

The Kansas Situation for 1901.



VOL. XXXIX.
NO. 35.

TOPEKA, KANSAS, THURSDAY, AUGUST 29, 1901.

ESTABLISHED IN 1863
\$1.00 A YEAR.

Breeders' Directory

SWINE.

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

Registered Stock, DUROC-JERSEYS, contains breeders of the leading strains.
N. B. SAWYER, - - Cherryvale, Kansas.

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

Duroc-Jerseys.

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

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

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

FAIRVIEW HERD DUROC-JERSEYS
Has 80 pigs of March, April, and May, 1901, farrow for this season's trade at reasonable prices.
J. B. DAVIS, Fairview, Kans.

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

POLAND-CHINAS. 90 GOOD spring pigs; bred but they are CHOICE. Write for one. Don't delay.
DIETRICH & SPAULDING, Richmond, Kas.

DUROC-JERSEY SWINE—REGISTERED.
Write for prices on choice spring pigs; 100 to select from.

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Commodore Dewey No. 46187 head of herd, assisted by a grandson of Missouri's Black Chief. Young stock for sale reasonable. All stock recorded free.
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KANSAS HERD OF POLAND-CHINAS has some extra fine spring gilts, some January gilts, and sows 18 months, bred to Sen. I Know, he by Perfect I Know; and some nice fall boars by Sen. I Know and U. S. Tec. Address **F. P. MAGUIRE**, Haven, Reno Co., Kans.

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

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

MOUND VALLEY HERD OF POLAND-CHINAS
Has some very fine spring pigs of either sex for sale at famine prices. Give us an order and we will surprise you as to prices and individuals. Most popular blood represented. Everything guaranteed as represented.
W. P. WIMMER & SON, Mound Valley, Kans

A FEW POLAND-CHINA PIGS FOR SALE.

Fine individuals. "Chief I Know" and "Look Me Over" strains. **R. J. CONNORWAY**, Edna, Kans.

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Stock For Sale.
Farm is two miles northwest of Reform School.

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

SUNNYSIDE HERD OF PEDIGREED POLAND-CHINA HOGS.

We now have for sale some extra good young boars, and a lot of gilts 8 to 10 months old. All good. Gilts will be bred or sold open as desired. This is a choice lot of young stuff that will be priced cheap, quality considered.

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For Sale: A few boars and gilts farrowed in January, sired by Perfection 24535, and out of the dams: Lady Sanders, Lady Hadley Sanders, and Lady Alice Sanders. Price very low.
Will also sell recorded Scotch Collie pups.

SUNNY SLOPE PRINCE 102051.
BELINDA 65879, Front View. **BELINDA 65879, Rear View.**
Property of **O. B. Whitaker**, Alfalfa Meadow Stock Ranch, Shady Bend, Lincoln Co., Kans.

SWINE.

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PETER BLOCHER, Richland, Shawnee Co., Kans.
Herd headed by Big Joe 7863, and others. Write for prices on what you want. S. C. B. Leghorns.

SHADY LANE STOCK FARM. HARRY E. LUNT, Proprietor, Burden, Cowley Co., Kans. Registered Poland-Chinas

25 Boars and 25 Gilts of late winter farrow, sired by Searchlight 25513, and Look No Further. Dams of the Black U. S., Wilkes, Corwin, and Tecumseh strains. Prices low to early buyers.

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Have for sale—spring pigs of quality, at reasonable figures. Write us before buying.
MANWARING BROS., Lawrence, Kansas.

Verdigris Valley Herd POLAND-CHINAS.

Large-boned. Prize-winning. We have for sale 80 head of fall pigs—the best grown out lot we ever raised. We can furnish herds not akin, of any of the fashionable strains. We have several that are good enough to fit for next fall's shows. Prices reasonable. Nothing but good ones shipped on orders.
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High-Class Poland-China Hogs

Jno. D. Marshall, Walton, Harvey Co., Kans.,
Breeds large-sized and growthy hogs with good bone and fine finish and style. FOR SALE—Thirty October and November gilts and 15 boars, also 100 spring pigs, sired by Miles Look Me Over 18879. Prices right. Inspection and correspondence invited.

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I have for sale a few October boars and gilts, 4 bred sows, and 70 winter and spring pigs, good head and ears, large boned. Come and see them, or write me.
JOHN BOLLIN,
Kickapoo, Leavenworth Co., Kans.
(Express Office, Leavenworth.)

CATTLE.

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

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F. C. KINGSLEY,
Dover, Shawnee Co., Kans.

E. S. COWEE, Eskridge, Kans., R. R. 2, Breeder of **PURE-BRED HEREFORD CATTLE**
Kids' Duke 96697 at head of herd. Young bulls and heifers for sale.

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

ALFALFA MEADOW STOCK FARM
1,900 acres. Pure-bred stock only. Herefords, Poland-Chinas, Light Brahmas and Belgian hares. Stock of all kinds for sale. Pedigreed hares, \$2.
O. B. WHITAKER, Proprietor,
Shady Bend, Kansas.

