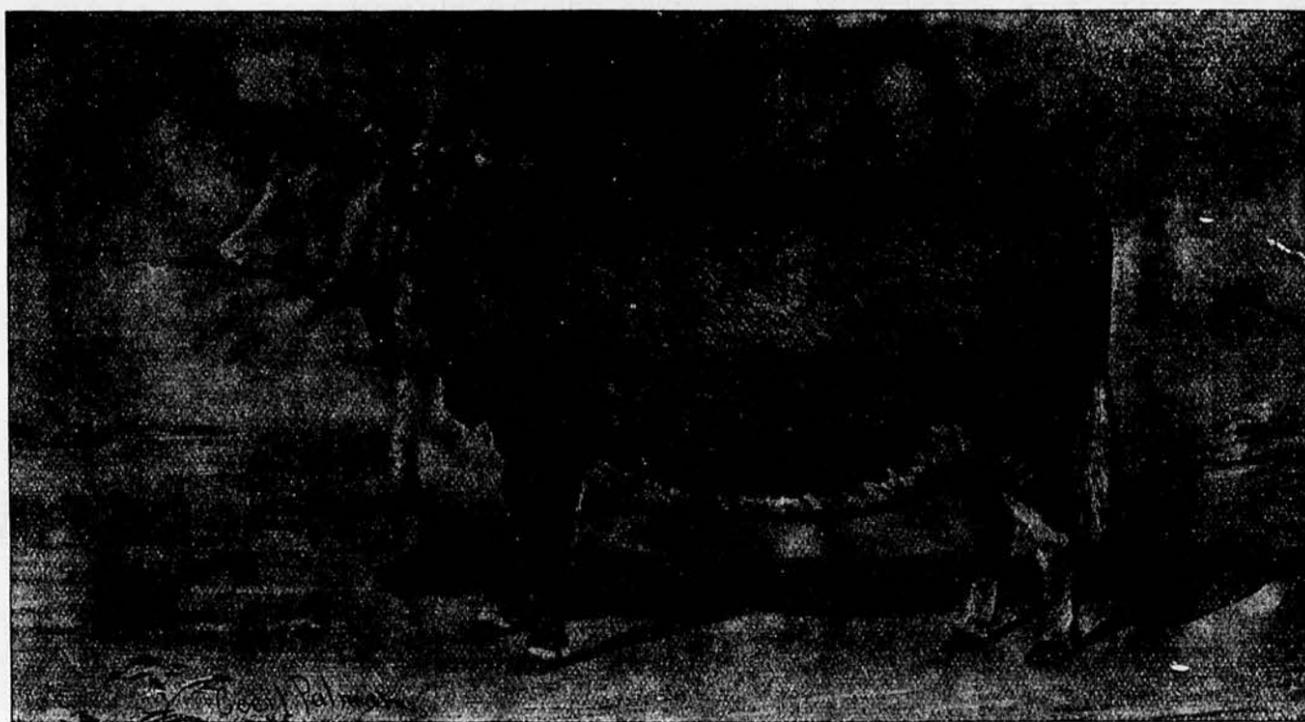


KANSAS FARMER

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TOPEKA, KANSAS, THURSDAY, NOVEMBER 17, 1898.

SIXTEEN TO TWENTY
PAGES—\$1.00 A YEAR.



DIANA 71049. BRED AND OWNED BY C. S. CROSS, EMPORIA, KANSAS.

Undeclared heifer calf at five leading State fairs in 1897, returning from the Trans-Mississippi and International Exposition in 1898 with the same unbroken record. Diana weighed at 10 months 700 pounds. She won in 1897, first in class and Hereford special at Indiana State fair, first in class and Hereford special Wisconsin State fair, first in class and Hereford special Illinois State fair, first in class and Hereford special at St. Louis, junior champion Wisconsin State fair, champion over all beef breeds Minnesota State fair. In 1898 shown only at the Trans-Mississippi and International Exposition, where she won first in class and Hereford special, one of aged herd third and Hereford special, one of young herd second and Hereford special, one of get of Archibald V. third in class and Hereford special, third in Hereford sweepstakes cow of any age, first in sweepstakes all beef breeds, one of aged herd second in sweepstakes all beef breeds, one of young herd second in sweepstakes all beef breeds. Diana will be included in the sale at Kansas City, December 7, 1898.

BREEDERS' DIRECTORY.

Cards will be inserted in the Breeders' Directory as follows: Four line card one year, \$16.00; six lines, \$23.00; ten lines, \$30.00; each additional line \$3.00. A copy of the paper will be sent to the advertiser during the continuance of the card.

CATTLE.

DOCK HILL HERD OF SHORT-HORNS—Cross bred Scotch and Waterloos, handsome and beefy. Have for sale twenty-four head thoroughbred red bulls, 6 to 12 months old, ten of which are by the great Linwood Lord Mayor. Also have a car-load very high-grade Short-horn bulls and seventy high-grade and two thoroughbred Hereford bulls for sale. J. F. True, Newman, Kas.

FAIRVIEW STOCK FARM—Registered Short-horn cattle. Royal Bates 2d No. 124404 at head of herd. Young stock for sale. E. H. Littlefield, Newkirk, Oklahoma.

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.

NEOSHO VALLEY HERD OF SHORT-HORNS—Imported Lord Lieutenant 120019 at head of herd. Young bulls and heifers for sale. Address D. P. Norton, Council Grove, Kas.

HORSES.

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

SWINE.

KAW VALLEY HERD POLAND-CHINAS—One of the best sons of Chief I Know at the head. Pairs and trios not akin; of all the leading strains. M. F. Tatman, Rossville, Kas.

S. F. GLASS, Marion, Kas., breeder of thoroughbred Jersey cattle, Poland-China and Large English Berkshire hogs, M. B. turkeys, B. P. Rook and S. C. White Leghorn chickens, peacocks, Pekin ducks and Italian bees.

SWINE.

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

J. U. HOWE, Wichita, Kas., Maple Ave., Herd Duroc-Jersey hogs. Choice stock for sale. Reasonable prices. Personal inspection and correspondence invited.

KANSAS HERD OF POLAND-CHINA SWINE—Has five choice yearling sows bred to my black U. S. boar, and one Tecumseh boar and thirty-five fall pigs by Model Sanders (20492) by Klever's Model. They have typical ears and show fine markings. Address F. P. Maguire, Haven, Kas.

V. B. HOWEY, TOPEKA, KAS.

Breeder and shipper of thoroughbred Poland-China and Large English Berkshires swine and Silver-Laced Wyandotte chickens.

Standard Herd of Poland-Chinas

A choice lot of gilts sired by Ideal U. S. and bred to Tecumseh Chief. Also some good Tecumseh Chief gilts bred to Look Over Me (he by old Look Me Over) and some good fall pigs, both sexes. Write and get my prices or come and see. **WM. MAGUIRE, Haven, Kas.**

PURE-BRED POLAND-CHINAS.

Spring crop of pigs by Wren's Model, What's Wanted Wilkes and Tanner by Hidesstretcher. Dams by Black Corwin, Wren's Medium, Protection Boy, Moss Wilkes Tecumseh, Hadley M. Washington. Get a Corwin Sensation, Darkness 1st, or Moss Wilkes Maid boar before my sale this fall. Some extra fine gilts for sale now. Tanner pigs are marked perfectly and have fine finish. Write me for particulars. **J. R. WILLSON, Marion, Kas.**

Poland-Chinas

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At home of Model Boy 18545 and A.'s Chief 21014. Choice spring pigs, either sex. Also a few well-bred sows and gilts, bred to either of above boars, at reasonable prices. Brood sow sale January 3, 1899. **E. E. AXLINE, Oak Grove, Jackson Co., Mo.**

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T. A. HUBBARD,

Rome, Kansas, Breeder of POLAND-CHINAS and LARGE ENGLISH BERKSHIRES. Two hundred head. All ages. 25 boars and 45 sows ready for buyers.

THE SEDGWICK NURSERY CO.,

Sedgwick, Harvey Co., Kas., —Breeder of—

Short-horn Cattle and Poland-China Swine

Of the Best Strains. Stock for sale. Correspondence and inspection invited.

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PEDIGREED POLAND-CHINAS.

Herd Boars are Grand Sons of J. H. SANDERS and SHORT STOP, the World's Fair Prize Winners. Bred to 20 large mature sows of Corwin Black U. S. and Black Bess blood. We aim to produce the money makers, not sacrificing size and feeding qualities to fancy points. Choice young stock for sale at reasonable prices. **M. L. SOMERS, Altoona, Kas.**

Nation's Poland-Chinas.

Fifty boars and gilts for this season's trade. My herd boars consist of Darkness Quality 14361, Princeton Chief 14543, Col. Hidesstretcher 37247 and Standard Wilkes. My sows are splendid individuals and of the right breeding. Personal inspection and correspondence invited. **LAWRENCE NATION, Hutchinson, Kas.**

SWINE.

VERDIGRIS VALLEY HERD PEDIGREED POLAND-CHINAS.

Two hundred head, four herd boars, 150 spring pigs. An extra lot of September boars and gilts for sale. Prices reasonable. Farmers and Stock Hog Raisers cordially invited to write or visit us. **WAIT & EAST, Altoona, Wilson Co., Kas.**

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Barred P. Rocks, White P. Rocks, Partridge Cochins, White Cochins, Light Brahmas, S. L. Wyandottes, White Wyandottes, Black Javas, Brown Leghorns, White Leghorns, Buff Leghorns, Silver Spangled Hamburgs, Pearl Guineas and Pekin Ducks. Two hundred this year's breeders for sale. Also 500 Spring Chicks, ready to ship after the first of July. Prices lower than any other time of the year. Circular free. **A. H. DUFF, Larned, Kas.**

POULTRY SUPPLIES.

Bone Mills, Clover Cutters, Ground Bone, Oil Meal, Mica Crystal Grit, Exhibition Coops, Shipping Coops, Oyster Shells.

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Simple, Lash and Conger Strains. My experience in breeding Rocks exclusive of the best young stock this year I have perfect, high-scoring, prize-winning bred pullets and cockerels now ready for sale. A few cockerels from E. B. Thompson available. Write for descriptive circular and printed recipe for making and using Liquid Egg Food. Address **T. E. LEFTWICH Larned, Kas.**

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DUROC-JERSEY HOGS—Registered Stock. Send stamp for 61-page catalogue, illustrated. Prices and history. J. M. STONEBRAKER, Panola, Ill.

CRESCENT HERD POLAND-CHINAS. Boars and gilts for sale. S. W. HILL, Hutchinson, Kas.



BENKSHIRE, Chester White, Jersey Red & Poland China Pigs. Jersey, Guernsey & Holstein Cattle. Thoroughbred Sheep, Fancy Poultry, Hunting and House Dogs. Catalogue. S. W. SMITH, Cochranville, Chester Co., Pa.



RIVERDALE HERD of Chester White swine and Light Brahma poultry. J. T. LAWTON, BURTON, Kas., proprietor. All stock guaranteed. I can also ship from Topeka, my former place.



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Model Combination 18853, a grandson of Kiever's Model on sire's side and of Chief Tecumseh 2d on dam's side. Will sell him reasonable, as I am keeping so many of his pigs in herd. He is as good a breeder as there is in Kansas. JAMES MAINS, Oskaloosa, Jefferson Co., Kas.

Wamego Herd Imp. Chester Whites and Poland-Chinas. Mated for best results. Also Barred Plymouth Rock chickens and eggs for sale. Correspondence or inspection invited. Mention FARMER. C. J. HUGGINS, Proprietor, Wamego, Kas.



H. W. CHENEY, North Topeka, Kas. POLAND-CHINAS of the fashionable prize-winning Chief I Know strain. Cheney's Chief I Know at head of herd. Pigs for sale. Prices low.

W. B. VAN HORN, LAWRENCE, KAS. Breeder of POLAND-CHINAS. Twenty boars by Combination Model 20112. Look Me Up by Look Me Over, Tecumseh Short Stop and other choice boars. I breed for size and bone as well as finish. Satisfaction guaranteed. Fifty Plymouth cockerels for sale.

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PLEASANT VALLEY HERD REGISTERED POLAND-CHINA SWINE King Perfection 4th 18744 S. at head of herd, assisted by Tecumseh Wilkes 12694 S. and Lambing Ideal 14050 S. The sire of last named is Gov. C. by Black U. S. We have added several very finely bred sows to our herd. Write for particulars. Address either W. E. JOHNSON, E. A. BRICKER, Colony, Kas. Westphalia, Kas.

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F. L. and C. E. OARD, Proprietors, HEDGEWOOD HERD OF POLAND-CHINAS VASSAR, KANSAS. Popular Blood. Individual Merit. Brood sows of the most popular strains and individual merit. The best that money can buy and experience can breed. Farm one and one-half miles south and half mile east of Vassar, Kas., on Missouri Pacific railroad.

M. C. VANSELL, Muscotah, Atchison, County, Kansas, Breeder of Pure-bred Poland-China Swine and Short-horn Cattle of the most desirable strains. For Ready Sale Thirty Poland-China Bred Sows One and two years old, bred for fall farrow; very choice; price low if ordered soon; must make room for 170 pigs now on hand. Come and see or write.

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BLUE MOUND HERD BERKSHIRE SWINE. Herd boars, Victor Hugo 41799 (sire imp.), Barkis 30040 (weight 800 lbs.), Prince Jr. 17th, from World's Fair winner. Choice pigs from five different strains. Also bred Shropshire sheep, M. B. turkeys and B. F. Rock chickens. Write. Allen Thomas, Blue Mound, Linn Co., Kas.

"HIGHLAND" POLAND-CHINAS Ten choice fall boars and a number of fine spring boars sired by Knox All Wilkes 18179 S. and Highland Chief 18384 S. by Chief Tecumseh 2d. Young sows of same blood bred or open. Write us. DIETRICH & SPAULDING, Richmond, Kas.

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SHEEP FOR SALE CHEAP—Ten head of Cotswold ram lambs, \$5.00 each; ten head of fine Vermont Merino ewes, \$5.00; three fine heavy shearing Vermont rams—\$25.00 takes the three head. Write soon to H. H. Hague, Walton, Kas.

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CENTRAL KANSAS STOCK FARM.—F. W. ROSS, Alden, Rice Co., Kas., breeds pure-bred Short-horns, Poland-Chinas and Barred Plymouth Rocks. Stock for sale.

NORWOOD SHORT-HORNS—V. R. ELLIS, Gardner, Kas. Rose of Sharnon, Lady Elizabeths and Young Marys. Richest breeding and individual merit. Young bulls by Godwin 115676 (head of Linwood herd). Sir Charming 4th now in service.

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Short-horn cattle, Percheron and Roadster horses and Shetland ponies—stock of each class for sale. A load of extra good young bulls. O. L. THISLER, Chapman, Dickinson Co., Kas.

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Cows' Teats Sore?

Advice Free. MOORE BROS., V. S., Albany, N. Y.

CHOICE POLAND-CHINA GILTS FOR SALE.

Poland-China gilts sired by Wren 17172, Eberley's Model 2854, and Duke of Weston 16974. 1898 farrow. If you want a choice young animal, send for one of these—\$8 to \$10. I guarantee satisfaction on this kind. J. W. HIGGINS, JR., HOPE, KANSAS.

R. S. COOK, WICHITA, KAS., Poland-China Swine BREEDER OF



The Prize-winning Herd of the Great West. Seven prizes at the World's Fair; eleven firsts at the Kansas District fair, 1893; twelve firsts at Kansas State fair, 1894; ten first and seven second at Kansas State fair, 1895. The home of the greatest breeding and prize-winning boars in the West, such as Banner Boy 28441, Black Joe 28603, 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.

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By GEO. CHANNON, Hope, Dickinson Co., Kas., Breeder of Poland-China Swine and Short-horn Cattle. I must reduce my herds to the minimum on account of short feed and insufficient accommodations for winter, therefore will sell at prices that should be a big object to purchasers. My offering consists of tried brood sows, gilts and boars, all ages. Will sell singly or in lots to suit. The young stock is by my herd boars Prince Bismarck 1867, Seldom U. S. 18218, Duke of Weston and Corwin. Come now and get a bargain. Also, for sale thirty extra fine young Short-horn bulls, sired by Glendower 16838. None better in Kansas.

Sir Charles Corwin 14520 and Harry Faultless, Jr. HEADS OF HERD.



We have been in the show ring for the last three years, always winning the lion's share of the premiums. If you want prize-winners and pigs bred in the purple, we have them. All ages of Poland-China swine for sale. Write or come and see us. We have an office in the city—Rooms 1 and 2 Firebaugh Building.

ELM BEACH FARM, Wichita, Kas., C. M. IRWIN. S. C. DUNCAN, Supt

The Sunrise Herd of Large English Berkshires.

The largest herd of registered Berkshires in Kansas, and probably the largest in America. 360 head to pick from. As well bred and as good individual as you can buy anywhere. The great 1025 pound boar, Longfellow W. 33011, at head of herd. Seventy-five boars large enough for service and one hundred sows bred, or large enough to breed, for sale. Also one hundred and twenty-five piglets from two to six months old; prices very reasonable. I also have one hundred registered Hereford bulls ready for breeders and fifty females for sale cheap. Write for what you want.

THE SUNRISE STOCK FARM, C. A. STANNARD, Prop'r, Hope, Dickinson Co., Kas.

ELI ZIMMERMAN,

Proprietor of the Brown County Herd of Poland-China Swine and General Live Stock Auctioneer, is prepared to make sales anywhere. He is a first-class salesman and keeps posted on the prices of live stock and the best time when to sell and when not to sell. Registered Poland-China Swine of both sexes of the best strains of blood always on hand. Address him at

FAIRVIEW, KANSAS.

BOARS, BOARS, BOARS.

July to September 1897 farrow, good condition and ready for service. All eligible. Poland-Chinas sired by Wren 17172, choice \$15.

J. W. HIGGINS, JR., Hope, Kas.

ITALIAN BEES.

Bred from queens imported from Italy. Full colonies; two, three and four frame nucleus shipped anywhere and safe arrival guaranteed. We ship bees any time from March to November. Queens, hives and supplies generally. A. H. DUFF, Larned, Kas.

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"FEEDS AND FEEDING."

A Hand-Book for the Stockman, by Prof. W. A. Henry, of the Wisconsin Experiment Station. Price \$2. It is a large octavo volume of 657 pages. Years of time and thousands of dollars in cash were spent in its preparation. Part I.—Plant Growth and Animal Nutrition. Part II.—Feeding Stuffs. Part III.—Feeding Farm Animals. In addition to the thirty-five chapters enumerated in above parts there is an appendix containing elaborate and up-to-date tables giving the average composition of American feeding stuffs, their digestible nutrients and fertilizing constituents, feeding standards for farm animals and a glossary of scientific terms. The volume closes with an extended index arranged for easy and quick reference. Throughout the work there are numerous cross references so that any subject may be quickly and exhaustively studied. Of this work, Thos. Shaw, Professor of Animal Husbandry, Minnesota College of Agriculture, says: "You have made the entire live stock community your debtor." This valuable book will be sent by prepaid express to any address for \$2, or with the KANSAS FARMER one year for \$2.75. Address KANSAS FARMER CO., Topeka, Kas.

SHROPSHIRE

From the choicest flocks in Michigan and Canada.

Can sell one crated or a double-decked car-load. Have a few Hampshires and Cheviots. PLATT BROS., 1613-15 Genesee St. (near stock yards), Kas. City, Mo.

A Short-horn Herd For Sale.

I will sell my entire herd of Short-horns, consisting of the herd bull, Buxom 11497, twenty-six cows 4 years and over, thirty-seven cows from 1 to 3 years old, five yearling bulls, forty calves (sexes about equal); in all, 109 head, seventy-four of which are registered or eligible. The offering will be sold cheap for cash. For further information, address J. K. NELSON, Chelsea, Kas.

Texas! Texas!

The Missouri, Kansas & Texas Railway Company will sell low rate round-trip tickets on November 15, December 6 and 20, with final limit of return to twenty-one days from date of sale. An excellent opportunity for home-seekers, tourists and investors to view for themselves the great resources of the State. For further information, address Geo. A. McNutt, D. P. A., 1018 Union Ave., Kansas City, Mo.

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Write for new and complete pamphlet containing official indorsements and testimonials covering three years' successful use in the United States.

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Seed Breeding.

Press Bulletin Kansas Experiment Station.

The laws governing the breeding of plants by seed are essentially the same as those governing the breeding of animals. There are two laws which express the basic principles upon which breeding is founded (in this article only propagation by seed is considered), viz.:

(1) The offspring tend to inherit characters from the parents. In Bulletin No. 8, the nature of fertilization was explained. The pollen must come in contact with the pistil, grow down to and unite with the ovule, after which the ovule develops into a seed. If the pollen comes from the same plant as the ovule, it is self-fertilized; if from a different plant, it is cross-fertilized. As was also explained, plants are usually cross-fertilized; and even plants which are usually self-fertilized, are occasionally cross-fertilized.

(2) The offspring tend to vary from the parents and from each other. This principle is in some degree antagonistic to the first. The variation comes from the

wishes, at least in a slight degree, the variety is fixed by constant and judicious selection from generation to generation. With the ordinary grower of plants—the farmer, gardener, or other persons raising plants from the seed for the crop—selection is usually the only practical method for changing the type, or, what is still more often wished, maintaining the type or variety at its present standard. The farmer's chief care is to prevent a desirable variety which he has from deteriorating. The seed dealer produces the varieties but frequently does not grow them long enough to fix the characters. Hence the buyer finds that unless he purchases new seed each year his variety is running out. A few simple rules for fixing and maintaining varieties are appended.

(1) Give best of tillage to those plants from which seed is to be gathered.

(2) The more generations the seed is selected for a certain character, the more strongly is that character fixed; and, on the other hand, the more strongly a character is fixed, the more slowly will it lose this character or "run out."

(3) Grow the parent plants where they

Introduction of the Novius Cardinalis Into Portugal.

The Department of Agriculture of Portugal, through Dr. Howard, entomologist of the United States Department of Agriculture, and the courteous co-operation of the State Board of Horticulture of California, has succeeded in repeating in Portugal the wonderful success effected in California some years ago partly through the efforts of the department in saving the orange industry of that State from annihilation, owing to the depredations of the white or fluted scale (Icerya purchasi), by the introduction from Australia of the Novius (Vedalia) cardinalis, which preys upon the scale and thus keeps it in check.

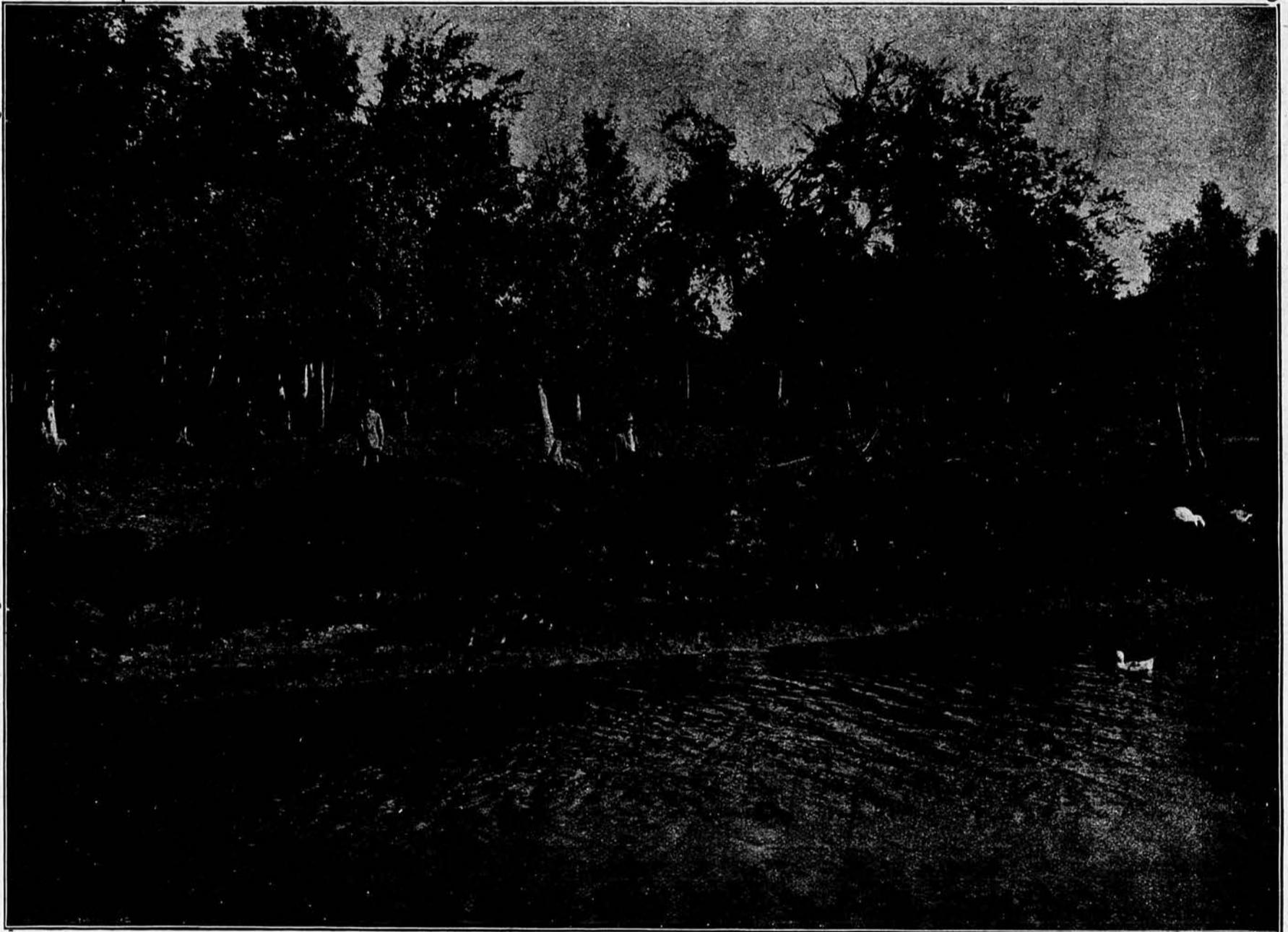
In September, 1896, Dr. Howard was appealed to by Portuguese authorities for advice as to the most efficacious means of combating the ravages of the scale which had appeared in disastrous numbers in the orange and lemon groves along the river Tagus.

Dr. Howard having satisfied himself, by examination of photographs and specimens of the insect received from

several unfortunate delays in transit, the packet did not reach Lisbon until forty-four days after it left California. One male and five females were still alive, and, owing to the great care taken of them by the Portuguese officials, these survived and multiplied. Owing to the great fecundity of the Novius, the breedings from the six which reached Lisbon in a few months reached many thousands, and colonies were established in Lisbon and its environs.

Reports received by Dr. Howard last August were to the effect that many thousands of the beetles had been distributed and already about ninety colonies had been established in and around Lisbon. In the orange orchard around the propagation station the beetles and larvae of Novius were reckoned by millions and colonies were being distributed daily to farmers and gardeners who asked for them. Senhor Lecocq, who had charge of the work at Lisbon, gratefully acknowledges the invaluable benefit done to Portuguese agriculture and horticulture by the introduction of the beetle.

Later information is to the effect that colonies of the Novius were established



A TYPICAL GROUP OF GALLOWAY CATTLE, OWNED BY ED PAUL, DUNDEE, MINN.

fact that the offspring inherit characters unequally, and from the inherent tendency in all organisms to vary. The more nearly alike the parents are in any particular, the more likely is this character to appear in the offspring. A character is said to be fixed when it appears constantly in succeeding generations.

In practical seed breeding it is, of course, the aim to fix certain desirable characters. Before a character can be fixed it must be originally present. The breeder can not produce at will a new character; he can only make greater or less, a character already present. A stock breeder could not produce a breed of cattle with a third horn on the forehead unless the character appeared spontaneously in some individual. But he can "breed off" the horns that are there by proper selection. The same is true of plants. A spontaneous variation along a certain line may be perpetuated, or fixed; or a normal character may be made greater or less.

The variability in the offspring may be increased in various ways, such as artificial crossing, increase or alteration of food supply, and similar means; but after a suitable individual is found, one which possesses the character one

will not cross or mix with other varieties.

(4) In selecting the seed, choose a plant in which the parts are uniform—that is, consider the plant as a whole rather than any particular branch. In a plant which has mostly inferior fruit but which has one large fruit, seeds from this large fruit are not so likely to transmit the size as if the seeds are chosen from a plant in which the fruit is uniformly large.

