fine ones and especially in sows, and can furnish some show stuff at reasonable prices. And though we are striving to produce show stuff yet our aim is to produce a larger hog with heavier bone and still retain the quality and smoothness of the smaller hog, which we maintain can be done if the proper attention is paid to selection and mating. In the selection of a boar to use this year we travelled over 700 miles and visited a dozen of the best herds in this state and Missouri before we found a boar possessing the qualities we desired. We at last found a boar in the herd of H. C. Sydnor, sired by that wonderful breeder, Sydnor's Tecumseh, the \$495 pig out of the \$2,005 litter out of Ina Wilkes and by Chief Tecumseh 2d. We expect great results from this cross on our broad-backed, heavy-boned sows by Black Stop Chief. To sum it all up briefly, we are trying to produce a hog that will meet the demands of the farmer and feeder as well as the fancier. And now a word about our sows: We have contended that a sow to be profitable should raise at least 7 pigs and be a good milker so as to raise 7 good pigs, and we have ever bred and selected with that as one of the main ends in view, and we are highly gratified with the results, and can say with confidence to our customers, that we can furnish them with the most profitable kind of sow as well as first-class in form and breeding."

Numerous inquirers for Shorthorn females to add to their foundation stock, will find what they want in the first annual sale of Bill Brook Shorthorns, by H. O. Tudor, at Holton, Kansas, on Tuesday, March 19, 1901. Mr. Tudor, who now owns one of the largest herds in Kansas, proposes to offer cattle that will be great

credit to him, and a class that we predict will be appreciated by the farmers and breeders who attend. Mr. Tudor expects this. He has found his neighbors and parties from a distance as well, ready buyers of good stock at fair figures and he proposes to cater to their trade. Because of a brisk retail business in bulls, Mr. Tudor has not attempted to hold many for this sale, but to supply those who wish, he has reserved ten head of last spring stuff that will be catalogued. Heifers and young cows, however, he is making the feature of this sale, and a straighter, cleaner, more thoroughly useful lot we have not seen consigned to any sale. In age the females run from short yearlings to 3-year-olds and all old enough are bred to one or the other of Mr. Tudor's two Scotch bulls, whose pedigrees and description will be given in later issues. Three or four of the cows will have calves at foot and will be bred again. The heifers too young to breed are sired by Mr. Tudor's Cruickshank bull, Iowa Scotchman 2d. Before going into the pedigrees of these cattle, about which we can say nothing more important than that in many the foundation stock and a few succeeding crosses are identical with those of Mr. T. J. Wornall's champion bull, Viscount Anoka, we wish to call attention to something we consider of even more importance. This is the individual merit of the sale cattle and the members of the home herd. It is this which will appeal to the buyers on sale day and it is this which Mr. Tudor wishes to be his drawing card. He proposes to sell cattle that will be desirable as additions to established herds or as foundations for new ones and is taking the best out of three crops of young stock to do so. It is our earnest wish that breeders of the state will avail themselves of this opportunity to see this great herd of Shorthorns—the Bill Brook Herd—and the fine farm upon which it is maintained, and to encourage Mr. Tudor in a business that is a credit to the state and the breed. Read his advertisement in this issue and send for catalogue. Mention Kansas Farmer.

**Publishers' Paragraphs.**

Mr. L. C. Brown, of La Grange, Ill., is selling very select seed corn, Farmer's Interest, white dent, 1.25 a bushel, or five bushels or over at 2 per bushel; bags 10 or 18 cents each. As only a limited amount of this seed is for sale we advise our readers to order at once. This variety withstands drought well. Stalks are strong, close jointed and leafy. A fine grower. Produces mammoth ears. The ear is 11 inches long, and frequently they grow even longer. Grains are very deep, ranging one-half to three-fourths of an inch in length in middle of the ear. Color pure white; firm and good texture; cob medium size. The ears frequently shell one pound of corn to the ear, and cobs from one bushel of ears weigh from eight to ten pounds. Ears eighteen to twenty-four rows. Rows straight, and ears of this variety are well filled out at the ends. Matures in about one hundred days. Yields very heavy.

**Seed Truth.**

One of the best booklets which has come to our desk is Seed Truth, issued by Northrup, Young & Co., Seedsmen, of Minneapolis, Minn., and which is sent free to those who write for it. Seed Truth not only offers valuable suggestions to those wishing to purchase seeds, but takes a strong stand against the exaggerations which characterize so many seed catalogues. The following amusing story is one of the many good things contained in Seed Truth. Our readers should by all means send for it.

**Compressed Air Sprayer.**

Elsewhere in this issue will be noticed the advertisement of Rippley's Compressed Air Sprayer, which is being used by many leading breeders for applying lice killer, white-washing poultry houses, fences, etc. Since it can be used for so many other purposes than spraying, it is a convenient article at all times. It is made of various substantial materials and will last for years. It is fitted with a positive acting safety valve and is far superior to any compressed air sprayer on the market. No labor; any child can use it; every breeder needs one. As will be seen by this advertisement, it is sold at very low prices. This sprayer is sold under a guarantee to be as represented or money refunded. A "Spraying Calendar" furnished with each sprayer. Send your orders either direct to Rippley Hardware Co., Grafton, Ill., or to their eastern branches—8 Park Place, New York City, or 34 Merchants Row, Boston. We know this firm to be reliable and are sure our readers will never invest a like amount of money to better advantage. Please mention this paper in writing them.

**The Amfalula Tree and the Dinkey Bird.**

I was writing at my desk one morning when a man walked in and shook hands with me. I had known him for some years as a hard working farmer of small means living near a little town about forty miles north of Minneapolis. After transacting the business which brought him in, he was about leaving the office, when his eye rest-



ed upon two or three pods of the Honey Locust which happened to be lying on my desk. He picked one of them up and said: "That is a curious looking seed. What is it? I knew him for one of those men who are always sending away for some new and wonderful seed or plant that is going

to revolutionize the food supplies of the world, and thought I would have a little fun with him.

It so happened that the evening before I had been reading to my children Eugene Field's poem of the "Amfalula Tree and the Dinkey Bird," the first verse of which goes like this:

"In an island way out yonder,  
As all sapient people know,  
Is the land of wonder, wonder,  
Whither children love to go,  
'Tis their laughing, romping, swinging,  
That giveth joy to me  
While the Dinkey Bird goes singing  
In the Amfalula Tree."

The rhyme had been running in my head so I said to him, "That is seed of the Amfalula Tree." "What kind of a tree is that?" he asked. I replied, "It is the only tree that the Dinkey Bird will sing in." "What kind of a bird is the Dinkey Bird?" was his next question. "A small brown bird with white on its breast, and a very fine singer," I answered. "Don't they come about your place?" "I have seen that kind of bird," he said, "but did not know its name before, and I have never heard them sing that I remember of." That is probably because you have no Amfalula Tree," I answered. "They never sing except in that tree." "Well, I guess I'll take one or two of those seeds along and plant 'em," said he, and was going out with them when I said, "Hold on. They are \$5 apiece—how many have you?" He brought them back and laid them on my desk saying that he could not afford to pay that price for them, and reluctantly took his leave. I had almost forgotten the incident when late in the afternoon he walked again and said: "Mr. Northrup, I would like to try this Amfa—what did you say the name was?—seed. Can't you sell me one cheaper than \$5?" "Ought not to," I replied, "but seeing it is you, I will let you have one of them for \$2.50." His eye lit up; he reached down deep into his trousers' pocket, pulled out an old leather pouch, counted out the money, handed it to me, took up the pods, carefully selected the largest seed he could find, and was going out of the door with his treasure, when I called him back and said: "Mr. H., that seed you have is nothing but a Honey Locust! I would sell you a pound of them for twenty cents and have a good profit at that. I ought to keep that \$2.50, for I know some other seedsmen will get it next spring for some novelty that is of no better value than that in your hand; but try and keep your money until then, and look out for Gold Brick and Green Goods men on the cars. Good-bye." And he went.

**The Phalaris Grass.**

Elsewhere illustrated our readers will find the John A. Salzer Seed Company's, La Crosse, Wisconsin, Phalaris Grass.

This grass grew at La Crosse, Wis., to a height of 8 feet the past summer and is one of the most remarkable grasses for wet moist soils to be found. The Salzers obtained same some years ago while in Russia, and have found



it extremely valuable as a meadow grass. It is hardy, very prolific, withstanding the coldest weather and growing on very indifferent soils. It is fully described in their catalogue, so also about 100 different kinds of grasses and clovers and forage plants. Among these we mention the remarkable Billion Dollar Grass, that attained a height of 15 feet 6 inches in 1900, in Wisconsin. This was done by cutting three crops of hay respectively, 5 feet, 5 feet 6 inches, and 5 feet tall and after that it gave several months of pasturage.

Then they are the introducers of the Bromus Inermis in a large way and use of this seed annually one quarter million pounds.

Of Speltz, which they introduced last year for the first time, they used one and one-half million pounds to supply their trade, and the way it is selling thus far this spring they will double this amount. Speltz not only furnishes magnificent flour, but is a perfect food for the cattle. The straw is almost as rich in nutritious quality as timothy hay.

Salzer's great catalogue is worth \$100 to any wide-awake farmer, as it is brimful of new creations in the farm seed line. It is mailed to any address upon receipt of 5 cents for postage, by writing to the John A. Salzer Seed Company, La Crosse, Wis.

# PERSONAL

Will the woman who finds housework hard work please try

# GOLD DUST

## Washing Powder.

**Confirmed Liars.**  
"I don't know who first said figures couldn't lie," said the young woman, "but I would bet any old sum that the person was a man."  
Then, for the fourth time, she tried to make her personal account book balance.—Indianapolis Press.

**Agreeable Form of Philanthropy.**  
Mrs. Brown—We are going to give a progressive euchre for the poor. I love to do something for the poor!  
Mrs. Jones—So do I. I love to play progressive euchre for them.—Brooklyn Life.

**Mothers! Mothers!! Mothers!!!**  
MRS. WINSLOW'S SOOTHING SYRUP has been used for over FIFTY YEARS by MILLIONS OF MOTHERS for their CHILDREN while TEething, with PERFECT SUCCESS. IT SOOTHES THE CHILD, SOFTENS THE GUMS, ALLAYS ALL PAIN, CURES WIND COLIC, and is the best remedy for DIARRHEA. 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.

### 78-TOOTH HARROW FOR \$5.48

\$5.48 for a 2-foot, 100-pound, 78-tooth, 2-horse Harrow.  
\$7.12 for a 16 1/2-foot, 240-pound, 102-tooth, 2-horse Harrow.  
\$9.92 for a 26-foot, 360-pound, 150-tooth, 4-horse Harrow.  
Guaranteed the best genuine Ross highest grade, heavy seasoned oak harrow made. AT THESE SPECIAL PRICES we ship direct from the factory in Southern Wisconsin or Minneapolis, the point nearest you. The freight will amount to nothing compared to the money saved.

**\$5.48**

### SEND NO MONEY

If you live within 500 miles of Chicago or Minneapolis (if farther send \$1.00) cut this ad. out and send to us, state whether 78, 102 or 150-tooth harrow, we will send the harrow to you by freight C. O. D., subject to examination. You can examine it at your freight depot, and if found perfectly satisfactory and exactly as represented, the equal of harrows that others sell at double the price, then pay the freight agent our special price and freight charges.

**THESE ARE THE HIGHEST GRADE WOOD HARROWS** made, made for us under contract by one of the best makers in this country. The bars are made from 2 3/4-inch high grade selected seasoned oak, eveners are made from 2 1/2-inch best seasoned oak; teeth are one 1/2 inch square, highest grade drag steel with dagger point or square center point; sections are independent and connected with eveners by eye bolts, so as to secure a perfect hitch, allowing the sections flexibility and vibration without permitting the teeth to drag or follow each other. The two-horse harrow consists of center section and two next sections adjoining. The four-horse consists of all the sections UNITED. AT OUR SPECIAL \$5.48, \$7.12 and \$9.92 PRICES we furnish draw bars to match the number of sections, complete with connections. Our special prices are based on the actual cost of material and labor, less than dealers can buy in carload lots. For astonishingly low prices on all kinds of wood, steel and cast harrows, write for Harrow Catalogue.