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

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

Silver Creek Shorthorns.
The Scotch bull, Gwendoline's Prince 180913, in service. Also the imported Scotch Mistle bull, Aylesbury Duke. 100 head of the best Scotch, Bates, and American families. High class Duroc-Jersey swine for sale.
J. F. STODDER, Burden, Cowley Co., Kans.

CATTLE.

Rocky Hill Shorthorns

25 Choice Young Bulls For Sale.
J. F. TRUE & SON, - - Proprietors.
P. O. Perry, Kans. R. R. Station, Newman, Kans.

Registered Herefords

Of either sex, at private sale. I also have 140 $\frac{3}{4}$ to $\frac{1}{2}$ high-grades at private sale.
ALBERT DILLON, Hope, Kansas

D. P. NORTON'S SHORTHORNS,
Dunlap, Morris Co., Kansas.

Breeder of **PURE-BRED SHORT-HORN CATTLE,**
Herd Bull, Imported British Lion, 133692.
YOUNG - STOCK - FOR - SALE.

MT. PLEASANT HERD OF SHORTHORNS.

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

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Also German Coach, Saddle and Trotting-bred horses. World's Fair prize Oldenburg Coach stallion Habbo, and the Saddle stallion Rosewood, a 16-hand 1,100-pound son of Montrose in service. Visitors always welcome.
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Special Offering: Eleven cows and heifers, from 8 months to 8 years old. Cows bred to Java of East Lynn; all regular breeders and registered; also 10 registered bulls, from 8 to 20 months old. These bulls are large and bred right. If you want a bargain, write me or come and see them.
WILL H. RHODES, Tampa, Marion Co., Kans.

CATTLE.

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

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

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Splendid recently imported bulls at head of herd. Registered animals on hand for sale at reasonable prices at all times. Inspect herd at Allendale, near Iola and La Harpe, Allen Co., Kans., and address Thos. S. Anderson, Manager, there; or

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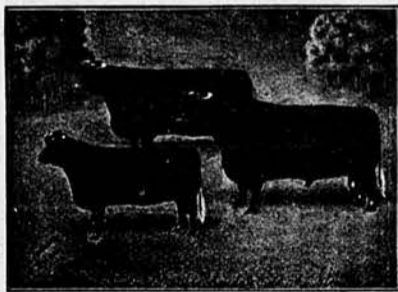
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The Best, Pure-Bred SHORTHORN CATTLE.

Herd numbers 135, headed by ROYAL CROWN 125698, a pure Cruickshank, assisted by Sharon Lavender 148002.

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Leading Scotch and Scotch-topped American families compose the herd, headed by the Cruickshank bull Scotland's Charm 127264, by Imp. Lavender Lad, dam by Imp. Baron Cruickshank. Twenty bulls for sale.

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Registered Percherons (Brilliant) in Service.

DIRECT 18899 (by Bendago by Brilliant, dam Fenelo by Fenelon by Brilliant.) Bendago's dam the famous prize-winner Julia by Le Ferte. FOR SALE—Three 2-year-old stallions by Direct.

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SUNFLOWER HERD

SCOTCH AND SCOTCH-TOPPED

SHORTHORN CATTLE, POLAND-CHINA SWINE

Herd Bull, Sir Knigh 124403. Herd Boars, Black U. S. 2d 25582 S, and Sunflower Black Chief 23603. Representative stock for sale.

ADDRESS **ANDREW PRINGLE,** Rural Route 2, Eskridge, Kans

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J. W. & J. C. ROBISON, Towanda, Kansas.

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25 Mammoth, Warrior, and Spanish Jacks Now For Sale.

Quality and Breeding Unexcelled. Inspection and Correspondence Invited.

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For Sale—25 Clydesdales, including 3 registered stallions of serviceable age, and 18 mares. Inspection and correspondence invited.

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FOR SALE--At Half Their Value.



I must sell; am overstocked and short of feed.

15 head of Black, mealy nosed Jacks and Jennets; 7 registered Stallions (all good ages); 25 Horses, consisting of mares (in foal), 1- and 2-year-old Colts, and some Driving Horses.

S. A. SPRIGGS, Westphalia, Kansas.



RIVERSIDE STOCK FARM.

O. L. THISLER, Chapman, Dickinson Co., Kans., Importer and Breeder of **Percheron, and French Coach Horses, and Shorthorn Cattle.**

For Sale—A few Shorthorn heifers, and Percheron stallions; also a Special Bargain on 9 Registered Hereford Bulls, 2 years old, and a few Full-blood Percheron Mares.

SNYDER BROS., Winfield, Kans.,

Breeders of

POLAND-CHINA SWINE; SHIRE, CLYDE, AND PERCHERON HORSES, AND POLLED DURHAM CATTLE.

For Sale at Special Prices—17 BOARS, and 25 GILTS, farrowed mainly in November and December. They are extra well bred and very thrifty. 8 Polled Durham Bulls, of serviceable age. 17 Stallions over 2 years. 2 Mammoth Jacks.



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EVERY FIRST PRIZE: except one, at the Universal Exposition, Paris in 1900. NINETEEN MEDALS at the Great Percheron Show at Nogent-le-Rotrou in 1901. THIRTY-FIVE MEDALS at the Great Annual Show of France at Nantes and other shows throughout the Draft Horse Breeding Districts of that country. THE LARGEST SINGLE IMPORTATION ever made by ANY FIRM now in business just received at our stables.