(5) Finally, to maintain the standard, selection must be made each year. Plants which as a rule self-fertilize, such as the small grains, do not tend to run out so rapidly as cross-fertilized sorts, such as peas, beans, melons and tomatoes.

Nut growing is profitable, but it requires years to bring a nut tree to a stage of growth where it will pay well, hence only young farmers are induced to devote land in that direction. Walnuts, chestnuts and butternuts would improve with cultivation. In a few years walnut trees will be so scarce that the farmer who has a grove will secure his own price therefor, the timber being valuable.

Portugal, that it was undoubtedly the Icerya purchasi of California experience, strongly advised his Portuguese correspondents to attempt the introduction of the Novius cardinalis and pledged his co-operation in an effort to secure specimens and ship them to Portugal. His advice and proffers of assistance were cordially accepted.

In October, 1897, Dr. Howard secured from the State Board of Horticulture of California about sixty specimens of the Novius cardinalis, in the adult condition, and some larvae. These were packed in moss with a plentiful supply of Icerya as food, and forwarded from Washington by direct mail. Only five of the Novius reached Portugal alive. They were at once placed in glass jars at the Chemical Agricultural Experiment Station at Lisbon and were so successfully cared for, that when heard from in December there was already a numerous progeny.

November 22, a second colony of the predatory beetles was received from California. In order to hasten the journey of this colony to Portugal, Dr. Howard took the packet to New York and placed it on cold storage, awaiting the arrival of the direct steamer to Lisbon. But in spite of these precautions, and owing to

on not less than 487 estates, whence naturally many others were formed by radiation. Gardens and orchards that were completely infested with the scale and nearly ruined are to-day clean or well on the way toward becoming so.

The entomologist would not have been able to assist the Portuguese government in accomplishing this great work had it not been for the enlightened policy of the State Board of Horticulture of California in continuing the breeding in confinement of these predaceous beetles long after any apparently urgent necessity for such work had disappeared in California, and for the prompt courtesy of the board in placing living specimens at his disposal.

Some of the expert pickers of poultry can take the feathers off a fowl so quickly as to astonish one who does not understand the operation. It is done by dipping each carcass in cold water and allowing it to drip. Finely pulverized rosin is then dusted over and among the feathers, which causes the feathers to stick to the hands, even the pin feathers coming out with but little difficulty. Use the common crude rosin, about half a teaspoonful for each fowl.

Agricultural Matters.

Government Crop Report for November.

The November report of the statistician of the Department of Agriculture will give 24.8 bushels as the average yield per acre of corn, according to the preliminary returns of the department's correspondents. The preliminary estimate last year was 23.7 bushels and that of 1896 27.30 bushels. The indicated yield in the principal corn States is as follows: Pennsylvania, 32; Ohio, 36; Indiana, 36; Illinois, 30; Iowa, 32; Missouri, 26; Kansas, 19, and Nebraska, 21. The average per cent. of quality is 82.7, as compared with 86.3 in 1897 and 88.4 in 1896. Reports indicate that about 7.2 per cent. of the crop of 1897 is still in the hands of the farmers.

The preliminary estimate of the average yield of buckwheat is 17.3 bushels per acre, against 20.7 bushels last year and 18.7 bushels in 1896. The average in New York and Pennsylvania, the two States of principal production, are 16.8 and 17.2 bushels respectively. The average per cent. of quality is 85.2, as compared with 94.3 in November of last year. The estimated average yield of hay is 1.55 tons per acre, as compared with 1.42 tons last year. The present indicated average is the highest on record, and the crop of 1898 was unquestionably the largest ever gathered. In point of quality the average is 95.3, against 92.8 last year and 92.9 in 1896.

The estimated average yield of Irish

potatoes is 75.2 bushels per acre, as compared with 64.6 bushels last year and 86.3 bushels in 1896. The average per cent. of quality is 84.7, against 81.3 in November last and 89.2 in November, 1896.

The special wheat investigation is approaching completion. It is believed that it will not only serve its primary purpose of indicating with approximate accuracy the wheat production of the present year, but will prove of permanent value to the department in its bearing upon the existing methods of reporting this important crop.

The Chinch Bug.

The United States Department of Agriculture has in press and will soon issue Bulletin No. 15, new series, Division of Entomology, entitled, "The Chinch Bug: Its Probable Origin and Diffusion, Its Habits and Development, Natural Checks and Remedial and Preventive Measures, with Mention of the Habits of an Allied European Species."

It was prepared, under the direction of the Entomologist, by F. M. Webster, Entomologist of the Ohio Agricultural Experiment Station.

The chinch bug is one of the most destructive insects with which the American farmer has to contend, and the Department receives many requests for information about it. This bulletin is intended to meet this demand, and gives many new facts concerning the life history and distribution of the species, and the whole subject of the practical handling of its diseases in order to assist in its destruction is treated at length.

It says few insects have caused such pecuniary losses as the chinch bug, and no other insect native to the Western Hemisphere has spread its devastating hordes over a wider area of country

with more fatal effect to the staple grains of North America. It is widely distributed over the world and hibernates in the adult stage. It is of gregarious habits and migrates in spring, summer and autumn.

When and where it lays its eggs, the period of incubation, the different stages of development, the development and habits of the young, annual generations, and food plants are covered by the bulletin.

It treats of the influence of precipitation and temperature on the insect; its natural enemies; remedial and preventive measures; and describes the true and false chinch bugs.

The bulletin states that it would appear that this pest first made its presence known in this country in North Carolina in 1783, and mentions several serious outbreaks of the bug in the West, the estimated loss from its ravages from 1850 to 1887 reaching \$267,000,000. It also says that it is believed that the losses up to 1898 amounted to fully \$330,000,000.

The bulletin contains nineteen illustrations, including maps, showing areas infested by the chinch bug and probable course of its diffusion over North America.

Kansas Sugar Beets.

Editor Kansas Farmer:—Prof. Willard is receiving the "heaviest mail" of any man in the State just now. A few days ago it was necessary to call in the services of a drayman to have it delivered at the college. All this is because of the

weather, and especially snow storms, during which they seek shelter in poultry houses, barns, etc., in immense swarms, and are unusually tame and may be driven into nets, or destroyed in many ways. Third, make a good roomy net out of light cloth (gunny sacks will do), with a hoop in the front end, and attach this to a pole six or eight feet long; place a small lamp in the center of the hoop. With this net pass gently around hay stacks and other roosting places of the little pests, and while blinded by the light many will fly into the net. A second party can aid materially by driving toward the net with a pole.

ALLEN THOMAS.
Blue Mound, Kas.

Monthly List of Publications. (October, 1898.)

The United States Department of Agriculture has become a great publication office. Each month large numbers of tracts and pamphlets, on subjects interesting and important to farmers, are issued. These are free except for such as have a price affixed in the list:

(To obtain those publications to which a price is affixed, application should be made to the Superintendent of Documents, Union Building, Washington, D. C.)

"The Renewing of Worn-Out Native Prairie Pastures."

"Exports of Cotton from Egypt."

"United States Wheat for Eastern Asia."

"Hawaiian Commerce from 1887 to 1897."



STREET VIEW, COMMERCIAL STREET, ATCHISON, KAN.

From a photographic view taken along the line of the Missouri Pacific Railway.

active interest of the farmers of Kansas in the investigation of the sugar beet industry which the Kansas Experiment Station is carrying on at the Agricultural College.

About seventy-five samples of beets have been analyzed thus far this season. The percentage of sugar in the juice ranges from 7 to 15. The average is about 10 per cent. The highest percentage comes from Cloud county, Mr. A. Munger, of Hollis, having sent in two samples which contained 17.21 per cent. and 16.59 per cent. respectively. Kearney county sends in the second best samples, J. W. Songstroth and H. C. Nichols, of Lakin, each having sent in samples which contained 16.3 per cent. and 16.18 per cent. of sugar respectively. Other counties which have sent in samples that contained from 13.21 per cent. to 15.18 per cent. of sugar are Reno, Harvey, Greenwood, Washington and Clark. The above-named localities have demonstrated that they can grow sugar beets rich enough for the manufacture of sugar. The next problem for them to solve will be the cost of building and operating a factory, as compared with the running expenses of factories elsewhere. Upon this comparison will probably devolve the future of the sugar beet industry in Kansas.

R. W. CLOTHIER,
Kansas Experiment Station.

English Sparrows.

Editor Kansas Farmer:—These little pests are becoming very alarming, and the sooner farmers wake up and make war on them the better it will be for the country. I will give three methods of destroying them: First, by destroying their nests, eggs and young during the summer season. Second, by taking advantage of the old birds during very cold

"Directions for the Pasteurization of Milk."

"Crop Circular for October, 1898." Report on the condition of corn, buckwheat, cotton, Irish potatoes, apples, tobacco, sugar cane, sorghum, and rice; and preliminary estimates of the yield of oats, barley, and rye. Also estimates of the world's wheat crop; weather conditions east of the Rocky mountains for September, 1898; rainfall; and a table showing average yield per acre and average condition of crops, by States and Territories, October 1, 1898.

"Some Books on Agriculture and Sciences Related to Agriculture Published 1896-1898."

"Practical Assistance to Farmers, Lumbermen, and Others in Handling Forest Lands." A proposed plan for promoting and increasing the value and usefulness of forest land to the owner, and to perpetuate and improve the forest upon it.

"Notes on Peach Culture."

"Small Fruit Culture for Market."

"The Red Desert of Wyoming and its Forage Resources." Price 10 cents.

"Economic Grasses." Description of 252 grasses and their uses. Price 10 cents.

"Chemical Composition of the Carcasses of Pigs." Price 5 cents.

"Experiment Station Record," Vol. IX, No. 12. Price 10 cents.

"Experiment Station Record," Vol. X, No. 2. Price 10 cents. The Record contains numerous abstracts of the publications of the agricultural experiment stations and kindred institutions in this and other countries; articles and editorials on topics of special interest in agricultural science by American and foreign experts; and notes on the experiment stations. Note.—For the convenience of those who desire to receive this

Swollen Neck

Also Had Great Difficulty With Her Heart—How Cured.

"My daughter had a swollen neck and also heart trouble. After the least exertion she would breathe so hard she could be heard all over the room. She could not sweep the floor or even move her arms without affecting her heart. Her limbs were badly bloated. Her father insisted that she must take Hood's Sarsaparilla, and we gave her about six bottles, when she was cured, and there has been no return of her ailments." MRS. EMMA THOMAS, North Solon, Ohio.

Hood's Sarsaparilla

Is the best—in fact the One True Blood Purifier. Sold by all druggists. \$1; six for \$5.

Hood's Pills easy to buy, easy to take easy to operate. 25c.

publication regularly the Superintendent of Documents has decided to fix the price per volume (12 numbers) beginning with Vol. VIII, at \$1, payable in advance. "Monthly List of Publications," September, 1898.

FARMERS' BULLETINS.

"The Feeding of Farm Animals."
"Souring of Milk and Other Changes in Milk Products."

"Butter-Making on the Farm."

PUBLICATIONS OF THE WEATHER BUREAU.

(For the publications of the Weather Bureau, requests and remittances should be directed to the Chief of that Bureau.)

"Monthly Bulletin of the River and Flood Service for August, 1898."

"Monthly Weather Review, July, 1898." Price 10 cents.

"Monthly Weather Review, August, 1898." Price 10 cents.

Charts of the Weather Bureau.—Daily weather maps showing weather conditions throughout the United States and giving forecasts of probable changes. . . . Meteorological Chart of the Great Lakes. (List of Wind Signal Stations on the Great Lakes, both American and Canadian, with table of maximum of observed wind velocities on the lakes and advices as to November storms and storm tracks.)

Hatch Chickens by Steam.

The problem of successful artificial incubation has been completely and practically solved through the inventive genius of Mr. Geo. H. Stahl, of Quincy, Ill. The uncertainty of hatching chickens by artificial means has been removed and the expense and labor reduced almost to zero by the Excelsior incubator, which Mr. Stahl invented and manufactures. The Excelsior incubator is so simple in its construction and operation, and so perfectly automatic in its regulation of the supply of heat, moisture and fresh air, that it practically runs itself. Thousands of these perfect hatching machines now in successful operation in all parts of the country amply bear out the claim of the manufacturer, that the Excelsior is the lowest-priced first-class incubator made.



Ex-President Cleveland's farm school, at Princeton, N. J., has two of Mr. Stahl's incubators, the manager, Mr. John Henry Vroom, having selected them in preference to all other incubators. Mr. Stahl will gladly send postpaid an illustrated book on incubation to any one who writes for it and mentions this paper.

Harnessing Snoqualmie Falls.

The beautiful Snoqualmie falls in the State of Washington are to be harnessed to the car of utility. The falls are thirty-one miles distant from Seattle and forty-five miles from Tacoma, but the waters are to be utilized for supplying those cities with power. A novelty in the transmission of the electric currents will be the use of aluminum instead of copper wire, with a voltage as high as 25,000.

TO BE HEALTHY AND TRONG
Use "Garland" Stoves and Ranges.

The Stock Interest.

THOROUGH-BRED STOCK SALES.

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

NOVEMBER 22—George Bothwell, Short-horns, Nettleton, Mo.; sale at Kansas City, Mo.
NOVEMBER 23—W. P. Harned, Short-horns, Bunce ton, Mo.
NOVEMBER 30—Scott & March, Belton, Mo., Herefords, Kansas City, Mo.
DECEMBER 3—Miles Bros., Poland-Chinas, Peabody, Kas.
DECEMBER 15 AND 16—C. G. Comstock, Albany, Mo., Herefords, Kansas City, Mo.

CATTLE IN THE UNITED STATES.

From the Liverpool Journal of Commerce, October 19, 1898.

Shipping men may be interested in the contents of a recently published Foreign Office report on the "Cattle Industry of the United States" during the last two years. It tends to throw some light on the probable movement of cattle across the Atlantic in the future, and thus to give an idea as to how far an increase in this important branch of the shipping trade is likely to be maintained or developed. It appears that the total number of cattle in the United States at the beginning of the present year was something over 44,000,000 head. Of these nearly 16,000,000 were classed as milch cows, and are therefore somewhat outside our present view. Comparing these numbers with those of a year previous it is seen that a heavy decrease took place. The reduction was noticeable in both those classed as milch cows and in those classed as "other cattle." But whilst the number of milch cows declined by but 100,000, the other class showed a decrease of no less than twelve times that number. Nor does it appear that the shrinkage of the past year, at least, as regards the larger group, was anything exceptional. It is a continuation of a movement which has been going on since the year 1892, though, fortunately, it is somewhat less marked during the last two years than it was in the earlier part of the series. The number of milch cows in the country has tended to increase with the growth of the population, being now, as we have said, nearly 16,000,000, whilst they were under 14,000,000 in 1885. But there seems, naturally, perhaps, under the circumstances, no relation between the numbers of "other cattle" and those of the human inhabitants. In 1882, when the maximum number of "other cattle" was reached, the figure was over 37,600,000. In 1898 it had fallen to 29,264,000. The absolute decrease is 8,387,000 head, or no less than 22 per cent. of the highest total. Such a movement, if it were to go on unchecked, with the immense facilities now given for exporting beasts to Europe, would obviously tend to stop the supply available for export in a comparatively short time, and the common ox would appear to be likely to become as rare a beast as the now practically extinct buffalo, who not so many years ago in practically countless herds roamed over those Western plains where now centers the cattle industry. The figures, however, look less alarming when analyzed. The seven cattle States have suffered less in proportion than the whole of the States of the Union. Thus, during the last two years whose statistics are given, they have on balance lost but 100,000, whilst the whole of the country has lost some 9,500,000. The mid-Western regions are about holding their own (Kansas is even on the up grade), whilst the real denudation is taking place in the Southwestern States. The fact that the decrease in numbers is largely caused by excessive exportations has induced heavy movements of cattle throughout the continent. Cattle are being brought into the country. This movement only began to an appreciable extent six years ago. Then a couple of thousand head were brought in. A little while and the numbers were but a trifle under 150,000 in 1895. Two years later the figure was considerably more than doubled. But in the next year—which is the last of which we have statistics—the numbers fell to 291,000. It is interesting to regard the analysis of this last figure. Mexico contributed 173,000 of the imports, and Canada 116,000. It is estimated that nearly 20,000 steers were imported last winter from Ontario into Illinois, Iowa, Nebraska and Missouri, and the ranchmen of the Northwestern States are said to find it more profitable to procure Canadian stock from the Northwest Territory of Canada than to buy young cattle in the United States. This matter of cattle importation, should the traffic ever assume very large proportions, is likely to be one of the means of bringing the people of the United States to their senses as regards the tariff question, and it is certain that many farmers must already find the shoe pinch rather severely as the duty on imported cattle under the

Dingley tariff is estimated to represent about 25 per cent. ad valorem on the average class of cattle imported. A rather curious feature in regard to the changed conditions of the cattle-raising districts of the States is noticed in the report by an interesting reference to the rapid exhaustion of the cattle-raising capacity of the Texas range. It is explained that in the early days of ranching the ranges of Texas were thickly covered with grasses, and were estimated to be easily capable of supporting some 300 head of cattle per acre. [Per square mile is more likely.—Editor Kansas Farmer.] The cattlemen had no legal right to the tracts, but when the railway came, and the cattlemen realized that the days of free grass were numbered, they recklessly overstocked the ranges, and this process continuing down to very recent times has reduced the average raising capacity to one head for every ten acres. But though it is admitted that the present scarcity of stock must be regarded as a permanent element in the situation, it is recognized that the increased prices have given a flip to the industry, and ultimately it may be found that the cattle raising resources of the country are in no way in danger of being diminished. A rather curious feature of recent developments in the cattle trade is the fact that, though during 1897 the average value of steers in Chicago increased by as much as 1s. 10½d. per 100 pounds, yet the price in England was only increased by 7d. per 112 pounds. Indeed, it is inferred that exporters, to keep their hold on the English trade, have done some considerable part of their business at a sacrifice, and, as the report under review very astutely observes, "the great firms which now control the export trade also do an immense packing and dressed meat business in the United States, and can afford to conduct one branch of their trade for a time without return." On the whole, then, it looks as if the back of the American cattle export trade were at length broken, and that we must look to other places than the United States to meet our ever increasing demand. Happily there are such places, and if the circumstances command there will be little difficulty in diverting our custom into other channels.

About Galloway Cattle.

At the last annual meeting of the American Galloway Breeders' Association, held in Kansas City, November 3, 1898, it was decided, in view of the improved prospects for these favorite cattle, to send out to the agricultural press an article concerning the breed which should be authoritative and reliable information. It was prepared by the old President, Mr. D. McCrae, of Guelph, Canada. It received the unanimous endorsement of the members present and reads as follows:

"This hardy breed of beef cattle are doing well in America. They have not had the boom that has distinguished the pale-faced Herefords, nor yet the widespread trial that has been given the popular Short-horns. They have had nothing to excel the smooth-finished shorn specimens of their black cousins, the Aberdeen-Angus, who have a well-deserved reputation; but they have made good, substantial profits for those handling them and they are becoming yearly more popular, both on Eastern farm and Western ranch. They have fair records for butter in dairy districts and have at the shambles paid their purchasers better than any other breeds. Where they have been tried on Western ranches they have done splendidly. Hardy and active, they roam far and wide for food and water, and if these be scarce will feed on plants despised by other pure breeds. Prolific and good mothers, they raise a large percentage of calves and herd together more closely than any other breed. On the farms in the East, they have made good progress and have paid their owners good profits. At the fall fairs, in point of numbers, in the showing and in excellence of exhibit, they usually stand second only to the popular Short-horns. In the feed lot, they are already dehorned and can be herded together like sheep, and for forced feeding in loose boxes they are found to be specially well suited.

"The quality of Galloway beef is a feature that the breeders have never brought to the front as they should have done. They put the very best marbled beef on the most valuable parts. Quality is becoming a point more and more noticed and valued. Recently at the Christmas show of the Smithfield club, of London, England, the Directors made a new departure and offered prizes for the best and most valuable carcasses of beef. In the ring, judging for the sweepstakes, the Galloway entries alive were hardly looked at—the cross-bred Short-horn Galloway blue-gray steer ran neck

and neck for first place, but the real Galloways hardly got the second glance from the judges. The same animals, when killed and hung up, captured four out of five prizes offered. Galloway beef is of the best quality. They are not as smooth as the Aberdeen-Angus, not as massive as the Short-horns, but they kill better than either and on the table are second to none.

"Careful experiments made at different agricultural colleges have shown that the Galloway makes beef at a low cost; on ordinary farms and in carefully watched feed lots the same thing has been shown. This is the most important point in the battle of the breeds. We claim the best beef at the lowest cost for the Galloway. The breed that can make the best beef for the least feed is the one for the farmer. Some time ago at the Guelph Agricultural College a series of experiments was made as between the different breeds to determine cost of production. The animals were taken soon after birth and were fed liberally—forced, in fact, as well as a good feeder could do. There were grade steers tried of several breeds and the food each one consumed was carefully noted. In gain per day the Hereford came first, Short-horn second, and Holstein third. In this the Galloway stood fifth. In value, when ready for the block, the Hereford, Galloway and Short-horn were valued at same rate per pound live weight. All the others at a lower rate. Taking the ordinary market values of all the food used, the selling value of the Holstein grade showed a loss of \$8.22, the Short-horn a loss of 21 cents, the Hereford a gain of \$1.40, and the Galloway a clear profit of \$15.15. Similar experiments made at other stations have shown the Galloways to be in the front rank of cheap beef production. Such experiments require care and are too expensive for the ordinary farmer, but we should profit by the results, and from actual tests the Galloway claims to make the best beef at the lowest cost."

Those Polled Kansas Cattle.

Editor Kansas Farmer:—I viewed with considerable interest, when at the Trans-Mississippi Exposition, at Omaha, the Polled Kansas cattle belonging to the Hon. W. W. Guthrie, of Atchison, and your illustration in the Farmer of November 3 looked very natural.

These cattle, according to Mr. Guthrie's statement at Omaha, are a "sport," i. e., they originated from the Hereford, a horned breed. By accident, or chance, a horned Hereford cow dropped a polled calf. This calf being mated with another horned Hereford a second polled calf was produced, and these two being mated produced other polled offspring, and thus, with an occasional out-cross with a horned Hereford to give new blood, the polled progeny being kept for breeders, this new breed has been produced without resort to any of the established polled breeds. That being the case, they are pure polled Herefords. The same is claimed of the Polled Durham cattle by many breeders, although I believe some speak of certain animals of the Polled Durham breed as having too much of the "muley cow" in them.

We have to admit that such a "sport" is possible. A better name than sport, and the one used by William Warfield in his book on cattle breeding, is "variation." That this variation is constantly operating in the animal and vegetable kingdoms, and that nature changes the animal or plant to suit its environments, is an established fact, but the absence of horns on an animal whose ancestors have from the time of their creation always had horns, does not come under that class of variations, but rather it is a deformity or monstrosity, which is produced by some shock or mental impression received by the dam at the time of conception or during pregnancy, as the instance recorded in Genesis, chapter 33, 37th to 42d verses, of Jacob's device to change the color of the best of Laban's cattle and goats, as he (Jacob) was to have all the individuals which were streaked, spotted, etc.

Now, it may be possible that Mr. Guthrie and the Polled Durham breeders have some such device for taking off the horns and putting a nice poll on Herefords and Short-horns, but in my opinion a Red Polled bull is, at this age of advanced civilization, a far quicker and surer device.

But the majority of Polled Durham breeders—and I suppose Mr. Guthrie is like them—would not pollute the lordly Short-horns or the fair white-faces by a drop of blood from the "muley cow." Yet I see nothing degrading about the Red Polls, as in the sweepstakes for general-purpose cattle, at Omaha, the Red Polls won four first, two second, one fourth and one fifth prize, while the Polled Durhams took two first and two second prizes.

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Dr. W. E. Brown & Son, North Adams, Mass.

The Polled Kansas and Polled Durhams both claim to be general or dual purpose cattle. I would beg to inquire, is the milking quality in both Polled Kansas and Polled Durhams a result of environment, or Jacob's device?

It requires only a casual observer to see among the Kansas certain individuals which in form resemble the Red Polls, while other individuals are typical Herefords except the horns. Among the Polled Durhams some individuals resemble the Short-horn and others are typical Red Polls, color and all.

Mr. Guthrie's bull reverts to the Red Polled type, as may be seen by looking at the illustration in Kansas Farmer, while one of the Polled Durham bulls which was exhibited at Omaha was of the Short-horn type and the other of the Red Polled type. There may be seen in a litter of cross-bred Poland-China-Chester White pigs some Poland-Chinas and some Chester Whites; the breed characteristics seldom blend, but usually revert, or throw back, to one or the other of the ancestral types. So, as I see in a Polled Kansas the Hereford breed type and in a near relative the Red Polled breed type, and the same among the Polled Durhams, I am constrained to believe, that while nature may have departed from the law of heredity and these new breeds may have originated from a variation, the law of atavism contradicts it and shows a cross of some prepotent breed. Jacob's peeled stick plan may have been applied in the form of a Red Polled animal, and if so, it worked to a finish, not only knocking off the horns, but producing the breed type and dairy qualities. Or, perchance, unknown to the originator of the new breed, a Red Polled bull may have, as the Scotchman would say, "leaped the dike" and got in with the Short-horn and Hereford cows. WILKIE BLAIR. Beulahland Farm, Beulah, Kas.

Cooking Feed for Hogs.

Editor Kansas Farmer:—Could you or any one of the many readers of your paper give me information concerning the merits or demerits of cooked corn to feed to pigs or hogs, as against corn fed in the raw state?

Allen, Kas. M. E. CHARVOZ.

This is an old question, many times asked and answered, but as a five-mile ride into most any country district will pass you by a feed cooker or two, it is evident that knowledge on the above question is needed in many places, for when you see one of these being used to cook feed for swine, money and time are being wasted.

There is no other subject that has been more generally taken up by our experiment stations than the cooking of feed for swine, and to quote even the summaries of them here would cover more than a page of the Farmer. And in all these experiments, covering a wide range of country, feeds and conditions, the results show either no gains at all from cooked feeds or very slight gains that do not near pay for the cooking. With corn or corn meal the trials all show losses by cooking. At the Kansas station it required 749 pounds of cooked corn to produce 100 pounds of gain, and 630 pounds of raw corn. At the Iowa station, 538 pounds of cooked corn produced 100 pounds of gain, while it only required 443 pounds of raw corn. At the former station the loss was over 15 per cent. and at the latter over 17 per cent., by cooking shelled corn for pigs. And this does not include the time and fuel used.

Potatoes are a food that must be cooked to feed to swine successfully.

F. C. BURTIS.

Kansas Experiment Station.

GROWTH OF ALFALFA IN NORTH-WESTERN KANSAS.

BY GEO. L. CLOTHIER.

During the latter part of the summer of 1898, the writer was detailed by Professor Hitchcock of the Kansas State Agricultural College to make observations upon the growth of alfalfa in northwestern Kansas. The trip planned extended through the three northern tiers of counties from Manhattan west to the State line. Observations were made in twenty-seven counties. Thousands of acres of alfalfa are grown in the regions visited, and the alfalfa grower is almost universally a thrifty farmer.

The ideal conditions of soil and moisture for the growth of the plant are found on the valleys of streams where sheet water is obtained at a depth of twenty feet or less, and where the soil is a porous sandy loam with a permeable subsoil. I am convinced, however, that alfalfa will grow and give remunerative returns upon as many varieties of soil as any other cultivated plant.

J. E. Fitzgerald, of Jamestown, Cloud county, the owner of 280 acres of upland alfalfa, says that it will grow successfully upon the poorest clay soils and the highest knolls, if the land be given a coating of barnyard manure. "In fact," he continues, "no crop responds so readily to fertilizers upon poor soil as does alfalfa."

C. M. Burr, of Grainfield, Gove county, believes that nearly every section of high prairie in western Kansas has upon it, somewhere, a spot that will grow alfalfa. Such a location must receive the surface drainage from higher land. By run-

of alfalfa ought to be worth \$250 per acre; another conservative farmer estimated it worth \$100 per acre. In view of the high protein content of the hay, making it worth \$8 to \$10 per ton when corn is worth 25 cents per bushel, the above valuations are not extravagant.

It has been thought by some of our experiment station workers that the frequent failures of alfalfa on upland might possibly be attributed to the absence of the beneficial soil bacteria causing nodules on the roots of the plants. This subject was extensively investigated, and nodules found in sixty-three out of sixty-eight fields. The distribution and development of nodules generally made as good a showing for upland as for bottom land. Nodules are better developed and more abundant in soil of moderate than in lands of great fertility.