**SEARS, ROEBUCK & CO., CHICAGO, ILL.**

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NEW, GREAT INVENTION.

Protects Orchards, Gardens, etc., from Worms. Cheaper and Better Than Spraying. Try It. Agents wanted. Write quick or others may get your territory. Send for Testimonials, Agents' Terms, etc.

Small size, 85 cents. Large size, \$1.00.

Address S. A. HASELTINE, Springfield, Mo.

### BERRY plants for sale,

dozen, 100, 1,000, or 100,000. Our experimentation with new varieties small fruits is up-to-date. We sent out the first illustrated berry catalogue published in Kansas in the early eighties, giving in a nut shell of conciseness, information about best soil for berries, their culture, plants, planting, etc. In every annual issue we tell the facts about the behavior of new sorts on our soil. If you want plants for Kansas or Missouri, send for our 1901 catalogue. But if you simply want the catalogue, send five 2-cent stamps.

**B. F. SMITH,**  
P. O. Drawer C. LAWRENCE, KANS.

Horticulture.

Methods of Mulching.

Mulching is generally recommended by horticulturists, and is practiced by many of them. In all cases it is more or less beneficial, and in some cases is necessary to success. It is used to conserve moisture, to keep fruit clean, to save cultivation, to protect from frost and to keep the soil cool. The operation is nothing more than covering the ground about the stems of trees and plants and between the rows with coarse straw, barn-yard litter, or some other material that will not take up moisture from the soil, but will prevent evaporation, thus preserving the moist and equitable condition of temperature most favorable for the growth of young roots. In the orchard it is excellent for newly transplanted trees, and more especially if set rather late in spring. Very many trees, in a dry season, fall at midsummer after having made a fair start, when, if they had been properly mulched, or well watered in the holes if too dry, an inch or two of loose soil left on the surface, and a light mulch of barn-yard litter applied, they would have gone through a very dry, hot season with comparative safety.

If no other material is at hand 2 inches of road sand will answer a very good purpose. Indeed, watering on the surface, after the ground has become dry and hard, is generally injurious, unless immediately covered with a mulch. But mulching will do but little if any good if applied over dried-out soil. Often there is not rain enough during the summer to wet through the mulching and there is danger in using a mulch that would carry water away from trees. The best of all mulches for the orchard is dust, or loose earth, which is made with the harrow, or by digging up the ground while the soil is yet well supplied with moisture. The best practice seems to be a light loose mulch only around the trees and a frequent stirring of the soil between them.

Mulching to save cultivation is a snare and a delusion. Mulching does not hold moisture as cultivation will. Good and thorough cultivation is of the utmost importance in growing fruits of any kind, but there are times when it is not practicable to continue the cultivation of small fruits. We would not cultivate strawberries from the opening of spring until the fruiting season is past, or the fruit will be a dirty, gritty mess. They should have a mulching of clean straw or prairie hay be-

tween the rows, and a light covering through the winter to help keep out frost and too frequent freezing and thawing. Raspberries and blackberries are better for shallow cultivation in the early part of the season, but when the fruit begins to color they ought to be liberally mulched, and the best material to use is green fresh-mown clover. The dust mulch is the only one suitable for the successful production of grapes. Rhubarb and asparagus seem to delight in a heavy mulching with barn-yard manure.—Farm, Stock and Home.

A Garden.

SASKATCHEWAN, IN NORTH-WEST FARMER.

It is an indisputable fact that the farmers of the West give very little care or attention to the garden. Here and there may be seen a plot of vegetables that is a credit to the owner; in other cases an alleged garden may be seen where a splendid growth of pigweed smiles mockingly down upon a few rows of spindly plants; others again make no attempt to grow a few vegetables and barely have enough potatoes to supply their needs. Why such is the case it is somewhat difficult to state. He would be considered a bold man who states that a vegetable garden can be made an absolute success in this variable climate, subject to extended spells of dry weather, as it is. Nevertheless it is true, and I will explain as concisely as possible from my own experience, how it may be done.

In the first place, vegetables never take any food in a solid form into their bodies. They draw the whole of their nourishment from the soil in a liquid form. Thus we see that the most important item to be considered in growing vegetables is a regular and liberal supply of water. This is considered to be a difficult want to supply here, the rainfall being limited and variable. We can not control the rainfall, and irrigation is impracticable at present. But there is one other source of moisture over which we have complete power. I allude to the snow, which visits us every winter unfailingly. Most people have noticed what an immense quantity of snow collects in the course of winter on both sides of a rail fence. The following is the plan I have found valuable and recommend it to others. A plot 50 by 100 feet is large enough with good care to supply an ordinary sized family. In the fall, after removing the vegetables, I make a temporary fence with poplar pickets and rails on each side of the garden, 12 feet from the center. The bottom rail should be on the ground and the next laid on it and so on till about 4 feet high. If this is done, the whole garden will be covered with a solid bed of snow several feet deep. I have found that the ground gets such a thorough soaking from the melted snow in the spring that with proper care it enables one to have magnificent vegetables, even in the driest seasons. The fence can be built in a couple of hours, and removed in the same time in the spring, so that for less than a dollar expended in labor we provide the prime requisite for a profitable garden.

Most vegetables require rather rich soil, and this want is easily supplied by a liberal dressing of rotted manure. This should be spread evenly on the ground and ploughed under 9 inches deep in October and then well harrowed. Vegetables may be grown by most people by following directions in the seed catalogues, without any special knowledge, but, of course, experience is quite as valuable in a garden as elsewhere. Perhaps onions are rather difficult to raise successfully, at least more so than other vegetables. The points to be noticed in their culture are these: The ground can not be too rich; the seed can not be sown too early; half an inch of soil should be firmly pressed on the seed, with a quarter inch of loose soil on top, and the rows should not be more than 12 inches apart.

Another point I would specially urge is—constant cultivation. As soon as the plants show the length of the row, weeds or no weeds, start the hoe going. This leaves a covering of loose earth over the ground and prevents the sun from sucking the moisture up, and so leaves the whole supply of water contained in the soil for the use of the vegetables. Good seed is absolutely necessary. Never buy seed in packets from the store, but send to some long established and reputable seedsmen.

When to Break Bluestem Sod.

EDITOR KANSAS FARMER:—I wish to break up some prairie sod this coming spring, and would like to have some of your subscribers who have had experience in that line in central Kansas, report the same through your paper. Which of the spring months is prefer-

able for breaking up bluestem sod? How deeply should the ground be broken? What kind of plow is best, square-cut or diamond-point? What kind of a crop would be best to grow on such breaking and have it removed in time to enable one to disc the ground and sow to wheat in the fall of the same season?

Any information upon this subject will be thankfully received. HERRINGTON, KANS. SUBSCRIBER.

The Disc Plow.

About a year ago I saw something in the KANSAS FARMER relating to a disc plow. I would like to know through the FARMER from some one who has used one whether it is an improvement on the share and mold-board plow, and if so, in what respect. MARION, KANS. R. HAROLD.

I would like to ask through the KANSAS FARMER if anyone has had any experience in sowing alfalfa and Bromus-grass together for pasture, on good bottom land, and with what results. I have 30 acres of fine alfalfa on good bottom land, but would like to find some good rank growing kind of grass to sow with it, so it would not beat cattle so bad. If anyone reading the KANSAS FARMER can give the desired information, it will be thankfully received. FINDLAY, KANS. FRANK ZIMMERMAN.

Revised Figures.

The Engineering and Mining Journal, of January 5th, gave some figures regarding the production of zinc white and white lead during 1900. From these figures I deduced some interesting facts regarding the consumption of paint in the United States.

It has since been found that in the compilation of these figures an error was made in the zinc white total, which set the latter 2,533 tons too low, the actual output of this product for the year being 47,101 tons instead of only 44,568 tons as stated. The increase for the year is therefore nearly nineteen per cent instead of only twelve per cent.

This raises the amount of zinc white paint represented by the pigment to the enormous total 376,808,000 pounds, of which 282,808,600 pounds were linseed oil, representing about 15,711,000 bushels of flaxseed. This, assuming that all the product has been made into paint, as nearly all of it was. Add to this 330,374,000 pounds of paint represented by the 90,855 tons of white lead produced last year, we have the equivalent of 707,182,000 pounds of paint consumed in this country during 1900.

The point I wish to emphasize in these figures is that they demonstrate the growth of correct information regarding paint, and show that combination paints are rapidly gaining ground with discriminating paint users. It is only a few years since the consumption of white lead was more than three times that of zinc white, while now it is scarcely double, while in the paint represented the output of zinc is actually nearly twelve per cent greater than that of lead. This increase means almost entirely an increase in the use of combination paints and a corresponding decrease in the use of straight lead and oil, since except for interior painting, straight zinc white is not generally recommended, and straight lead is equally unsatisfactory. The figures show that consumers are rapidly realizing that, even with paint, "in union there is strength."

STANTON DUDLEY.

Youthful Investigator.

A little girl who had been tearing her doll to pieces during the week attended Sunday school on the following Sabbath and was asked what Adam was made of. "Dust," she replied. "And what was Eve made of?" "Sawdust," promptly answered the little miss.—Philadelphia Inquirer.

"Pa, what is the 'halo of victory?'" "The 'halo of victory?'" Well, it is that unbecoming smirk your mother gets on when she has succeeded in making you or me do something we don't want to do.—Indianapolis Journal.

Bloating after eating, indigestion, flatulence or water brash, may be quickly corrected through the use of Prickly Ash Bitters. It strengthens digestion, cleanses and regulates the bowels.

SEED CORN

SPRAY YOUR FRUIT TREES & VINES. WORMY FRUIT AND LEAF BLIGHT OF APPLES, PEARS, CHERRIES AND PLUMS PREVENTED BY STARK'S SPRAYING OIL. Double Acting Excelsior Spraying Gun. Thousands in use. Catalogue, describing all insects injurious to fruit. Free. Address W. STARK, Quincy, Ill.

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

NEBRASKA TREES HONEST IN QUALITY. Grapes, Small Fruits, Flowering Shrubs. Lowest prices, honest quality. Budded Peach 5/16 each, Plums 1/2, Apple 4/16; R. Mulberry, Black Locust, Ash, from \$1 per 1000 up. We pay freight. Send for catalogue, English or German. German Nurseries, (Carl Sonderegger, Prop.) Box P, Beatrice, Neb.

FRUIT AND ORNAMENTAL TREES. Grapes, Small Fruits, Flowering Shrubs. Lowest prices, honest quality. Budded Peach 5/16 each, Plums 1/2, Apple 4/16; R. Mulberry, Black Locust, Ash, from \$1 per 1000 up. We pay freight. Send for catalogue, English or German. German Nurseries, (Carl Sonderegger, Prop.) Box P, Beatrice, Neb.

SEED OATS. 45c a Bu. and up. The cleanest, heaviest, best yielding oats are Michigan Northern Grown, Hammond's English Wonder, Ogar of Russia, Michigan Wonder and Mortgage Lifter, the four best varieties. Rust proof, stiff straw, have yielded 150 bu. per acre. Catalogue describing these oats and all other farm seeds free on request. Harry N. Hammond Seed Co., Formerly of Field. Box 74, Bay City, Mich.

GOT A DOLLAR? Invest it in our choice FRUIT TREES, SHRUBS or VINES. 25 Grafted Apple Trees for \$1 25 Budded Peach Trees for \$1 40 Grafted Grape Vines for \$1 Ours will grow. They are well rooted, healthy and true to name. Send bill good for \$25 and Catalogue in German or English free. We pay freight on \$10 orders. Fairbury Nurseries, Box 16, Fairbury, Neb.