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BREEDERS OF PURE BRED

HEREFORDS,

BELTON, CASS COUNTY, MO.

BULLS in service, HESIOD 29th 66304, Imp. RODERICK 80155, MONITOR 58275, EXPANSION 93663, FRISCOE 93874, FULTON ADAMS 11th 83731. HESIOD 29th 66304 Twenty-five miles south of Kansas City on Frisco, Fort Scott & Memphis, and K. C., P. & G. Railroads



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HERD BULLS:

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Young bulls, cows, and heifers for sale.

E. W. Thrall, Eureka, Kansas

50 Shorthorn Bulls For Sale.

The Bill Brook Herd of Registered Shorthorns

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

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

Cattle, Sheep, and Hogs.

CATTLE AND SHEEP ALL SOLD.

Good April sow and boar Poland-China pigs at reasonable prices; also a few sows and gilts, bred for September and October farrow to Black Missouri Chief 25785, one of the best sons of Missouri's Black Chief 18399, and out of a sow from Chief Tecumseh 2d 9115, whose dam was by Klever's Model, the great \$5,100 sire.

J. CLARENCE NORTON, Moran, Kansas.

WHEN WRITING ADVERTISERS MENTION KANSAS FARMER.

Agricultural Matters.

A New Wheat Industry for the Semi-arid West.

MARK ALFRED CARLTON, CEREALIST UNITED STATES DEPARTMENT OF AGRICULTURE.

During the past twenty years much interest has been awakened in the subject of crops adapted to semiarid districts, and great results have been obtained in this line. The successful establishment of Kaffir-corn, Turkestan alfalfa, and awnless brome-grass has already been worth many times the cost of the work, and now there is an opportunity to establish in these districts another crop, that is, macaroni wheat, which is quite as important as those mentioned, and which may be profitably grown in the plains region of the United States far beyond the hundredth meridian.

NATURE OF MACARONI WHEATS.

Macaroni wheats differ radically from the ordinary bread wheats, and in the field look more like barley than wheat. The heads are flat, compressed, and bearded, the beard often being black; the chaff is usually golden yellow, but sometimes black; and the grains are large, hard, yellowish white, and clear, or, in wheats of the best quality, sometimes translucent. There are also occasionally velvet chaff varieties. In Europe they are known simply as hard wheats, or durum wheats. The grain is much harder than that of the hardest bread wheats, and in the best varieties contains an unusual amount of nitrogen and a correspondingly small amount of starch. The quantity and quality of the gluten make them exceedingly valuable for making macaroni. They are extremely resistant to drouth and resist the attacks of leaf rust and smuts to an unusual degree. On the other hand, they will not withstand hard winters, and are usually grown as spring wheats. This fact should not be a strong objection to them, however, for they will behave very differently from the ordinary spring wheats grown in Kansas and Nebraska. South of the thirty-fifth parallel they may be sown in late autumn.

ADAPTATION FOR CULTIVATION IN THE GREAT PLAINS.

In seeking for crops suitable for semiarid districts, we usually have especially in mind the benefit of the region and not of the crop itself. In the case of macaroni wheats, however, it is not only true that they can be grown in dry districts, but they must be grown there in order to produce the best quality of grain, and up to a minimum of about 10 inches annual rainfall, the drier the better, provided the rain falls at the proper time and the soil is of the right kind.

A careful study, made by the writer, of the conditions in east and south Russia show that in both soil and climate they are remarkably similar to those of our great plains region. The special climatic features of the Russian region, which are requisite for the production of good macaroni wheats, and which are also characteristic of our own great plains, are as follows: (1) A very low annual rainfall (not exceeding 17 inches in east Russia); (2) the occurrence of a very large proportion of that rainfall in the summer months; (3) the nature of the rainfall, which occurs in the form of quick thunderstorms, with few days of mist or fog; (4) corresponding to this, the low atmospheric humidity and large number of days of sunshine; (5) great extremes of temperature, but especially short, intensely hot summers. In the Russian region, however, as a result of the growing of macaroni varieties, the present actual wheat area is characterized by greater extremes of climate than the actual wheat area of the great plains. For example, the normal yearly rainfall of the great plains at the one hundredth meridian, where wheat growing is at present practically non-existent, because of the lack of drouth resistant varieties, is nearly 3 inches greater than that for the entire semiarid Volga region, which is one of the principal wheat regions of Russia and produces the finest macaroni wheat that is known.

The soil of the Russian region is a deep black loam, rich in humus and rather strongly alkaline, and exactly the same can be said of the great plains region. In the great plains, however, wheat has not yet been grown where these features are so striking as in the Russian region. By the use of macaroni varieties the great plains wheat area may be and should be extended much farther westward.