INTERVIEWS.

The following is a synopsis of my interviews with fifty-one farmers.

Question 1. How many cuttings do you get from your alfalfa per year?

The number of cuttings varies from one to four, with a yield of one-half ton to six tons per acre. Mr. Fitzgerald says that alfalfa on Buffalo creek valley in Jewell and Cloud counties will yield five crops per year if cut at the right time. G. R. Allaman, of Wallace, gets four crops and pastures off the fifth crop in the fall.

Q. 2. At what stage of growth do you cut it?

The majority prefer to cut it in the bloom for cattle, though a few would cut earlier. Nearly all who use it for horses agree that it should be cut when

distributed over the ground. Eighteen persons interviewed favor 20 pounds, seven prefer 30, one prefers 45 pounds and got his finest stand from sowing 60 pounds. Twelve prefer 15, two prefer 12, and two think 10 pounds sufficient. Drilling requires less seed than broadcasting.

Q. 5. What kind of soil do you prefer?

The majority of answers indicates a preference for a sandy loam with a porous or jointed-clay subsoil underlaid with sand and sheet water at a depth of fifteen to twenty feet. The next best soil is alkali "gumbo" with a similar subterranean formation. Few farmers can choose the location of their alfalfa lands, being of necessity limited to the soil they already own.

Q. 6. How do you prepare the soil before seeding, and what should be its condition at the time of seeding?

The preparation of the soil varies with its nature and location. If the subsoil is impervious to water, it will be necessary to subsoil the land eighteen to twenty four inches deep. If the subsoil is porous, ordinary plowing will suffice. All agree that the surface should be in the finest of tilth. Plowing should be done long enough before seeding to allow the soil to settle somewhat. The land should be free from weed seeds. If the land is foul it will pay to wait a year before seeding until it can be freed from weeds by clean culture.

Q. 7. What method of seeding do you prefer?

Twenty-nine favor broadcasting and twenty prefer drilling. Both lists of answers contain the names of very successful alfalfa growers. Where drilling

has lost cattle from feeding the hay in the rain. F. S. Curtis, of Solomon Rapids, lost a cow from feeding his last cutting when it was frozen. H. W. Moses, of Grainfield, had some bloated calves from eating alfalfa hay the day I visited him.

Q. 11. How much cheaper can you fatten steers if you have alfalfa for roughness, than if you do not have it?

The general consensus of opinion is that a great saving of grain can be effected by using alfalfa hay for roughness. Fifteen persons were prepared to make reliable estimates of the saving. Seven answered that you could save one-third the grain; three believed you could save half, and one said a fourth. One said you could fatten steers 50 per cent. cheaper; another answered, 25 per cent. cheaper; and a third said 20 per cent. cheaper.

Messrs. Wilson & Blair, of WaKeeney, base their estimates upon five feeding experiments tried last winter and reported as follows:

(1) Took 102 head of old cows, the culls of 8,000 head that could not be sold at any price when put into the lot, and fed them on nothing but alfalfa hay for three months. Sold them for \$30 per head.

(2) Put forty-five old worn-out range bulls into another lot and fed them alfalfa hay and shelled corn for three and one-half months. These made a net gain of \$14 per head with an average of ten bushels of corn per head.

(3) Fed thirty-two head of choice steers alfalfa hay and shelled corn five months and obtained a net gain of 517 pounds per steer. These cattle were badly shrunken from driving and dehorning when weighed into the lot.

(4) Bought five spring calves for \$18 per head, three heifers and two steers, and fed them shelled corn and alfalfa hay five months. These calves netted \$28.31 per head when marketed.

(5) Fed sixty-five head of brood sows through the winter upon nothing but alfalfa hay. They came out in the spring in good flesh. The last cutting of hay was used for this purpose.

Q. 12. If you feed alfalfa to steers, to what extent do you feed it, and do you think a fattening steer will eat too much of it to make the most economical gains, or the most rapid gains?

Eleven farmers who feed alfalfa hay to fattening cattle give them all the alfalfa they will eat unless the supply is limited. Seven think that they should be limited in order to compel them to eat enough grain. The answers to this question indicate that few Kansas farmers have ever thought of balancing a ration for fattening animals.

Q. 13. What has been your experience in pasturing horses or sheep on alfalfa?

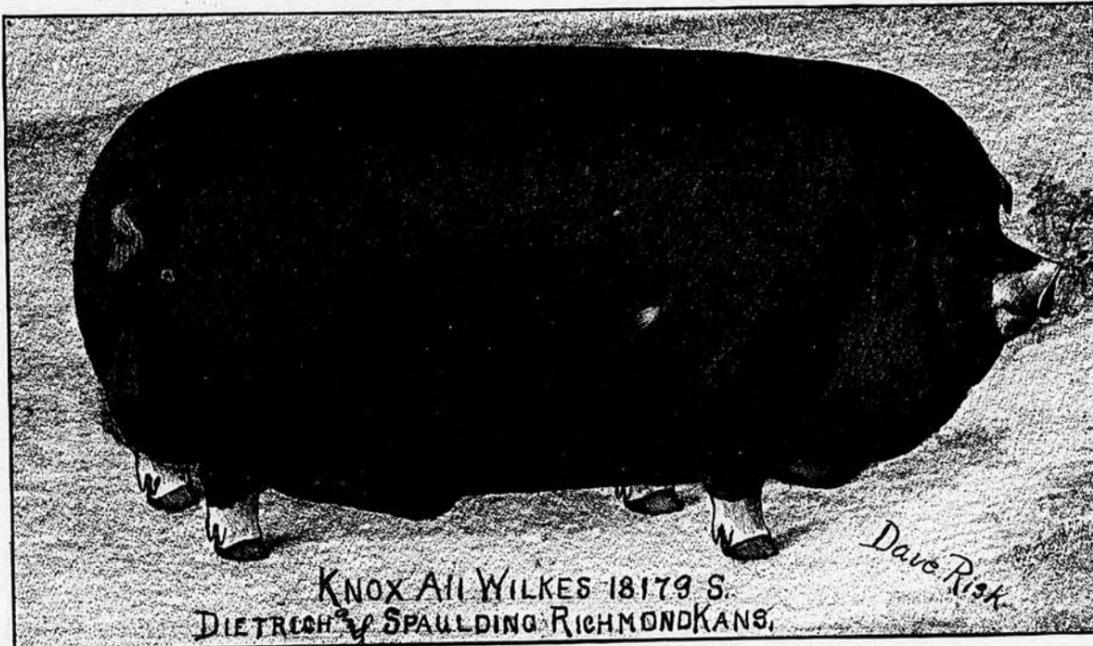
Twenty-five persons interviewed have had experience in pasturing horses and colts on alfalfa, and all declared it to be excellent pasture, especially for young animals. Three persons think that horses eat the plants too closely for the good of the pasture. But three persons had ever seen an experiment in grazing sheep upon alfalfa, and these asserted that it is more liable to bloat and kill sheep than any other animals.

Q. 14. Do you feed alfalfa hay to your work or driving horses and with what results?

Eleven persons feed it to work horses only; sixteen feed it occasionally to both; twelve feed it exclusively to both; one feeds all that work horses will eat and limits the quantity to his driving horses; and two never feed it to either because of bad results. The objections offered were that it is too washy, it affects the kidneys, and it makes horses "short-winded."

Q. 15. To what extent can you continuously use alfalfa for hog pasture and not kill it out? That is, how many hogs do you put on an acre, how long and what parts of the season are they on, and to what extent are they compelled to get their living from the alfalfa?

It was generally conceded that alfalfa makes excellent pasture for pigs. Six farmers practice killing it out in three to five years by pasturing five to fifty head per acre, the year round. One person compels them to make their living exclusively from the alfalfa four months, another two months, another three months, and another for the whole summer. Three persons believe it will not kill out if continuously used providing the noses of the pigs are "rung." One farmer pastures 150 head on 100 acres without being able to find where they have been, another puts 200 head on 30 acres and does not kill it out, a third person pastures 25 head on 3 acres, giving in addition a little grain, and still another has allowed 100 head to run on 3 acres for 2 years past without killing it out. Hon. William Baker, of Lincoln, says that you can put 5 head on an acre and get 2 crops of hay beside. Messrs. Wilson & Blair, of WaKeeney,



ning furrows out into the buffalo grass sod, Mr. Burr is enabled to catch sufficient drainage water to insure him one to three crops of hay per year from alfalfa sown on land where water is found at a depth of eighty-five feet.

J. H. Taylor, of Rhinehart, Dickinson county, has 100 acres of excellent alfalfa on upland where water is obtained at a depth of 150 feet.

Alfalfa was found growing on high prairie in almost every county visited. The acreage on upland is still very limited in western Kansas. This fact partly accounts for the difficulty usually experienced by farmers in getting the plant started on high prairie. A farmer frequently sows a small patch and then allows his whole herd of cattle to range over it in the springtime when the plant needs all the green foliage it can command for the manufacture of its own food materials. If any of the crop survives this treatment, the grasshoppers swarm in from the thousands of acres of prairie sod surrounding the alfalfa patch and "camp down" upon it until not a green shoot is left. The farmer then gives out the report that alfalfa will not grow on upland in western Kansas. Of course it will not grow with such treatment; no other plant would. Every farmer who has had any experience with it knows, however, that it will not yield as large returns from upland without irrigation as it will on bottom land. It need not be so productive in order to give good returns on the cheap upland of the West. Bottom land with sub-irrigation that will yield from three to six tons of alfalfa hay per annum can be bought for \$5 to 20 per acre, while upland may be had in many parts of western Kansas at merely nominal prices. In an interview with an experienced alfalfa grower, I was told that a good bottom-land field

fairly well developed and the seed pods set.

Q. 3. What is the effect upon the succeeding crops of cutting at different stages of growth?

The great majority of the farmers interviewed believe that this has no effect upon the succeeding crop. Dr. M. F. Hudson, of Osborne, says: "It should be cut just as soon as it comes into blossom, the early harvesting seeming to vitalize the plant and stimulate its growth. The hay when cut early is more nutritious, containing a larger percentage of nitrogenous matter."

Q. 4. When do you sow alfalfa and how much seed do you use?

Successes and failures were reported from sowing in every month from March to September. The condition of the ground at the time of sowing is more important than the time, provided the seed be sown in the growing season. In western Kansas, on high land the ground ought to be subsoiled and sub-surface packed the fall prior to sowing, in order that all the winter rains and snows may be retained in the soil. Alfalfa should not be sown until after a good rain when the ground is wet 18 to 20 inches deep. Hon. C. B. Daughters, of Lincoln, believes the majority of failures to get a stand are due to late sowing. He would not sow as late as the first of May, because the weeds are liable to get a start of the young plants. S. Larrick, of Lenora, Norton county, has had the best success from sowing in August, and believes it would be all right to sow as late as the middle of September. From 10 to 60 pounds of seed were recommended for an acre. The prevailing opinion seems to be that 20 pounds per acre should be sown on rich valley land, for a hay crop. If the crop is to be used for seed the plants should be more thinly

was recommended the press drill was generally preferred.

Q. 8. What treatment do you give the crop the first year after seeding?

The treatment prescribed was to mow the weeds as often as they need it. A few farmers stipulated that it is an advantage to the young plants to prune them and, therefore, preferred to mow often whether there were many weeds or not. County Attorney M. A. Wilson, of Atwood, prescribes the following treatment: "Mow three or four times and leave the vegetation on the ground, if the weather is very hot and dry. The next spring, rake the mulch up and haul it off, and give the ground a thorough harrowing. If there is plenty of rain the first season, cut the weeds and alfalfa about three times and haul off immediately, and harrow the field next spring. After the first season, disk and harrow the field about every second year."

Q. 9. To what extent do you practice pasturing alfalfa with cattle? If you find it a successful practice, what methods do you employ to prevent the bloat that causes so many deaths among cattle pastured on alfalfa?

Seventeen farmers interviewed pasture it when the weather is dry, early in the spring or late in the fall after frost; twenty-eight never use it except when cattle accidentally get upon it; and three prefer to take the risk and pasture at any time. There is always more or less risk to run whether precautions are taken or not. Puncturing the left flank, putting turpentine upon the bloated parts, and tying a stick in the mouth of the sick animal were remedies suggested.

Q. 10. Have you ever had any or heard of any case of bloat from feeding alfalfa hay to cattle?

Ten persons were met who had seen or heard of it. H. F. Sims, of Phillipsburg,

say that an acre of good alfalfa will support 10 hogs the year round. Dr. A. B. Jones, whose farm is on Big Creek valley in Trego county, says: "I pastured 200 head of hogs, 6 milch cows, and 6 horses on 10 acres of alfalfa all last summer. The hogs were fed nothing but the alfalfa. A good hog will keep fat on it from the time it starts in the spring until it freezes up in the fall."

Q. 16. How much cheaper and better can you grow pigs with alfalfa pasture than without?

Fifteen farmers were certain that they could grow pigs for half the usual cost; three could grow them one-third cheaper; one, 80 per cent. cheaper; and one answered 75 per cent. cheaper. One person can raise pigs to weigh 150 pounds without any corn. A large cattle feeder said that, by letting his pigs run loose on his alfalfa meadow, he is enabled to grow the healthiest and best of stock hogs, to run after his cattle, at a cost of 50 cents apiece.

Q. 17. Have you ever fed alfalfa hay to pigs in winter? If so, how and with what results?

Fifteen persons had fed it with splendid results, using at the same time a small grain ration; six had fed it exclusively and wintered stock hogs on it in fair condition; while six had fed it occasionally and believe it to be excellent feed. Five persons know that pigs like it though they have had no experience in feeding it. Mrs. N. Ratliff, of Jewell county, answered: "Yes, we feed our hogs hay in winter as regularly as the horses. My husband always saves the last crop for his pigs and milch cows."

Q. 18. It has been stated by many that there has never been a year so dry in any part of Kansas but that sufficient moisture was held by the frost to make at least one crop of alfalfa hay in the spring. Is this true? What has been your smallest yield for the season since 1892?

The majority of the persons interviewed believe that one crop of alfalfa can be harvested in the spring in any part of Kansas whether any rain falls during the growing season or not. I believe, however, that there have been seasons so dry in the extreme western part of the State that the plant would make no growth at all on upland. Such seasons occur very rarely. Mr. J. E. Payne, Superintendent of the Colorado Rainbelt Experiment Station at Cheyenne Wells, harvested a ton of alfalfa per acre the past season without irrigation on land 290 feet to water. The smallest yield reported was one-half ton per acre.

Q. 19. What is the average length of life of the alfalfa plant? How long have you grown it from one sowing?

G. R. Allaman, of Wallace county, has grown alfalfa from one seeding nineteen years and it is better to-day than ever. As the plant grows old the crown is apt to decay in the center and new side roots are thrown out which send up new plants from adventitious buds. This is a method of slow vegetative propagation which, I believe, may be hastened by frequent use of the disk harrow. The harrow splits open the crowns and thus causes the plants to spread.

FACTS LEARNED FROM THE INVESTIGATIONS.

Suitable locations may be found in any part of Kansas for the growth of alfalfa that will produce one-half to six tons, or an income per annum, calculated on the basis of digestible nutrients, of \$4 to \$50 per acre. If harvested as it is coming into blossom, alfalfa furnishes more nutritious feed than if left to grow tough and woody. When intended for horse feed, the stems should be allowed to become somewhat ripened and the pods set before it is harvested. Mowing often does not injure the plants, but stimulates the vital processes. It should be sown late enough if in the spring, and early enough if in the fall to guard against the possibility of frost catching the young plants with only their first two leaves developed. The young plants are more tender at this time than at any other stage of growth. Excessively hot weather following the seeding is apt to result disastrously. Twenty to thirty pounds of seed should be sown per acre.

Alfalfa will thrive best on a fertile loam soil underlaid with a porous, moist subsoil. It will produce a fair crop, however, upon poor land, bringing the nitrogen down from the air and the minerals up from the depths below, and adding to the fertility of the soil upon which it feeds. Moisture in the soil is the one condition indispensable to a good crop of alfalfa. It is a deep feeder, exploiting the subterranean stores of moisture and the hidden mineral elements of the earth. The soil before seeding should be put in the finest possible tilth and freed from weed seeds. Alfalfa should not be sown until the ground is moist enough to ger-

minate the seed immediately. If not covered too deeply, it may be either drilled or broadcasted with equal probabilities of success. Weeds should not be allowed to shade or crowd the young plants, and are best removed with the mowing machine.

It is never safe in Kansas to pasture alfalfa with cattle or sheep, on account of the liability to bloat the animals. There is even some danger in feeding the hay if it should happen to get wet. Steers can be fattened on one-third less corn with alfalfa for roughness than without. Owing to its high protein content, too much may be fed to fattening animals to secure the most economical gains. Horses when not working do exceedingly well on alfalfa pasture. It is not best to feed too much of it to working animals. If mixed with other hay, there is no better horse feed.

A good stand of alfalfa can be very easily destroyed by overpasturing with hogs. To mow the green feed and haul it out to the pigs in a different enclosure is more economical than to pasture it. Pigs can be grown for almost half the usual cost, if green alfalfa be added to their ordinary ration. It pays to feed them the hay in winter providing they get grain in addition.

In conclusion, I urge upon every farmer in Kansas the vital importance of this plant to agriculture. It is the greatest mortgage lifter ever discovered. Do not put off sowing it, but begin now to prepare the ground for seeding next year.

Record-Breaking Herefords.

In view of the forthcoming sale of Sunny Slope Herefords, by C. S. Cross, of Emporia, to be held at Kansas City, on December 7, 1898, it is particularly gratifying to know that the greatest averages made at public sale in recent years were for Herefords owned and mainly bred in Kansas.

Mr. Cross, in his advertisement, makes the following claim: "At my spring sale I received the highest average of recent years for one, five, ten, twenty, thirty, forty, fifty, sixty, seventy, eighty, ninety and 100 head, I do not say this as giving any idea as to what the present cattle will average, but only to emphasize the two facts, that my cattle are of the very highest quality, and more especially that this present offering will consist of animals equally as good in quality and breeding."

The following table, compiled from the catalogue of last spring's sale, shows exactly the prices realized for the offering, and the same is grouped in lots of ten. The number to the left of the amount in dollars corresponds to the lot number in the catalogue:

Table with columns: No., Pr., No., Pr., No., Pr., No., Pr. containing price data for various lots of Herefords.

The averages in dollars and cents are as follows: Five, \$2.04; ten, \$1.47; twenty, \$1.03.25; thirty, \$2.94.33; forty, \$780.40; fifty, \$705.20; sixty, \$651.25; seventy, \$608.64; eighty, \$572.80; ninety, \$543.27; one hundred, \$518.25; one hundred and ten, \$497; one hundred and twenty, \$477.50. The general average for 146 head sold at the spring sale was \$431.30.

The offering of Sunny Slope Herefords next month, in so far as the home-bred cattle are concerned, is, in the opinion of the writer, decidedly better, both in quality and breeding, as nothing but top quality young animals are included in the sale, thereby affording an unusual opportunity for the Hereford breeding fraternity.

Knox All Wilkes 18179.

In this issue we show a cut from life of one of the noted sires of the famous Poland-China breed. Knox All Wilkes 18179 was farrowed March 27, 1896, bred by D. A. Kramer, Washington, Kas., his sire Little Mc 14992 by McWilkes 9242, who sold for \$455 at public sale, and is a prize-winner of note. Knox All Wilkes is a grand individual, good on feet and legs, fancy head and

ear, high crest, and a broad back, slightly arched. He has great depth of body and a straight-edge would touch its full length if laid against his side. As a show hog he won at five fairs in 1897 and is still a show animal in the full sense of the word. He is very stylish and proud and admirably fits the position of head of Highland. As a producer his record is even greater than as an individual. His get have the same style and finish as himself and he has produced more pigs fit to go in show ring or to head herds than any hog Messrs. Dietrich & Spaulding have owned. He is not a boom hog, as his owners are not in the boom business. They pay for what they get and buy the best blood and individuals and produce Poland-Chinas that hold their own in the strongest show rings. If in want of a choice young boar or sow sired by Knox All Wilkes or Highland Chief 18334 by Chief Tecumseh 2d 9115, write them for prices and descriptions and you will receive prompt reply with satisfactory prices. Messrs. Dietrich & Spaulding, Richmond, Kas., are among the oldest breeders of the State and have spent much time and money in making Highland herd a leading herd of eastern Kansas, and their success is the best guarantee of their judgment as breeders.

Gossip About Stock.

J. M. Stonebraker, Panola, Ill., writes the Farmer that he has the largest and finest herd of Duroc-Jersey swine he has ever owned, and that the same are in most excellent condition. He reports that the trade in Kansas for this class of swine is greatly on the increase.

Five thousand dollars for a Lincoln ram and \$1,600 dollars for a Shropshire ram in England; \$5,000 for a Merino ram in Australia and \$2,500 for a Rambouillet ram in Argentina, says the American Sheep Breeder, make the year's records for three noble breeds of sheep and set the seal of world-wide approval upon great sheep and their master breeders.

Our advertisers of Red Polled cattle reap remarkable results from very small advertisements, all of which goes to show that this breed of cattle is coming rapidly into public favor and that the Kansas Farmer is par excellence as an advertising medium. A recent letter from L. P. Haseltine, Dorchester, Mo., reads: "We have been making good sales this fall and still have several fine young Red Polled bulls ready for service."

Mr. Philo L. Mills, owner of the champion Short-horn bull of Great Britain—Marengo—in the course of a recent letter to the Breeder's Gazette, says: "At the late auction sales in Scotland I saw ten sucking calves (bulls) sell for 1,840 gs., an average of \$965 each." It is evident that the old-time favorites are entering upon a new lease of popularity abroad and it is equally apparent that a great revival of interest in Short-horns is at hand in America.

The eighth annual sale of recorded Poland-China swine and thoroughbred and grade Short-horn and Jersey cows at Welcome stock farm, Bellaire, Smith county, Kansas, on Tuesday, November 22, 1898, by Mr. C. F. Hutchinson, is an event that should attract all interested in improved stock, and especially so in northern Kansas. It is a most desirable offering in every way, as will be noticed by the advertisement elsewhere in this issue, and we trust that none of our readers who can attend will overlook this sale.

On Wednesday, November 30, 1898, the successful breeders, Messrs. Scott & March, of Belton, Cass county, Missouri, will hold their third public sale at Kansas City. The Anxiety blood largely predominates in their herd, now aggregating over 500 head. The sale offerings are mostly yearlings and two-year-olds and in breeding and individuality they are a most desirable lot of white-face cattle, not pampered nor overfed but in that condition that insures future usefulness. If the interested reader has not as yet sent for a copy of the sale catalogue there is yet time to do so. Keep in mind the date—November 30—and, if possible, attend the sale.

If richly-bred Short-horn cattle are wanted by the reader, then the opportunity to get them will be offered by two of Missouri's leading breeders, Mr. Geo. Bothwell, of Nettleton, Mo., and W. F. Harned, of Bunceton, Mo. Both herds are most favorably known to the people of the West and ought to attract buyers that are desirous of having some of the best-bred cattle obtainable. Eighty-eight serviceable bulls, about one-half of which are long yearlings, and forty-seven cows and heifers, a major portion safe in calf or with calves at foot, should draw a great crowd of intending buyers. Keep in mind the dates—November 22 at Kansas City and November 23 at Bunceton, Mo.

On December 8, 1898, Miles Bros., of Peabody, Marion county, Kansas, will hold a closing-out sale of their entire herd of high-class Poland-China swine. This is an event of unusual importance to the Poland-China fraternity, and their offering, as far as breeding and individual excellence is concerned, has not been surpassed by any sale in the West this year. One of the Kansas Farmer staff visited this herd last week and, like all other visitors, was surprised to find such a grand uniform lot of hogs. Their herd boar, Miles' Look Me Over, which will be included in the sale, has certainly proven himself one of the great sires of the country. This sale will be the breeder's opportunity, and we trust that no Poland-China breeder in Kansas will fall to investigate closely the merits of this offering.

Hope, Dickinson county, Kansas, is making a brilliant record for improved stock and enterprising breeders. During the past year over \$100,000 worth of pure-bred cattle and swine have been sold by the breeders of that stronghold of fine stock. The latest announcement of interest to the public is that made in this issue by J. W. Higgins, Jr., who is making a special offering of fine Poland-China swine at prices that secure him a large Western patronage. The writer is personally familiar with his stock and has no hesitation in urging Farmer readers to avail themselves of this chance. Mr. Higgins is reliable and a clean-cut business man who knows how and will treat customers fairly. He is determined



Death's Betrothal.

A few years ago a New York newspaper conducted an open discussion upon the topic: "Is Marriage a Failure?" The answer is easy and upon the surface. Where there is mutual love and respect, if there is also health, marriage is a success. When health is left out, even the most ardent love does not count, and marriage is invariably a failure.

Modern science has cried the warning so often that all should realize the dangers of wedlock to people in ill-health. In a case of this kind death lurks on every side—in the kiss of betrothal and the caress of the honeymoon. The man who is suffering from ill-health is a physical bankrupt, and has no right to condemn a woman to be his nurse for life and the mother of babes that inherit his physical weakness. Dr. Pierce's Golden Medical Discovery acts directly on the digestive organism. It makes it strong and its action perfect. When a man's digestion is all right his blood will be pure; when his blood is pure his nervous system will be strong and his health vigorous.

A woman who suffers from weakness and disease of the delicate organism of her sex is certain to suffer from general ill-health, and to be an unhappy, helpless invalid and a disappointment as a wife. Her children will be weak, puny and peevish. A happy home is an impossibility for her until her health is restored. Dr. Pierce's Favorite Prescription cures all troubles of the distinctly feminine organism. It cures them speedily, completely and permanently. It fits for wifehood and motherhood. Both medicines are sold by all good dealers.

to make a reputation for Dickinson county Poland-Chinas. He offers a large number of boars and gilts by Eberley's Model, a fine boar selected last season from Ohio at a long price. Of these pigs Mr. Higgins says: "I consider them finer than any others offered at the prices. A man can make no mistake in ordering one of these. I desire to place them now for the reputation in the future."

F. R. Lusk, of Rago, Kingman county, writes the American Sheep Breeder as follows: "I have been in Texas and New Mexico for three weeks looking for some sheepman who did not fully appreciate the fact that McKinley is President, but came home without any sheep. I sent the Merion ram Master 353 to John A. Clark, of Ohio, who writes that he is well pleased with him. Mr. Daved, of Mulvane, purchased twenty-two head of me last week, among them the three-year-old Merino ram, 400, that sheared 45 1/2 pounds last spring of twelve months' growth. In the spring of 1897 George Clark and myself bought 10,000 picked wethers in old Mexico at \$1.56 delivered on this side. That was just before the Dingley bill became a law. The same kind of wethers landed on this side to-day would cost \$2.80 per head. I think protection protects."

All persons interested in the better class of beef cattle, especially Herefords, will doubtless be pleased to learn something concerning the herd founded and owned by Mr. C. G. Comstock, who has been a resident of Gentry county, Missouri, for forty years. The visitor at the 3,000-acre Grandview farm finds now over 600 head of pedigree Herefords, whose foundation was laid in the early 90's. The first draft of white-faces came from the herd known at that time as the Shoemaker-Funkhouser herd, in Clinton county, Missouri, and consisted of fifteen heifers sired by the Anxiety 4th bred bull, Governor Simpson, headed by the bull, Cephas 37607, a son of Royal 16th 6459, bred by J. B. & G. H. Green, Marlow, Leintwardine, England. Shortly afterward a draft of twenty was secured at a Chicago sale made by Adams Earl, of Lafayette, Ind., and among these was the great breeding bull, Capt. Grove 2d 51325, a grandson of The Grove 3d 2490. In the female division of this draft were five Erica cows by Garfield, two by Sir Bartle Frere, and others by Earl of Shadeland 30th and Star Grove 10th. Earl of Shadeland 30th 30725 was the sire of the bull at the head of the Armour herd, St. Louis, and the cow, Lady Laird, that sold at the late Armour sale for \$1,000. He was also the sire of May Day, the dam of Mr. Funkhouser's Dew Drop 61351, that has been so successful in the strongest of American show ring contests. Among the later animals that came into the Grandview herd were several heifers that were selected at the dispersion of the Fowler herd at Kansas City, three of which were daughters of the noted Beau Real 11055, the bull (see Vol. IX A. H. R.) that won from 1885 to and including the show ring contests of 1888 a list of victories the equal of any white-face ever exhibited in this country. Several and some of his more remote descendants will go into the sale. The females catalogued will have been bred to either of the following herd bulls: Captain Grove 2d 51325, Hesiod 14th 56464, Gentry Briton 2d 75740 or Blue Grass 51566. Hesiod 14th 56464 is a son of the noted Hesiod 2d 40679, the premier herd bull of Mr. Funkhouser. Individually he possesses great Hereford character and is one of the few best sons of his noted sire. The prospective buyer can count on finding the 105 head—seventy bulls and thirty-five cows and heifers—that will be offered are worthy the acquaintance of all beef cattle breeders throughout the country.