SEEDS GOOD & CHEAP. Best of all & TESTED. 1c to 3c per package & lots of EXTRAS with every order. My Great Big Catalogue FREE. Send address for largest & prettiest Garden Guide, and Seed-Book, ever printed. R. SHUMWAY, Rockford, Ill.

GREGORY'S Warranted Seed. It matters not how rich the land, Or hard the labor on it, Vexation is the only crop Bad seed will raise upon it. All seed warranted to be pure and reliable, as per page 2 of catalogue. Our trade with market gardeners is immense; and market gardeners buy none but the best of seed. Write for our new Vegetable and Flower Seed catalogue—free to everybody. J. J. H. GREGORY & SON, Marblehead, Mass.

Giant Pansies, Sweet Peas, Mayflower. Did you ever see 7 straight or circular rows of Pansies or Sweet Peas side by side, each a different color? If so, you know that the effect is charming. Did you ever see Childs' Giant Pansies and Sweet Peas, marvels in beauty and true to color? If not, you have not seen the best. As a Trial Offer we will mail for \$25, 14 Pkts. Giant Pansies and Sweet Peas as follows: Pansy Giant—Snow White Sweet Pea—Navy Blue, " " Coal Black, " " Black Knight, " " Cardinal, " " Gold'n Yellow, " " Yellow, " " Orange Pink, " " Azure Blue, " " Cream, " " Violet, " " Scarlet, " " Striped, " " Pure White. One Packet of each, THE MAYFLOWER Magazine until 1902, (devoted to Flowers and Gardening, Elegant Cuts and Colored plates), and our Great Catalogue, all for 30c. Our Catalogue for 1901, New Century Edition—Greatest Book of Flower and Vegetable Seeds, Bulbs, Plants and New Fruits, 152 pages, 600 illustrations, 25 colored plates, will be mailed free to any who anticipate purchasing. Scores of Great Novelties. John Lewis Childs, Floral Park, N. Y.

SALZER'S SEEDS RICH! WILL MAKE YOU RICH! Billion \$ Grass. Marvellous grass, wonderful yield, every state in the Union. Will yield 15 tons of rich hay and lots and lots of pasture besides. "What is it?" It's the heaviest yielding grass in the state; it will make you rich. First crop 6 weeks after sowing. Everybody is asking: "What is it?" Catalogue tells. Combination Corn. Greatest golden yellow dent corn of the age. Seed dirt cheap. Will make you rich to plant. Will revolutionize corn growing. Speltz, Rape and Peas. Three perfect foods. Speltz yields 50 bu. grain and 4 tons of hay per acre; Rape 25 tons green food and Peas 4 tons of perfect food per acre. Bromus Inermis. Greatest permanent grass of the century. Nothing like it on earth to-day and we have secured the right for its equal. 4 to 7 tons of hay per acre. Vegetable Seeds. Largest Growers. Onion seed 60c lb. For 10c Stamps and this Notice, we mail big illustrated Seed Catalogue and 10 grain samples, including above, also Speltz (80 bu. per A.), Oats (200 bu. per A.), Rape, Barley (175 bu. per A.), Peas, etc., worth \$10 for a start. JOHN A. SALZER SEED CO. LA CROSSE, WIS.

The last call. Spring planting will soon be done. That will settle the seed question for another year. Don't let it be settled without planting some of Vick's Seeds. We want every grower of vegetables or flowers this year to test them—to learn that there are no seeds so productive or vigorous as Vick's seeds. Our New Garden and Floral Guide tells all about seeds, plants, bulbs, small fruits, etc., Free. JAS. VICK'S SONS, Box No. 1190 Rochester, N. Y. VICK'S SEEDS

All the leading and best varieties of choice selected, thoroughly tested seed corn, 75c per bu. and upwards. Ask for large descriptive catalogue of Corn and all kinds of Farm Seeds. Most valuable book ever published for western farmers. Free if you mention this paper. IOWA SEED CO., Des Moines, Iowa.

**Agricultural Matters.**

**Professor Haworth on Gypsum.**

EDITOR KANSAS FARMER:—Since the appearance in the KANSAS FARMER of my paper on the subject of gypsum as a fertilizer, which you were kind enough to publish along with the other papers read before the state board of agriculture, I have received a great many inquiries from farmers and others as to the method of applying the gypsum, the addresses of the gypsum dealers and other matters which the farmer should have information upon. Can you not take up the subject in the KANSAS FARMER from week to week and give to your readers the information they desire, and advise them to patronize the companies who advertise their goods through you? I have been trying for years to get the gypsum dealers to insert advertisements in the agricultural papers, assuring them that many farmers throughout Missouri, Kansas, Iowa, etc., would be glad to know where to get the goods.

In this connection I enclose a letter just received from Mr. S. N. Perry, of Oskaloosa, Kans., a gentleman who used gypsum as a fertilizer in Michigan previous to coming to Kansas, which letter I should be glad to see published in your columns. Recent inquiries received show that an interest is being aroused in the subject throughout different parts of the Mississippi Valley. Yesterday I received a letter from a gentleman in Missouri who stated that for two years he had been trying to find where he could buy plaster but was unable to do so. About a year ago I happened to notice a letter from a Missouri farmer published in an Iowa paper asking where such goods could be had. A recent letter from a dealer in garden seeds in Kansas City inquiring where goods of this kind could be had by wholesale says that he is anxious to buy it in wholesale lots to give away to his customers for experimental purposes on gardens and small fruit fields. I am sure the times are ripe for the dissemination of knowledge on the subject. I know of no better medium than your paper which reaches the great mass of intelligent farmers in Kansas and throughout the Missouri and Mississippi river valleys.

ERASMUS HAWORTH.

Following is the letter mentioned above by Professor Haworth:

S. N. PERRY'S LETTER.

Oskaloosa, Kans., Feb. 18, 1901. Prof. Haworth, Lawrence, Kans.

Dear Sir:—Your published statements in regard to gypsum as a fertilizer were of much interest to me as I have made repeated inquiries regarding its use in Kansas for that purpose for several years, but have failed to find any one who knew anything about it or who seemed interested in it at all. I came from southern Michigan to Kansas fifteen years ago, and in Michigan all the best farmers thought they could not get along without land plaster for clover, corn, and oats. One fall in drilling a 20-acre field to wheat, I used commercial fertilizer at the rate of 100 pounds per acre, which cost me \$20 per ton. I drilled a strip two rods wide with the fertilizer, then left a strip same width without any fertilizer through 15 acres of the field. In the spring I sowed it all to clear red clover, and on the other 5 acres I sowed alternate strips with land plaster same as I had with the fertilizer. No one could pick out the strips where the fertilizer was used either in the wheat or clover. Neither was there much difference in the wheat where the plaster was sown, in yield, but the berry was more plump, but in the clover there was a great difference which could be seen as far as the field could be seen. The strips where the plaster was sown made a much more vigorous growth of a much darker green color. It was also very noticeable that the dew fell much earlier at evenings, and heavier on the clover sown with plaster. A hill or row of corn that had been sprinkled with a tablespoonful of plaster per hill, would keep its vigorous dark green color through a dry spell much better than its neighbors. This fact has caused me to wonder many times why it would not help the farmers in Kansas to tide over some of our hot dry spells. We would sow broadcast on

our new seeding some time in May, so the spring rains would wash in and dissolve. Sowed with a sack over our shoulder same as to sow grain, putting on from 75 to 100 pounds per acre. For corn we took a sack that we could carry handy and dropped about a tablespoonful on each hill just as it was coming up, taking two rows at a time. A good smart man will plaster 10 acres per day. It was hard, disagreeable work to do, but it paid us well. I am anxious to try it here in Kansas, and trust you will inform the farmers where it may be procured, its cost, etc.

Respectfully yours, S. N. PERRY.

**Disking Alfalfa.**

PRESS BULLETIN, KANSAS EXPERIMENT STATION.

Our first experience in disking alfalfa was in 1898. A field had been seeded to alfalfa in the dry year of 1894 and a poor stand secured. In 1897 this alfalfa was heavily pastured by hogs. The hogs were taken off early in the fall and a heavy growth of crab grass came up. The crab grass was so thick and the stand of alfalfa so thin that it was not worth keeping.

Late in March, 1898, this field was harrowed with a disk harrow, the disks sharp and set at as great an angle as possible. It was immediately cross disked with the disks set the same way. The ground was thoroughly pulverized and the alfalfa apparently destroyed. It soon started, branched out thickly, and we made three good cuttings from that field that summer.

In 1900 we went a step further in disking alfalfa. The season was very dry at Manhattan, the rainfall in June being 1.19 inches, in July 4.51 inches, and in August 2.84 inches. Two fields of alfalfa, 2 years old, were disked.

One field was disked March 28, the first cutting for hay made May 31, disked June 6, the second cutting for hay made June 25, disked June 27, the third cutting of alfalfa made August 13, and the alfalfa disked for the fourth time August 20. The last cutting of alfalfa was made September 13. This shows four diskings and four cuttings of alfalfa on upland in a dry year.

Another field of alfalfa was disked and cross disked March 27. The first cutting of alfalfa was made June 4 and the second disking June 6. Through July and the early part of August, the alfalfa was cut from day to day and fed green to dairy cows to help out dried up pastures. August 20, the field was disked, and October 3, the last cutting of alfalfa made.

The alfalfa in both fields made fine late fall growth and went into the winter in good condition.

The stand of alfalfa on both fields disked in 1900 was good. A harrow with sharp 16 inch disks was used, the disks being set at a slight angle, just sufficient to turn the soil over, and the harrow was weighed to make the disks split the alfalfa crowns to a depth of two inches. The disking split the alfalfa roots and this made them throw out many new shoots. The disking made an earth mulch over the field and prevented the evaporation of water so rapid in a dry time from an alfalfa field just after being cut. The disks were set so that they barely turned the soil over and, running at a depth of two inches, they turned the roots of the crab grass and weeds up to the sun which killed them. These disked fields were clean and free from crab grass in the fall.

We have not disked 1-year-old alfalfa. From these experiments, we feel safe in recommending disking all alfalfa of 2 years or more standing. Make the first disking early in the spring and then disk immediately after each cutting. If the stand of alfalfa is fair to good, set the disks as we did in the experiments made in 1900. If the stand is poor and the growth of crab grass thick, set the disks to cut deeply. Disking is of as much value to alfalfa as cultivation is to corn. H. M. COTTRELL.

**Rural Mail Delivery.**

EDITOR KANSAS FARMER:—As the rural mail delivery question is one particularly affecting the farmer, as he represents the great body of those directly benefited by it, outside of the publishers of daily papers, it seems that if any one should be expected to say anything of the merits of the subject he is the one, and, as he has not been heard from very freely, outside of his petitions for new routes, a few ideas on the subject may be in order. He certainly has no cause of complaint so far, when we consider the readiness with which new routes are established, where conditions are suitable, when petitioned for. He certainly has cause to heartily thank the postal agents, who have the matter in charge, for the prompt attention given

petitions and for establishing of routes as fast as circumstances permit.

**BOXES.**

The first thing for patrons to do, when they learn that a route is to be established on their petition; is to prepare suitable boxes for their mail, and as I have had nearly a year and a half's experience and observation and have talked with carriers on the matter, I will give what I have learned, that others so desiring may benefit thereby. One very general fault of boxes is that they are too small. They are not large enough to take anything much larger than a common paper and be closed so as to protect the contents from rain and snow. I have frequently seen mail protruding from boxes, too small to hold it. The best box that I know, and one the carriers say is "all right" is 7 or 8 inches square and 18 or 20 inches long inside, with a sharp roof, like a bird house, one end nailed in tightly and the other hinged at the eaves by a nail or screw put in, one from each side; the bottom of the end or door opening outward, and as the end is all in one piece, the top swings in. I built our own box by using a piece of galvanized iron 2 feet square, bending it round on top, making roof and sides together, without joints, and nailing lower edges to a board 7 inches wide and 4 inches shorter than the iron. Into one end I carefully fitted an inch board, letting it come down against the end of bottom board and a little lower and nailed it firmly to bottom board, then with small nails, nailed the iron to it all around sides and top, so that when down the iron projected an inch outside of the end board, entirely preventing rain from driving in. For the door I fitted the other end of box with a board in same way, giving the inch projection, and hanging it by putting a screw through the iron and into the door, one on each side, just where the turn from sides to top begins. Put a knob on door near bottom. The door comes down against end of bottom and a little below to exclude rain. When the door is raised by the knob, the top above the screws turns in. A bolt is put down through the bottom, from inside; and through any suitable piece of wood extending a few inches to one side, to be nailed to a post. Paint, and it is ready for business. I have no arrangement for locking, as, so far, there has been no need. A special advantage of this box, in cold weather, is that when placed at the right height, the carrier sitting in his vehicle, can raise door, and looking in see if there is mail to go; and if there is can run his gloved hand in over it, draw it out and place it in his box, without having to remove his glove, as he would have to do, to pick up card or letter from the bottom of a box made like a trunk. In some weather this counts for much, as at the best, he is obliged to bare his hands so often in attending to business that he can scarcely keep them warm with the best of covering.