On making actual trials of introduced varieties of these wheats the results ob-

tained have abundantly confirmed the conclusion that they are well adapted to our semiarid districts. In 1898 several of the best Russian varieties were obtained by this department and they have been under trial in cooperation with State experiment stations since that time. In all cases so far reported from the semiarid districts these have given results better in all respects than those obtained with standard varieties of the locality grown under the same conditions. At the South Dakota station in the discouraging season of 1900 they yielded about 30 bushels per acre when other varieties made but 2 to 8 bushels. In North Dakota the yields have been several bushels per acre better than the best bred Fife and Blue Stem wheats. In Utah the average results for 1899 and 1900 were considered better than those of the other varieties. In all these cases so far as the writer has seen samples the grain was sound, of a clear color, and generally of a good appearance, though the conditions for 1900 were quite damaging to other varieties in North and South Dakota. Trials made by private parties have given equally good results in Kansas, Colorado, Texas, Idaho, Nevada, and California. The varieties Nicaragua, Wild Goose, and Arnautka have been grown sparingly in Texas and the Dakotas for many years independent of government introduction, though the department introduced Arnautka as early as 1864. At all times the unusual yield and hardness of these wheats in districts subject to drouth have been considered remarkable. The excellent qualities of macaroni wheats for semiarid conditions may be summarized as follows: (1) They are very resistant to leaf rust and smuts; (2) they are extremely resistant to drouth; (3) they often ripen a little earlier than other spring wheats; (4) west of the one hundredth meridian they will yield an average of 12 to 20 bushels per acre in many places where wheat growing is now practically an impossibility because of drouth; (5) in the larger portions of the great plains region they will yield on an average about one-third more per acre than the wheats ordinarily grown there.

The very best grain will be produced near the one hundredth meridian, and so long as the summer rainfall is as much as 8 to 10 inches the yield will also be good. West of this these wheats will thrive excellently in the larger part of the wheat-growing territory and produce bright, sound grain, but the quality will not be so good because of the lack of nitrogen supply from the soil. It is very important to note that macaroni wheats are, as a rule, sown in the spring. In this country they should be sown in the spring in all territory north of the thirty-fifth parallel. South of that latitude they should be sown October 15 to December 1. In Oklahoma and southern Kansas certain varieties may be found to be adapted to fall sowing also, but until that is well known to be true, it will be safer to sow in the spring.

Probably the most important thing to announce as a result of the department's investigations is the existence of a market for these wheats. The entire present crop in this country, which will probably be about 100,000 bushels, was practically contracted for even before harvest at a good average price. It is being grown chiefly in North and South Dakota, and consists mainly of the variety Arnautka, but with some Wild Goose also. Heretofore there has been no market for these wheats, and therefore no reason for growing them except for feeding on the farm. Millers have declined to handle them for making bread flour, and macaroni manufacturers have either been unaware of the opportunity of obtaining such wheats or have considered the amount produced too small to justify any preparation for handling them. Now, however, several mills are grinding these wheats, a number of American macaroni manufacturers are desiring the semolina as soon as the mills can furnish them a sufficient amount, and the demand from foreign manufacturers of semolina for American grain of this class is constantly and rapidly increasing. It is only recently that foreign dealers have discovered the good quality of American wheats of this class. As a result, 100,000 tons of Wild Goose wheat have been shipped from Canada to Marseilles since March 1 of this year, as reported to this department by United States Consul Skinner at Marseilles. There is no doubt that fully that amount or even more could be sold from our great plains if it had been grown; for Dakota grain of this class is known to be of better quality, as a rule, than the Canadian product.

The department is in receipt of letters from a number of macaroni manu-

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Tales of Old Turley, by Max Adeler. Six new stories by the author of "Out of the Hurly-Burly"—the first humorous work he has done for twenty-five years. A country town just before the war is the scene.

The Diary of a Harvard Professor, by C. M. Flandrau. A new series of deliciously clever little tales in which the author of "The Diary of a Harvard Freshman" views college life through the spectacles of Professor Fleetwood.

The Curtis Publishing Company, Philadelphia



facturers inquiring for a source of supply of these wheats, and also for the addresses of millers who can prepare the semolina for them; for the factories as a rule do not grind their own wheat. There is a distinct demand for one or two enterprising millers to arrange their machinery for specializing on the preparation of semolina. But above all, there is a strong demand for more of the wheat itself, and farmers of the great plains are here urged to put in a much larger acreage the coming season. There is certainty of a market for all that can be grown next year, and at a good price, if the quality maintained. The writer would also strongly recommend that farmers' clubs and local dealers take pains to place samples of the present crop before the Boards of Trade and Produce Exchanges in our large cities, and have them transmitted also to such organizations in France and Italy, especially to such points as Marseilles, Bordeaux, Genoa, and Naples.

About 15,000,000 pounds of foreign macaroni is imported to this country each year, solely because, being made from true macaroni wheat, it is considered to be of better quality than our domestic macaroni, which is made almost entirely from bread wheats. Moreover, the imported macaroni sells at a much higher price. Of course all the cost of the imported product will be saved to this country if the farmers and millers will furnish our factories with the right kind of material, which they can easily do; and the factories are anxious to have the material.