The Home Circle.

THE MORNING HILLS.

He sits among the morning hills,
His face is bright and strong;
He scans far heights, but scarcely notes
The herdsman's idle song.

He cannot brook this peaceful life
While battle's trumpet calls;
He sees a crown for him who wins,
A tear for him who falls.

The flowery glens and shady slopes
Are hateful to his eyes;
Beyond the heights, beyond the storms,
The land of promise lies.

He is old and sits so still,
With face so weak and mild,
We know that he remembers naught
Save when he was a child.

His life is fought, his fame is won,
Life's highest peak is past;
The laurel crown, the triumph arch,
Are worthless at the last.

The frost of age destroys the bay—
The loud applause of men
Falls feebly on the palsied ears
Of threescore years and ten.
He does not hear the voice that bears
His name around the world;
He has no thought of great deeds done
Where battle tempests whirled;

But evermore he is looking back,
Whilst memory fills and thrills
With echoes of the herdsman's song
Among the morning hills.

—Maurice Thompson.

REFUGE IN SLAVE DAYS.

The Wayne County Historical Society has at last taken steps for the preservation of the old Coffin homestead in Fountain City, Indiana. The historic building is to be turned over to the State. Here, in actual life, existed most of the characters known around the world, wherover "Uncle Tom's Cabin" has been read. This was the headquarters and home of the underground railway in the days of slavery. Then Fountain City was Newport. With the end of the days of 1861-4 its star began to fade. Its great system, which hurried slaves from the South to Canada, was relegated to the rear, and Newport was forgotten. From Indiana's most noted settlement it became one of her most obscure. Nothing is left of its activity, nothing of its glory, but a few old brick buildings and the famous Coffin home—the home of Levi and his wife—"Simon and Rachael Halliday" of the great novel. The streets are deserted, and all is still. Only occasionally can an old Quaker be seen who recalls the days of departed fame and tells again the story of the past.

The home of Levi Coffin once sheltered "Eliza Harris" and the baby she carried across the Ohio in her flight on the ice. "George Harris," "Simon and Rachael Halliday," and other characters known to every child in the land, and considered by the great majority of people to be simply creations of the imagination of Mrs. Stowe. Here lived Levi and "Aunt Katie" Coffin, the husband known as the President of the Underground railway, and his house the Union station; his wife known as Vice President, Auditor and general promoter. But they are all gone now, even the writer who placed the characters in fiction; even Fred Douglass, who often visited the scenes of this story, and there met Harriet Beecher Stowe. Murat Halstead, who used to run over frequently from Paddy's Run, Ohio, has even given the town what is now called "the shake," and no vigorous pen remains to jot down for the coming generation the quaint old scenes which throw light upon the descriptions and real life and blood into the characters of "Uncle Tom's Cabin."

Newport dates back to about 1791, when Quakers living in North Carolina liberated their slaves and moved North. Wayne county was then a Quaker center, as it is at present, and they formed a settlement and called it Newport. Near the cross street where are clustered the postoffice, the drug store and the town's business is the home of the noted President of the Underground railway, Levi Coffin. Southern slave-owners conferred the name upon the house and its occupant. The house is a square, two-story brick structure. The windows and doors stand out prominently, rather too boldly for beauty. The roof slopes down, forming dark eaves. In this structure and under the sloping eaves of the roof were sheltered at various times 3,200 slaves, all runaways from the South, who, after reaching that haven, were never overtaken. "Aunt Katie" Coffin's greatest and probably only boast was that of all the 3,200 that had been hidden away in the house not one had ever been recaptured and returned to slavery. Though the sloping roof does not add beauty to the structure, it did much in adding to its fame. Though not noticeable on the outside, the eaves come over far enough to form a small continuous dark room

all around the house. It was into this space that the runaway negroes were stowed through a door which was then hidden from view by a big bed. The house was searched fully 200 times, and on one or two occasions the door to the dark closet was found, but not once did a slave-hunter ever regain his property when once it had been stowed away in this eave-room.

In this dark space "Eliza Harris" and her child were hidden when they were compelled to seek hiding after making their perilous trip across the Ohio. "George Harris" was also hidden away once in this garret, and through this house thundered the man to whom Harriet Beecher Stowe gave the name of "Simon Legree." He was a Kentucky slave-dealer whose business it was to sell negroes. Aunt Katie would feed her charges and take good care of them for weeks at a time. Many she hid in the monster feather-beds which were quite popular in Hoosierdom about that time. After seeing that they were safe from their pursuers, Levi, her husband, Daniel Huff and others would bring out the old wagon, which still stands in the old Huff barn, and they would start their fugitives along to the next station of the Underground railway. Coffin had organized it perfectly from the Ohio river to Sandusky, Ohio, where they passed over into Canada.

John W. Johnson, now an old man, is a nephew of the President of the Underground railway. He still lives at Newport or Fountain City, only a few doors from the historic house.

In speaking of the "good old times," among other things Mr. Johnson said: "I was at my uncle's when Eliza of 'Uncle Tom's Cabin' fame was brought to his house. Her pursuers were close upon her trail. She was a brown-skinned, intelligent woman, and was sheltered there for several days. She said that she was a slave from Kentucky, living back a few miles from the Ohio. It was this story told to my uncle and aunt, and repeated to Mrs. Stowe a few days later, that resulted in the interesting scene in 'Uncle Tom's Cabin' wherein Eliza, followed by the bloodhounds, reaches the Ohio and passes over on the ice. The great body of American people think it is all fiction, but it was not. She reached here just ahead of her pursuers, and was stowed away under the eaves of the old house. She remained there several days, and was then forwarded on to Sandusky, and thence sent over into Canada. I think it was in the year 1854 that my uncle and aunt were on a visit to Canada, and attended church at a colored meeting house at Chatham. During the services a pretty colored woman rushed up and exclaimed, 'How are you? God bless you, Aunt Katie!' She was not recognized until she referred to the Coffin house, and said she was named Eliza Harris by Mrs. Coffin herself. She was living happily in Chatham then, but I have lost sight of her in the years that have passed. I suppose she is dead."

This narrative, told to Harriet Beecher Stowe during one of her visits to the Underground Union station, produced such a wonderful effect upon her that she made it the chief incident in her story. George Harris was in reality Lewis George Clark, a mulatto, who died recently in Lexington. He was born in Madison county, Kentucky, in 1812, and was the property of Samuel Campbell.

It is said that Mrs. Stowe got her inspiration for Legree and other characters through incidents at Newport. Hardly a day passed but that the town was thrown into an excitement because of an invasion of angry slave-hunters who had come to regard Coffin and his followers as enemies, because hundreds of negroes had mysteriously disappeared at the "Union station." Sometimes the slave-hunters threatened to burn down every house in the town in order to find their negroes, but when the fifty or hundred free negro residents would come out armed to the teeth with guns and raiders changed their minds.

Coffin was a man of wonderful nerve and was surrounded by Quakers equally as brave. It is related that at one time, after helping to save by legal process some negro girls from being kidnapped into Kentucky by unprincipled men, one of them said: "I would like to see the man who swore out this affidavit. I would fill him full of shot." Coffin rode up to him on horseback, and in his simple Quaker custom said: "My friend, if it will afford thee any satisfaction to see that man, look at me. I am the man. But it is not I that thee has to contend with, but the State of Indiana."

Mrs. Coffin was a woman of infinite tact and resource. On one occasion she found a negro girl in a house that was being surrounded by slave-trailers. She laid aside her Quaker garb, and assumed the clothes of a fashionable woman. Then, dressing the negress in her own

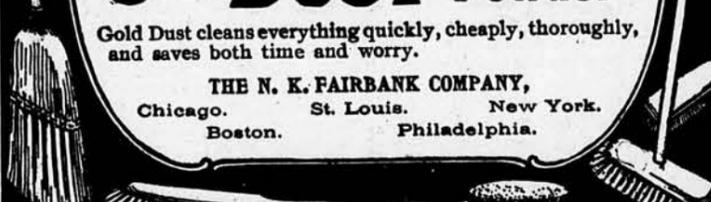
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must be cleaned often, else they become dangerous germ collectors. Hair brushes demand special attention from the standpoint of both health and cleanliness. They can be cleaned quickly and thoroughly by washing in a weak suds made from

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clothes, she made a mock baby of a bundle of clothes, and passed the slave-owner with the girl as a nurse carrying a child for her mistress. There are many stories of her wonderful ability in this line.

Mr. Coffin at one time was a man of considerable wealth, but he exhausted his fortune in taking care of fugitive slaves, and in the last years of the Underground railway was compelled to ask for financial assistance from his friends in carrying on the work. One day, while in Cincinnati on a business trip, he went into the office of Henry Lewis, then the most prominent pork packer in the West. Mr. Lewis and Mr. Coffin were warm friends, and the latter said:

"Friend Lewis, I've got a man and his wife and children at my house, and it's costing me considerable to feed and clothe them and get them fixed up for their trip. Can you help me a little in the work?"

"Certainly," said Mr. Lewis, who knew well what Coffin meant by "the work," and at once handed over a liberal donation in money. Being fond of a joke, Mr. Lewis turned to a number of men who were in his office, saying:

"Perhaps some of you gentlemen would like to assist Mr. Coffin and myself in taking care of a poor family he has on his hands just now?"

This appeal brought generous response from every man in the office, and Mr. Coffin went away with a goodly sum in cash. As his friend left, Mr. Lewis said: "I neglected to tell you, gentlemen, that my friend Coffin is at the head of the Underground railway, and that the poor family he is assisting are fugitive slaves."

As all the men were Southern merchants and planters, who heartily hated Coffin and his work, Mr. Lewis' announcement created something like a sensation, but the feeling soon died down and the matter was treated as a good joke.

"Blame me," said one of the party, "but you've suddenly got us, Mistah Lewis. Th' ideah of makin' us subscribe to th' stealin' of our own slaves. Let's likker, gentlemen."—Chicago Inter Ocean.

A Better Name.

"This is the parlor, eh?" tentatively remarked the agent, who was looking over the house. "Yes," replied old man Kidder; "but I usually call it the court room—I've got seven daughters, you know."

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One of the coins that Cromwell had struck was called the "broad piece." It was of gold and preceded the guinea, which has in turn given way to the sovereign. Upon one side of the broad piece there appeared the words "The Commonwealth of England," and upon the other was the phrase, "God With Us." This gave rise to a pleasant bit of witticism on the part of a cavalier. Holding the coin in his hand, and look-

ing first on one side and then on the other, he remarked, "I see God and the commonwealth are upon different sides."

Matrimonial Amenities.

Mrs. Peck—You haven't the spirit of a mouse. Why, you would never have even proposed to me if I hadn't made you do it. N. Peck—I guess that's so. That is the only thing about the whole affair that I have any reason to be proud of.

The Duke Remembered.

A tailor once vainly tried to make clear his identity to the Duke of Wellington. "Why," said he, "General, don't you know me? I made your breeches." The Duke cordially grasped his interlocutor's hand and exclaimed: "Why, Major Britches, how are you?"—London Judy.

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To get the best results it is always necessary to have different dyes for cotton and wool, and on this account there are some fifteen Diamond Dyes specially prepared for cotton and mixed goods. Be sure to get a cotton dye if you wish to color cotton or mixed goods.

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The Young Folks.

A LITTLE DUTCH GARDEN.

I passed by a garden, a little Dutch garden,
Where useful and pretty things grew—
Heartsease and tomatoes,
And pinks and potatoes,
And lilies and onions and rue.

I saw in that garden, that little Dutch garden,
A chubby Dutch man with a spade,
And a rosy Dutch frau
With a shoe like a scow,
And a flaxen-haired little Dutch maid.

There grew in that garden, that little Dutch garden,
Blue flag flowers, lovely and tall,
And early blush roses,
And little pink posies—
But Gretchen was fairer than all.

My heart's in that garden, that little Dutch garden;
It tumbled right in as I passed,
'Mid 'wildering mazes,
Of spinach and daisies,
And Gretchen is holding it fast.
—Hattie Whitney, in Boston Budget.

Written for Kansas Farmer.

YOUNG FOLKS IN THE OLD COUNTRY.

BY ANNA MARIE NELLIS.

NUMBER 47.

After leaving the steamer, we crossed the "Lange Bruecke" (long bridge, a fine structure) and were right at the City Palace (Stadt Schloss). This was one of the principal palaces in Potsdam one hundred years ago, and Frederick the Great divided his leisure time between it and the beautiful Sans Souci, described in my letter No. 10.

In front of the palace is a huge lime tree, which is protected by an iron fence to keep souvenir hunters from whittling it to pieces. It is connected with the

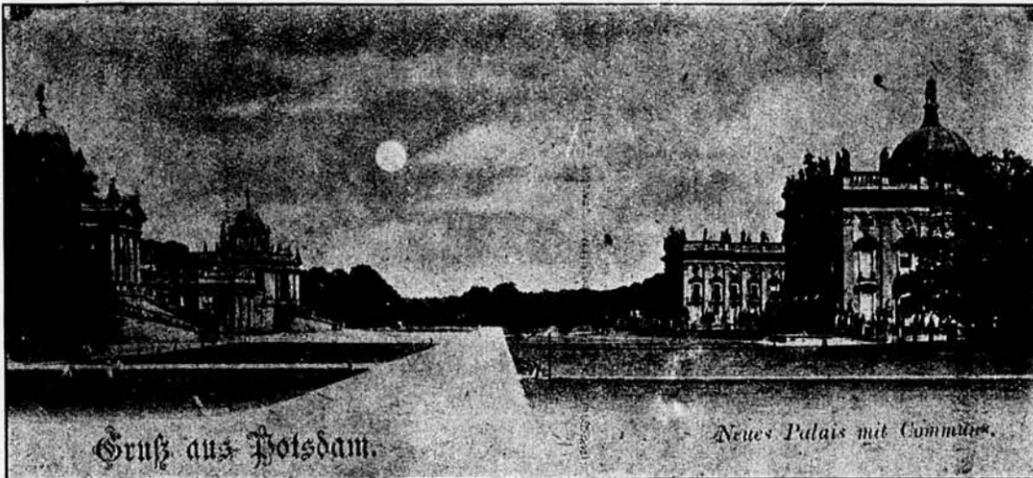
above—this being the principal entrance for royal carriages when they were driven into the square courtyard for the purpose of depositing their royal freight.

While viewing the beautiful fountain and beds of flowers in the courtyard, the guide came to offer his services for our party. The entrance hall is small but the floors and walls are all of beautiful marble. Two broad stairways extend from opposite sides of the hall in a semi-circle to a common landing on the main floor. The first room from the landing which we entered is known as the reception-room. The decorations are not extraordinary but quite fine, as becomes a royal room. However, there was one article of furniture in the room which has an historical record, and it is a measuring machine. Frederick William I., the second King of Prussia and father of Frederick the Great, was a man as full of whims as could be found in seven centuries of historical research. One of his whims was to have a regiment of giant soldiers—the tallest to be found in the world. He had his agents in every country hunting for tall men, and when one came to be enlisted he would be measured in this measuring machine, and unless the man were at least seventy-eight inches in height he would be rejected. We all were measured in the machine and not one of our party could have been accepted by the giant-collector. Our guide said I lacked exactly one foot of being tall enough.

This old Frederick William I. had another whim, which induced him to form a smoking club in this palace, where he and his guests would meet as equals and each would call the other by his first name, as boys would, and then they all would drink as much beer as their corporeal capacities would sustain, while

We next visited the library, which is also fitted up as a sort of a chapel, for here the Princes of the royal family are always baptized. The furniture and hangings are all of blue satin and silver. Adjoining the library is a small dining-room, the only entrance to which is from the library, and in this little room Frederick II. held his private conferences and private dinners. The dining table is a small round affair in the center of the room, and the center of the table is movable, so that it can be let down through the floor to the room beneath, where the different courses were prepared, and then sent up again; so that no servant need be in the room to hear the conversation. The decorations are in old rose and gold velvet. In the study of Frederick II. we saw his desk just as it was when the great monarch wrote on it, except that a strip from the top was taken by Napoleon in 1806 to Paris as a souvenir of conquest. The Frenchman seemed to think that whatever the great German King had used was better, for luck, than a rabbit's foot.

The marble banquet hall, the tea-room and many others were shown us, all interesting but too numerous for a printed description. One room, however, was noticeable on account of the cheap furniture and hangings, and that was the room of Frederick Williams' tobacco club. The walls are decorated with pictures painted by the old grumbler himself. He imagined he was a great artist and his pictures show that his imagination was correct. One figure, for instance, of a man in one of his paintings, is the happy owner of two left feet, and the gentleman is cross-eyed; otherwise he is quite handsome. The guide informed us that we had now seen all the rooms usually shown to visitors, but



THE HOME OF EMPEROR WILLIAM II.

history of the great Frederick in a peculiar way. The old King was cross, sometimes, like Kings and other folks are apt to be, and would not always allow his subjects to approach him with their grievances or applications for post-offices and such things. His principal business office was in the second story of the palace, the windows of which overlooked the Havel river, and the old lime tree was directly opposite where he would sit at his work.

Large mirrors are on the walls of the room and they reflected every object moving in front of the windows. Frederick's politicians soon learned the situation exactly, and when they wished to see the King they would climb the tree and look appealingly toward the palace windows. The King could see the man in the tree reflected in the mirrors opposite his desk, and if he was willing to hear the applicant he would motion to the reflection in the mirror and the happy man in the tree would hasten to his royal master, and the next man would climb up and await his turn. Sometimes there would be many men waiting for their turn to climb the tree. When I learned these facts, I understood what is meant by the saying that a politician is "up a tree."

When we arrived at the principal entrance, we learned that the guide had just started with a party to show them through the palace and that we would have to wait until another guide would come to escort us. I occupied the time while waiting in walking around the court and noting the exterior. The palace was built in its present form in 1750, although a royal palace has existed on the same location for several centuries, as it was the favorite dwelling of Prussian Kings and Kurfuersts of Brandenburg before Prussia became a kingdom. The palace is built on three sides of an open square, with the fourth side marked by a curved colonnade, in the center of which is its largest arch with tower

smoking long clay pipes filled with the strongest tobacco obtainable.

Another whim of his compelled him to prevent his wife and daughters from wearing any jewelry in public, although they had plenty of it, and the old grumbler had plenty of gold to buy ten times as much as they could possibly wear. He forbade court parties except on very seldom occasions.

One day, feeling particularly generous, he told Sophia Dorothea (that was his wife's name) that she might have a fine court party. Many titled guests were invited and the palace was made brilliant with beautiful decorations. Frederick William was affected with gout and concluded he wouldn't attend the party; so he had his tobacco club summoned to meet in their rooms and smoke and drink beer while the dancing was in progress in the ball-room. The members of the club were at the party when they were summoned by the King. They swore to themselves a couple of times or so, but they had to obey the King. They left the ball-room and joined the King in the smoking-room.

About midnight the old fellow concluded he hadn't been really mean yet all day, so he called his man servant to help him walk and then ordered the smoking club to follow. He went to the ball-room, but the news was spread of his coming, before he appeared, and the Queen and her daughters began to take off their ear-rings, bracelets, brooches and other jeweled ornaments and hide them in their pockets so "the old man" wouldn't see them. He ordered Sophia Dorothea to come with him and he then led his little procession to another room where were two coffins, brought in that day. He informed his wife that these were for her and himself when occasion should require, and he was anxious to know if the furniture would fit. He actually made the poor Queen lie down in her coffin and then he was helped to get into his own receptacle.

upon my request, he took us to the room of Queen Louise, which is left just as it was when she died, eighty-eight years ago. The curtains and hangings on the walls are sadly worn by time; and on the sofa are a pair of gloves and a parasol, left there by the beautiful Queen on her return the last time she enjoyed a walk out of the palace.

Leaving the palace, we are in the parade ground and "Lustgarten," which are enclosed by two rows of tall Grecian columns, between which are statues of many Generals and important personages. Near the Lustgarten is the magnificent fountain group, by Knobelsdorf, of Thetis and Neptune in a shell chariot drawn by two impossible prancing sea horses.

We next visited the "Neues Palais" or Frederickskron, the summer home of the present Emperor. The grounds around it, for more than a mile square, are laid out as a magnificent park, the northeast part of which is the gardens of Sans Souci. This palace was built by Frederick the Great at an enormous expense, after the "seven years' war," to show Europe and his people that the German treasury was not yet empty. This palace was used for entertaining guests, as Sans Souci was too small. I will describe only one room—the shell-room (Muschel Saal)—which is world-renowned. The walls and ceilings are inlaid with shells, the frieze in precious stones. It is so beautiful and dazzling that one seems to be transported into fairyland. The guide pointed out a large piece of petrified wood from Arizona, which is on exhibition in this shell-room. We visited, in turn, all the many rooms in which visitors are allowed, the last being the theater, in which private theatricals are performed for royalty. In this theater the great Friedrich used to have his favorite dancer, Barbarina, perform for the pleasure of his guests, and her picture still adorns the walls.

Leaving Frederickskron, we retraced

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our steps through the park, past Sans Souci, out through the large iron gates, to the "Friedens Kirche," adjoining which is the mausoleum of Emperor Frederick William III. (father of the present Emperor). The church is in the early Christian basilica style. In front of the chancel are the burial vaults of King Frederick William IV. and his Queen, Elizabeth, who died in 1873.

The mausoleum is much smaller than the one at Charlottenburg. In the center is the beautiful sarcophagus of Frederick III. It represents the Kaiser lying in state, his sword and laurel wreath in his hand and a robe edged with ermine over the feet. By the side of the sarcophagus is the marble slab marking the place where his Empress (Victoria, of England) will sleep some time. She is known as the most learned woman in Europe and is the best disliked one in Germany—why, I do not know. Before the mausoleum is the guardian of the grave, Thorwaldsen's "Risen Christ." The figure is represented with flowing robes and arms extended, and underneath is the inscription: "Come unto me, here ye shall find rest and peace."

We next visited the "Garnison Kirche," in the center of the city, near the City Palace. In the vaults, underneath the pulpit of this church, lies the body of Germany's greatest warrior, Frederick the Great, with his father, King Frederick William I. The vault is very small and the only light we had was from a candle held by the guide. It seemed impossible to me, as I rested my hand on the small copper coffin, that it should contain the mortal remains of the Great Friedrich. Napoleon, the victor, stood here on the night of November 3, 1806, and as he rested his hand on this same coffin, he spoke aloud: "Had you been living I never would have reached Berlin." A few years later, on this same spot, stood Alexander I., of Russia, with King Frederick William III., and over the great General's coffin they promised each other to oppose Europe's greatest enemy until he should be subdued. Napoleon, Alexander, Frederick William and I, all have stood in the same place and have touched the coffin of the great conqueror. We returned to Berlin by the 6 o'clock steamer. Had the three gentlemen above named been living we probably would never have reached Berlin.

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THE ELECTION.

There are many attempts at explaining the result of the election in Kansas and throughout the country. No doubt many causes contributed to the changes. The fact that the changes which made Republican success possible in Kansas occurred in the country precincts is significant. The changes in these country precincts have had much to do with making several recent Governors "one-term men." While defeat of the administration in any of these cases is not to be attributed to a single cause, it is notoriously true that no recent administration of the prohibitory law has seemed to farmers or to other candid folks to be honest. Not a few voters have determined to help "down" any administration found guilty of trifling with the duties it has sworn to perform. The small vote cast for the Prohibition candidate, ex-Senator Peffer, is entirely in harmony with what seems to be the settled purpose of voters to defeat any candidate whose official record is thought to be unsatisfactory. A vote for Peffer was, in effect on the result, a "stay-at-home" vote. Those who were bent on punishing for supposed remissness made their votes as effectual as possible.

It is not to be supposed that the temperance issue was the only one, although it is generally conceded that opponents of the prohibitory law were almost unanimous in their opposition to Mr. Stanley. But a feeling that the national administration ought to be sustained by a vote of confidence pending the final settlement of the issues of the war with Spain, appealed powerfully to the patriotic sentiment which is nowhere more pronounced than in Kansas.

Improvement in the times had a share in changing the vote. Pessimism does not harmonize well with American sentiment at any time. At a time of signal triumph of American arms; of extension of democratic government over the islands of the sea and to millions of people; of fair crops and fair prices and easier money markets in our own State, it is not unnatural that voters should endorse optimistic declarations.

Again, fusion of parties of considerably diverse principles, combination of inharmonious elements in opposition to something or somebody, or for the purpose of acquiring office, does not appeal strongly to voters as an abiding principle of government. Such combinations inevitably melt away after a time, leaving party memberships somewhat changed from their original alignment. But in this country, as in England, the lines of party division are very persistent. The party of Hamilton and the party of Jefferson, with various attentions to subordinate issues, are likely to be the political parties of this country, in Kansas as elsewhere, for generations yet to come.

Henry Clews predicts that prices of securities are upward bound. These are the "properties" in which Wall street money is largely invested.

The first nine months of the present year showed a balance of trade in favor of the United States amounting to \$378,842,609. The imports were larger and the exports were smaller than for the

corresponding period last year. For September, however, there is shown both an increase of imports and a decrease of exports, as compared with September, 1897.

A RACE CONFLICT.

The late election was the occasion for a small race war at some points in the South. Several deaths have been reported, and the feelings of animosity evidenced indicate race animosities such as have, in times past in the world's history, led to wars of extermination. It was a maxim with a certain school of sociologists, a generation ago, that a superior and an inferior race could not dwell together unless the inferior were in a state of subjection; that in a state of freedom the extermination, or at least the displacement, of the inferior was inevitable.

There has been an apparent reversal of this maxim in some of the English colonies, although in the newer countries, such as Australia, the aborigines have seemed to shrink away before the aggressive Anglo-Saxon. In India—for a long time under British rule—there is a notable example of diverse races living without great changes in relative strength from generation to generation. Indeed, that country presents an example older than England of diverse races, separated, indeed, by caste, but dwelling side by side from age to age.

But the history of the Indians of North America since the advent of the Anglo-Saxons, the piling away of a fierce and war-like race before the onward tread of a race of progress, the remorseless appropriation of a land whose resources lay undeveloped by the former occupants, is a patent example of the often repeated displacement of the weaker by the stronger, the less by the more progressive, barbarism and savagery by civilization and enlightenment.

The black man as a slave was acceptable in the South. The black man as a ruler, even where outnumbering the white two to one, is an object of hatred, an enemy to be disposed of by death if by no other means, but to be disposed of at all hazards.

A generation ago the condition of the black man at the South was a subject of much solicitude on the part of the government, and especially of humanitarians at the North. This year preparations for a war of races over the ballot-box were the subject of news dispatches for days before the election. Armed and hostile bodies of men were notoriously provoking each other to wrath. It was advertised that negro rule would not be endured, even if the blacks must be shot down at the ballot-box to prevent them from carrying the election. Not a protest was heard from all the humanitarians of the country. The President and Cabinet are said to have considered the matter after the event.

It is to be hoped that this country may avoid the horrors of a race war, but it must be confessed that race prejudice is deepening and widening, and that indifference is manifested in quarters which once showed great enthusiasm for the political rights of the colored man. The feeling that the Anglo-Saxon race is to dominate the world; that it has the right of the strongest; that it has a destiny to develop; that it will need the room for itself, and therefore must take it—this feeling received a tremendous impetus in this country during the present year and is likely to grow upon the food it is taking. This possibly bodes no good to any other people with whom Anglo-Saxon Americans may be in contact.

The World's Crops Officially.

Statistician Hyde, of the United States Department of Agriculture, has completed the official report of the crops of the world for this month and a revised review of the world's wheat is an important feature. The Russian wheat crop is now put by the Ministry of Agriculture at 417,000,000 Winchester bushels, an increase of 30,000,000 over the Hungarian official estimate. An estimate believed to be below rather than above the actual yield is credited to the Hungarian agricultural ministry estimating the Hungarian wheat crop at 132,277,200 bushels of sixty pounds.