**THE CARRIER.**

Looking at the matter casually it may seem that the rural mail carrier has a nice easy job. It's all right for warm weather and good roads, but when the roads get heavy and the winds chilly, not mentioning snows and blocked roads, a 25-mile drive with a stop at every house, as a day's work, is "no snap." In other departments of the service the work is done in comfortably warm rooms and cars, but the rural carrier has to take his "in the rough." So when the elements are against him, keep an eye open that he does not unnecessarily suffer. As one said to the writer one cold day recently after being refreshed by food and fire, "It don't seem as cold as it did before dinner." It is not really necessary that we should forget him entirely in the summer time either, so when fine apples or nice juicy peaches are about, they'll not seriously injure the mail box if, accidentally or otherwise, some do get into it, tagged "for the carrier's babies," for there may be little ones at home, and eager young eyes looking for "papa."

**REMARKS.**

The benefits of rural mail delivery can not be fully realized until experienced. To have your mail placed at your door every week day, with papers fresh from the press a few hours before, contrasts so strongly with having to go to the post-office, several miles, purposely to mail letters when business presses, as the writer has often done, that it is almost too good to be true.

Now, if letters requiring immediate attention come, there is ample time, before to-morrow's mail, to attend to them and drop them in the box. The saving of time to the patrons on a route, for a year, is very great when summed up as a whole. This is not a question of



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If well bred, not too small, and planted thickly, always out-yields your Kansas native corn, because its ears mature before hot winds ruin your native corn. Positive proof of this and my new catalogue free.  
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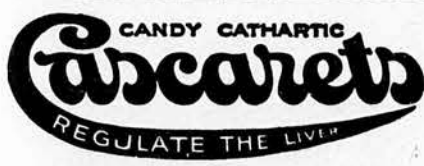


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**CANDY CATHARTIC**  
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REGULATE THE LIVER

convenience only to the country dweller, but dollars as well. By it the country and city are brought into close touch and the isolation of country life is reduced to a minimum.

No community can long receive its benefits without more fully realizing than ever before, that that community is a real live factor in this great country of ours.

In conclusion, if you want to be "in the swim," get in your petitions and When Uncle Sammy's wagon comes hiking down the road, Just meet it at the gate and help lighten up its load;

It'll bring along the papers and other things to you, And, Monday morning surely, the Sunday papers too;

For it's known among the people, that printers never rest, Till they cross the shining river and dwell among the blest.

Linwood, Kans. P. W. GOWELL.

## The Poultry Yard

### Something About Poultry.

LUCY POPPNOE, BEFORE THE BERRYTON FARMERS' INSTITUTE.

"And Peter remembered the word of Jesus, which said unto him, 'Before the cock crow, thou shalt deny me thrice,' and he went out and wept bitterly." "Oh, Jerusalem, Jerusalem, thou that killest the prophets, and stonest them which are sent unto thee, how often would I have gathered thy children together, even as a hen gathereth her chickens under her wings, and ye would not!"

Here is the scripture proof of the antiquity of our domestic fowl, Gallus domesticus, or commonly known, chicken. The book of Matthew contains the first mention of them that I could find in the Bible. There is no distinct allusion to them in the Old Testament. They are natives of the East Indies and Malayan Archipelago.

### ANCIENT HISTORY OF THE FOWL.

It is uncertain at what time the domestic fowl was originally introduced into Europe. The remains of Egyptian antiquity carry the student back to a time when it seems to have been unknown in Egypt, but it seems to have been common in southern Europe almost from the beginning of their civilization. The cock was sacred to some of the mythological gods worshipped by the Romans, especially Apollo, Mercury, and Mars. He has figured on gems and coins, both of Greece and Rome, and has always been highly valued for his courage and fighting qualities. There is much doubt as to the origin of our domestic hen and very little is known as to its native country. It seems to have been known to ancient Britons before the Roman invasion, and it was found domesticated in the South Sea Islands when first visited by Europeans. The Greeks sometimes called it the Persian bird. From this it is thought by some to be a native of Persia. The jungle fowl of India, the first species of Gallus known in its wild state to naturalists, was for some time thought to be the origin of the domestic fowl, but more recently other species found in Java and other islands of the eastern archipelago more nearly resemble those of the present day and the distribution of these throughout the islands of the Pacific Ocean, favors the belief that their origin was from this region. The Bankiva fowl of Java very closely resembles some of the domestic varieties, especially the Bantams. The comb is large and lobed; the colors are brilliant steel-blue, chestnut-black, and yellowish-brown; the hackles abundant and of golden-orange. A similar but larger species is found in India. The jungle fowl of India is very abundant in the high wooded districts and is much sought after by sportsmen. It is about equal in size to our ordinary fowls but is much more slender and graceful, the comb large and indented, and the colors rich and beautiful. There are some very queer varieties nowadays, of the bird Gallus domesticus, one in particular, the Negro fowl. This I have never seen. It derives its name from the black color of the covering of the bones. The comb, wattles, and skin being dull purple. That does not sound very appetizing, does it? You who have attended our state poultry shows have no doubt seen the silky and frizzle fowls. The silky is distinctly Japanese and you who have seen a big white Japanese chrysanthemum know about how a silky looks. The frizzle is also well described by

its name. It looks very much as if some one had dipped it in water and then rubbed all the feathers the wrong way.

From all that is written about the ancient fowl, we must believe they were of the breed known to us as gamefowls and cock-fighting was one of the common pastimes and pleasures of the ancients. During the reign of Edward III, it became a very fashionable amusement. It is said to have originated with the Athenians. It was prohibited in 1654. Although there have been other acts passed since then putting it down, it still exists under prohibition. One author writing in 1776 says, "In a word cock-fighting is a heathenish mode of diversion from the first and at this day ought certainly to be confined to barbarous nations."

To lend to brutes the means of destroying each other and of rendering their conflicts more deadly than nature ever intended them to be, can not be considered a spectacle calculated either to refine or improve humanity, and the indulging in it as a sport is simply cruelty. The sport was a favorite one among the Greeks and Romans, as it is also among the Chinese and the citizens of Leavenworth. So much for the "ancient hen." We will now say a few words about the up-to-date hen.

### THE MODERN HEN.

In the standard of perfection, the thoroughbred fows are divided into ten classes.

### THE FIRST CLASS.

The first class is the American, of course, first as anything American should always be. The Plymouth Rock, of which there are four varieties, Wyandottes, of which there are five, the American Dominique, the Jersey, and three varieties of Javas. Of these the Plymouth Rock and Wyandotte are best known and are good general-purpose fowls. The Plymouth Rock is a cross of three breeds, American Dominique, Cochin, and black Java. The Wyandotte originated from crosses of the Brahma, spangled Hamburg, and Polish fowls.

The Jersey is but little known and is not popular.

The Javas are well liked by those who have given them a trial. They have been well known in the United States for fifty years but strange to say were not seen in England until 1835. They are harry, rank high as winter layers and are good sitters and mothers.

The Dominique is the oldest of the American breeds. The name Dominique represents the plumage meaning cuckoo-color.

### THE SECOND CLASS.

The second or Asiatic class includes a modification of the old Brahma putra, which is still found about the Brahma putra river in India. There it is called the Chettagong fowl. Many admirers of feathered bipeds think the Brahma such a noble, attractive fowl but to me they seem just great, lazy, awkward bunches of feathers. They are not great layers but the cockereels make fine, juicy roasts.

The Cochin is the old yellow Shanghai reduced to short legs and neck by careful breeding. The first known in America was imported from England in 1847. They are very gentle and quick, and with a very little encouragement in the way of a corn-cob or so in the nest will sit all the year round. Now I do not wish to slander even a hen but I have heard that Mr. Vesper says, "If a Cochin hen finds a corn-cob in the public road she will sit on it."

The Langshan is of Chinese origin and was the latest of the Asiatics to reach this country, being introduced into the United States in 1878 by Mr. Sargent, of Maine. They have much to recommend them; they are of large size, good appearance, remarkably free from disease, hardy by nature, quiet and gentle; are good winter layers and good but not persistent sitters. The flesh is of fine quality.

### THE THIRD CLASS.

The third or Mediterranean class comes to us from Spain and Italy and embraces the Leghorns, of which there are 8 varieties, Andalusians, black Spanish, and the Minorca, of which there are 2 varieties.

The Leghorns are the best layers in the world, are sprightly, graceful, light of wing and early to mature. Their eggs are medium in size but large compared to the size of the fowl, and are fine in flavor. They are classed as non-sitters but our experience has been that they make very good sitters after their first year, at least this is so of the buff variety. The white and buff are especially attractive and look particu-

larly fine on a blue-grass lawn. We think their flesh is superior to that of the larger breeds, as the Grimes' Golden apple is to the Ben Davis. Of course they are small and it sometimes takes two where one larger one would do, but we can not expect all the good qualities in one breed.

The black Spanish has been bred to the standard longest of any breed. They are called the aristocrats of the poultry-yard. Their white faces and silky black feathers give them a distinct and very handsome appearance. The egg is large and creamy-white.

The Andalusian might be called a blue Leghorn. They are small but said to be very hardy and lay a large white egg.

The Minorca looks much like a black Leghorn, but has a heavier body. They are a popular fowl and famous for the large size of their eggs. One of the greatest objections to this breed is their black pin-feathers, but lovers of the breed claim this an advantage as being black enables them to be readily seen on the white skin. They were known and valued many years in England before attracting attention elsewhere.

### THE FOURTH CLASS.

The fourth class is the Polish, of which there are 8 varieties. Both fowls and eggs are small. They are distinguished from other breeds by well-developed tufts of feathers on top of the head. I heard a lady remark at the poultry show while looking at these birds that their heads reminded her very much of the style of dressing the hair worn at the present time by our young ladies.

### THE FIFTH CLASS.

The fifth or Hamburg class includes 6 varieties of Hamburgs; of these silver-spangled are most common and to my eye are the most beautiful of all fowls. They never sit but lay a great many rather small eggs. We have had no experience with this breed but have the impression they are not hardy.

The Red Cap also belongs to the Hamburg class and seems to be just a larger type of Hamburg with very large rose comb.

### THE SIXTH CLASS.

The sixth class takes in the French breeds, Houdans, La Fleche and Creve coeurs.

The Houdans are best known in our country. They have "V" shaped combs with large topknots and mottled black and white plumage; are said to be good layers and superior table fowls. The French breeds like the English Dorking have five toes on each foot, which

to my mind seems altogether right and proper.

### THE SEVENTH CLASS.

The seventh class is the English Dorking, of which there are 3 varieties. They are very satisfactory, laying good-sized eggs and plenty of them, and are especially good as a table fowl, having nice white flesh. Do not stand stormy weather very well and seemed with us more inclined to roup than other breeds.

### THE GAME CLASS.

Last but not least is the game class. This includes 8 varieties of Games, as many of Bantams. The varieties named in the standard are not often bred for fighting but for exhibition and practical purposes. They are not first class layers.