Although these wheats are considered to be of value chiefly for making macaroni, the idea that they do not make good bread is quite erroneous. A very large amount of macaroni wheat is annually employed in Russia, France, Italy, Spain, Greece, and other Mediterranean regions for making bread, which is considered to be of excellent quality; and

the French especially ought to be good critics in this matter, for they are the greatest bread-eating people in the world. A small per cent of the softer wheat is usually mixed with the macaroni wheat before grinding, however.

The thorough establishment of this new wheat industry will be of the greatest benefit to agriculture in the semiarid plains. A million or more of acres can thus be given to profitable wheat raising which on account of drouth have heretofore either been entirely idle or less profitably employed. In a few years time the result ought to be an addition of 30 to 50,000,000 bushels to the annual wheat production of the great plains alone. The agricultural area will be extended much farther westward and the necessity of irrigation will thereby be diminished correspondingly.

We ought to produce in the harvest of 1902 at least 5,000,000 bushels, but it is doubtful if there will be sufficient seed to produce that amount without importations. It is very desirable that at least one-fifth of the present crop be saved for seed. But even that much can produce but a small fraction of 5,000,000 bushels next year. If the demand for seed is sufficient to justify it, farmers and grain dealers can unite in importing a large amount of seed at reduced cost. Such importations if attempted should be made either from the Azov Sea region of Russia or the region east of the Volga River near the Siberian border. No doubt a considerable amount of seed can be obtained in Canada, though it will not be of so good a quality. In the region from Texas to California Algerian seed might well be used.

It will be advisable in all localities where these wheats have not previously been grown not to sow a very large amount the first year, and to sow two or more of the best recommended varieties if possible. For spring sowing seed should be obtained that was grown

pretty well north. The resulting crop is thus likely to ripen earlier and produce grain of better quality.

In this country there are but 3 varieties that can be drawn upon extensively for seed. These varieties are the Nicaragua, in Texas, and the Arnutka and Wild Goose, in the Dakotas. Other excellent varieties are being grown by the experiment stations but on an experimental scale. Of these 3 varieties, Arnutka is likely to be the best. It is a Russian variety which probably came originally from the Azov Sea region. In Russia, so far as the writer's investigations have gone, Gharnovka from the Azov Sea region and Pererodka or Kubanka from the Siberian border are the best, though Beloturka ranks well also. Russian macaroni wheats are the best in the world, as shown by the numerous comparative tests and analyses and the fact that they are chiefly used in the foreign factories. In a number of chemical analyses made by this department their gluten content is shown to be nearly 50 per cent greater than that of varieties from Algeria and Argentina. This is probably to be accounted for by the unusual humus content of the soil in the Russian region.

Comparative field tests of various varieties of macaroni wheats introduced by this department are being continued at several of the State Experiment Stations this year. Experiments in cooperation with this department have been inaugurated at the South Dakota Station, in which 60 to 75 varieties from various countries are employed mostly on a small scale. Similar experiments will be conducted with one or two other States of the plains next year. These experiments are to be carried on in a most thorough manner, and will soon indicate by their results which varieties are the best for the particular district. The methods of cultivation of macaroni wheats are much the same as should be observed in growing other wheats in semiarid districts. No doubt in many instances, however, attempts will be made to establish these wheats where it has been impossible to grow other wheats profitably on account of the extreme drouth. In such cases, of course, every means possible for conserving moisture should be employed. All plowing should be done very early—the preceding summer in cases of spring sowing—and the ground afterward cultivated lightly several times before seeding. These wheats invariably give best results on new ground. They should be sown at the rate of about a bushel and a peck to the acre. They do not stool extensively, but produce fine heads and grain, if sown only moderately thick. Seeding should always be done with the drill, and the drills should be deep and always run east and west. Macaroni wheats require an abundance of hot sunshine near harvest time. Continued humidity of the atmosphere is fatal to them. They should be pretty well ripened before cutting, and should not be harvested in damp weather if avoidable.

The Hessian Fly.

PRESS BULLETIN FROM ENTOMOLOGICAL DEPARTMENT, KANSAS EXPERIMENT STATION.

During the season past the Hessian fly has caused some loss and much comment in parts of the Kansas wheat belt, and numerous letters of inquiry reaching the Kansas Experiment Station have shown the need of wider popular information on this subject. An extended account of the insect appears in entomological bulletin No. 16, of the United States Department of Agriculture, which should be consulted by those interested in full details of life history. For practical purposes, however, the methods of preventive procedure are those of widest interest, and of these it appears that the most important are still the practices recommended by earlier writers.

Concerning the value of burning the stubble, and thus destroying the contained pupæ of the fly, opinion is somewhat divided. If done at once after harvesting, especially in fields where the header was used, this method is certainly effective, if practiced by the neighborhood in general. But by burning, not only are the pupæ of the fly destroyed, but the contained parasites as well, whose aid is the most important factor, after all, in the subjugation of the pest. Moreover, the burning of the stubble, in the opinion of some wheat-growers, robs the soil of important physical, if not manurial constituents, which should be incorporated by plowing under and not destroyed by burning. Early plowing of the stubble-ground, as soon as possible after harvest, if the ground be compacted afterward by harrowing or rolling, will serve the same end with less loss in this respect.