An estimate said to be the preliminary official one puts the German wheat crop at 8,000,000 bushels more than 1897 crop, making it in round numbers 115,000,000 bushels of sixty pounds.

The official estimate of the Italian wheat crop puts it at 133,371,900 Winchester bushels.

The latest estimate of the Spanish wheat crop is a little less than 95,000,000 Winchester bushels.

The London Times estimates the wheat crop of the United Kingdom at

77,900,000 Winchester bushels, considerably in excess of the estimates a month ago.

The official estimate for Roumania makes its wheat crop 58,456,904 Winchester bushels.

Official figures for Manitoba give its wheat crop at 26,729,808 Winchester bushels. Preliminary official figures make the crop of Ontario 33,208,729 Winchester bushels, the total for the two provinces being 59,757,887 Winchester bushels. As the wheat area of the more eastern provinces was much larger than in recent years, it seems likely that the total for Canada will reach the highest of last month's estimates, 63,000,000 Imperial bushels.

On the whole the changes from a month ago increase the total estimate of the world's wheat crop, but the conditions affecting the crops of the southern hemisphere are scarcely as favorable as they were commonly supposed to be when the estimates used in the table published a month ago were made.

Australia has suffered from drought, but this is now broken, good rains having fallen throughout Victoria, South Australia and New South Wales. If the Australasian wheat crop should fall short of the Broomhall estimates, the largest it may in any case equal, or perhaps exceed the very moderate estimate for these authorities announced last month. The Broomhall estimate was 54,000,000 and the Hungarian estimate only 37,000,000 bushels of sixty pounds, while the estimate of the Bulletin des Halles was 37,000,000 Winchester bushels. Severe frosts have been reported from Argentina, but the latest accounts as to the outlook for the wheat crop in that country are not favorable.

As to other crops, the estimate for France for barley is 52,167,766 bushels and for oats 299,059,074 bushels. The provisional estimate of the Russian agricultural ministry gives in Winchester bushels: Winter wheat 141,639,000 bushels, spring wheat 275,811,000 bushels, total wheat 417,450,000 bushels; rye 717,786,000 bushels, barley 320,141,000 bushels, oats 606,861,000 bushels, maize 42,789,000 bushels.

The official crop report of Austria for the middle of October represents the oats crop as generally satisfactory in quantity and still more so in quality. Except in the mountain districts, maize is mostly harvested and hardly a medium crop. Buckwheat suffered partly from drought and partly from frost in the northern and eastern provinces, but in the middle one more satisfactory. The barley crop was somewhat deficient in quantity and quality. In general, however, the cereal crops were satisfactory, the kernels being mostly full, heavy and of good color. In the mountain districts and in the south the yield of potatoes was below the average, but they were satisfactory, and especially so, in upper Austria and part of Moravia and eastern Galicia, though in the last named province the latter part of the crop suffered somewhat from frost. Beet roots suffered from drought more than other root crops; the yield is barely up to the average, but quality satisfactory. The fruit crop, though good in the middle zone and in some districts of Silesia and west Galicia, is, on the whole, disappointing. The vintage in lower Austria exceeded the estimates and the quality was quite good. In Karst and the east districts the yield was only medium, but the quality in general was satisfactory.

Fall sowing was delayed by drought throughout a large portion of Europe, but there is no reason to apprehend any material detriment to the crop from the delay, though in some countries the area sown may be somewhat smaller than under more favorable circumstances. In Russia sowing was effected under generally favorable conditions, but the weather was too cold for the welfare of the young crop. No serious injury has, however, been reported, and in most other countries the grain, so far as sown, has been favored by subsequent rains and mild temperature.

The proposition of public ownership of the water-works was carried in Topeka, at a special election, last Saturday, by a majority of nearly three to one.

The Kansas Farmer wants a local agent at every postoffice in Kansas to represent the paper regularly. Any person wishing to act for us will please write us at once. It will pay.

The majority given for the Republican ticket in Kansas at the late election surpasses the most sanguine estimate of the most sanguine advocate of Republicanism. The plurality for Governor Stanley will, when all returns are in, be not far from 16,000. The unexpected support came from the farmers of the State.

Publishers' Paragraphs.

N. D. Sanders, Secretary of the Pittsburg (Kansas) Commercial Club, writes that they want a creamery established at that place, also a canning factory.

In all unassigned territory, the Kansas Farmer wants an agent and permanent representative. For further information and terms, address Kansas Farmer Co., Topeka, Kas.

"What Shall Our Boys Do for a Living?" is the title of a volume by Charles F. Wingate which the Doubleday & McClure Co. have just issued. It is full of advice to parents and children based on twenty years' study on the author's part and reinforced by interviews with hundreds of successful Americans whom Mr. Wingate quotes. The book treats of physical, mental and moral training; of school and college life; and of the essential equipment for success in life. It tells what a young man starting in life wants to know about the trades, journalism, law, public speaking, engineering and business.

Messrs. Zeigler & Dalton, of Junction City, Kas., have for three years been supplying the trade with a very substantial light-draft, low-priced sweep feed mill that is supplied with diamond-cut steel burrs which can be adjusted to grind Kaffir corn and Indian corn, and which are provided with double breakers for grinding ear corn. Messrs. Zeigler & Dalton claim this mill to be the cheapest and best mill now on the market. The mill deposits the ground grain through a small opening beneath the grinders. This firm has enjoyed a splendid trade throughout the corn belt and will be pleased to send circular to any applicant. Read advertisement in another column.

The Hinman Improved Can Co., of Omaha, received from the Trans-Mississippi Exposition the gold medal on its milk can, which represents a new principle in that it hermetically seals and provides a center cooling surface. This can is so constructed that there is no agitation, because a hollow cone extends from the top to the interior of the can in such a manner that it firmly holds the contents. This makes it possible to ship milk any distance over the roughest road in perfect condition. This can is likely to revolutionize the business and materially promote the industry generally, because of its manifold advantages over the ordinary milk can. The Hinman can attracted great attention in the Dairy building at the Exposition.

The Blue Valley Manufacturing Co., of Manhattan, Kas., advertises in the columns of the Farmer the Blue Valley Sweep Feed Mill. This company was organized in 1888 and incorporated in 1895. The output of these mills is constantly increasing and the mill has been greatly improved, both in the matter of material used and in the workmanship and finish. Two sets of concaves are supplied, one for ear corn and the other for Kaffir corn, oats and wheat, and for very fine grinding. These burrs will also grind ear corn, but at a somewhat slower rate. These chilled burrs are made from the best grade of chilled iron, and everything about the mill is guaranteed. If one proves defective it is replaced by the manufacturers. That these mills are popular is demonstrated by the fact that they are sold in every State, from New York to Idaho. Messrs. Bradley, Wheeler & Co., of Kansas City, Mo., are the agents for this mill in eastern Kansas and Missouri. Several patterns of the mill are made, as shown by their circular. Note their advertisement in another column.

We take it that after all that has been said on the advantages and economy of grinding grain for stock, that it is no longer necessary to talk to our readers on that phase of the subject. The question most naturally arising in the minds of many is what kind of a grinder to buy. We present herewith the cut of a grinder which has given very good satisfaction in the past, and which is reasonable enough in price to come within the easy reach of all. This is the Star Sweep Mill, manufactured by the Star Mfg. Co., of New Lexington, O. It is capable of a wide range of work, crushing and grinding ear corn, cob and all, and all smaller grains and seeds singly or when mixed. It grinds easily ten to thirty-five bushels per hour, according to whether the grist is fine or coarse. The Star people make three sets of burrs or grinders for this mill, to meet the many varieties of work exacted of a grinding mill. This mill is very simple in construction, light in draft and very durable. The manufacturers tell us they have mills out that have been running for twelve years that are still in use, working very satisfactorily. They also make a power mill which has a large grinding capacity. Write them for catalogue, testimonials and prices before buying a mill.

Kieffer Pears--Catalpas.

Editor Kansas Farmer:—In reply to Mr. Dobbs' inquiries, "Do plants transmit their qualities?" I would say: He speaks in reference to the articles of Mr. Tatman, in regard to the Kieffer pear, saying he had received some from a friend which were good, while his own were poor. He infers from this that the fault is in the failure of the variety to produce its fruit in two places or on two trees. The trouble in the case is not in the failure of the varieties to produce a like fruit on both trees, but wholly the lack of ripening, or waiting for the pears to ripen properly, and the failure to understand the conditions necessary to ripen them well.

The fact that Mr. Dobbs expected the Kieffer pears to be ripe and delicious to eat in the month of September, shows conclusively that he has not given the variety the proper care or attention. The Kieffer pears as grown in Kansas are just now in their best condition, and there is no other pear grown in the State that can compare with them for excellency.

You may as well expect the Ben Davis apple to be ripe in September, and if it is not, to say that it does not transmit its qualities on different trees, as to say that the Kieffer pear when ripened in September does not do so.

The fact that one tree is more productive than another can be more readily accounted for with the fact that the soil in which one grows is more suitable than the soil where its neighbor grows.

Such things as a new variety from cuttings have been grown, but such cases are exceedingly rare. The Gano apple is said to be a sport from the Ben Davis apple, yet it is a distinct variety and will produce the Gano just as the Ben Davis will produce the Ben Davis and the Concord the Concord and the Kieffer the Kieffer.

The variations in varieties are caused by the more favorable conditions of the soil of the one.

CATALPAS.

The catalpa tree to be planted in the West is the Catalpa speciosa, the Western variety. The Bignoidis variety is not hardy, though it was once entirely used in the West.

I have a little strip on the edge of the creek, planted to catalpas twelve or fourteen years ago, and each tree would make two good-sized posts and a quantity of firewood, and they have grown in that way without any care or cultivation, planted four feet apart each way.

The catalpa and Russian mulberry can be grown in most parts of the country for their timber as a good profitable investment.

The honey locust is adapted to grow further on the plains, probably, than either of the others. If you get a thornless variety, it makes a beautiful and stately tree, which is very ornamental. Lawrence, Kas. A. H. G.

Notes from State University.

Volume III of the University Geological Survey is now ready for distribution, and can be had by applying to the Chancellor of the University, and forwarding 26 cents for postage, or asking that it be sent by express collect. It was prepared by the department of physical geology under the immediate direction of Professor Haworth, the head of that department, and was entirely written by Professor Haworth and Mr. W. R. Crane, A. M. '95.

Volume III is a special report on coal, and treats of all phases of Kansas coal mines and coal mining. Part I, by Professor Haworth, deals with the general stratigraphy of coal measures. Detailed accounts of the strata are given with maps and other illustrations to assist the reader in understanding the rock system of the eastern end of the State. The records of many deep wells are included, and drawings showing the strata as shown by the wells, and also many geologic sections crossing the State in different directions. It is probable that no other State in the Union, saving Pennsylvania, has had the stratification of the coal fields so elaborately worked out and represented in print.

Part II is by Mr. Crane and deals with the detailed strata at the mines, the geographic location of the coal fields, the chemical and physical properties of the coals, mining methods and mining machinery, closing with a tabulated statement of the different mining companies and a copy of the present State mining laws. Probably the greatest practical importance is attached to the exposition of the chemical and physical properties of the coals. This is a piece of work performed in an elaborate manner, the tests being made in many different ways,

all the results of which are finally compassed in a general summary.

This volume, the same as other University publications, is for free distribution, excepting that the transportation charges must be borne by the party receiving it. Should you want it, apply at once, while the edition lasts.

It may be added that copies of Volumes II and IV of the survey may likewise be obtained for the asking, but the supply of Volume I is exhausted. The postage on Volume II is 24 cents and on Volume IV 36 cents.

How to Postpone Old Age.

Anatomical experiment and investigation show that the chief characteristics of old age are the deposit of earthy matter in the human system. Carbonate and phosphate of lime, mixed with other salts of a calcareous nature, have been found to furnish the greater part of these earthy deposits. As observation shows, man begins in a gelatinous condition; he ends in an osseous or bony one—soft in infancy, hard in old age. By gradual change in the long space of years the ossification comes on; but, after middle life is passed, a more marked development of the ossific character takes place. Of course, these earthy deposits—which affect all the physical organs—naturally interfere with their functions. Partial ossification of the heart produces the imperfect circulation of the blood which affects the aged. When the arteries are clogged with calcareous matter there is interference with circulation, upon which nutrition depends. Without nutrition there is no repair of the body. None of these things interfere with nutrition and circulation in earlier years. The reparation of the physical system, as every one ought to know, depends on this fine balance. In fact, the whole change is merely a slow, steady accumulation of calcareous deposits in the system. * * * When these become excessive and resist expulsion, they cause the stiffness and dryness of old age. Entire blockage of the functions of the body is then a mere matter of time. The refuse matter deposited by the blood in its constant passage through the system stops the delicate and exquisite machinery which we call life. This is death. It has been proved by analysis that human blood contains compounds of lime, magnesia and iron. In the blood itself are thus contained the earth salts. In early life they are thrown off. Age has not the power to do it.

Hence, as blood is produced by assimilation of the food we eat, to this food we must look for the earthy accumulations which in time block up the system and bring on old age. * * * Almost everything we eat contains more or less of these elements for destroying life, by means of calcareous salts deposited by the all-nourishing blood. Careful selection, however, can enable us to avoid the worst of them. Earth salts abound in the cereals, and bread itself, though seemingly the most innocent of edibles, greatly assists in the deposition of calcareous matter in our bodies. Nitrogenous food abounds in this element. Hence a diet made up of fruit principally is best for people advancing in years, for the reason that, being deficient in nitrogen, the ossific deposits so much to be dreaded are more likely to be suspended. Moderate eaters have in all cases a much better chance for long life than those addicted to excesses of the table. Fruits, fish, poultry, young mutton and veal contain less of the earthy salts than other articles of food, and are therefore best for people entering the vale of years. Beef and old mutton are usually overcharged with salts, and should be avoided; a diet containing a minimum amount of earthy particles is most suitable to retard old age, by preserving the system from functional blockages. * * * The daily use of distilled water is, after middle life, one of the most important means of preventing secretions and the derangement of health. As to diluted phosphoric acid, it is one of the most powerful influences known to science for shielding the human system from the inconveniences of old age. Daily use of it mixed with distilled water helps to retard the approach of senility. By its affinity for oxygen the fibrinous and gelatinous deposits previously alluded to are checked, and their expulsion from the system hastened.

To sum up: Avoid all foods rich in the earthy soils, use much fruit, especially juicy, uncooked apples, and take daily two or three tumblerfuls of distilled water with about ten or fifteen drops of diluted phosphoric acid in each glassful. Thus will our days be prolonged, old age delayed, and health insured.—Dr. W. Kinnear, in the Humanitarian.

National Pure Food and Drug Congress.

Editor Kansas Farmer:—In a great measure health, morals and honest business depends upon the adoption of laws by the federal government to prevent the adulteration and improper branding of foods, drugs and liquors. Recognizing not only the power of the press for good, but its generosity in aiding all that promotes health, honest industry and morality, I take the liberty of writing to ask your co-operation in our efforts to secure the passage of the bill now before Congress to prevent the interstate traffic in adulterated and misbranded food products, known as the Faulkner-Brosius bill. I trust you will direct attention to the following points:

1. That adulteration and misbranding exists to an alarming extent and injures our trade and commerce at home and abroad to the extent of hundreds of thousands of dollars annually.

2. That representative men appointed by thirty Governors of States, twenty-one national organizations, six departments of the general government, and eighty-six chambers of commerce, trade, manufacturing, agricultural, scientific and labor organizations gathered in Washington to consider the question and adopted the proposed bill.

3. That every one is requested to assist the work, by writing Senators and Congressmen and urging immediate action; by signing petitions to Congress and sending them to the Secretary of the National Pure Food and Drug Congress, Washington, D. C., and by urging friends to do the same, and by organizing pure food and drug clubs all over the country.

4. That all scientific, agricultural, labor, manufacturing and trade organizations interested in the production, manufacture and sale of food and drug products are entitled to representation in the approaching congress and are requested to send delegates; that the railroads will give excursion rates to Washington to delegates and visitors to the congress, and that reduced hotel rates have been arranged for and that all necessary information upon the subject will be promptly furnished by application to the Corresponding Secretary, Alex. J. Wedderburn, P. O. Box 464, Washington, D. C. ALEX. J. WEDDERBURN.

Washington, D. C.

Bacterial Rot of Cabbage.

Purdue University Agricultural Experiment Station:

Within the past few years a bacterial disease of the cabbage has become so prevalent in certain cabbage-growing localities as to occasion very serious losses to those engaged in the business.

Although it has been said to occur in Indiana, it has not come to the attention of the station until recently.

Several fields in the vicinity of Lafayette affected with this bacterial disease, have been examined by the writer the present season. In one of these fields, containing over 20,000 plants, which were attacked early in the season, not a single marketable head was obtained. In other fields, judging from a cursory examination, from 10 to 50 per cent. of the heads were affected.

In view of these facts, it has been thought best to send out a note of warning in regard to the disease, in order that such precautionary measures as are deemed most valuable may be at once employed in keeping it in check. Fortunately the life history of the disease has been quite thoroughly studied of late, and the result of the investigations, together with other valuable information, may be found in Bulletin No. 65, of the Wisconsin Experiment Station, and Farmers' Bulletin No. 68, of the U. S. Department of Agriculture. The latter bulletin is sent free on application to the Secretary of Agriculture.

The conclusions of these investigators, although working independently, are essentially the same. Both are agreed that the only hope of successfully combating the disease is in the careful observance of several precautionary measures.

Symptoms of Disease.—A dwarfing or one-sided growth of the heads, or in case of an early attack, the entire absence of any heads. Occasionally the heads rot and fall off.

In the leaves the symptoms usually begin at the margins and consist of a yellowing of all the affected parts, except the veins, which become decidedly brown or black.

Infection.—The bacterial germ is conveyed to the leaves of the plant by wind or insects, and in most cases gains an entrance to the tissues of the plant through the edges of the leaf.

Precautionary Measures.—As there is no remedy known, preventive measures must be relied on in combating the disease. These measures are as follows:

Avoid planting in land on which infected plants have been grown. Several

Agents Wanted

We want an Agent in every town to secure subscribers to THE LADIES' HOME JOURNAL, to look after renewals and distribute advertising matter. We offer profitable employment for the Winter, also special rewards for good work. \$1000 will be given to the Agent sending the largest list up to April 15 next; \$500 to the next best worker, and so on—distributing \$11,500 among 500 best Agents the coming season. Good pay is assured every Agent whether he or she secures one of the extra awards or not.

The Curtis Publishing Company
Philadelphia, Pa.

years may be necessary to rid the land of the germs.

Do not use manure containing decayed cabbage leaves or stalks either in the seed bed or field.

Wet land should be avoided, as it favors the development of the disease.

Keep the plants as free from insects as possible.

Remove and destroy all diseased plants or portions of the plant, as soon as diseased condition is noticed.

If any of the readers of this article have been troubled with the disease, they will confer a favor by reporting the same to the Indiana Experiment Station at Lafayette.

Adulterated Food in France.

France certainly knows how to protect the lesser rights of her people. Any one who doubts the genuineness of an article of food that he has purchased from a Parisian tradesman may take it to the municipal laboratory for analysis. It will cost him nothing to have it analyzed and the fact determined whether it is unadulterated or adulterated, and, if the latter, the law deals with the offender without further action on the part of the purchaser. The shopkeeper is deprived of the few civil rights he is supposed to be otherwise entitled to, and has to display conspicuously in his show window or on his door for a year, a large placard bearing the words, "Convicted of Adulteration."

The Gauchos of Buenos Ayres.

The Gauchos, or dwellers in the extensive plains of Buenos Ayres, are marvelously dexterous with both hands and feet. Many of them have acquired, through long practice, such skill in using their toes as if they were fingers that they can fling the lasso and even pick pockets with them. Some time ago a Frenchman who was fishing in one of the rivers of Buenos Ayres was warned to be on his guard against the light-fingered natives. He forthwith kept a vigilant watch on his companions, but, nevertheless, one day, when his attention was closely riveted on his float, a wily Gaucho drew near, and, delicately inserting his foot, extracted the Frenchman's hooks and other valuables from his pocket.

Ancient Jokes.

No wonder the modern "funny man" is almost driven to distraction in his vain quest for an original joke, and that the ancient descent of all "good stories" has become proverbial. Brugsch Pasha, the eminent Egyptologist, has discovered an ancient papyrus containing a lot of comic colored pictures, very much in the style of those of to-day. They represent various animals dressed up as human beings, which is now the popular form of humor. Thus, a cat dressed as a fashionable lady is taking a hand mirror from a rat dressed as a slave, and a cat barber is shaving a rat attired as a fashionable dandy. Truly, if these things were current in ancient Egypt, we may literally say, with Mr. Kipling, "In the days of old Rameses that story had parisis!"

Inquiring Easterner—How did you feel when you were being borne away in the awful whirl of the cyclone? Prominent Kansan—Jest about like a fly 'pears to feel in a glass of sody water.

Horticulture.

A Beautiful Hedge Plant for Country Homes.

JOSEPH MEHAN.

One of the best plants for the making of a nice ornamental hedge is the one known as the California privet. It is really a Japanese plant, but coming to the Eastern States by way of California, it got to be called California privet. It is not a thorny plant, which will be good news to many, for, while necessary to have such for defensive purposes, a good hedge plant without thorns, which could be used as a boundary line or for screening purposes, had long been wanted. It exists now in this privet, and it will soon be found in use in all places where it will prove hardy. As it is a Japanese plant, it may be tried with a fair chance of success where other shrubs from northern Japan do well. It is perfectly hardy in Pennsylvania. Those who are familiar with the common European privet, which is also found wild here occasionally, having become naturalized, would be pleased and surprised to find how much superior this Japanese sort is. It has large, bright green leaves, which are evergreen in sheltered places. With this it has a quick growth, and it was these good points which suggested its use as a hedge plant. Years ago the common privet was used for hedges, but it has rather small, dull green leaves, which do not remain on the twigs through the winter, and so in time it fell into disrepute. In the California species there is a something filling a place long vacant. Planted in but fair soil it makes a fair hedge in three years. It is like many another shrub in this, that it desires to grow tall, and as this is not what is desired in a hedge plant, it needs watching at first, so that a thick, broad base, the requisite of a good hedge, be produced first. This plant is easily raised from cuttings made from the dormant shoots. Cut off in winter time, kept in a cool cellar until spring, first having been cut into lengths of about a foot each, and then planted in rows in the garden, nearly every one will form a plant. After a year's growth in this way the plants may be set for the hedge, though those of two years growth are to be preferred, being stronger. To form a hedge the plants should be set about a foot apart. They should then be cut down to within about four inches of the ground. Let them grow as they will for the first season. Then, when spring returns, cut them down again before growth commences to within about six or eight inches of the ground. This will produce numerous shoots near the ground. After this, as the plants grow, once or twice through the season the ends of the branches must be nipped off, doing this to cause the side shoots to be forced out, all to make a thick base. Many persons are so anxious to have a tall screen or hedge in a short time that they will not lose a little time, such as occurs when the work is done as recommended above. They get the height, but not the pretty, thick, handsome hedge. When the hedge is once formed it needs two trimmings annually thereafter, one when the young growth is about half grown, cutting it back almost to where it started from; the other when the growth is over for the season, cutting it back again to a perfect hedge shape. Treated in this way, a perfect hedge, not overgrown, may be maintained for years. Another good thing to be said about this shrub is, that if at any time the hedge gets too large, no hesitation need be felt in cutting it down to within a foot of the ground. It will push out afresh, vigorously, too, and in a short time, treated somewhat as when first planted, there will be another and a prettier hedge. The ease with which this plant is propagated enables it to be offered to purchasers at a low figure, which tends to help along the favor it meets with from the public.

Tree Planting.

E. C. ESTES.

In the study of tree planting and the culture and growth of trees, I have no theory of my own to propound, but, instead, will ask the reader to take a look at nature and her methods of starting a forest. When heavy rains break the sod or cover it with earth, nature sends her forest forerunners, hazel brush and sumach, to prepare the way for a forest by shading out the grass and weeds and cover the ground with a heavy mulch of leaves which keeps the soil loose and damp. The seed of forest trees quickly spring up and shade out the brush that has protected them, and now with their own shade and decaying leaves they keep the soil damp and loose. Thus nature

produces a forest that man cannot equal.

In planting shade and forest trees, let us copy after nature as nearly as possible. When trees are planted, mulch the ground with hay, straw, corn stalks, cane stalks, cobs or almost anything that is on the farm. Mow down any weeds that come up and pile them around the tree. They will hold back the bloom in the spring and protect them from drought in the summer.

I have grown peaches by this method for four years in Mills county, Iowa, and have found it a great success with cherries, plums and grapes. I have raised good crops of blackberries when those who cultivated lost theirs by drought.

Planting Peach Seeds.

Editor Kansas Farmer:—Will you kindly answer the following question in the Farmer: Can I plant peach seeds now and have them germinate and make sufficient growth to bud next summer and fall? How far apart in a row should they be planted? Should the seeds be cracked before planting? How deep in the soil should they be planted? How long after budding before the tree should be cut off above the bud, and how far above the bud should the tree be cut?

I wish to plant some peach seeds. I have had no experience, and desire information, which will be very thankfully received.

THEO. GRIFFIN.

Kansas City, Mo.

Fall planting of peach seeds can be practiced with good results on well-drained soil and will produce seedlings large enough for budding the following summer and fall. The hulls should not be cracked for fall planting, as they protect the kernels from the ravages of moles and mice during the winter, and by spring are opened naturally by the freezing and thawing. Plant the seed three or four inches apart in the row and cover them to a depth of two or three inches.

After the trees are budded, they should not be cut off until the following spring, about the time the buds begin to start. Better results are obtained by cutting a few inches above the bud at this time and cutting down to the joint when the budded branch is six or eight inches long. Make a smooth, clean cut just above the point of union of the bud and stock. This cut, if rightly made, will heal over completely before the end of the season.

W. L. HALL.
Experiment Station, Manhattan, Kas.

Caves for Apples.

In the published proceedings of the Missouri Valley Horticultural Society occur the following:

"The matter of cool and cold storage was considered. Secretary Goodman was of the opinion that any outdoor cellar, well ventilated and free from frost, was better than cold storage. He visited a number of cold storage places last winter and found them varying too much in temperature, as much as 15 degrees being noticeable in twenty-four hours. Apples cannot stand that change coming so often and they must perish. His experience ranged over some sixteen years with cold storage, and he would prefer a good, cool cave, however rudely constructed."

The opinion of Hon. L. A. Goodman, Secretary of the Missouri State Horticultural Society, upon any topic pertaining to raising or keeping fruits is respected by all who know him and especially when sustained by sixteen years' experience. He is not only disinterested authority, but is also a man who values the correctness of his views very highly. Now, assuming that Mr. Goodman is correct (and the writer believes he is), it is very important information to the owners of orchards in the section of the Missouri valley where the loess soil is found, adding greatly to the well-known conceded advantages of this section for apple culture. The peculiar soil in the bluff formation, which can be excavated with but slight support and without stone walls, renders the construction of good, cool cellars very cheap, which would enable the grower to provide ample room for his crop and carry it himself until late in the season, when he could barrel and market his crop for at least 50 per cent. more than selling in the fall.

Messrs. Reece and Downey, owners of the large orchard near Bean Lake, Mo., opposite Atchison, are already planning to build a cellar of sufficient capacity to hold their entire product. To do this they will excavate a large tunnel 400 feet long from one ravine to another, supporting it in the center with strong posts, between which will be room to drive a team, and on each side of the tunnel large bins will be built, but will be divided in tiers so that in no case will the apples be over two feet deep, with

slatted bottoms to insure perfect ventilation. The ends of the tunnel will be on a level with the ground outside. Large ventilators will be inserted at different points, but the total cost will not be one-half the cost of cold storage for one season, aside from the enhanced value of the product. Nearly every farm in the Missouri valley possesses good natural locations for such cellars. A northern or eastern exposure is preferable and if no ravines run parallel to tunnel as herein described, then a tunnel can easily be built on a curve, which would accomplish the same purpose. The writer feels sure that if the plans of Secretary Goodman are followed the result will be an immense profit compared to disposing of the crop under the present system.

—U. B. Pearsall, Troy, Kas.