So much for the history of the helpful hen both ancient and modern.

### PESTS AND DISEASES.

I will now speak of the pests and diseases which handicap the ardent poultry man or woman. I should have put woman first as it is she who nearly always does the poultry work, and it is very interesting work if one has time; to care for them properly. I read not long ago in some farm paper a letter from a farmer, asking the editor's advice in regard to some home trouble. His complaint was that his wife gave her chickens so much care that he did not get his breakfast on time and that she cleaned out her hen house, neglecting her housework to do so. The editor replied that any man mean enough to let his wife clean out the hen-house ought to have to do without breakfast altogether. While that may seem somewhat severe, we think that editor must be a very nice kind of a man. This talk hardly comes under the head of pests and diseases, but you know it is somewhat difficult for a woman to stick to her text. Of the insects affecting poultry perhaps the most troublesome and common is the mite. It is very small and hardly noticeable unless looked for sharply. They are gray in color except when filled with blood then they are red. All authorities agree that this pest is the offspring of neglect and overcrowding, so the first remedy is to clean up. They do not stay on the body of the fowl but go on at night while the fowls are on the roost. Whitewashing with plenty of sulphur and carbolic acid in the whitewash is a great help. Three years ago when we built our last hen-house, the inside was thoroughly coated with hot coal-tar and over this was a covering of tarred building paper. In this house we have never had any trouble what ever from insect pests. Their absence

No. 376. **\$48.00. Different** from the ordinary buggy, is our latest style for 1901. We use Long Distance Axle with bell collar which keeps out all dust and mud, runs 1000 miles without reolling. Combined Quick Shift Shaft Coupler and Anti-Knatter, so you can change from shaft to pole in one minute. With this attachment you never have any rattle. Wheels and Gear, every stick of timber used guaranteed to be the very best of second growth hickory. Every forging and bolt the best Norway iron. (Wheels furnished any size.) Body 29, 32 or 34 in. wide, 55 in. long. Spring cushion and back. We upholster the seat and back cushion with a fine green velvet with gold figure, or whip cord with high wings on end of seat cushion, and line the top with a special light color top lining to match the seat trimming. The edge of top lining is pinked, the back stays of top are pinked on color carpet for bottom and side panels of body, (or when desired will use leather or dark broadcloth trimmings and dark lining in top with dark carpet to match.) We furnish nickel dash rail, nickel rail over back of seat cushion, nickel prop nuts, nickel seat chaser. We take special pains with this buggy to see that it is fitted with trimmings, paintings, and everything to match. **We have no agents, but sell direct to you at wholesale prices. NO MONEY.** We ship subject to examination and are you the middle man's profit. We warrant every buggy that you order, and if you are not satisfied in every way, and do not feel that we have saved you money and given you a better buggy than you could have bought elsewhere for any thing like our price, return to us and we will pay all freight. We warrant every buggy for 2 years and guarantee safe delivery. Do you want, or are you interested in any way in a vehicle or harness of any kind? If so send for our new free vehicle Catalogue. We have all styles at prices that will interest and save you money. **MARVIN SMITH CO., 55-57-59 Jefferson Street, Chicago, Illinois.**

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PRICES AND QUALITY TALK. Champion Oats, 40 cents per bushel; Early Fife Wheat \$1.10 per bushel; Beardless Barley, 65 cents per bushel; Speltz, 90 cents per bushel; Choice Re-cleaned Clover, \$3.75 per bushel; Choice Re-cleaned Timothy, \$2.30 per bushel; Fancy Clean Iowa Blue Grass, \$1.10 per bushel; Bromus Grass, \$2.00 per bushel; Dwarf Essex Rape, 7 cents per pound. Bt's, 15 cents each. Above prices are for quantities. All Grasses, Grain, Garden, and Flower Seeds at farmers' prices. Our Catalogue tells all about it. It's Free. Ask on a postal for it. Address

Box 50. A. A. BERRY SEED CO., Clarinda, Iowa.



we attribute to the use of the coal-tar, but how much longer this will prove efficacious we can not say.

One should be careful in using remedies in the nests of sitting hens. The Persian insect-powder does not seem to have any bad effect and we use this very freely both on hens and in nests.

There is a large brownish bug, first cousin to the common bedbug, who is provided with a sharp proboscis and sallies forth at night to feast on the unsuspecting fowls. I think this bug is not very common but when he comes he is hard to get rid of.

The head-ouse sometimes bother the chicks very much, but if the head is rubbed with a little grease with a drop or two of turpentine added, they will soon disappear.

The worst insect we have to contend with belongs to the genus homo, and is commonly known by the title of chicken thief. What to do with him and how to get rid of him is beyond us, but perhaps our legislature will help us out for there is a bill introduced fixing the penalty of theft as a penitentiary offense, be the number stolen great or small.

Of the diseases of poultry we have but little experience except with that scourge called roup. In the past ten or twelve years we have lost a good many fowls through roup, but now we have a remedy that seems to be a sure cure, if the doctoring is begun when the disease first puts in an appearance. The medicine is called Conkey's Roup Cure and is given in the drinking water, and this with one or two applications of grease and turpentine on the head and neck and a half teaspoonful down the throat will soon give relief.

INCUBATORS AND INCUBATION.

Of the use and management of incubators, I can tell you nothing as we have always depended on the hens for hatching.

From time immemorial artificial incubation has been known and practiced. The ancient Egyptians made huge brick ovens in which they hatched out large broods. These ovens they called mammals. In 1777 an Englishman devised an incubator that supplied the market with frys at a time of the year the farmers were unable to do so.

The Pekin duck is of Chinese origin. It is the most common variety in America. Was brought from China in 1873. They are a great market duck and prolific layers of large white eggs.

Our geese are descendants of the wild grey goose of northern Europe. Next to the common goose the Toulouse is most familiarly known in America. They came to us by way of England. There is a large white variety called Embden or Bremen that comes to us from Germany.

We find mention in the Bible of the peacock at least 900 years before the birth of Christ. Specimens have been found by Palestine explorers, but they were not natives of that country but of the East Indies. We often hear the expression, "As proud as a peacock" and he is a proverbial image of ostentation and pride and when we remember how far back he can trace his ancestors, we must allow it is a just pride.

No matter how prosaic and practical the subject, nothing is complete without a few lines of poetry, so I will close with a poem entitled the "Kansas Hen," which, although not written by a poet of much renown, has much to recommend it from the fact that it was written in Kansas and by a Kansas man.

THE KANSAS HEN.

We have read of Maud on a summer day,  
Who raked bare-footed the new mown hay;  
We have read of the maid in the early morn,  
Who milked the cow with the crumpled horn;  
And we've read the lays that the poets sing,  
Of the rustling corn and the flower of spring;  
But of all the lays of tongue or pen  
There's naught like the lay of the Kansas hen.  
Long, long before Maud rakes her hay,  
The Kansas hen has begun to lay,  
And ere the milkmaid stirs a peg,  
The hen is up and has laid her egg.  
The corn must rustle, the flowers spring,  
If they hold their own with the barnyard ring.  
If Maud is needing a hat or gown,  
She doesn't hustle her hay to town,  
But goes to the store and obtains her suit  
With a basketful of her fresh hen fruit.  
If the milkmaid's beau makes a Sunday call,  
She does not feed him on milk at all;  
But works up eggs in a custard pie,  
And stuffs him full of chicken fry.  
And when the old man wants a horn  
Does he take the druggist a load of corn?  
Not much! he simply robs a nest,  
And to town he goes—you know the rest.  
He hangs around with the cliques and rings,  
And talks of politics and things,  
While his poor wife stays at home and growls,  
But is saved from want by these self-same fowls.  
For while her husband lingers there,  
She watches the cackling hens with care,  
And gathers eggs, and the eggs she'll hide,  
'Till she saves enough to stem the tide.  
Then hail, all hail to the Kansas hen,  
The greatest blessing of all to men.  
Throw up your hats and emit a howl,  
For the persevering barnyard fowl.  
Corn may be king, but 'tis plainly seen  
The Kansas hen is the Kansas queen.

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A few choice cockerels with score cards, at prices you can't afford to miss. J. C. WITHAM, - - Cherryvale, Kansas.

LIGHT BRAHMAS—Forty cockerels \$1 each; 10 cockerels, very choice, \$2 each; 80 hens and pullets \$1 each. Eggs in season. Address F. W. DIXON, Holton, Kansas.

ROSE COMB BROWN LEGHORNS—Exclusively farm-raised eggs per sitting of 15, \$1. Incubator users write for special prices by case or 100 lots. P. H. Mahon, Hollis, Cloud Co., Kans.

Ten M. B. turkey toms, and a few hens; 4 Barred Plymouth Rock cockerels. Barred Rock, and M. B. turkey eggs from prize-winning stock. M. S. Kohl, Furley, Kans.

Heavy feathered, rich colored Buff Cochins—hens, pullets, and cockerels \$1 each; eggs \$1 per 15. Belgian hares \$1 each. H. A. Thomas, Soranton, Kans.

EGGS—\$1 for 15, from Barred Rocks; fine fowls; Shoemaker and Hawkins strain. Mrs. T. Bowen, Garnett, Kans.

EGGS FOR HATCHING—From prize-winning Black Langshans, and White Holland turkeys. J. M. Slonaker, Garnett, Kans.

FOR SALE—S. C. B. Leghorn, C. I. Game, W. Wyandotte and W. Plymouth Rock. H. C. Staley, Rose Hill, Butler Co., Kans.

Twenty White Holland toms, \$2; hens, \$1.50. Twenty Barred Plymouth Rock cockerels, \$1 to \$2 each. J. C. Curran, Curran, Kans.

EGGS FOR HATCHING—From Rose Comb White Leghorns, \$1 per sitting. Mrs. John Hill, Vinland, Ks

LIGHT BRAHMAS—Eggs, 75 cents for 15; \$2 for 45. Cockerels, \$1 to \$2 each—farm raised. F. P. Healey, Bedford, Iowa

FOR SALE—Pure-bred Barred Plymouth Rocks, B. B. Games, and White Holland turkeys. Mrs. Porter Moore, Box 641, Parsons, Kans.

B. P. ROCKS, AND COLLIE DOGS—Early hatched cockerels, very large and finely marked, and some yearling hens and a few cock birds. Two fine litters of Collie puppies. One fine male pup 2 months old from imported Royal Lassie's litter left. To secure bargains write at once. W. B. Williams, Box 142, Stella, Neb.

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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

FOR SALE—Mammoth Bronze turkeys, both sexes, 41-pound tom at head of herd. Eggs in season. Barred Plymouth Rocks, both sexes. Eggs in season. Edwards & Parker, Kinsley, Kans.

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BELGIAN HARES—Special low price for next 30 days. D. A. Wise, Topeka, Kans.
Belgian Hares For Sale
Pedigreed stock, healthy, and good in every particular. Correspondence solicited. S. W. STEWART, Alden, Rice Co., Kans.

### The Stock Interest.

#### THOROUGH-BRED STOCK SALES.

*Dates claimed only for sales which are advertised or are to be advertised in this paper.*  
 March 12, 1901—Gifford Bros., Milford, Shorthorns Manhattan, Kans.  
 March 19, 1901—H. O. Tudor, Shorthorns, Holton, Kans.  
 March 27, 1901, Combination sale of Galloways, at Chicago, Ill. Frank B. Hearne, Manager, Independence, Mo.  
 March 29, 1901—B. O. Cowan, New Point, Mo., Shorthorns, Kansas City, Mo.  
 October 8-10, 1901—American Berkshire Association Sale at Kansas City.

#### Salt for Fattening Cattle.

There always has been and no doubt always will be a great deal of discussion regarding the use of salt for various kinds of stock. Especially at institutes do we hear the pros and cons, at times to an almost tiresome extent. There are ardent advocates of the using of large quantities of salt for stock—putting it in the feed so that they must eat it. The more conservative seem to favor keeping salt where the stock may have it at will. Others would use no salt at all, claiming it to be the cause of blackleg, dry murrain, and various other troubles.