Considered in all relations, where one method alone is followed, it is best, in the writer's opinion, to depend upon late sowing. The adult insect flies and lays eggs according to season earlier or later in summer or fall, but can not withstand the frost; and wheat appearing after the first white frost of season will be free from attack. This fact is confirmed by the present year's experience of correspondents of the Kansas Station. Early sown areas, on the other hand, will sometimes be found so badly infested, through the massing of the insects thereon, that the wintering of the plant will be a matter of doubt.

If egg-deposit be delayed by the absence of suitable plants, the flies will remain alive for some time in waiting, but if proper opportunity is provided the eggs are laid at once and the insects then die. Small areas or strips through fields in infested localities may be seeded early, as trap crops, and after egg-deposits these may be plowed under, destroying the contained eggs or larvæ before the general seeding of the field.

Against the spring brood, which weakens the stalk and lightens the grain, little can be done except by means to limit the winter brood of larvæ. The thorough destruction of volunteer wheat, accompanied by late seeding, through their reduction of the numbers of insects wintering over, are the most practical means.

Owing to the situation of the larvæ down in the crown of the plant, there is little possibility of valuable results from pasturing the wheat during fall and winter. Where fields are pastured early, chance eggs may be destroyed before hatching, but the advantage thus gained will be slight, if any.

It is the combination of early sown trap-strips with general late seeding that is recommended for practice by Kansas wheat-growers.

E. A. POPENOE.

Feeding Wheat.

Feeding wheat to farm animals is not a novelty to the farmers who passed through the years of '93, '94, and '95 in this country, as many thousand bushels were fed during that time. Due to a very severe drouth which has caused almost a total failure of corn the farmer now has the choice of feeding wheat; of which he fortunately has plenty; or letting his stock go without grain. At 57 cents per bushel, wheat is by far the cheapest grain within his reach, and if the price of fat stock is maintained it can be fed with profit if the proper methods are followed. The feeder has the advantage of the experience gained from '93 and '94, and any one not familiar with them should get them as they have been widely published in reports and papers.

The value of wheat for hog food has been demonstrated by practical feeders and the experiment stations. Pound for pound it is equal or slightly superior to corn when properly fed. A bushel of wheat will produce from 12 to 15 pounds of pork when fed to thrifty shoats. Grinding at 5 cents per bushel pays well since when fed whole and dry about one-fourth passes through the hog undigested. Soaking does not lessen this materially, although the results are some better. Feeding sheaf wheat to fattening hogs has not proven economical, but with pigs and stock hogs on a light grain feed it is practiced with good results.

Little definite information is on record in feeding wheat to cattle although hundreds have been so fed with good results. In the few experiments at experiment stations in this line, wheat has been fed mixed with other grain. When fed this way it has given results fully equal to corn. At the Ohio station steers fed on a mixture of wheat-meal and bran required 6.7 pounds of grain to produce a pound of gain. At the Kansas station 12 steers fed on wheat-meal for sixty-three days required 5.72 pounds of grain for each pound of gain. This is 10.5 pounds of beef from a bushel of wheat. The sixty-three days were the first part of the feeding period. When the grain fed was limited in amount the steers ate it well without getting off feed. A thousand pound steer should not be fed over 16 to 18 pounds of wheat-meal per day as wheat will surfeit a steer more readily than corn-meal. Ground is the only condition in which to feed wheat to cattle and better results will be obtained with this if it can be mixed with bran or cottonseed-meal.

Wheat-meal makes good feed for dairy cattle but should be fed with alfalfa, bran, cottonseed or cottonseed-meal, for the best results.

With sheep wheat feeding has been very successful as the grain gives the best results when fed whole and dry, and the cost of preparation is saved. At

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the Michigan experiment station wheat fed to lambs returned 100 pounds of gain for each 553 pounds of grain fed.

Opinions differ much on the merits of wheat as a horse feed. Due to improper methods of feeding, many poor results have followed, but this should not detract from its worth for this purpose. Whole dry wheat can not be fed to horses with good results, especially to work or driving horses. Soaking it improves it some but grinding is by far the best method of preparing it for horses, but if it is fed as an exclusive feed, even in this condition, care will be necessary to avoid colic at times. Much better results will be obtained by mixing half bran, oats, or corn with the wheat or mixing it with chopped feed.

The composition of wheat is such that for the animal to make the best use of it some food rich in protein must be added. Cottonseed-meal can be used in most cases for this purpose. When corn or wheat is 25 to 30 cents per bushel this consideration has not much importance, but with the present prices the saving made by balancing up the ratio will be considerable.

There will be considerable question as to how wheat will pay out this year when fed to fattening stock, but there can be no question but that it will pay to feed it to growing and breeding stock rather than to sacrifice them or let them suffer and deteriorate.

One Hundred Balanced Rations for a Man.—V.

MARY WAUGH SMITH.

COOKING FOR BEST RESULTS.

Food is cooked to render it more easily digestible. This is accomplished by making it either more easily soluble or else by converting it into a more appetizing substance when it will be more freely acted upon by the digestive fluids. One often says jokingly of a person with weak digestion that he can not eat what he doesn't like but the things he likes do not hurt him. While this is not true in every case there is considerable truth in it in many cases.