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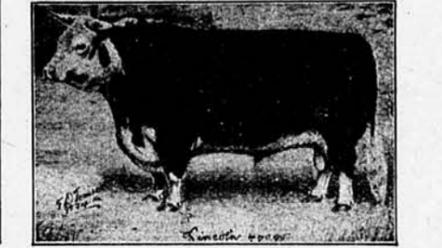
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Leading Scotch and Scotch-topped American families compose the herd, headed by the Cruikshank bulls, Glendon 119370, by Ambassador, dam Galanthus, and Scotland's Charm 127264, by Imp. Lavender Lad, dam by Imp. Baron Cruikshank. Young bulls for sale. C. F. WOLF & SON, Proprietors.



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In the Dairy.

Conducted by D. H. OTIS, Assistant in Dairying, Kansas Experiment Station, Manhattan, Kas., to whom all correspondence with this department should be addressed.

After the State Convention, Then What?

By the time this issue of the Kansas Farmer reaches its readers the meetings of the Kansas State Dairy Association will be fresh in our minds. The question naturally arises, why all this gathering together? What is the object to be gained from such a meeting? After the convention is over, then what? There are two classes of people that will doubtless give answers to the above questions.

In the first place, there are representatives of private dairymen, creamerymen and creamery patrons who have their eyes and ears open and their minds in a receptive condition. This class of people have much to carry home with them. Doubtless some were a little surprised and puzzled when placed upon the examination stand. This class of people will go home with new ideas. Some of them will appreciate more fully the value of skim-milk as a stock food. Others will have higher notions of what a cow should be able to produce. They will also have increased knowledge as to how the cow should be fed and cared for. Being intensely interested along these lines, they will be ready to adopt and put in practice whatever methods will tend to increase the profit from the dairy cows. There will also be those in the class, who, though unable to attend, will nevertheless be benefited by the meetings from the published reports.

A second class of people do not think enough of the meeting to make any attempt to attend. Only recently have some of this class, when asked whether they would attend the State Dairy Association, declared that they could see no good to be derived from such a gathering; that such a convention is only another means for the creamery sharks to discuss the best way to rob the farmers. This class of people is to be pitied; they get very little enjoyment out of life and give but little to others. A man near Manhattan, who has been in the dairy business for some twenty odd years, is very free to give his opinions as to the external causes which make the farmer's profit so small and life a drudgery, recently made the remark that he believed alfalfa was a good feed for dairy cows and that he expected to sow several acres to this crop the coming year. Now, alfalfa has been known in Kansas for from twenty to thirty years, and for some years past prominent dairymen have declared that they could not carry on the dairy business successfully without it. Be the external causes as they may, they certainly did not hinder this man from sowing alfalfa several years ago. Had he attended meetings where the merits of such crops were discussed and had acted upon the suggestions made, he might be much better off to-day. As it is, he waited until after a large number of his neighbors had grown it and he was forced to do the same in order to compete with these neighbors. What is true of this man is true of hundreds and even thousands of others throughout the State.

After the State convention, then what? It is very plain. Let those who have gained new ideas and new inspiration go home and put what they have learned into practice, and let these practices stand as object lessons to the whole community. "Actions speak louder than words," is especially applicable in the dairy world. A man that produces an object lesson of this kind is building a living monument that will not only be an honor to himself and will help to fill his own pocketbook, but will remain to bless the lives of many others. D. H. O. bless the lives of many others. D. H. O.

Institutes.

Dates have been fixed for the following Dairy Institutes, Mr. F. C. Burtis representing the Agricultural College and Experiment Station:

- Denmark, November 28.
- Victor, November 29.
- Sunflower, November 30.
- Saltville, December 1.
- Green Mound, December 2.
- Beloit, December 3.
- Asherville, December 3.

Butter from Feed Without the Cow.

We have had bull butter and hog butter, now the corn and cob are to be milked.

Our Kansas creameries have been receiving the following circular:

"Gentlemen:—We send you by mail a

sample of Dairy Velvet, a corn product which is pure and perfectly neutral. It can be mixed with butter in the proportion of 10 to 20 per cent., according to the weather and the stock in which it is mixed. It does not deteriorate the butter in any way; being neutral, instead of imparting a flavor to the butter it receives the flavor of the butter and immediately becomes amalgamated with and not distinguishable from the butter itself. And added to these good qualities, it carries with it the element of a big profit, which is worthy of your attention and investigation.

"We quote you Dairy Velvet as follows: In barrels, containing about 625 pounds, net 1 1/4 cents; in half barrels, about 350 pounds, 2 cents; in 10-gallon kegs, about 115 pounds, 2 1/4 cents; in 5-gallon kegs, about 58 pounds, 2 1/2 cents. F. O. B. in Kansas City. Terms, thirty days or 1 per cent. discount for cash in ten days."

Treatment of Cow at Calving.

In winter the calving cow will do best in warm, comfortable quarters, free from draft. It is well to blanket her as soon as the calf is dropped, and to keep her blanketed until she has regained her normal condition. We have sewed bran bags together for a blanket when nothing better was at hand. Her bowels must be kept loose. Give her light, loosening feeds and all the water she will drink, removing the chill from it until the afterbirth has come away. When cold water is given before the afterbirth has been removed, the chill frequently causes a contraction of the mouth of the womb and the retention of the afterbirth. If the afterbirth does not come away in from twenty-four to forty-eight hours, it should be removed by a competent man, as its retention causes a serious loss in the milk yield, often lowering the yield through the entire milking period.

Where a box stall is kept for calving cows, and a number calve in it, all bedding should be removed after each birth and the floors and sides thoroughly cleaned and disinfected with quicklime or solutions of carbolic acid or corrosive sublimate.

Unless the cow's milk is so rich that it scours the calf, we prefer to have the calf stay with the cow for a few days. The colostrum, or first milk, is needed as the first food for the calf. If the cow's udder is caked and feverish, the rubbing of the baby calf against it in attempting to suck will help to reduce the inflammation. It is not difficult to teach the calf to drink, even when it has been with the cow for a week, if it is allowed to get quite hungry before the first feed is offered.

The udder is often hot and caked. When this is the case, the cow should be milked frequently, at intervals of not longer than two hours, and if the inflammation is serious more frequent milkings are better. Never milk the udder dry while it is in this condition, as, if it is milked out clean, a fresh flow is stimulated, which frequently increases the inflammation and sometimes leads to the fatal milk fever. If the udder is badly inflamed the cow should have a physic, and for this we use 1 1/2 pounds Epsom salts per 1,000 pounds live weight of cow, dissolving the salts in warm water and giving it as a drench from a long-necked bottle. Besides keeping the bowels loose and frequent milkings, hot applications and rubbing are the best means of reducing the inflammation. Dip a flannel cloth in water as hot as the hand will bear, wring it out lightly and hold around the udder. Before the cloth cools dip it again in the hot water and apply as before. Keep this up as long as time will permit. Thirty minutes of such application is good, two hours is better, and after a rest repeat the operation until the swelling is reduced and the fever gone. Whenever this steaming of the udder is discontinued for a rest, the udder should be rubbed dry by using the hands gently, and we often use camphorated vaseline while rubbing, as it allays the soreness on the surface of the udder.

When the udder has been badly inflamed, we have sometimes made a sack, covering the entire udder, and suspended it by straps from the hips; coarse bran is packed between the udder and the sack and kept saturated with hot water by pouring from cups. Holes are made in the sack for the teats, so that the cow can be milked frequently. Twenty-four to seventy-two hours of such treatment will sometimes save the udder of the most valuable cow in the herd, and the increase in milk for the first month will more than pay for the extra work.

Milk should not be used until there is no fever in the udder and not until the udder and womb have regained a healthy condition. Ordinarily this will be in

about five days; but if the afterbirth is retained, or there is a flowing from the vagina or severe inflammation of the udder continues, the period is longer, and in exceptional cases the milk may not be fit to use for a month after calving.—From Kansas Experiment Station Bulletin 81.

A Problem in Feeding.

Bulletin No. 81 Kansas Experiment Station received. I have been doing a little figuring on our ration but cannot get a perfect ration out of the feeds we have. I want your advice as to how we can better it. Here is what we are feeding now:

	Protein.	Carbo-hydrates.	Fat.
Corn silage, 30 pounds	.30	3.48	.12
Corn fodder, 5 pounds	.10	1.67	.06
Oat hay, 3 pounds	.13	1.39	.05
Bran, 8 pounds	.98	2.97	.21
Gluten meal, 3 pounds	.93	1.82	.14
	2.44	11.33	.58

J. E. D.

The writer neglects to give prices of feed-stuffs at his place, and without this it is difficult to plan a ration that will pay the best. As stated in our Bulletin 81, last winter several persons made rations for dairy cows based on prices of food at Manhattan. All rations contained practically the same amount of milk-producing nutriment, yet the cost per day varied from 6 1/4 to 22 cents, depending upon what feeds were used. If we had the cost of the different feeds to the writer, we could not only make out a balanced ration but a ration which would be of as low a cost as possible.

Taking the data given, if one pound of corn meal is added to the ration it would then furnish protein 2.52 pounds, carbohydrates 12 pounds and fat 0.62 pound. This would make a good ration, the excess of fat making up for the deficiency in carbohydrates.

Where the cost will permit, we like to put at least a little corn meal with the rest of the grain, because all cows like it and it gives a greater relish to the whole feed. The gluten meal adds color to the milk and is desirable on that account as well as for feed value. Both grains J. E. D. is feeding make butter soft and we would advise adding cottonseed meal to overcome this tendency. If the cows are not yielding well we would advise increasing the proportion of protein so as to force the milk yield.

With these considerations, we would suggest the following ration if prices of feed make it economical:

	Protein.	Carbo-hydrates.	Fat.
Corn silage, 30 pounds	.39	4.20	.21
Corn fodder, 5 pounds	.10	1.66	.03
Oat hay, 3 pounds	.13	1.39	.05
Bran, 1 pound	.62	1.86	.13
Cottonseed meal, 2 pounds	.74	.33	.25
Gluten meal, 2 1/2 pounds	.78	1.10	.12
Corn, 1 pound	.08	.67	.04
	2.84	11.21	.83

This ration is high in protein and low in carbohydrates, having nearly the composition of grass, and should stimulate the cows to their best yield. It offers a palatable variety in both grain and roughness and will produce butter that is firm but not too hard. H. M. C.

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

Frank J. Cheney makes oath that he is the senior partner of the firm of F. J. Cheney & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of Hall's Catarrh Cure.

FRANK J. CHENEY.
Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1888.
A. W. GLEASON,
Notary Public.

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Are more substantially made and are superior in all points to all others.
All Styles and Sizes. \$75.00 to \$625.00.
Agents in all dairy sections.
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TRADITIONS OF HAWAII.

Besides the riches of soil and scenery with which Hawaii abounds, there are other stores of wealth which are no less interesting. The former have received much attention since the act of Congress added the distant islands to our domain, the latter has received none. We refer to the wealth of tradition in which Hawaii abounds. The name of these traditions is legion. Every native of Hawaii has a store which he dispenses with a lavish hand. He clings to them with a fondness that is strange to the foreigner, though they no longer have an important effect upon his rules of conduct. Told with the zest of a native, they are enchanting, and even when recited by one who does not thrill with the same enthusiasm, they are most interesting.

Among the many traditions and myths one of the most romantic is known as the "Helen of Hawaii." The famous story of Homer is no more entertaining than that of the beautiful Hina. Long before the white people were known in Hawaii, if we are to believe the tradition, there lived a mighty chief at Haupu, Molokai, who had built himself a great fort or castle. He was a native or "original inhabitant," and hated the Polyne- sians, who were pouring into the lower islands and overrunning them.

From all accounts this chief, whose name was Kaupepee, was a buccaneer, who plundered other chiefs and islands indiscriminately. There lived at Hilo a chief named Hakalaui, who had a wife named Hino, said to be the most beautiful woman in the world. Hakalaui was an enemy of Kaupepee, and when the latter had heard of the charms of Hakalaui's lovely wife, he determined to abduct her and carry her to his stronghold. First he set out to Hilo in disguise to see with his own eyes if she was as fair as represented, and was smitten at the sight of her.

With some of his most skillful sailors and buccaneers he watched his opportunity. After nightfall, while the moon was shining, Hina, with her women ser- vants, repaired to the beach to bathe. A signal was given, and a long light canoe, heavily manned, dashed through the surf among the bathers. The women, with shrieks, ran off toward the shore. Suddenly a man leaped into the water and seized the fair Hina. There was a brief struggle, a stifled scream, a sharp word of command, and a moment later Kaupepee was again in the canoe, with the nude and frantic Hina in his arms.

His skilled sailors sent their boats flying through the waters, and in due time his stronghold was reached. There the pirate set about winning the affections of his captive, and though she had left a husband and two sons at Hilo, he seems to have succeeded. Hina's husband applied to his mother-in-law, a sorcer- ess, to know what to do, but, as usual, the mother-in-law was perverse, and re- fused to give him any further satisfac- tion than that his wife was living. For fifteen long years Hakalaui, the be- reaved husband, sought his wife among all the islands, but in vain. He began to despair, and finally ceased to search farther.

Meanwhile Hina's two sons, Kana and Nihou, had reached the stage of man- hood, and determined to take up the search where their father had left off. It took two years for them to locate their captive mother; but at last they learned that she was imprisoned in the great castle of Molokai, and with a large army attacked the abductor's stronghold. They were repulsed at first, but renewed the attack, and Kaupepee and his followers were slain and Hina restored to her fam- ily. While there was great joy to her in the embrace of her sons, it is said she wept over the death of Kaupepee, who, with his love, had made light her long imprisonment.

Another interesting tradition is known among Hawaiian legends as "The Royal Hunchback." Traditionary history re- presents ancient Hawaii as like ancient England, periodically overrun by bar- barians. The original inhabitants of Ha- waii were subjugated by the conquerors of the south. Cedric the Saxon never hated the Norman conquerors more than Kamaloie was said to hate King Kanipahu and his invaders. A chief of one of the invaders named Waiuku won the love of Kamaloie's sister and secretly married her. Kamaloie found his sister Iola in the grass house of her husband and stabbed her. The enraged husband chased him to the presence of the King, where they finally engaged in a duel, and the husband of Iola was slain by her brother, who also attempted the life of the King, and, failing in this, escaped and made his way to his district in Kau.

Iola recovered and gave birth to a daughter, whom she named Makea. Ka- maloie roused his warriors at Kau and

attacked and overthrew the King's forces. The King concealed his two sons, Iola and her daughter in a secluded val- ley, and went to live in Molokai. He lived as a common peasant, and his tall form became bent with care and hard labor, until he grew to be a hunchback. Eighteen years passed. His sons became men and Iola's daughter a beautiful maiden. Kalapana, one of his sons, mar- ried Makea.

Kamalole, proving to be a tyrant, an- gers the priests and common people. The high priest sought Kanippahu on Molo- kai and tried to induce him to come back to Hawaii and rouse the people against the usurper. But the King answered that he was old, hard toil had deformed him until he was a hunchback. He said he had two sons, and told the priest where they could be found, and sent word to Kalapana that he would surren- der his power to him. Kalapana received the intelligence with joy, and at once began to rally the discontented Hawai- ans. In two or three engagements he defeated the usurper and drove him to Kona, where the principal battle was fought. While the battle was raging furiously there suddenly appeared an old white-haired warrior who, notwithstand- ing his stooped shoulders, was invincible. Just as Kamaloie was raising his spear to strike down Kalapana the old gray- haired stranger stabbed him, and he fell.

The battle was soon ended, and when Kalapana asked for the usurper, the old white-haired warrior pointing to him an- swered:

"Here he is."

Then Makea came to seek her husband, and finding Kamaloie dying gave him some water out of a calabash. As the dying man drank he looked at her and said:

"Iola."

"No, not Iola, your sister, but Makea, her daughter."

With a look of inexpressible hate on his features the usurper died. Kalapana became King, and his father, the royal hunchback, went back to Molokai, where he lived and died in seclusion.

About the year A. D. 1170, according to Hawaiian tradition, Hua was King of Eastern Maui. He was a sort of robber baron, whose conduct was censured by the High Priest, Luahoomoe. The High Priest, who was a good man, could not brook the outlaw's depredations on other islands and kingdoms. Luahoomoe had two sons, Kaakakai and Kaanahua, of whom the first was the husband of Ou- lolu, a beautiful young woman. He was to be a High Priest at his father's death. Luuana, the priest of the King's house- hold, was a scheming villain and had his eye on the office of the High Priest, and laid many plans to dispose of Lua- hoomoe and his two sons.

At last the King of Hana, as Hua was called, determined to kill the High Priest, Luahoomoe, learning of his design, sent his sons to live in the wild, secluded re- gions of Haleakala, while the wife of Kaakakai lived in another secluded mountain. The High Priest was killed by the King, and while Luuana, the new- ly-chosen High Priest, was taking the body to the heiau for sacrifice at the gate of the outer inclosure, the tall wooden cross, indicative of the sanctity of the place, fell to the ground. On reaching the inner court the earth began to quake, groans issued from the carved images of the gods and the altar sank into the earth, leaving a great dark, yawning cavity, from which issued fire and smoke. The attendants and newly-made High Priest dropped the body and fled.

From that time a drought seized the whole land. The skies were cloudless, the springs and rivers were dried up, the people in Hana perished and Hua, the King, left the country. Wherever he went drought followed him. He went to Hawaii and in Kahala died of thirst and his bones were left to dry in the sun, and the saying, "Rattling are the bones of Hua in the sun," has come down to the present as significant of one of high power who defied the gods and persec- uted the priesthood.

The drought extended over the entire group, and even to Ewa in Aohu. A ce- lebrated priest or prophet in Ewa named Naulua-a-Maihea climbed the Wala- no mountains to look for a cloud. He saw none save a mere speck over Haleakalain Maui, and knew that the sons of the slain High Priest were there. They alone could bring rain, and he sailed in his canoe to find them.

Oluelu, the wife of the High Priest's son Kaakakai, had been most miracu- lously preserved in her home far up the valley. The spirit of the murdered High Priest had appeared to her in the night and told her that a secret cavern con- tained an abundance of fresh water. Kaakakai and Kaanahua were found and induced to offer sacrifices to the gods. They did so, and the clouds gathered and

Horse Owners! Use GONBAULT'S Caustic Balsam

A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or Blemish. Every bottle sold is warranted to give satisfaction. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland, O.

the rain fell, the grass grew once more and the land was filled with plenty.

There are many other famous legends and traditions in Hawaiian folk-lore, among which are "The Peasant Prince," and "The Lover of the Goddess," but to give them all would require a volume of good size. These given are sufficient to allow the reader to form some idea of the traditional history of Hawaii.—Philadel- phia Times.

Dr. Bull's Cough Syrup should be kept in every household. It is the best remedy for cough or cold, and is especially recommended for that gripe cough. Price 25 cents.

The largest painting in the world, ex- clusive of panoramas and cycloramas, is Paradise, by Tintoretto, in the grand salon of the Doge's palace at Venice, be- ing eighty-four feet wide by thirty-four feet high.

A young lady living in California some little while ago took it into her head that she would like to make a horse- shoe. It had been a favorite pastime of hers to watch a neighboring blacksmith at work, and she at last asked to be al- lowed to try her hand upon a shoe. She finally became an adept.

Anne M. Flower, a young lady of Springfield, Ill., went to Cuba as a Red Cross nurse and found a husband in the person of Albert Vanshelle, a Belgian nobleman of great prominence, who was delegated to observe the war and act for the Belgian Red Cross. They were mar- ried in Chicago last week.

A Great Supply House.

The easiest way to make money is by saving it. The best modern method of doing this is by carefully watching our every-day business transactions and pur- chases. One of the best opportunities in this direction is the offer made by a new patron of the Kansas Farmer in this week's issue, R. H. Williams, of Kansas City, Mo., who has a most interesting ad- vertisement which will interest every reader of this paper.

This firm was established in 1885 and to- day is doing an enormous business in Kan- sas City and throughout the entire West. They issue a catalogue once a month, which they will send regularly to any of our read- ers who request it and mention this paper. The house of R. H. Williams is in every way reliable and all orders sent them will have prompt attention. Be sure and read their first announcement in this issue.

Best Way to Smoke Meat.

Thousands of people in all parts of the coun- try have abandoned smoke-houses and now use Liquid Extract of Smoke for smoking hams, beef, sausages and all meats that were formerly smoked by fire. The Extract of Smoke is made by E. Krauser & Brother, of Milton, Pa. It is a pure, clean extract of hickory wood, containing ex- actly the properties of the wood that cure the meat by smoking, only, being in a liquid form, it is applied in a few moments, instead of requiring days. Liquid Extract of Smoke has been found to keep meats sweeter and finer flavored than the old way, and it also keeps them entirely free from insects. Circulars will be sent free.

SPRAINS
BAD WORSE
Can be promptly cured without delay or trifling by the
GOOD BETTER BEST
remedy for pain,
ST. JACOBS OIL.

Little Giant Separators



have been responsible for a new era and advance- ment in dairy and cream- ery practice. It consists principally in the farm use of the Separator, which keeps all the skim- milk at home, fresh and clean, where it can be fed to the best advantage and greatest profit. Our new illustrated pamphlet, "THE MOODY-SHARPLES SYSTEM," explains the ad- vantages of the plan. It's free. Send for one.

BRANCHES: P. M. SHARPLES, Elgin, Ill., Omaha, Neb., Dubuque, Iowa, West Chester, Pa.

B. & B.

Boys' Nobby All-Wool Reefers

\$3.00

—heavy navy blue chinchilla—Inch wide black braid on sailor collar and sleeves—any size 3 to 8 years.

Same Reefer for boys 8 to 16 years—high storm collar that buttons up snug—no braid trimming—\$3.50.

Both these Reefers lined throughout—made by a maker who puts such solid worth into Boys' clothing as has won unsurpassed reputa- tion for excellence. Such an extremely less price as means unusual money savin- g to every one who sends for this splendid Reefer.

Black Taffeta Silks, 50c yard

—wider for the money, and such less money for so staple and wanted silks as makes this espe- cially important.

Very fine, 22-inch Black Taffetas—splendid for full gowns—75c yard.

Extra quality 23-inch Black Taffetas, \$1 yard.

Get samples—see what handsome fancy striped Taffetas, 75c yard—dollar silks among them—smart waist styles.

Samples and prices will show how you can save on Silks and Dress Goods here.

BOGGS & BUHL, Department G. G. Allegheny, Pa.

Climate Cure
For Weak Lungs, Weak Throats, Weak Bodies.
The Health Resorts of New Mexico and Arizona are unrivaled. Pure, dry air; an equable temperature, the right alti- tude, constant sunshine. Send for descriptive pamphlets is- sued by Santa Fe Route Passenger Department. General Passenger Office, The Atchison, Topeka & Santa Fe Railway, TOPEKA, KAS.

CALIFORNIA GREAT ROCK ISLAND ROUTE

LOW RATES ON OUR PERSONALLY CON- DUCTED TOURIST EXCURSIONS.

Leave Kansas City every Friday via Col- orado Springs and Scenic Route.

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These Excursion Cars are attached to fast passenger trains, and their popularity is evi- dence that we offer the best.

Write for handsome itinerary which gives full information and new map, sent free. For complete information, rates and berth reservations, see your local ticket agent or address

E. E. MacLEOD, A. G. P. A., Topeka, Kas. JOHN SEBASTIAN, G. P. A., Chicago

MARKET REPORTS.

Kansas City Live Stock. Kansas City, Nov. 14.—Cattle—Receipts since Saturday, 8,275; calves, 188; shipped Saturday, 1,784 cattle, 124 calves. The market was steady to a shade lower. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS. No. Ave. Price. No. Ave. Price. 1.....1,880 \$5.00 22.....1,045 \$4.90 25.....1,218 4.75

WESTERN STEERS. 88 XIT.....1,187 \$4.85 89.....1,280 \$4.50 4.....1,000 4.25 85 T.....1,140 4.00 46.....1,017 3.75 84 Tex.....991 3.55 19.....701 3.00 10 mix.....983 2.65

NATIVE HEIFERS. 5.....802 \$4.40 83 c & h.....803 \$4.05 3.....733 3.80

NATIVE COWS. 1.....1,180 \$3.75 1.....1,370 \$3.50 12.....940 3.25 1.....1,140 3.00 4.....991 2.75 1.....890 2.50 1.....995 2.25 1.....1,050 2.10

NATIVE FEEDERS. 20.....951 \$4.35 7.....988 \$4.20 12.....978 3.95 17.....1,017 3.85

NATIVE STOCKERS. 1.....500 \$4.10 15.....708 \$4.00 1.....550 3.85 1.....830 3.50 5.....632 3.25

Hogs—Receipts since Saturday, 11,622; shipped Saturday, none. The market was weak to 5c lower. The following are representative sales:

69...300 \$3.52 72...388 \$3.50 48...316 \$3.50 68...247 3.50 70...261 3.50 73...285 3.47 66...294 3.45 59...280 3.45 54...276 3.45 41...263 3.45 73...281 3.42 75...240 3.42 77...228 3.42 91...220 3.40 62...242 3.40 6...280 3.40 89...176 3.40 74...206 3.40 89...218 3.37 67...164 3.37 58...225 3.37 2...200 3.37 2...230 3.35 5...240 3.35 4...205 3.35 5...300 3.35 51...175 3.35 34...162 3.30 4...307 3.25 5...290 3.25 35...159 3.25 83...137 3.24 79...165 3.24 33...139 3.15 5...145 3.20 113...117 3.20 7...188 3.15 1...379 3.15 102...101 3.15 5...160 3.15 63...155 3.15 3...173 3.10 19...110 3.05 9...121 3.05 87...94 3.05 2...260 3.00 9...125 3.00 45...83 3.00 8...98 3.00 6...156 3.00 12...100 3.00 1...340 3.00 8...120 3.00 14...346 2.50

Sheep—Receipts since Saturday, 1,298; shipped yesterday, 2,734. The market was strong to 10c higher. The following are representative sales:

213 fed. W....102 \$4.30 353 W. stk....46 \$4.25 10 nat. sh....121 4.20 282 Nev. ew....99 3.40 6 culls.....lot 2.00 26 W. cull....55 3.00 4 culls.....lot 2.00 200 stock....70 p.t.

St. Louis Live Stock.

St. Louis, Nov. 14.—Cattle—Receipts, 1,000; market firmer; beef steers, \$4.00 to \$5.25; stockers and feeders, \$2.25 to \$4.00; cows and heifers, \$2.00 to \$4.50; Texas and Indian steers, \$2.75 to \$4.00; cows and heifers, \$2.25 to \$3.40.

Hogs—Receipts, 8,500; market steady; yorkers, \$3.25 to \$3.35; packers, \$3.40 to \$3.55; butchers, \$3.50 to \$3.60. Sheep—Receipts, 1,500; market steady; native muttons, \$3.25 to \$4.25; stockers, \$2.25 to \$3.00; lambs, \$4.00 to \$5.50.

Chicago Live Stock.

Chicago, Nov. 14.—Cattle—Receipts, 14,500; market steady to strong; beefs, \$4.00 to \$5.60; cows and heifers, \$1.75 to \$4.50; Texas steers, \$2.75 to \$4.00; westerns, \$3.50 to \$4.50; stockers and feeders, \$3.00 to \$4.50.

Hogs—Receipts, 38,000; market steady to 5c lower; light, \$3.20 to \$3.55; mixed, \$3.25 to \$3.57 1/2; heavy, \$3.20 to \$3.60. rough, \$3.20 to \$3.35. Sheep—Receipts, 17,000; market strong; natives, \$2.60 to \$4.60; westerns, \$3.10 to \$4.50; lambs, \$3.75 to \$5.80.

Chicago Grain and Provisions.

Table with columns: Nov. 14, Opened, High'st, Low'st, Closing. Rows include Wheat, Corn, Oats, Pork, Lard, Ribs.

Kansas City Grain.

Kansas City, Nov. 14.—Wheat—Receipts here to-day were 377 cars; a week ago, 450 cars; a year ago, 267 cars. Sales by sample on track: Hard, No. 1, nominally 62 1/2 to 63c; No. 2 hard, 60 1/2 to 61 1/2c; No. 3 hard, 57 1/2 to 61 1/2c; No. 4 hard, 53 1/2 to 59c; rejected hard, 51 1/2 to 55 1/2c. Soft, No. 2, 65 1/2c; No. 3 red, 62c; No. 4 red, 53 1/2 to 61 1/2c; rejected red, nominally 43 to 52c. Spring, No. 2, 60 1/2c; No. 3 spring, 58 1/2 to 59c; rejected spring, 55 1/2c.