Salt is undoubtedly a very important factor in the feeding of all kinds of animals, but we find that a certain amount of care must be exercised in using it. The cattle that are bought and brought to the college are always very greedy for salt. If allowed to satisfy their desire, they will consume so much that it greatly deranges the processes of digestion. After the large quantity of salt is taken, the cattle will drink a large amount of water, which with the salt has a very cathartic effect; they go off feed, and it may take a week or more for them to get righted and in normal condition. After the cattle become accustomed to the salt it can be kept before them all the time with no bad results, but it can easily be seen how one could form the opinion from an occasional salting of the stock that the salt is a detriment.

We find it necessary to take the precaution of allowing cattle only 1 ounce of salt per day to the 1,000 pounds of live weight, and be careful that an individual does not get more than its share. This precaution is necessary only until the animals have become accustomed to the salt. After this the salt is kept before them all the time.

Our salt boxes are placed at a convenient place under the sheds, and replenished as often as necessary to keep salt in the box. The salt is weighed out in 2-pound sacks, and only this amount put in at a time, so the salt is fresh. A larger amount would not be desirable for lots of 10 to 20 head. Common barrel salt is used, and is considered preferable to rock salt. The animal must use too much energy and time, and often get their tongues sore, to satisfy themselves at rock salt.

As to how much salt calves will eat, the following from our notes on the 130 head of last spring calves now on feed at the barn will speak for itself:

Lots 1, 2, 3 and 4 have in each 20 head of grade Herefords, Shorthorns, and Angus, and have been on feed 102 days.

Lot.	Feeds.	Salteaten. lbs.
1.	Shelled corn and alfalfa hay	36
2.	Kaffir-corn and alfalfa hay	42
3.	Shelled corn $\frac{1}{2}$ , soy-beans $\frac{1}{2}$ , and prairie hay	50
4.	Kaffir-corn $\frac{1}{2}$ , soy-beans $\frac{1}{2}$ , and prairie hay	60

Lots 5, 6 and 7 contain 10 head each of grade Herefords, and have been fed just 100 days. Lot 6 in addition to having salt where they could get it at will, receive 1 ounce per 1,000 pounds live weight per day on their feed.

Lot.	Feeds.	Salteaten. lbs.
5.	Shelled corn and alfalfa hay	24
6.	Shelled corn and alfalfa hay   Ate at will.	14
7.	Shelled corn and alfalfa hay and a condimental feed	25
		12

The condimental feed was fed as per directions, and while it is not the intention of this article to give the results of this trial, I may say that for all practical purposes there is no advantage or disadvantage as to gains in either of the three methods of feeding.

Lots 8 and 9 contain 10 head of common grades of all breeds. Lot 8 was raised on skim-milk and have been fed 102 days. Lot 9 was raised on whole milk and has been on feed only 88 days. The skim-milk calves seem to have a great capacity for salt, but it has shown no bad effects. The lots are being fed the same—shelled corn and alfalfa hay. Lot 8 has eaten 34 pounds of salt and lot 9 only 15 pounds.

An average would show that the amount of salt consumed is near the standard of 1 ounce to the 1,000 pounds live weight for 24 hours. The calves

are doing nicely and there is much more interesting data that will be given later. J. G. H.

#### Value of Cooking Feed for Hogs.

A. B. AXELTON, BEFORE THE K. S. A. C. FARMERS' CLUB.

The early writers of agriculture usually recommended the cooking or steaming of all kinds of feed. About 1854 an experiment often tried proved that 18 or 19 pounds of cooked corn were equal to 50 pounds of raw corn for hog feed.

About 1869 a member of the Ohio State Board of Agriculture concluded that under ordinary circumstances of weather, and with dry and clean feeding pens, 1 bushel of raw corn fed on the ear would produce 9 pounds of pork, while raw meal would produce 12 pounds, boiled corn 13½ pounds, and cooked meal 16½ pounds of pork. Later experiments conducted at the experiment stations of this country show an average loss of six per cent in the value of feed because of cooking.

At the Ontario Agricultural College several experiments were tried with cooked and uncooked peas and corn. The result was that for fast and cheap production of pork, raw peas are 50 per cent better than cooked peas or Indian corn in any shape. Summing up the results of 9 continuous feedings at the Maine college, the result in every case pointed to the superior value of uncooked meal for the production of pork.

In 1885, an experiment was tried at the Kansas State Agricultural College by feeding one lot of pigs cooked shelled corn, while a second lot, similar in all respects, was given uncooked shelled corn. The corn was cooked by steam until the kernels were soft. The lot fed cooked corn required 749 pounds of grain to make 100 pounds gain, while those fed uncooked corn required but 630 pounds for 100 pounds gain.

Five trials reported from the Wisconsin station showed a slight gain in favor of cooked feed, the difference being very small.

The average of 10 trials from different stations shows that 476 pounds of uncooked meal or grain were required for 100 pounds of gain, while after it was cooked 505 pounds were required. This shows a loss of 6 per cent of the feeding value of these substances through cooking.

A few feeds appear to require the modifying influence of heat and moisture to render them more palatable and digestible with stock. Potatoes can not be successfully fed to swine in any quantity unless they are first cooked, and roots are more palatable if cooked and meal added to the mass.

As a general proposition, it may be stated that it does not pay to cook food for stock when such food will be satisfactorily consumed without cooking, for cooking does not increase the digestibility of feed stuffs, but may lower it, and there is considerable expense involved in the operation. One thing which must be taken into consideration is that a person who is willing to cook feed will usually give his animals many attentions which feeders generally pass by as not worthy of time or notice. It is the care and not the cooking which makes animals of superior quality.

#### Information Concerning the Angora Goat.

It is estimated that there are about 400,000 Angora goats in the United States, and that our annual production of mohair is about 1,000,000 pounds. Although very little has been said or written about Angora goats during the last forty years, they have been extensively bred in the western states and territories, especially in Texas, New Mexico, Nevada, Florida, California, and Oregon.

Investigations prove that they are not only classed among the most useful of the domestic animals, and have been so classed for thousands of years, but their usefulness is manifested in various ways. The fleece, called "mohair," furnishes some of the finest fabrics among ladies' goods, and is used in various other manufactures. Their habit of browsing enables the farmers in a wooded locality to use them to help in subjugating the forest. Their flesh is exceedingly delicate and nutritious; the milk, although not so abundant as with the milch breed of goats, is richer than cow's milk; their tanned skins, though inferior in quality to the skins of the common goat, are used for leather, their pelts make the neatest of rugs and robes; and they are excellent pets for children. A few of them in a flock of sheep are a protection from wolves and dogs; and their manure is noticeably helpful to the grass which follows them

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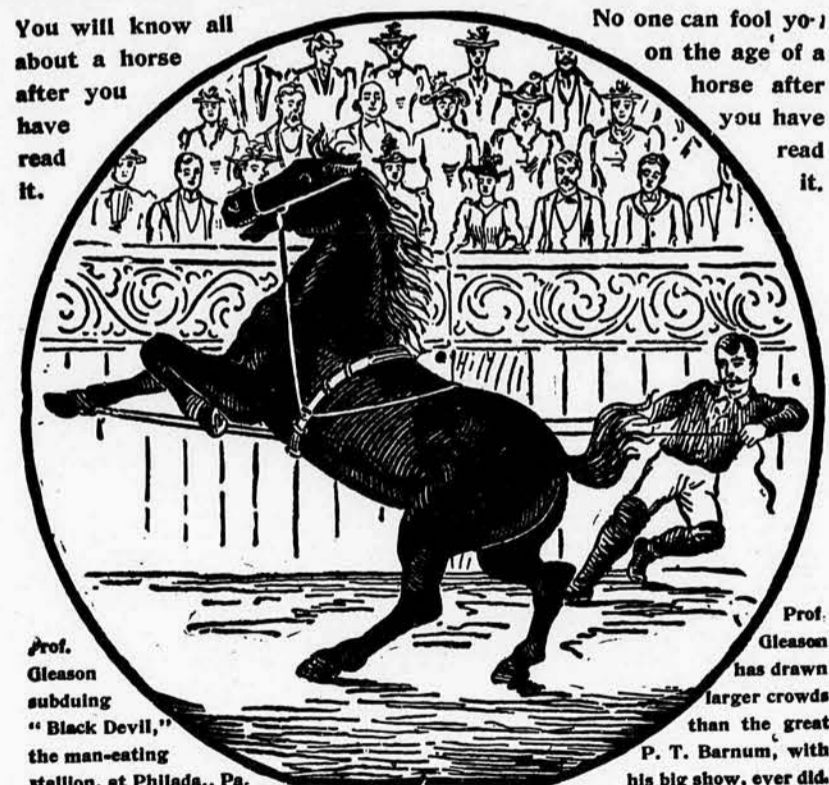
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You will know all about a horse after you have read it. No one can fool you on the age of a horse after you have read it.



Prof. Gleason subduing "Black Devil," the man-eating stallion, at Philada., Pa.

Prof. Gleason has drawn larger crowds than the great P. T. Barnum, with his big show, ever did.

416 Octavo Pages, 173 Striking Illustrations, produced under the direction of the United States Government Veterinary Surgeon.

In this book Prof. Gleason has given to the world for the first time his most wonderful methods of training and treating horses. 100,000 sold at \$3 each, but we have arranged to supply a limited number of copies to our subscribers on terms that will be easy for all who want the book.

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KANSAS FARMER CO., Topeka, Kansas.

after they have cleaned away the underbrush.

There is much interest in the goat question, and the U. S. Department of Agriculture has received numerous letters of inquiry concerning Angora goats.

The bulletin is illustrated with a frontispiece and 17 plates, and is for sale to miscellaneous applicants by the Superintendent of Documents, Union Building, Washington, D. C., at 15 cents the price affixed by him.

Pure-Bred Stock for the College Farm.

EDITOR KANSAS FARMER:—The people of Kansas probably have their minds made up on this question, as Kansas people are a reading and thinking people, and the farmers like to get together these long winter evenings to exchange ideas, and consequently are an enlightened, intelligent, and progressive people and do not have to graduate from some popular college to become a practical, thinking, and independent class of people.

If the people only knew that their money would be spent judiciously, how different it would be! How much faster our state would develop its resources if the men who make the money could only spend it. Hence the necessity of competent officers.

If the college would charge a fair tuition fee, and build suitable buildings, there would be no trouble in getting the different breeds represented, as there is no way a breeder can advertise his stock so well as to bring it before the public if the stock is only in good hands, unless it is at a state fair which we need ever so badly. A TAXPAYER, Carbondale, Kans.

To Fine Stock Breeders.

Every breeder of pure-bred or improved stock should start the new century right by identifying himself with that great, useful, and influential organization, the Kansas Improved Stock Breeders' Association, which was organized in 1880.

A Question of Memory.

Jones—You remember what a miserable memory I used to have? Well, Dr. Bolus gave me a prescription that has done me a world of good.

Smith—Something to take before meals was it?

Jones—Well, I don't recall just what the directions were, but it's a splendid cure.—Philadelphia Press.

The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the Kansas Farmer.

Impregnators.—Are artificial impregnators, when used in the breeding of horses, a practical success? If so, what method is the best? Please answer in the KANSAS FARMER.

Answer:—Impregnators when properly used in breeding is a great success and can do several times the amount of business with the same stallion. The best is made of metal so that it can be scalded out or boiled so as to keep clean and then will be nearer the right temperature when used.

Urticaria.—I have a mare five years old, bright bay. About three weeks ago, the hair began to come off each side of her nose just below the eyes and now it has spread over the most of her face. Also on her belly about as wide as a man's hand and between

Easy Harness Eureka Harness Oil. All harness, old or new, is made pliable and easy—will look better and wear longer—by the use of Eureka Harness Oil.

tholeum, 1 part to 50 of water. Do not feed Kafir-corn and give regular daily exercise of 3 to 5 miles.

The Effect of Oil.