While food is cooked to render it more easily digestible yet not all food is more easily digested when cooked. Raw cabbage, for example, digests more quickly than cooked cabbage. Raw eggs are better than cooked eggs if we could eat them in that state with enjoyment. Many people suppose that cheese is easier digested in the raw state than when cooked, because when improperly cooked it is nearly impossible to digest it; however it is benefited by cooking at a low temperature.

In cooking albumin, such as eggs, the temperature should be very low. Eggs heated to 150 degrees will slowly become solids, tender, resembling jelly in structure, very easy to digest. Fish and mutton need the same treatment. Fish will not break and lose its shape, which is desirable in serving, nor will it lose its juices like the fish cooked with the water boiling. It will be as well cooked, too, that is, as well done—better cooked. When albumin is subjected to a temperature of 212 degrees or over it becomes hard and tough. It is valuable as a cement in this form when cement is needed, but it is hard on the stomach when eaten as food. To "boil" eggs hard it will be necessary to cook them a longer time than by the old method but they will certainly become

hard if placed in water heated to 150 and set on the back of the range for half an hour where the water never reaches the boiling point. They are just as easy "stuffed" or prepared in other ways in which the old-fashioned hard-boiled eggs were used, and have a much higher food value because they do not overtax the digestive organs.

Starches should be cooked at 212 degrees for a time sufficient to burst all the starch grains. In finely powdered goods, corn starch or wheat flour, for example, the temperature needs to be as high but the time not as long as when cooking cracked wheat or oatmeal. The size of the grain should determine length of time of cooking. Well cooked breakfast foods taste better than those undercooked in addition to being better for the health of the eater.

In combining starch and albumin in the same dish it is desirable to cook the starch thoroughly and not overcook the albumin. To accomplish this a little planning is usually all that is required, for in preparing the food it is usually possible to cook the starch thoroughly before adding the eggs.

In roasting meat the object is to retain the juices within it and by driving off part of the water by evaporation to concentrate the juices contained in the meat. Certain laws have to be observed and when they are, roasting meat becomes a simple matter. Every housekeeper knows that the oven must be hot in the beginning. The smaller the piece to be roasted the more surface there is for the amount of meat, therefore higher heat is necessary in the beginning than if the roast is a large one. A small piece of meat can be hurried in cooking but a large roast requires plenty of time, frequent "basting" to keep the outer surface from drying too much, and a low temperature. Heat travels very slowly in the meat, and if one is planning to thoroughly cook a roast the larger it is the more time will be necessary.

In boiling meat if the juices are to be retained the heat must be 212 degrees and the water boiling rapidly in the beginning. The meat should then be allowed to cook gently the remainder of the time. If soup is to be prepared and it is desirable to cook the juices out of the meat it should be cut up, placed in cold water and cooked slowly for a long time.

In cooking vegetables for best results it is necessary to have them as fresh as possible. Where they are purchased at a store, however, and the age is doubtful, one can freshen them considerably by placing them in cold water for a couple of hours before cooking. They should be placed in boiling salted water and are much better if allowed to use up the water just at the time they are thoroughly cooked. To do this it will be necessary to be very careful, but it is worth while to be careful and save the vegetable flavor.

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* ED. M. MOORE, Secretary.

The Stock Interest.

THOROUGHBRED STOCK SALES.

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

October 8-10, 1901—American Berkshire Association Sale at Kansas City.
 November 21, 1901—Ernst Bros., Shorthorns, Tecumseh, Neb.
 November 20-22, 1901—National Hereford Exchange, E. St. Louis, Ill. (Sotham management.)
 December 10, 11 and 12, 1901—Armour-Funkhouser, Herefords, Kansas City.
 December 13, 1901—H. C. Duncan, Shorthorns, Kansas City.
 January 28 to 31, 1902, for Sotham's Annual Criterion Sale at Kansas City.
 February 25-27, 1902—C. C. Stannard and others, at Kansas City, Mo., 200 Hereford.
 March 25-27, 1902—National Hereford Exchange, Chicago, Ill. (Sotham management.)
 April 22-24, 1902—National Hereford Exchange, Kansas City, Mo. (Sotham management.)
 May 27-29, 1902—National Hereford Exchange, Omaha, Neb. (Sotham management.)
 June 24-26, 1902—National Hereford Exchange, Chicago, Ill. (Sotham management.)

Horse Registry Associations.

N. J. HARRIS, SECRETARY AMERICAN HORSE REGISTRY ASSOCIATION.

Of the many questions pertaining to horse breeding, none are less understood than that of registrations. Most persons believe that most well bred horses are or should be recognized by some registry association, and that the various registers or stud-books are of long standing. The former opinion is true, but the latter is erroneous. All of the horse registers, with the exception of the Thoroughbred and Standard-bred, are of very recent origin.