Corn—Receipts here to-day were 37 cars; a week ago, 53 cars; a year ago, 105 cars. Sales by sample on track: Mixed, No. 2, 29 to 29 1/2c; No. 3 mixed, 29 to 29 1/2c; No. 4 mixed, nominally 28c. White, No. 2, 29 1/2c; No. 3 white, nominally 29c; No. 4 white, nominally 28 1/2c.

Oats—Receipts here to-day were 12 cars; a week ago, 20 cars; a year ago, 31 cars. Sales by sample on track: Mixed, No. 2, 25c; No. 3 mixed, 24 1/2c; No. 4 mixed, nominally 22 to 23c. White, No. 2, 23 1/2 to 26 1/2c; No. 3 white, 25 1/2 to 28c; No. 4 white, nominally 24c.

Rye—No. 2, 49 to 50c; No. 3, 47c; No. 4, nominally 45c. Hay—Receipts here to-day were 66 cars; a week ago, 43 cars; a year ago, 62 cars. Quotations: Choice prairie, \$7.00; No. 1, \$6.25 to \$6.75; Timothy, choice, \$7.00. Clover, \$6.00 to \$6.50. Alfalfa, \$7.00.

Kansas City Produce.

Kansas City, Nov. 14.—Eggs—Strictly fresh, 18c per doz. Butter—Extra fancy separator, 20c; firsts, 18c; seconds, 15c; dairy, fancy, 15c; country roll, 11c to 13c; store packed, 11c; packing stock, 9 to 11c. Poultry—Hens, 5c; broilers, 6 1/2c; medium springs, 6c; roosters, old, 15c each; young

roosters, 20c; ducks, 6c; geese, 6c; turkeys, 8c; pigeons, 50c per doz. Apples—Home grown, \$2.50 to \$3.00 per bbl. Vegetables—Navy beans, \$1.30 per bu. Lima beans, 4 1/2c per lb. Onions, red globe, 40 to 50c per bu.; white globe, \$1 per bu. Cabbage, home grown, 40 to 50c per doz. Celery, 80 to 45c per doz. Pumpkins, \$1.00 per doz. Squash, 75c per doz. Turnips, home grown, 15 to 25c per bu. Potatoes—Home grown, 25c per bu.

Special Want Column.

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

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

MINNESOTA BURBANK POTATOES, PER BUSHEL, 55 cents; Michigan cabbage, per cwt., \$1; Michigan onions, per bushel, 50 cents; native Early Ohio potatoes, per bushel, 40 cents; native sweet potatoes, per bushel, 35 cents. For sale by Cope & Co., 117 Kansas Ave., Topeka, Kas. Country produce taken in exchange. Write us.

STOCK SALE.—I will sell at public sale, on farm at Wakarusa station, Wednesday, November 30: Four-year-old Coach stallion. Three-year-old Coach stallion. Five-year-old driving mare, by Pico. Four-year-old horse, by Oura. Two five-year-old work mares, by Honesty. Two three-year-old mules. Two yearling Short-horn bulls. Twenty cows and heifers. Thirty thoroughbred Poland-Chinas; eight Cotswold rams; two Shropshire rams; ten Cotswold ewes; one Merino ram and four ewes. Geo. B. Bell, Wakarusa, Kas.

TO FARMERS.—We are now writing contracts for tomatoes for 1899. Please come in at once and let us know how many acres you desire. The Bird Canning Co., foot of Monroe street, Topeka.

SHORT-HORN BULLS.—Serviceable age, for sale. Address F. C. Kingsley, Dover, Kas.

HEREFORD CATTLE.—Breeding stock for sale. Archibald castle a specialty. Visitors welcome. J. C. Curry, proprietor "Greenacres Farm," Quenemo, Osage Co., Kas.

100 MERINO RAMS FOR SALE.—Pure-bred American, Delaine and Rambouillet; also eight Shropshire rams from the Champion flock at the Omaha Exposition. Address E. D. King, Burlington, Kas.

SAMPLE copies of 100 different newspapers and magazines sent to any address upon receipt of 10 cents to pay for mailing. AM. SUBSCRIPTION AGENCY, Dept. F., 653 Arch St., Indianapolis, Ind.

FOR SALE OR TRADE.—A registered Cleveland Bay coach stallion, 7 years old, weight 1,300 pounds. For further information address S. S. Morine, McPherson, Kas.

WANTED.—One Kansas Farmer agent in every locality to represent the paper regularly. Good inducements offered. Address Kansas Farmer Co., Topeka, Kas.

FOR SALE.—A limited number of the last edition of Prof. J. C. H. Swan's great book, "The Future By the Past." Price \$1.00; postage paid until the supply is exhausted. Address Kansas Farmer Co., Topeka, Kas.

BARGAINS in Duroc-Jersey males. Five to eight months old. Two yearling males, cannot use longer. All recorded or eligible to record. Address M. H. Alberty, Cherokee, Kas.

FOR SALE.—Five yearling boars. Also fine line of spring boars and gilts by Chief Editor 17995, Tecumseh Short-Stop 14750 and High Hadley 20292. Choice blood. Call or write. E. T. Warner, proprietor Franklin County Herd Poland-China Swine, Princeton, Kas.

FOR SALE.—Pure-bred Polands and Berkshires from weanlings up, at very low prices. O. F. Updegraff, North Topeka, Kas.

POLAND-CHINA PIGS.—Three dollars to five dollars each, eligible to record and choice breeding; no feed and must sell. M. C. Hemenway, Hope, Kas.

WANTED, AGENTS.—We want an agent in every county in Kansas. Those acquainted with the farmers and threshers preferred. Liberal commission. For particulars, address The Victor Oil Co., Cleveland, Ohio.

BLOCKS OF THREE.—Two new subscriptions for one year for \$2, and, in addition, a renewal for one year free to any old subscriber who sends two new subscriptions and \$2 in one order. Kansas Farmer Co., Topeka, Kas.

ALFALFA SEED WANTED by F. Farteldes & Co. Lawrence, Kas. Correspond with them.

SHORT-HORN FOR SALE.—Forty-six cows and heifers, Cruikshank, Young Marys, Rose of Sharon and others; an extra lot. Nearly all were sired by that grand Cruikshank, Royal Prince 100646. Six bulls ready for service, sired by Young Mary bull, Glendon 119871. Parties met by appointment. Theodore Saxon, St. Marys, Pottawatomie Co., Kas.

WE WANT RELIABLE MEN in every locality at once to sell to farmers, threshermen and mills our high-grade lubricating oils, greases and specialties. Makes an excellent side line for farm implement dealers. We are manufacturers, and with our instructions an inexperienced man can become an expert oil salesman. Write at once for terms. Malone Oil Company, Cleveland, Ohio.

DAIRY WAGON FOR SALE.—Good two-horse covered dairy wagon, custom made. A. E. Jones, Topeka, Kas.

TO STOCKMEN.—Feed Mills and Corn-Shellers used as samples and at fair, special bargains. Write or see us. Sandwich Mfg. Co., 1205 Union avenue, Kansas City, Mo.

RICHLAND HERD.—I want to close out the entire herd of Poland-China sows and herd boars, including Klear at 1st Model 1894 S. What's Wanted Jr. 2d 18534, and B's Black U. S. 10957. The breeding and quality of these boars ought to suit anybody. Come and inspect, the only way to get suited. F. W. Baker, Council Grove, Morris Co., Ka.

FOR SALE.—My Poland-China herd boar, Gold Bug 12898. Also some choice young boars and sows. Will sell for the next fifteen days at almost pork prices. M. C. Vansell, Muscotah, Kas.

FOR SALE.—Extra fine young Red Polled bull calf, \$50, if taken soon. Wilkie Blair, Boulah, Crawford Co., Kas.

FOR SALE.—Improved farm of 160 acres with irrigation plant. Unsettled estate. Box 662, Abilene, Kas.

FOR SALE.—Grade Shropshire ram lambs, also fifty ewe lambs, at \$5, and 100 ewes at \$6 per head. Address E. W. Melville, Eudora, Kas.

J. G. Peppard MILLET CANE SEEDS CLOVERS TIMOTHY GRASS SEEDS. 1400-2 Union Avenue, KANSAS CITY, MO.

ALFALFA SEED FOR FALL SOWING. McBeth & Kinnison, Garden City, Kansas, Wholesale and Retail Seedsmen. Send for Our Free Manual on the King of Forage Plants.

BERKSHIRES—Choice bred sows by Imported Lord Comely, and boars ready for service. Wm. B. Sutton & Son, Kas.

FOR SALE OR TRADE.—A Belgian stallion and Arabian jack. Write me. H. Harbaugh, Agenda, Republic Co., Kas.

SHORT-HORN BULLS.—Cruikshank-topped, for sale. Choice animals of special breeding. Address Peter Sim, Wakarusa, Shawnee Co., Kas.

BERDEEN-ANGUS BULLS.—Three individuals of serviceable ages; registered. Wm. B. Sutton & Son, Russell, Kas.

FOR SALE.—Thirteen fine Poland-China boars. Call on or address H. W. McAfee, Topeka, Kas. (Farm three miles west of Kansas avenue.)

SINGLE COMB PURE WHITE LEGHORN COCKS.—Serefs for sale at \$1 each. A. F. Huntley, Paxico, Kas.

WRITE TO ALEX RICHTER—Hollywood, Kas how to sub-irrigate a garden, etc., and cost of same. Send him the size or dimensions of your garden, and he will give full information.

COTTSWOLD RAMS FOR SALE.—W. Guy McCandless, Cottonwood Falls, Kas.

WANTED TO EXCHANGE.—The pure-bred Cruikshank bull, My Lord 116563, bred by Col. Harris; sire Imp. Spartan Hero 7782; dam Imp. Lady of the Meadow (Vol. 30, p. 615), for a pure-bred Cruikshank bull—can't use him any longer in my herd. H. W. McAfee, Topeka, Kas.

BLOSSOM HOUSE—Opposite Union depot, Kansas City, Mo., is the best place for the money, for meals or clean and comfortable lodging when in Kansas City. We always stop at the Blossom and get our money's worth.

WE MAKE A GOOD FARMER'S SPRING WAGON, two laxy-backs and let-down end-gate, for \$55. Warranted. We will ship on approval to responsible parties. Kinley & Lannan, 424-426 Jackson street, Topeka, Kas.

MACLEAN FARMERS' SUPPLY CO., Kansas City, Mo. (Between Union Depot and Stock Yards.) Sell machinery and other supplies to farmers direct, saving the consumer middlemen's profits. Send now for 1898 Spring Price List.

We PAY CASH each week for STAR TREES. Outfit absolutely free. Louisiana, Mo. Danville, N.Y.

SAVE YOUR ORCHARD BY USING Jessup Tree Protectors. Absolute protection from rabbits; keeps off borers and bark-lice and prevents sun-scalds; is indestructible and cheap. Write for circulars and prices. J. D. BACON CO., Agents wanted. Mound City, Kas.

THE STRAY LIST.

FOR WEEK ENDING OCTOBER 27, 1898. Allen County—C. A. Fronk, Clerk.

BULL—Taken up by David Cation, in Cottage Grove tp., one red bull, 2 years old, with white on belly and brush of tail, no marks except it be a small notch out of upper side of right ear near the point. Coffey County—Dan K. Swearingen, Clerk.

COW—Taken up by Bowman Bros., in Lincoln tp. (P. O. Lebo), September 8, 1898, one red cow, 3 years old, dehorned, hole in each ear, slit out, white face, no brands. CALVES—By same, one red spring heifer calf, with white face, and one black spring heifer calf. Sumner County—W. E. Wood, Clerk.

HORSE—Taken up by Abe Muma, in South Haven tp., October 4, 1898, one bay horse, left fore foot wire cut; valued at \$15.

FOR WEEK ENDING NOVEMBER 3, 1898. Montgomery County—D. S. James, Clerk.

PONY—Taken up by John Dunham, in Caney tp. (P. O. Havana), one light bay pony, 4 years old, 5 feet 2 inches high, left hind foot and left fore foot white to pastern joint.

FOR WEEK ENDING NOVEMBER 17, 1898. Wyandotte County—Leonard Daniels, Clerk.

COW—Taken up by John Sess, in Quindaro tp., (P. O. White Church), October 19, 1898, one black, fawn and white cow, dehorned, 7 years old; valued at \$10. Cowley County—S. J. Neer, Clerk.

STEER—Taken up by W. C. Lunnelson, in Otter tp. (P. O. Cedar Vale), October 22, 1898, one three-year-old steer, pale red with white spots, (E) on right side; valued at \$30.

BOOK AGENTS WANTED FOR the only Official and superbly illustrated HISTORY OF OUR WAR WITH SPAIN. ITS CAUSES, INCIDENTS, AND RESULTS. A reliable and exhaustive story of the war. Civil, Military, and Naval, from its beginning to the close. With many fine steel plates, maps, and choice engravings. By Hon. HENRY E. RUSSELL, assisted by SENATOR PROCTOR (Vt.) and SENATOR THURSTON (Neb.). One Agent cleared \$200.00 in first two weeks, another \$400.00 in three weeks. 1,000 more Agents wanted. Distance no hindrance. For we pay Freight, Give Credit, Extra Terms, and Exclusive Territory. Write for terms to the exclusive publishers, A. D. WORTHINGTON & CO., Hartford, Conn.

FREE \$50.00 FREE

To the person sending us the best name for our new tooth powder. Each person sending us a name must also send 25 cents for a sample box of the powder. This offer is open till January 1, 1899. After the \$50 is awarded each one will be notified of the name selected and the name of the party who gets the \$50. Address THE BELLEFONTE CO., P. O. Box 676, Louisville, Ky.

Administrators' Sale of Real Estate.

Pursuant to the will of the late David R. Youngs, I offer at private sale all the real estate belonging to his estate, as follows: 1. The "Home Place," w. hf. of nw. qr. sec. 26, and e. hf. of ne. qr. sec. 27, t. 12, r. 15, 160 acres. Contains good house, barn and sheds, outhouses, corrals, wells and cisterns, wagon scales, three orchards, and all appurtenances constituting a first-class farm. About 130 acres plow land, 12 acres clover, 5 acres alfalfa, remainder pasture land; timber land and creek, all well and conveniently fenced. Price, \$3,000. Terms, one-third cash, one-third in two years and balance on long time. Interest on deferred payments 7 per cent. per annum, secured by mortgage.

2. Also the e. hf. of nw. qr. of said sec. 26, 80 acres. About 40 acres first-class plow land and about 40 acres hay land. Well and separately fenced. Price, \$3,200. Terms same as above.

3. Also about 101 acres of pasture land in one body, well fenced and well watered, being nw. qr. of ne. qr. frl. and sw. qr. of ne. qr. frl. of said sec. 27, and about 34 acres off the east side of the nw. qr. frl. of said sec. 27. Price, \$20 per acre. Terms same as above.

4. Also about 101 acres of good prairie hay land, being w. hf. of nw. qr. frl. of said sec. 27, and about 34 acres off the west side of the e. hf. of nw. qr. frl. of said sec. 27. Price, \$25 per acre. Terms same as above.

5. All of the above described land lying contiguous and constituting one large and complete farm and situated about seven miles southwest of Topeka near the Burlingame road, will be sold together for \$15,000, on the same terms already stated.

6. Also 42 acres in se. qr. of sec. 9, t. 12, r. 15, near Six Mile creek. Mostly first-class plow land; well fenced. Small house and some other improvements. Price, \$1,250. Terms same as above.

For further information write or call on the undersigned at his office, Bank of Topeka building, Topeka, Kas. CHAS. F. SPENCER, Administrator, with will annexed, of said estate.

Publication Notice.

Case No. 19727. In District Court in and for the county of Shawnee, State of Kansas. W. H. Wilson, vs. Iro L. Wilson.

To the above named defendant, Iro L. Wilson: You are hereby notified that the plaintiff, W. H. Wilson, has, on the 4th day of November, 1898, filed his petition in the District court of Shawnee county, State of Kansas, against you, praying for a decree of divorce from you, and unless you answer or demur by the 21st day of December, 1898, his petition will be taken as true and judgment rendered accordingly. THOMAS ARCHER, Plaintiff's Attorney.

Attest: E. M. COCKRELL, Clerk District Court.

BED-WETTING CURED. Sample FREE. Dr. F. E. May, Bloomington, Ill.

THE KANSAS CITY STOCK YARDS ARE THE FINEST EQUIPPED, MOST MODERN IN CONSTRUCTION AND AFFORD THE BEST FACILITIES For the handling of Live Stock of any in the World. THE KANSAS CITY MARKET Owing to its Central Location, its Immense Railroad System and its Financial Resources, offers greater advantages than any other in the Trans-Mississippi Territory. It is the Largest Stocker and Feeder Market in the World, while its great packing house and export trade make it a reliable cash market for the sale of Cattle, Hogs, and Sheep, where shippers are sure to receive the highest returns for their consignments.

Table with columns: Cattle and Calves, Hogs, Sheep. Official Receipts for 1897: 1,921,962, 3,350,796, 1,124,236. Sold in Kansas City 1897: 1,847,673, 3,348,556, 1,048,233.

C. F. MORSE, E. E. RICHARDSON, H. P. CHILD, EUGENE RUST, Vice Pres. and Gen. Mgr. Secy. and Treas. Asst. Gen. Mgr. Traffic Manager.

The Poultry Yard

Conducted by C. B. TUTTLE, Excelsior Farm, Topeka, Kas., to whom all inquiries should be addressed. We cordially invite our readers to consult us on any point pertaining to the poultry industry on which they may desire fuller information, especially as to the diseases and their symptoms which poultry is heir to, and thus assist in making this one of the most interesting and beneficial departments of the Kansas Farmer. All replies through this column are free. In writing be as explicit as possible, and if in regard to diseases, give symptoms in full, treatment, if any, to date, manner of caring for the flock, etc. Full name and postoffice address must be given in each instance to secure recognition.

KANSAS STATE POULTRY ASSOCIATION.

President, A. M. Story, Manhattan.
Secretary, J. W. F. Hughes, Topeka.

Poultry Show—At Topeka, January 9 to 14, 1899. C. H. Rhodes, judge.

The Difficult Details of the Poultry Business.

In carefully looking over this subject one fact confronts me, viz., the small number of poultry farmers who make a success, i. e., a profit from the business. Many embark in the chicken business with a self-satisfied idea that they can make money in it. They are encouraged in this belief by many poultry journals, which depict the profits in glowing reports, but an article in one of the leading papers would cover their hopes as with a wet blanket if allowed to control their cherished aspirations. It breathes so much mystery, and seeming unanswerable possibilities into the subject, that the novice would naturally feel that it would be very unsafe to embark in a business requiring so much classical knowledge. It reads thus: "What we must learn: Some hens are light eaters; some gross feeders; that a slight disturbance will stop some hens laying, while others can be frightened, as we say, nearly out of their wits without failing in egg production; that some fowls are injured by a degree of cold which does not affect others; that the earliest maturing pullets are not always the best layers; that some hens seem to have exhausted their producing capacity within a year after maturity, while others continue profitable through two, three or more years; that some are incapable of transmitting their good qualities to their offspring, others remarkably potent of giving their best points to the next generation, and others still have that rarest and most valuable potency, the power of giving to their progeny greater degrees of merit than they themselves possess, and they find that each and every variation has a bearing, either direct or indirect, on the question of profit."

Now, isn't that enough to make the average chicken farmer tremble? To find out all these facts would require years of study and experience, and life is too short to get to that point of knowledge by which a man could with certainty exclaim, "Eureka!"

To demonstrate all these points to a complete satisfaction would require more experimentation, more positive proof, more physiological knowledge, more careful and accurate data, more systematic calculation, and more abstract reasoning than it has been my lot to observe in any modern breeder. To be sure, a few of these points can, by care and methodical attention to every detail, be learned with positiveness, but, if it is necessary for any poultry farmer (in order to secure success) to sift out and know positively each and every one of the variations spoken of, he has a task before him which will appall any but the stoutest heart. I am not inclined to be pessimistic about poultry for profit, and do not wish to be understood as saying that the success desired is an easy or sure thing unless conducted properly, and am not inclined to surround it with any extra barriers which the ambitious, hard-working poultryman cannot overcome, nor would I belittle the necessity of a business method to insure success, nor would I in any way discountenance ideas held up to the readers of this journal as superfluous, but I would rather attempt to simplify the task by divesting it of the obtruse problems as contained in the above quoted article.

I notice in each issue of your paper you propose showing not perfection, but a degree of success as obtained by practical experience, and this idea is of great value. To demonstrate the practical utility of the quoted variations is indeed commendable, but for the average poultryman to spend his time in proving these many problems would be disastrous to those of small means, whom necessity, perhaps, has compelled to forego such luxuries. To know the "cause why" of our success or failure is often the most difficult question we are called upon to answer, and even then, our answer is generally theoretical. By many it is called "luck," by others "good management," but to determine which is

right, arguments, facts and comparative methods often fail to convince.

That some do have success without a definite idea of the theories, cannot be denied, while others who have made a study of them and mastered all their details fail to get the desired profit is equally true, yet I would not discredit the benefits resulting from a thorough knowledge of the points mentioned. My object is rather not to mingle too much theory with experience to the detriment of the latter. A little common (or so-called horse) sense if properly applied is often better than volumes of theories used without judgment. Certain cardinal points must be carried out to obtain a profit from poultry, even though we are conversant with all the theories marked out by scientific experts, and unless poultrymen do so, their acquired knowledge will avail them nothing. Cleanliness, warmth, pure water and proper food will often produce a better credit side of the account than all the theories of experts, who differ materially in their opinions, while none dispute the necessities spoken of. The laws of heredity are not always infallible, but are variable and conditionable. Environment causes them to be unreliable, and a neglect of the practical requirements may render them void, and the result obtained by the application of a perfect theory may be completely obliterated. There are certain cardinal points necessary to success—capital, knowledge and work.

First, capital. No man would expect to engage in any mercantile business without sufficient capital to conduct said business properly, and yet nine out of ten starting in poultry farming think the minimum amount of cash is ample and expect a revenue for almost nothing. To build the proper houses, to buy or raise the working stock, to allow for losses and disappointments, to maintain the stock in a healthy, producing condition, and many other details, requires money, and yet few, very few, stop to consider this until necessity and failure stare them in the face.

Second, knowledge. Here is the most important requisite, and the one in which so many fail. To know how to run a chicken ranch is no small matter. Most every one thinks he knows how, and it is generally not until failure results, does he awaken to the fact that there is something to learn if he would be successful. In fact, there is no branch of mercantile life which requires such a varied and accurate accumulation of knowledge as is demanded in the chicken business. Volumes might be written on this subject, but space forbids.

Third, work. Mental and physical, not in spasms, but continuous, never-ending, early and late, and by system. The old-fashioned haphazard way is relegated to the past. The present and future demands methodical, systematic and business-like action and cannot be left to decrepit old men and to brainless boys.

Now, then, there abideth these three points to be used to insure success: Capital, knowledge and work, and they must all be employed if a person wishes to succeed.—Poultry Culture.

Ducks Compared With Chickens.

It is a common saying that there is no profit in raising ducks for the table, because they eat more than they are worth. Let us examine this notion a little.

In the attempt to change grain into meat by raising poultry, it is necessary to keep alive the first pound of flesh gained by a bird while the second pound is being accumulated. We say keep alive, because animal tissue cannot exist for a moment in a fixed state, but is constantly undergoing waste and repair, and every day and hour that this first pound is supported, it is done at the expense of a certain amount of feed. When the second pound is gained two pounds must be kept alive, while the third pound is growing, and so on.

This mere maintenance of the animal machinery is no inconsiderable amount of the whole cost of feeding an animal, no matter whether it be a calf, lamb, chicken or duck, until it is old enough for the table. Consequently, the faster the creature grows the less time and cost are necessary to support the first few pounds of flesh acquired while the animal is reaching the desired weight. In other words, early maturity is essential to the economical raising of table fowls. Now, we have no domestic bird which matures faster than ducks. Their appetite, so far from being an objection, is their great recommendation. They eat for good reasons. From nothing, nothing comes.

Try the experiment of raising chickens, of the fastest growing breed you please, in the same yard with ducks hatched the same day (common puddle ducks, or blooded ones, either), and feed

An Old Man's Last Hope.

Made helpless as a baby by a dreadful nervous disease he read of a case like his own, and had enough faith to follow the example it set him. Now he is himself an example to others who are suffering from disorders of the nervous system.

Sawing wood, working in his garden, walking three times a day to and from his place of business—these form part of the daily routine of Edwin R. Tripp, Postmaster of Middlefield Centre, N. Y. He is past his seventieth birthday.

Nearly fifty years a blacksmith; thirty-two years Justice of the Peace; three years town clerk, then postmaster; forty-six years a resident of the town he now lives in—these are the bare outlines of a useful life.

Mr. Tripp's career is a type. His story will be read with heartfelt sympathy by thousands. His hearty endorsement of Dr. Williams' Pink Pills for Pale People will be echoed by tens of thousands.

He said: "In March, 1892, I was attacked by what I afterwards learned was locomotor ataxia.

"Two skillful doctors did everything they could for me. I steadily became worse. Was unable to dress myself.

"Later I could not move even about the room, but was carried in my chair.

"I gave up hope. The doctors gave me no encouragement. I did not expect to live very long. I was more helpless than a baby. I sank lower and lower.

"In June the tide turned! From the lowest ebb, it began to set toward health and vigor.

"The turning point was a newspaper article.

"It told how a man, who suffered as I had suffered, had been cured by Dr. Williams' Pink Pills for Pale People.

"It gave me faith and hope. I took two boxes of the pills; then four more boxes.

"My gain was steady; my return to health was a source of daily gratification.

"In all I took eighteen boxes of the pills before I was entirely well. At first I paid 50 cents a box, but afterwards I saved money by getting six boxes at a time, paying \$2.50.

"I owe my cure entirely to Dr. Williams' Pink Pills for Pale People."

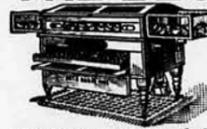
To clinch his remarkable story and add to its helpfulness to others, Mr. Tripp made affidavit to its truthfulness before Homer Hanna, a local Notary Public.

From helplessness, suffering and despair Mr. Tripp was restored to the healthful, useful activity suggested at the beginning of this sketch. His experience is like others.

While locomotor ataxia is one of the most baffling nervous diseases with which physicians are called to contend, its cure by Dr. Williams' Pink Pills for Pale People has become a matter of almost daily occurrence. Smaller nervous troubles yield much more readily to the powerful influence these vegetable pills exert in restoring wasted nerve force and in purifying and enriching the blood.

Druggists everywhere sell Dr. Williams' Pink Pills for Pale People.

THE BEGINNING



the chick until it reaches the end of the poultry business, from the hatching of eggs and the best methods of hatching, brooding, feeding and marketing of eggs and poultry. That is what is in our **BOOK ON POULTRY.** It contains 228 pages chock full of the things poultry people should know. Cuts of all the leading breeds, incubators, brooders and a full line of poultry supplies. It will help you out of many of the little troubles that arise in breeding poultry. Sent for 10c. in stamps.



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Thousands in successful operation. Lowest priced self-regulating incubator made. GEO. H. STAHL, 114 to 122 S. 6th St., Quincy, Ill.

CHICKEN MONEY

and how to get it; how to mate, breed, feed and market poultry. Cuts and plans for building poultry houses and cost of same. These and many other things together with **CYPHERS INCUBATOR** which is sent freight paid to every purchaser is contained in our Poultry Guide. Sent for 10 cts. The Cyphers Incub. Co. Box 84 Wayland, N.Y.

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The farmer can save mill tolls and save cost of hauling. It has adjustable force feed, steel ball bearings, turns 30 in. diameter and self-sharpening. Write for circulars and prices. **KELLY & TANEYHILL, Waterloo, Ia.**

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With Dumping Caldron. Empties its Kettle in one minute. The simplest and best arrangement for cooking food for stock. Also make Dairy and Laundry Stoves, Water and Steam Jacket Kettles, Hog Scalders, Caldrons, etc. Send for circulars. **D. B. SPERRY & Co., Batavia, Ill.**

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Latest Improved Triple Geared Cob and Grain Grinder. A Powerful Two Horse Machine. Grinding Rings go four times around to one turn of team; grinds at a rapid rate. Has been thoroughly tested and proves to have no equal in any respect. Sold direct to farmer. **T. L. PHILLIPS, MFR. AURORA, ILL. WRITE FOR TERMS, ETC.**

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STEEL

Special prices.