Crimsonbeak—Did you see Dauber's painting of the ocean? Yeast—Yes. Crimsonbeak—What do you think of it? Yeast—Oh, I thought the water looked too calm.

We want a good reliable man or woman in every county to act as local agent for the KANSAS FARMER. We offer a good proposition to the right parties. In answering please give some one as reference and also state how much time each week you can give to the work.

THE KANSAS FARMER, Topeka, Kansas.

TRY A Moth Catcher.

This little machine destroys the moth before it deposits the egg. Hence it protects orchards, gardens, etc., from worms and takes the place of spraying. It has been in general use in the fruit district of southwest Missouri for several years and is pronounced a great success.

It is made in two sizes, the larger retailing at \$1 and the smaller at 85 cents. Through a special arrangement with the manufacturer we can furnish these machines with the FARMER as follows:

- MOTH CATCHER (large size), .....AND..... KANSAS FARMER ONE YEAR, \$1.50. MOTH CATCHER (small size), .....AND..... KANSAS FARMER ONE YEAR, \$1.40.

Address The Kansas Farmer, Topeka, Kansas.

CELEBRATED Des Moines Equalizers No. 3 for Binders WHAT THEY SAY ABOUT The Des Moines Equalizer

The above illustration shows the celebrated Des Moines evener. This evener has been a great success and an evener which practically every farmer has use for. They are put up in first-class shape and on scientific principles.

T. H. Well, Blairstown, Iowa, says: "Enclosed find money for two more four-horse eveners for right hand sulky plows. Those I got are all right, all you claim for them. Every one of my neighbors seem to want one."

the front legs. In the first place it seems to swell or raise the skin up just a little and in three or four days the hair begins to loosen and come out. In a week it will all be out and some places raw from 1/4 to 1/2-inch in diameter. Sores are red and not very deep. No pus forms and the skin seems to have almost its natural appearance only where the sores are.

Answer:—Give nitrate of potash, 3 ounces; sulphur, 8 ounces; arsenious acid, 2 drams; fenugreek seed powdered, 3 ounces. Mix and divide into 24 powders and give 1 twice a day in oats and bran dry, if she will take it and if not drench in a pint of water. Bathe the parts once a day with chloro-nap-

ZENOLEUM kills lice, ticks, mites, fleas, etc., on all kinds of animals and poultry. Given internally it drives out worms. Cures all cuts, wounds, sores, etc. Non-poisonous. Endorsed by leading veterinarians. "Veterinary Adviser" free. Zenner Disinfectant Co., Box 61, Detroit, Mich.

BUY THE BENNETT STUMP PULLER TILE DITCHER Handy Farm Wagon & CORN HARVESTER Cat. each free. H. L. Bennett, Westerville, O.

THIS FEED MILL does all kinds of work on one set of grinders. The tandem sweep compels each horse to pull his own share. No Gearing. No Friction. Capacity, speed and comfort increased. (Also make 7 sizes belt-power mills). Price lists free. C. W. F. Bowser Co., So. Bend, Ind.

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THE UNION PACIFIC HAS AUTHORIZED One-Way Excursion Rates TO CALIFORNIA —OF— \$25.00 FROM KANSAS and NEBRASKA POINTS Also to points in Utah, Idaho, Montana, Oregon, and Washington, as follows: Ogden and Salt Lake City, Utah, \$23 00 Butte, and Helena, Mont., 23 00 Portland, Ore., 28 00 Spokane, Wash., 28 00 Tacoma, and Seattle, Wash., 28 00 TICKETS WILL BE SOLD March 5-12-19-26, 1901. April 2-9-16-23-30, 1901. P. A. LEWIS, City Ticket Agent, 525 Kansas Avenue. J. C. FULTON, Depot Agent.

SEND NO MONEY—but order any of our Sewing Machines sent C. O. D. on 30 days' trial. If you don't find them superior to any other offered at the same or higher prices or are dissatisfied for any reason, return them at our expense and we refund your money and freight charges. For \$12.50 we can sell you a better machine than those advertised elsewhere at higher price, but we would rather sell you better quality and give satisfaction. Our elegant Arlington Jewel, drop head, \$12.50. Our No. 9 Ball Bearing Arlington, 5 drawer, drop head, \$15.45. Write for large illustrated catalogue FREE. CASH BUYERS' UNION, (Inc.) 158-164 W. Van Buren St., R-64, Chicago



Transfers of Pedigreed Stock.

Chas. E. Morrison, proprietor of the Phillips County herd of Polled cattle and Poland-China hogs, reports the following sales: Red Polled bull, Hummer, Vol. 13, to George Clifton, Esbon, Kans.; boar by Best on Earth 2d 21451, to A. W. Johnson, Phillipsburg, Kans.; boar by Monarch 23940, to J. W. Young, Pleasant Green, Kans.; one bred sow by Best on Earth 2d 21451, to J. N. Eike, Colby, Kans.; boar by Best on Earth 2d 21451, to George B. Ross, Alden, Kans.

Albert L. West, Garnett, Kans., writes: I have to report the following sales of pure bred stock: Double Standard Polled Durham bull, Starlight (yearling), by Red Thistle Top F. D. No. 1253 S. H. No. 131932, to J. W. Morrison, Ottawa, Kans.; the Poland-China boar, Chief L. Grand 48723, by Chief Tecumseh 2d 14579, to G. P. Robinson, Woodlawn, Kans.

From the Poland-China herd of John D. Marshall, Walton, Kans., have gone out lately the following: To Brown Corby, Marion, Kans., Model U. S. 25028; to Richard Radway, Walton, Kans., boar by Miles Look Me Over 18879; to C. L. Horst, Newton, Kans., boar by same; to Frank Griffith, Walton, Kans., boar by same; to Dave Harshbarger, Walton, Kans., boar by same; to Elsie Merrill, Walton, Kans., gilt by same; to Johnathan Weaver, Walton, Kans., two gilts by same; to E. Langgenger, Elbing, Kans., boar by same; to D. C. Wilson, Walton, Kans., boar by same; to H. D. Barnes, Tulla, Texas, one boar and one gilt by same.

Chinquapin farm, of Alma, reports the following sales of Poland-Chinas, eligible to registry: Sow by Black Chief's Perfection 235273, to Dow Busenbark, Eskridge, Kans.; boar by Black Chief's Perfection to Otis Grienke, Paxico, Kans.; boar by Black Chief's Perfection to F. L. Cleland, Alma, Kans.; boar by Black Chief's Perfection to Albert Guadt, Paxico, Kans.; boar by Anderson's I Know 25162 and 7 sows by Black Chief's Perfection to E. Sturdy, Bradford, Kans.; boar by Black Chief's Perfection to M. H. Collins, Kingfisher, Okla.; 4 sows by same to U. Dickinson, Kingfisher, Okla.; one boar by Anderson's I Know to U. Dickinson.

L. E. Moyer has recently sold to C. W. Strickland two young Poland-China sows by Bismark 2d 23116 out of Susie 55096; Bismark was sired by Prince Bismark 18671 and Susie by Chief Wilkes 20182. Both seller and purchaser live at Junction City.

Messrs. Snyder Bros., Winfield, write: Our late sales have been a Polled Durham bull by Winfield Chief 507 to J. S. Coe, Whitman, Kans.; Poland-China boar by Ideal Corwin 43965 to D. G. Charles, Winfield, Kans.; boar by Illinois King 25063 to T. H. Schrepel, Ellinwood, Kans.; 1 sow by Illinois King 25063 and one sow by Ideal Corwin 43965 to D. H. Plowman, Caney, Kans. We have four nice summer boars left and a nice lot of gilts and fall pigs for sale at reasonable prices.

Messrs. O. E. Morse & Sons on January 31, sold to A. Hofsegg, of Hume, Mo., the 12 months old Shorthorn bull, Prince Lavender, sire Lavender King 4th 108682 out of Woneka Lady by Lord Warden 52506 (bred by Col. Harris), out of Little Sugar by Climax Airdrie 28863, and tracing to Imp. Lady Elizabeth.

D. V. Turner, Frederick, Kans., has sold to Sharbauer & Aycock, of Midland, Texas, the following string of pure-bred Herefords: Cow, Brunette 108295; cow, Lily Langtry 108298; cow, Miss Wixson 108301; cow, Miss Gibson 108300; cow, Kodax Pride 108297; cow, Besse Kodax 108294; bull, Saint Valentine 108303; bull, Remsburg 108302; bull, Truthseeker 108304; bull, McDonald 108299.

Sales for the week ending February 2, by L. F. Parsons, Salina, were as follows: Male pig, Duroc-Jersey, sire Red Dick, dam "Lady Smith" by "Trot's Ruby," 3637, to George Bowman, Brookville, Kans.; to Wm. Gardner, Salina, Kans., the bull calf "Brilliant P." 155417, sire "Grand Duke" 121982, dam Pink P., Vol. 42, page 970; to John Peterson, Brookville, Kans., bull calf "Jack of Hearts" P. 155419, sire "Model" 147941, by Glendower 103387, dam "Beauty 2d P.," Vol. 40, page 250.

Manwaring Bros., of Lawrence, report English Berkshire sales as follows: To C. W. Elyea, Jewell City, Kans., 1 gilt sired by 2d Seven Oaks Col. Mills 45718; to J. A. Dawdy, Jewell City, Kans., 1 gilt sired by Searchlight 48890; to M. C. Orton, Boling, Kans., 1 boar sired by 2d Seven Oaks Col. Mills; to John Kohler, of Myers Valley, Kans., 1 boar sired by Pearl's Prince 56256; to H. C. Shaw, Bradford, Kans., 1 boar sired by 2d Seven Oaks Col. Mills 45718.

W. M. Vandenberg, of Eldorado, has just bought of E. E. Hanes, Potwin, Kans., 3 sows by Paymaster 3d 23814 S, 1 sow by Hadley Faultless 20451 S, and 1 sow by Faultless Chief 23460 S. M. L. Helena, Towanda, has also bought of the same parties 1 boar by Paymaster 3d.

Messrs. Tohuer & Meyer Bros., Hill City, have bought of W. J. Skelton, Wakeeney, the bull, Duke 115221, by Franklin Square 41266 and out of Duchess 9th 68606.

Harry G. Gillette, of Ottawa, has purchased of Dietrich & Spaulding, Richmond, Kans., a Poland-China boar by Knox All Wilkes 18179, and of E. E. Axline, Oak Grove, Mo., a sow by Missouri's Black Chief 19399.

List of transfers from Laundale Herd: Boar, Grand Medium 24455, from J. D. Ziller, Hiawatha, Kans.; to W. Minner, Hamlin, Kans.; boar by Grand Medium, to Dave Hillyer, Reserve, Kans.; boar, Chieftain Jr. 24456, to Wm. Hart, Padonia, Kans.

January sales of registered Poland-Chinas as reported by G. W. Harman, Ridge, Kans.: Boar by Klever's Boy (28843), to John McCowen, Chanute, Kans.; boar by Joe Medium 16438 S, to S. Udene, Ridge, Kans.; boar by Klever's Boy, to S. G. Bryant, Neosho Falls, Kans.; boar by Klever's Boy, to Wm. Lunder, Cookville, Kans.; boar by Brilliant Chief 23842 S, to Fred Hasting, Rose, Kans.; boar by

Klever's Boy 20843, to Ed Pray, Kiowa, Kans.; boar, Brilliant Chief, to S. E. McMillen, Chanute, Kans.; sow by Brilliant Chief, to S. G. Bryant, Neosho Falls, Kans.; boar by Brilliant Chief, to B. F. Smith, Bentonville, Ark.; boar by Brilliant Chief, to J. P. Huffman, Vilas, Kans.

The Shorthorn bull, Barrington Lad 153940, has been sold by G. D. Stratton & Son, Walton, Kans., to W. H. Snook, Hennessey, Okla.

W. B. Vanhorn, of Lone Star, Kans., has just made the following Poland-China sales: Fine sow by Missouri's Black Chief 19399, to H. Davidson, Waverly, Kans.; also boar pig to M. Raskoppf, Irvin Mound, Kans., sire Kanwaka Chief 23380.