Kansas City Hay Press Co., 407 Mill St. Kansas City, Mo.

both species all they will eat; and you will find that the ducks increase in weight the fastest absolutely and the fastest in proportion to their weight when matured.

It is not very often that one, in riding through the country, meets ducks, compared with the frequent appearance of several other kinds of fowl. The reason probably is that there is a general feeling that ducks require a good deal of water, and close to the house. Well, this is good, if you have it. Ducks are very clever at capturing all kinds of creeping things in the mud of streams and turning them into cash; but a little water will do nearly as well, and they will go grubbing about on dry land. Some breeders are very successful in raising ducks with only a tub of water set in the ground. The best varieties are Pekin, Rouen or Aylesbury. The Pekin attains the greatest weight, and, besides, is content with very slender accommodations in the way of swimming privileges, taking to muddy pools by preference. Do not think of the common duck when you get these, as they will reach the living weight of twelve pounds to the pair at but little more cost than the common duck, which weighs only two-thirds as much; and the former are, besides, more quiet, and roam much less. These ducks are fully as profitable as hens, and make a pleasanter variety in the farm surroundings. —American Stock Keeper.

Dressing Poultry.

Sprague Commission Co., of Chicago, which, perhaps, handles more dressed poultry than any other Western firm, gives the following advice:

"Kill by bleeding in the mouth or opening the veins in the neck; hang by the feet until properly bled; head and feet should be left on, and the intestines and crop should not be drawn. For scalding poultry, the water should be as near the boiling point as possible without actually boiling; pick the legs dry before scalding; hold by the head and legs, and immerse and lift up and down three times; if the head is immersed it turns the color of the comb and gives the eyes a shrunken appearance, which leads buyers to think the fowl has been sick. The feathers and pin-feathers should be removed immediately, very cleanly, and without breaking the skin; then 'plump' by dipping ten seconds in water nearly or quite boiling hot, and then immediately into cold water; hang in a cool place until the animal heat is entirely out; it should be entirely cold, but not frozen, before being packed.

"Dry-picked chickens and turkeys sell best, and we advise this way of dressing, as they sell better to shippers; scalded chickens and turkeys generally are sold to the local trade. To dry-pick chickens and turkeys properly the work should be done while the bird is bleeding; do not wait and let the bodies get cold; dry-picking is more easily done while the bodies are warm. Be careful and do not break and tear the skin.

"Pack in boxes or barrels; boxes holding 100 to 200 pounds are preferable, and pack snugly; straighten out the body and legs so that they will not arrive very much bent and twisted out of shape; fill the package as full as possible to prevent shuffling about on the way. Mark kind and weight and shipping directions neatly and plainly on the cover. Barrels answer better for chickens and ducks than for turkeys and geese. When convenient, avoid putting more than one kind of fowls in a package. Endeavor to market all old and heavy cocks before January 1, as after the holidays the demand is for small, round, fat hen turkeys only, old toms being sold at a discount to canners.

"For geese and ducks the water for scalding should be the same temperature as for other kinds of poultry, but it requires more time for it to penetrate and loosen the feathers. It is a good plan after scalding to wrap them in a blanket, providing they are not left long enough to partially cook the flesh. Another method, and no doubt the best for loosening feathers, is to steam them, and, whenever proper facilities are at hand, we advise this process. It is poor policy to undertake to save the feathers dry by picking them alive just before killing, as it causes the skin to become very much inflamed and greatly injures the sale. Do not pick the feathers off the head, and it is well to leave them on the neck close to the head for a space of two or three inches. The feet should not be skinned, nor the bodies singed for the purpose of removing any down or hair, as the heat from the flame will cause them to look oily and bad. The process of 'plumping' and cooling is the same as with turkeys and chickens. There is no kind of poultry harder to sell in this market at satisfactory prices than poor, slovenly

dressed geese and ducks, and those who send in such must not be disappointed at low prices. No poultry of any kind sent to this market should be drawn."

Coming Poultry Shows.

- Kansas State Poultry Association.—J. W. F. Hughes, Secretary. At Topeka, January 9 to 14, 1898. C. H. Rhodes, Judge.
- Garden City Poultry and Pet Stock Association.—A. S. Parson, Secretary. Garden City, Kas. Show December 27-30, 1898. John C. Snyder, Judge.
- Ablene Poultry and Pet Stock Association.—Roy O. Shadinger, Secretary. Abilene, Kas. Second annual exhibit, at Abilene, January 25-28, 1898. Theo. Sternberg, Judge.
- Butler County Fancy Poultry and Pet Stock Association.—C. H. Pattison, Secretary and Treasurer. El Dorado, Kas. Second annual exhibit at El Dorado, Kas., December 20-23, 1898. C. H. Rhodes, Judge.
- Topeka Fanciers' Association.—L. V. Marks, Secretary. Topeka. Exhibit January 9-14, 1898, in connection with State show.
- Ottawa County Poultry Association.—Mrs. D. Collister, Bennington, Kas., Secretary. Bennington, Kas., November 28-30, 1898. C. H. Rhodes, Judge.
- Manhattan Poultry Association.—S. J. Norton, Manhattan, Kas., Secretary., Manhattan, Kas., December 1-3, 1898. C. H. Rhodes, Judge.
- Mitchell County Poultry Association.—A. Whitney, Beloit, Kas., Secretary. Beloit, Kas., December 6-10, 1898. C. H. Rhodes, Judge.
- Smith County Poultry Association.—S. C. Stevens, Smith Center, Kas., Secretary. Smith Center, December 12-13, 1898. C. H. Rhodes, Judge.
- Arkansas Valley Poultry Association.—Mrs. H. P. Swerdfeger, Wichita, Kas., Secretary. Wichita, Kas., December 13-18, 1898. C. H. Rhodes, Judge.
- Garfield County Poultry Association.—A. F. Rusmiser, Enid, Okla., Secretary. Enid, Okla., December 24-25, 1898. C. H. Rhodes, Judge.
- Chase County Poultry Association.—C. M. Rose, Cottonwood Falls, Kas., Secretary. Cottonwood Falls, December 27, 1898, to January 1, 1899. C. H. Rhodes, Judge.
- Rooks County Poultry Association.—N. N. Neher, Stockton, Kas., Secretary. Stockton, Kas., January 2-5, 1899. C. H. Rhodes, Judge.
- Glasco Poultry Association.—M. E. Potts, Glasco, Kas., Secretary. Glasco, Kas., January 5-7, 1899. C. H. Rhodes, Judge.
- Central Oklahoma Poultry Association.—H. F. Stephenson, Kingfisher, Okla., Secretary. Kingfisher, Okla., January 16-21, 1899. C. H. Rhodes, Judge.

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The Peerless brand of Crushed Oyster Shells, Bone Mills, Tarred Roofing, poultry foods and remedies, Poultry Netting, etc., etc. Write for price list to T. Lee Adams, 417 Walnut street, Kansas City, Mo.

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SAVE FEED!

By supplying your cattle and hogs with warm water. Feed is just so much fuel to the animal economy. It takes lots of extra feed to take the chill out of the cold water animals drink.

The Goshen Tank Heater

excels in the following points: Heavy galvanized steel sides, cast iron top and bottom—base cast to sides, double riveted and asbestos packed, perfect draft and ashes can be removed without disturbing the fire and without removing the fire pot. Burns soft coal, wood or coals, and takes but a small amount of fuel. We make also the famous

GOSHEN STEEL TANKS which are arranged for this heater when desired. We stake our reputation on this heater pleasing you. Write us for circulars and prices.

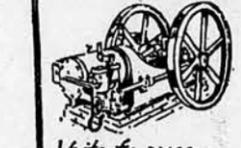
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PERFECT FARM FENCE Made of best doubly annealed galvanized steel wire. Top and bottom wires No. 9. All other wires No. 11. We use the strongest stay wire in any woven wire fence on the market—hence more strength and durability.

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Where we have no agents a liberal discount will be given on introductory order. Reliable farmer agents wanted in every township. **Pittsburg Woven Wire Fence Co., Pittsburg, Pa.** Send for catalogue and prices.



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No Coal or wood - Little water - Just what every farmer and stockman should have for pumping water for both stock and irrigating purposes. - grinding feed, cutting fodder - running corn huskers, cider mills, wood saws, cream separators, churns, cotton gins etc., etc. Inexpensive to operate. Reasonable in price.

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Especially built for Threshing, Pumping, Grinding and general services. Estimates made and complete plants installed.

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1217-19 Union Ave., KANSAS CITY, MO.

WHEN WRITING ANY OF OUR ADVERTISERS PLEASE MENTION KANSAS FARMER.

Potatoes and Field Roots for Fattening Lambs.

Bulletin No. 59, University of Minnesota.

This experiment relates to the feeding of lambs bought upon the Montana ranges. The lambs were purchased at Culbertson, Mont., from Wm. B. Shaw, the manager of Prospect ranch. They had been reared on the open range and were a part of a lot brought in from the range in the autumn of 1897.

Chief among the objects sought were the following: (1) To ascertain the value of potatoes, mangels and sugar beets, respectively, as food factors in fattening lambs. (2) To ascertain the outcome from feeding very ordinary range lambs under what may be termed high pressure feeding. There were also secondary objects sought, but of a less important nature. The behavior of the lambs on the diet of roots was the feature of the experiment. Potatoes are largely grown in our State, and in some seasons, as for instance, in 1895, the price falls so low that the marketing of the potatoes is of doubtful advantage. These conditions have very naturally begotten a desire on the part of the farmers to know their precise value in feeding and their relative value for the same use.

The lambs chosen were what might be termed the tail ends of a lot of 300. They were not really culls, but were small in size, and not of so good form as were the major portion of the lambs of the entire lot. They weighed, on an average 49.7 pounds when the experiment began. They were from Oxford Down grade sires and from dams that were essentially Merino grades in breeding. They were a little flat of rib and long of limb.

They were divided into three lots of twelve each, as thirty-six in all were fed. Each lot had a small apartment of the piggery, 8x11 feet, and each had access to a small yard, 8x20 feet, on the sunny side of the piggery. They were plentifully supplied with water and salt in addition to the other food named. They were weighed every two weeks. Those to which the potatoes were fed are spoken of as lot 1; those to which mangels were fed are referred to as lot 2; and those to which sugar beets were fed are designated as lot 3.

The grain portion of the food fed consisted of corn, barley and oil cake, fed in equal parts by weight. The hay was clover and timothy, the former predominating. The lambs in lot 1 were fed potatoes, those in lot 2 mangels, and those in lot 3 sugar beets. The grain was fed whole and the hay uncut, and they were given of each what they would eat up clean and no more.

The food was estimated at average market values in the State. These were as follows:

Hay, per ton	\$ 4.00
Oil cake, per ton	22.00
Corn, per bushel of 56 pounds	.22
Barley, per bushel of 48 pounds	.20
Potatoes, per bushel of 60 pounds	.20
Mangels, per bushel of 50 pounds	.05
Sugar beets, per bushel of 50 pounds	.05 1/2

These valuations would make the potatoes 33 cents per 100 pounds, the mangels 10 cents, and the sugar beets 11 cents.

The time covered by the entire experiment was 117 days. The preparatory period began November 15, 1897, and covered seven days. The experiment proper covered ninety-eight days. The lambs were sold when fattened to P. Van Hoven, to be retailed in the Twin City markets.

The evenness in the amounts of the food consumed was very marked. Out of a total of 12,457 pounds eaten, the extreme of difference was only 47 pounds, and this was chiefly from the more grain consumed by the lambs in lot 3. The average total of food consumed per day was 3.52 pounds. The average amount of roots consumed per day was practically the same by the lambs in each lot. In all instances it was relatively small, not exceeding 1 1/4 pound per day, notwithstanding that the lambs were given all that they would eat up clean. Although the amounts consumed by the lambs were practically the same, the cost of the food consumed by the lambs in lot 1 was \$3.51 more than that of the food fed to the lambs in lot 2, and \$3.05 more than that of the food fed to the lambs in lot 3.

During the ninety-eight days feeding of the experiment proper, the profit made on the lambs in lot 1 was \$8.50, on the lambs in lot 2 \$11.13, and on the lambs in lot 3 \$13.26. In figuring this profit, the lambs were charged virtually at what they had cost when the experiment proper began. This was \$3.34 per 100 pounds, and they were estimated at the close of the same period at \$5 per 100 pounds, the price for which they were actually sold on March 12, 1898.

The total average profit made by one lamb in each lot during the experiment

proper without any shrink in weight was as follows: Lot 1, 86 cents; lot 2, \$1.05; lot 3, \$1.24.

At the beginning of the experiment, on November 15, the average weight of each lamb in the respective lots was as given: Lot 1, 49.6 pounds; lot 2, 49.8 pounds; lot 3, 49.6 pounds.

At the close of the experiment these weights had increased to the following: Lot 1, 82.5 pounds; lot 2, 80.4 pounds; lot 3, 84.2 pounds.

The average gain, therefore, on the lambs for the 117 days feeding was 32.9 pounds, 30.6 pounds and 34.6 pounds, respectively. The average gain made per month during the experiment proper was 9.2 pounds, and during the entire period of feeding 8.4 pounds. The average cost of making 100 pounds of gain during the experiment proper was \$4.33, and during the whole feeding period \$4.51.

A noticeable feature of the experiment is the relatively high cost of the grain portion of the ration. While the grain fed during the experiment proper amounted to \$32.79, the cost of the hay was only \$5.73, or not much more than one-sixth as much. It is also to be noted that while the mangels fed cost only \$1.46 and the sugar beets \$1.64, the potatoes cost \$4.95.

During the experiment proper a profit of but 17 cents was made on the increase in weight over the cost of food used in making it with the lambs in lot 1. With the lambs in lot 2 it was \$2.72, and with those in lot 3 it was \$4.30. Happy is the country that can furnish foods so cheaply as to make any profit possible on the increase weight made during the fattening period.

The cash returns for thirty-five lambs (for one died during the experiment) was \$137.06. The entire outlay for the lambs and for the food fed to them was \$111.45. Hence, there was a profit on the thirty-six lambs of \$25.61, or 71 cents per lamb. The lamb that died was in the lot to which mangels were fed. It died but three days prior to the close of the experiment proper. The trouble was urinal in character, but whether it was in any way associated with the feeding of the mangels is not clear.

On better lambs of the same shipment a net profit of \$1.49 per lamb was made during an experiment that was simultaneously conducted. But the more favorable result is not to be attributed entirely to the superior development of the lambs. It was rather to be attributed to the use of cheaper foods. But it is true, nevertheless, that the lambs in the experiment referred to sold for 50 cents more per hundredweight.

The average value of each lamb in Montana was \$1.62. The average selling price was \$3.89, hence the average advance in value over the cost price was \$2.27.

The conclusion, therefore, is legitimate that the food factors fed in this experiment gave very satisfactory returns, even with lambs that were under rather than over the average. The further conclusion is also correct that potatoes are a much more costly food to use in fattening lambs than either mangels or sugar beets. They would seem, however, to be almost equally useful in producing gains.

THOS. SHAW.
University of Minnesota.

Grinding Feed for Cattle.

By J. F. True, Newman, Kas.

It always pays to grind, excepting when fed green or wet, or with the fodder, to Scotch cattle, in the open lot, and it pays for all kinds of stock excepting calves under six months old. They do as well or better on shelled corn. I prefer corn and cob ground together, fine enough so that the meal has the appearance of coarsely-ground shelled corn and wheat bran mixed. To grind this fine is difficult, I know, if the corn is somewhat damp. The proper grinding of the cob requires the right kind of a machine, with the grinding surfaces in the best condition; but better finely-ground at an expense of 4 cents a bushel than too coarse at one-half that expense. This corn and cob meal, with such helps as you are able to add to it for your hogs, either breeders, stockers or the fattening hogs, fed wet, is good; as good as so many pounds of clean corn meal, I think. In fact, for work horses, milch cows and stock cattle (when the latter cannot be fed shock corn), and for the fattening cattle as well, the corn and cob meal is equally as valuable, pound for pound, as corn meal. This corn and cob meal, except as noted above, for the hogs, may properly be fed dry. If impracticable to grind it fine, and the weather is warm, I would grind coarse for fat steers and wet thoroughly twenty-four hours before feeding, as follows: Put in a wagon-box the feed for the following day, drive to the water tank and pour on water until corn is thoroughly wet through. You

have not a water-tight wagon. The next day the mess will be softened, swelled and somewhat soured, and is excellent for the steers.

Since I have practiced grinding (for several years) I dislike to feed good, dry, hard ear corn to any kind of stock.

Experiments With Animals and Bacteria.

During the past week Dr. Fischer, of the Kansas Experiment Station, inoculated thirty-eight hogs for the farm department with swine plague protective virus. This was partially for the sake of experiment, although largely for the practical experiment of protecting the hogs.

Analyses have been made in the last few days of wells in connection with the typhoid fever epidemic, particularly those near the outlet of the college sewerage, from which, it has been asserted, the typhoid came. All the wells contained quite a number of different kinds of bacteria. The wells nearest to our ditch showed the least number of germs of any sort. This agrees with the report by Professor Willard upon his chemical analysis. The wells nearest the ditch showed the least proportion of organic pollution. One well in the town contained one-fourth of the number of germs per cubic centimeter that is found in London sewer water; this should be very suggestive to those who are drinking water from wells in the neighborhood of outhouses and stables.

An experiment was made with two flasks of milk which was sterilized and then transferred into a second pair of flasks; these had also been sterilized and afterward one had been rinsed in the water from a certain well. In the flask that was not rinsed the number of bacteria, twenty-four hours later, was nothing, but in the one rinsed with well water there were no fewer than two hundred bacteria per cubic centimeter. Suppose those bacteria had been typhoid fever bacilli; it is easy to see the danger to those using that well water even for dish washing. The kind of bacteria in this experiment was not determined, but where there is a great number of bacteria there is always a likelihood that some of them are disease germs.

The department inoculated a calf with blackleg, Tuesday, in order to cultivate material for the manufacture of the protective vaccine which is furnished to stockmen. They have sent out enough material in the past week to inoculate six thousand calves.

In order to preserve the colors of plants it is necessary to kill the specimens quickly, and this can be effected by

plunging them for a few seconds in boiling water. If a plant is allowed to die slowly the colors of its leaves and flowers will gradually fade. A writer in Meehan's Monthly says that some succulent plants will live for months after being placed between the drying leaves of an herbarium, and finally they dry up and turn black.

Dr. Bull's Cough Syrup will cure croup and whooping-cough. No danger to the child when this wonderful medicine is used in time. Mothers, always keep a bottle on hand.

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Kansas owns (in round numbers) 900,000 horses and mules, 550,000 milch cows, 1,600,000 other cattle, 2,400,000 swine and 225,000 sheep.

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GENERAL PASSENGER OFFICE.

THE ATCHISON, TOPEKA & SANTA FE RAILWAY,

TOPEKA.

The Apiary.

Conducted by A. H. DUFF, Larned, Kas., to whom inquiries relating to this department should be addressed.

Sugar for Bees in Winter.

The following from the Modern Farmer and Busy Bee, by E. T. Abbott, very plainly gives the manner of making and using sugar for bees in winter when short of stores or otherwise:

"A colony of bees will live through the winter and keep healthy if they have nothing but dry sugar to eat, provided the sugar be so placed that they can always reach it without breaking cluster. Dry sugar, however, cannot be manipulated in a way to guarantee this condition of things. I, therefore, secure the best quality of granulated sugar, and make it into solid cakes, similar to those of maple sugar which we find for sale in the stores. To prepare these sugar cakes, the granulated sugar should be put into a vessel with a very small quantity of boiling water—not more than one pint of water to five pounds of sugar—and the sugar thoroughly melted. Be careful not to let it burn. After the sugar is melted, let the sirup boil until it will harden into a solid cake. One can ascertain when it has boiled enough by dropping a little of it in cold water. After it has boiled so it will thoroughly harden, pour it out into shallow pans; making it into cakes six or eight inches long, an inch and a half thick, and wide enough to make cake weigh ten pounds. When these are thoroughly cold and hardened, they are ready for use.

"Having prepared your cakes of sugar in this way, remove the top of the hive and the covering to the frames, and lay three or four sticks, one-half inch square and six inches long, directly over the cluster, placing them about two inches apart. Lay the cake of sugar on these sticks, and over this place a cloth sufficiently large to cover the entire top of the hive. An old grain-sack makes a very good covering for this purpose. Over the cloth place two or three thicknesses of old paper, and tuck all down snugly inside of the hive. After this is done put on the hive cover. The idea is to make the covering above the bees perfectly tight, so that there is no upward draught.

"As I said before, the cluster always forms on the combs below the food, and as it moves upward, it consumes the food immediately above it until it reaches the top of the frames, when the bees will find themselves in contact with the sugar candy. The warmth and moisture arising from the cluster will keep the sugar sufficiently soft so the bees can eat it without any trouble. I have never known a colony of bees thus provided with sufficient sugar to take them through the cold weather, to die or come out in the spring diseased."

Honey Localities.

Editor Apiary Department:—Having noticed what you have to say in the Farmer about the honey crop of western Kansas and Colorado, would like to ask you what is the matter with eastern Kansas as a honey-producer?

Carbondale, Kas. JOHN WEIR.

Nothing whatever is the matter with eastern Kansas, Mr. Weir, only you know that us folks out here in the "short grass" country get abused by everybody, and when we get a little ahead, or just even get on a level with you, why, we feel like "crowing" about it. See? Eastern Kansas is equal to any of the old States for the production of bees and honey, and the climate is such there that it makes bee-keeping very desirable and extremely profitable. Since the above letter was written we have another letter from Mr. Weir, as follows:

"I would gladly give you an article on the management of my bees, but owing to press of business just at present, it is impossible. Will say that I have fifty colonies of bees and that I took an average of fifty pounds per colony of honey this season. Mr. Duff, be sure to give us more and longer articles on bee culture in the Kansas Farmer, as they are always interesting as well as practical."

Bees will winter in ordinary hives about in the same manner your cow or horse will winter by staying out in the weather on half rations all winter through. It is on the same principle exactly. So house your bees in good chaff hives, and they will come out strong in the spring and will not have consumed more than half the honey they otherwise would have eaten, and the result is that they have more honey to spring on, which means more bees to gather honey when the season opens.

GRAND CLOSING OUT SALE HIGH-CLASS POLAND-CHINAS.

THURSDAY, DECEMBER 8, 1898, AT PEABODY, KANSAS.

In order to close out a partnership, we have concluded to close out our entire herd of registered Poland-China swine, which we believe is by all odds the best and most toppy offering of Poland-Chinas both as to breeding and individual excellence made this season. The herd boars, Miles' Look Me Over 18879 and Lambing's Best, besides thirteen serviceable yearling boars; also What's Wanted Jr., Wren's Medium, Chief I Know, Look Me Over, Black U. S., Chief Tecumseh 2d sows and gilts—sixty head in all. Write for catalogue to

COL. S. A. SAWYER, Auctioneer,

MILES BROS., Peabody, Marion County, Kansas.

EIGHTH ANNUAL SALE RECORDED POLAND-CHINAS

At Bellaire, Smith Co., Kas., Tuesday, November 22, 1898.

The offering of 100 HEAD consists of ten yearling boars, thirty spring boars, thirty of our tried brood sows, not bred, and thirty spring gilts. The herd is headed by Honor Bright 12790, assisted by Welcome Chief 16744, Sayle's Model 18068 and Silkwood 18067. Sows in herd are of the following strains: L. S. Tecumseh, Chief Tecumseh 2d predominate; other strains are One Price, Black U. S., Happy Medium, Dandy Wilkes and Hadley 2d.

I will also sell thirty high-grade Short-horn cows, ten Short-horn-Jersey cows, two thoroughbred Jersey bulls, and twelve steer calves. Everybody invited to come.

C. F. HUTCHINSON, Bellaire, Smith County, Kansas.

PUBLIC SALE OF REGISTERED HEREFORD CATTLE

Seventy-five Head,

THIRTY-THREE BULLS and FORTY-TWO COWS and HEIFERS,

AT STOCK YARDS SALE BARN,

KANSAS CITY, MO., WEDNESDAY, NOVEMBER 30, 1898.

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..PUBLIC SALE OF.. Grandview Herefords,

AT THE STOCK YARDS PAVILION, KANSAS CITY, MO.,

December 15 and 16, '98.

Seventy bulls and thirty-five cows and heifers will be sold. These animals are of particularly desirable ages, are of the leading Hereford families, and are selected with care with the view of making an offering that will maintain the reputation of the Grandview herd. The bulls are large, smooth, grass-grown, fleshy animals, and three-fourths of them will be over seventeen months old at the time of sale. The heifers will either all be bred or old enough to breed at that time. Catalogues now ready.

COL. S. A. SAWYER, Auctioneers. C. G. COMSTOCK, Albany, Missouri.
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135 SHORT-HORN CATTLE.

On Tuesday, November 22, 1898,

At Kansas City Stock Yards Sale Barn

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38 Bulls, 19 Cows and Heifers

All bulls but four range yearlings up to two years old. Cows with calves at foot, others bred to the undefeated show bull, Admiral 130-662. Sale opens at 1 o'clock p. m. Write for catalogue. Terms cash.

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Third Annual Sale Idlewild Herd.

I will offer on WEDNESDAY, November 23, 1898

AT LIVERY BARN IN THE CITY OF

Bunceton, Cooper Co., Mo.,

75 Head of Registered Short-horns,
50 BULLS and 25 FEMALES.

About two-thirds of the bulls are yearlings past, and big early fellows ready for heavy use. There are quite a number of pure Cruickshank breeding, both bulls and heifers. Send for catalogue. As Mr. Bothwell sells the preceding day, parties can arrange to attend both sales.

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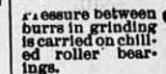


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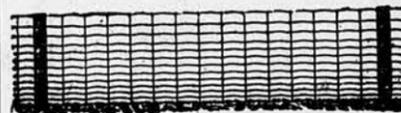
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is what Eastern nations are telling each other, just like the farmer says to unruly stock. We can fix the stock for you, neighbor. PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.



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— OF —

REGISTERED HEREFORD CATTLE

TO BE HELD AT KANSAS CITY STOCK YARDS, KANSAS CITY, MO.,
ON WEDNESDAY, DECEMBER 7, 1898,

at which time I will offer

100 HEAD OF BULLS AND HEIFERS

of the Highest Quality and Most Fashionable Breeding.

The sale will include all of my Omaha Show Herd excepting my imported breeding bull, Keep On.

In 1899 I expect to show only a calf herd, as I will have about sixty calves sired by Wild Tom and the bulls that I imported last year, out of which I shall make a selection to show as a young herd.

There will be sold a son of Beau Real, 3 years old (a half brother of Wild Tom), and at least four young Beau Real cows, including Beau Real's Maid, the well-known show cow. Beau Real died on my farm, and I am the only breeder that can offer any of his younger get. Included in the sale will be Diana, the yearling heifer, winner of first at five State fairs in 1897, and first in class and first over all beef breeds at Omaha this year; Climax 4th, winner of many prizes as a bull calf and yearling; Miss Grove 2d, second in class and second over all beef breeds at Omaha, the only time shown. I will also sell Climax 60942, himself a show winner and the sire of many good ones, including Climax 4th and Miss Grove 2d. I am offering the very best of the young males and females that I own, believing that as I have the same sires and dams, I can produce just as good ones another year.

A fact that has not been fully emphasized is that there is a multitude of cattle of cheap quality and but few really good ones. Those farmers and range men who have in the past bought pure-bred animals to keep in their herds are the ones who are reaping the benefit of the present good prices for good cattle. As an illustration, Mr. R. Walsh, who for many years kept up his supply of pure-bred bulls, sold at public sale in Kansas City in October 400 spring heifer range calves at \$37 per head.

At my spring sale I received the highest average of recent years for one, five, ten, twenty, thirty, forty, fifty, sixty, seventy, eighty, ninety and one hundred head. I do not say this as giving any idea as to what the present cattle will average, but only to emphasize the two facts that my cattle are of the very highest quality, and more especially that this present offering will consist of animals equally as good in quality and breeding.

I do not expect any fancy prices, but do feel that breeders will pay fair value for superior quality. I have put into the sale animals to fill the desires of all. There are aged bulls, young bulls and bull calves, cows that have calves at foot, heifers bred and unbred, and heifer calves.

I will be very glad indeed to see present all those who have been corresponding with me this fall, and expect all those who attended my sale last spring to come again and bring their friends.

If you have not received a catalogue, send for one to

C. S. CROSS, Emporia, Kas.