The herd boar, Model Index, of Corwin Index and Klever's Model breeding, has been sold by W. H. McAfee to Alfred Docking for Cedarcraft Poland breeding.

F. C. Kingsley, Dover, sold Shorthorn bull Dan, Vol. 48, to Kocil Bros., Dover.

F. C. Kingsley, Shorthorn breeder, of Dover, Kans., has a nice lot of coming yearling bulls ready to go to fields of usefulness.

A. F. McCarty, of Humboldt, Kans., sold the registered Hereford bull, Hallock 70820, to T. N. Smith, of Chanute.

Sam W. Hill, the successful Poland-China breeder, of Hutchinson, Kans., reports the following sales: Nancy Chief (59754), by Perfection Chief 24978, to Elmer Brown, Halstead, Kans.; Beauty Price 2d (59755), by Guy Darkness 18292, to Elmer Brown; boar by Guy Darkness 18292, to Israel Marteny, Yoder, Kans.; boar by Guy Darkness, to S. S. Mathers, Vining, I. T.; Duchess 59963, by Guy Darkness, to F. F. Miller, Anthony, Kans.; boar by Perfection Chief 24978, to George Hirst, Hutchinson, Kans.

D. L. Button, has made the following sales of Chester Whites during the past week: Boar by Chief Eclipse 10835, to George Kopp, Elmont, Kans.; boar by Chief Eclipse, to W. S. Goding, Jewell City, Kans.; boar by Fritz All Right 11145, to H. Hamler, Seneca, Kans.; boar by Fritz All Right, to Philip Morstoff, Elmont, Kans.; boar by Fritz All Right, 2 sows by Chief Eclipse, to J. H. Fountain, Arlington, Kans.

The following registered stock, all bred by Rhodes Bros., Wellsville, has recently been sold: Bull, Illustrious Lad, by Illustrious Charley 124184, to E. Rhodes, Milan, Kans.; bull, St. Charles 7th, by Illustrious Charley, to Riley Bros., Albion, Neb.; bull, Clover Lad, by Illustrious Charley, to D. D. Tuttle, Vinland, Kans.; bull, Illustrious Victor, by Rosmond's Victor 4th 126971, to F. M. McWilliams, Paola, Kans.; Poland-China hogs: Boar by Rhodes' Black U. S. 22743, to James Zooky, Milan, Kans.; sow by Rhodes' Black U. S., to Elton Rhodes, Milan, Kans.; boar by Rhodes' Black U. S., to Felix Bouray, Le Loup, Kans.; boar by Rhodes' Black U. S., to John Smith, Wellsville, Kans.; boar by Rhodes' Black U. S., to Clarence Wasson, Wellsville, Kans.; boar by Rhodes' Black U. S., to Newt. Chandler, Wellsville, Kans.; boar by Rhodes' Black U. S., to Chas. A. Winter, Le Loup, Kans.; boar, sire Rhodes' Black U. S., to P. E. Stephenson, Black Jack, Kans.; boar, sire Commadore 21551, to L. Cayot, Wellsville, Kans.; boar by Commadore, to R. H. Harrison, Wellsville, Kans.; boar by Commadore, to Chas. Skinner, Edgerton, Kans.; boar by Commadore, to B. F. Turner, Gardner, Kans.; boar by Rhodes' Black U. S., to A. Joy, Baldwin, Kans.

Messrs. J. W. & J. C. Robison, of the Whitewater Falls Stock Farm, have recently sold the registered Percheron mares, Adelaide 18203 and Virginia 25419, to the Oklahoma Agricultural College; price \$700. This is a very fine pair of black mares, good specimens of the breed. They were selected by Prof. F. C. Burtis of the agricultural department, and will be shipped to them at once. They also sold to the same college the trio of Imperial Pekin ducks that were the first prize winners at the last state poultry show. They also report the sale of the imported black Percheron stallion, Banward (44552) 25971, to A. L. Robison & Sons, of Tremont, Ill. This is a very fine colt, imported by them last December and will make a 2,300 pound horse at maturity. He was selected by Mr. Robison after a great amount of travel and examination of the young stallions of the breed. Kansas has been getting her supply of horses from the East but now the travel is the other way.

Volla Christian, of Clyde, has just sold his Red Polled herd bull, Bonanza Record 2197, to A. Johnston, of Concordia.

Mr. W. E. Nichols, of Sedgwick, has just returned from an extended trip into Iowa and Illinois, where he bought several of the finest bred Poland-Chinas to be found in the country. At Springfield he attended the Funk & Brown sales, where he captured Beauty U. S., an extra fine sow that was first prize winner at the Foner City fair, also two other country fairs and is thought to be a better sow than U. S. Belleflower, her full sister, that was shown at Springfield and captured second place. She is a full sister also to U. S. Chief that sold for \$450 as a yearling and would have been winner of first at Springfield if he had lived. This grand sow is bred to Henry's Perfection 53999. This is an excellent animal and Mr. Funk Jr. refused \$500 for a one-half interest in him. He also attended the Burgess Bros. sale at Bement, Ill. and bought a fine sow bred by Peter Mouw. She is bred to Great T. C. U. S., a state fair winner two years in succession at the Ohio state fair; also winner of first in aged class at Springfield; record, twenty-seven shows and twenty-seven first prizes. He also produced the most phenomenal gilt ever seen in the show-yard. From the Burgess Bros. sale he went to the great Woodberry Hill farm sale and bought the queen of Poland-Chinas, T. C. S. Superb, sired by T. C. U. S. and bred to that great king of breeding boars, King Perfection 50017A, known as the hog with the business hams. This sow was



CENTURY MANUF'G CO., East St. Louis, Ill.

bred by E. W. Foster, of Troy, Ohio. Those looking for show stuff for next fall will find it here, sired by King Perfection, Henry's Perfection, T. C. U. S. and I Know Perfect.

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School of Agriculture; the North Dakota Agricultural College; the South Dakota Agricultural College; the Iowa Agricultural College; the Virginia Agricultural College; the Massachusetts Agricultural College, and in the Illinois and Washington State Agricultural Colleges. We have received a special edition of this book, issued for the Ames Plow Company, which contains 240 pages; more than 120 illustrations and treats of the cultivation of every variety of vegetables grown in America. While the regular price of the book is \$1.25 (and it is well worth it), the Ames Plow Company is offering it free to every purchaser of a Matthews New Universal Seeder in any of its various styles. These seeders are unsurpassed by any implement used by the gardener and truck grower, being adapted to all classes of work, both seeding and cultivating. They are used by Professor Green in his field tests. We trust that our readers will avail themselves of this opportunity to secure free so valuable a book, by so capable an authority. Look up the advertisement in another column, and write them to-day, mentioning this paper.

A Happy Family. The accompanying illustration shows a Sure Hatch "Happy Family." It is one of the many pictures made from real photographs given in the handsome catalogue of the Sure Hatch Incubator Company, of Clay Center, Neb. The Sure Hatch incubator has been one of the sur-



prises of recent years in the poultry world. Its inventor, Mr. M. M. Johnson, is a practical poultry-raiser. In designing this incubator he was guided more by practical common sense than by theories. The Sure Hatch is built of California redwood, the only thing which stands continually the heat and moisture needed for perfect incubation without cracking, warping or pulling apart. It has copper tanks guaranteed for twenty years. The ventilation and application of moisture follow the natural method of the hen; the lamp is the famous hydro-safety with a water-jacket, which prevents all danger of explosion or smoking; the water regulator is as certain and as positive as a thermometer. The Sure Hatch has three walls and two dead-air spaces, being one more wall and one more dead-air space than any other incubator—in short, from first to last, there is not a point overlooked which will contribute to its success, durability and ease of operation. The same company make the celebrated Common Sense Folding Brooder, which meets the needs of poultry men who haven't time to teach chicks to climb a ladder. The guarantee under which the Sure Hatch is sold is one of the strongest that it is possible to give. One trial is all they ask—it must out-hatch other machines the first time, not after the season is nearly ended. The handsome catalogue, profusely illustrated, and containing a vast fund of poultry information, will be sent to any of our readers free. Ask for it. Address Sure Hatch Incubator Company, Clay Center, Neb., and mention this paper. We want an agent in every county in the state. Write us for terms and sample copies.

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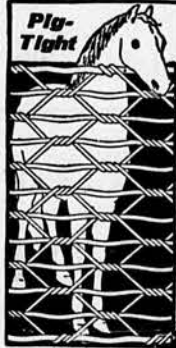
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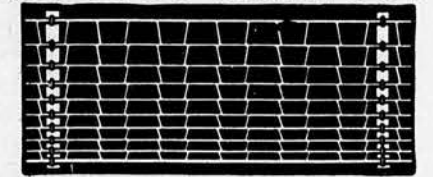
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The Apiary.

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

MISS ELIZABETH WALTON, BEFORE VINE-LAND FARMERS' INSTITUTE.

I am quite an amateur beekeeper. I have 17 colonies under my special care. I commenced caring for the bees several years ago, when my brother Will left home. My brother had a large number of colonies, and disposed of part of them before going away.

I knew this much, I was afraid of the bees. (They seemed to know that, too, and were always stinging me.) The stings were very poisonous and gave me much pain. Since I had undertaken the work I was determined to succeed at all hazards.

SPRING WORK.

One warm day I commenced looking the hives over, to see if they all had queens. There is one way you can be certain if you have a queen. That is when you find brood in the frames, as the queen bee lays all of the eggs. If you do not find any brood, take a frame of brood from another hive, carefully brush off all the bees and place it in the hive. The bees can then build up any common cell and raise a queen for themselves.

TOP BOXES.

As soon as the honey flow commences in earnest I put on the top boxes, if the colony is strong and ready for it. Unless it is, it is better to wait awhile, as it only discourages the bees, and makes a harbor for moths. My top boxes hold 10 frames, each frame holding 6 sections. I seldom put on more than 6 frames at a time, and sometimes less, according to my best judgment in the case, for if you put on too many frames, the bees are likely to start more sections than they are able to fill, thus you have your sections partly filled instead of well filled sections each weighing a pound.

Then comes the white clover and sun-mach. Later on the buckwheat. It always pays to sow buckwheat for the bees. The fall honey is made from the Spanish needle and is a dark, rich honey.

CATCHING THE SWARMS.

Almost every one seems to think catching the swarms is the hardest work a beekeeper has to do. I do not think so. In fact, I enjoy it more than any part of the work. The bees as a rule swarm between 10 a. m. and 3 p. m. When I discover that my bees are swarming, I open the entrance and windows to the hive I am going to put my new swarm in, and spread a cloth in. I then put my hat and veil on, take a large cloth in my arms holding it with my left hand and chin so as to form a bag. If the bees are high upon a limb I get some one to hold the ladder while I go up after them. I give the limb a quick jar letting the bees fall into the cloth, closing it up so the bees can not fly out. I carry them to the hive and gently place them on the cloth in front, brushing them to make them enter. The bees never try to sting during swarming.

TAKING OFF HONEY.

When I take off honey I smoke the bees to quiet them, then brush the bees off the frames of honey, place them in a wheelbarrow and take them to the honey-house. In one of the windows of this I have a bee-escape fixed in the

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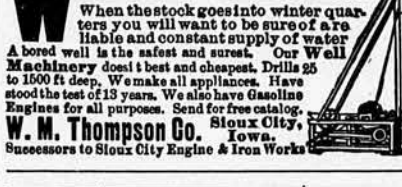
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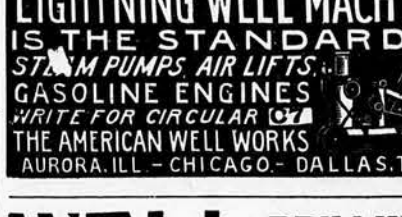
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Send a postal card with your name and address or that of a friend interested in Nebraska, to the General Passenger Agent of the Burlington Route, St. Louis, and a copy of the last issue of the "Corn Belt" will be sent free, by return mail.

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