The first stud-book of any breed of draft horses was made by J. H. Sanders of the Breeders' Gazette, at the instance of M. W. Dunham, for recording the imported horses of the latter. This was a very good move, but was done at the time for commercial purposes instead of the development of the breeds. But he builded better than he knew, because registration has since been a great benefit in developing the breeds. The first stud-book was founded in 1878. All of the other various stud-books for draft and coach horses have been made since that time. Another common error is the belief in the distinctness of the draft and coach breeds of long standing. Nothing can be further from the truth. The various so-called draft breeds are of common origin, that of the great black war horse of ancient Flanders. This is not only a plain matter of history, but is confirmed by the similarity of most of the earlier importations, whether they came from France or England. The feather on the leg of the French was as marked as on the English or the Scotch. This only shows that the so-called breeds are only families of the same great breed and can not only be inter-bred with impunity, but with a decided advantage as experience abundantly shows.

To those interested in horse breeding the following information will be of great value. It will answer many questions and should be kept for further reference. The number of registrations in the following volumes include those prior to January 1, 1901:

While all the various registry associations are useful in their way, the American Horse Registry Association is worth more than all the others from an American point of view. It means the building up of breeds of horses that will in the near future bring additional fame to this great country of ours.

Secretaries of the different associations will be glad to furnish any additional information that may be desired concerning the respective breeds.

American Horse Registry Association, Des Moines, Iowa. N. J. Harris, Secretary. This, like all other worthy institutions, was born of necessity. It was founded in the belief that America, like all other great nations, will have breeds of horses distinctively its own. And on the further fact that all the so-called breeds of draft horses sprung from the same source, viz., the ancient Flanders, and are, therefore, the families of the same great breed, and that all the lighter horses came from the Arabian or desert horse.

The association records four classes of horses, viz., roadster, draft, coach and carriage. Horses are recorded in their respective classes on individuality and breeding. Every horse offered for registration is subject to a rigid score card and veterinarian inspection. If the animal fails to score 80 points or is conspicuously bad in conformation in any region or points, or possesses a bad disposition, transmissible unsoundness, he is rejected, however desirable his breeding. The plan is to incorporate all of the desirable qualities of the various so-called draft breeds into one typical American draft horse, by eliminating the light bone, flat, brittle feet, shallow

chest, light waist, long back and bad eyes, that are continually being produced, by the prevailing plan of recording.

The size, style, action, beauty, grace, and manners of the European coach horse, combined with the speed and endurance of the large sized American trotting horse will produce the ideal American coach and carriage horse.

The American roadster is produced by crystalizing the utility qualities of the American trotter. The small size, short, thick neck, low withers, long back, steep rump, rattle heads, and crooked hind legs are eliminated, and instead the good size (15½ hands and 1,000 pounds), graceful neck, oblique shoulders, short back, smooth strong coupling, a long croup, a high set tail, and a set of broad, flat, cordy limbs, with only enough angularity to give the necessary elasticity. This is to be attained by recording nothing in the Roadster Register short of the requirements. The association regards individuality as of as much importance as bloodlines, and that in every record the horse must accompany the pedigree. In this respect the American Horse Register Association is clearly in advance of all others, in that undesirable qualities are not encouraged by the association. Their registers were founded in 1891, and stand third in the list of associations as to the number of horses recorded.

American Association of Importers and Breeders of Belgian Draft Horses.—J. D. Conner, Jr., Wabash, Ind., Secretary.

American Breeders' Association of Jacks and Jennets.—J. W. Jones, Columbia, Tenn., secretary. Number of registrations, about 750; date of first entry, 1891. Registration fees: To members, \$2 for living animals; transfers and certificates, \$1 each; fees to non-members, double. All similar associations are in Spain. The American association will cooperate with any foreign society recommended by American consul, if such society is found to have satisfactory rules. Eligible to registry: All animals when black with light points, as follows: Native, 14½ hands high, if of unrecorded sire or dam; jacks of recorded ancestors if 14½ hands, jennets 14 hands.

American Cleveland Bay Breeders' Association.—R. P. Stericker, Attica, N. Y., secretary. Number of registrations, 1,524; date of first entry, November 10, 1885. Registration fees: To members, stallions \$2, mares \$1; non-members, stallions \$5, mares \$3. Fees are doubled if animals are not recorded within two years from date of birth or importation. Affiliated foreign societies: Cleveland Bay Society of Great Britain and Ireland; Yorkshire Coach Horse Society of Great Britain and Ireland. Eligible to registry: Mares bred in America, four crosses by registered sires; stallions bred in America, five crosses by registered sires; stallion or mare whose sire and dam are both recorded in the American book or one of the affiliated foreign books, and imported animals recorded in one of the affiliated foreign books.

American Clydesdale Association.—Alex. Galbraith, Janesville, Wis., secretary. Number of registrations, 10,100, about one-half being stallions and one-half mares; date of first entry, 1879. Registration fees: To members owning stud-books 1 to 8, inclusive, \$3; non-members owning these books, \$4; non-members not owning books, \$6. Transfers for members, \$2; non-members, \$4. Extended pedigree certificates, same terms as transfers. Affiliated foreign society: The Clydesdale Horse Society of Great Britain and Ireland, 93 Hope street, Glasgow, Scotland. Eligible to registry: Animals whose sire and dam are recorded in the American or English affiliated book; animals recorded in the English book; stallions having five top crosses and mares having four top crosses by sires recorded in American book; but unsound or unworthy animals will not be admitted.

American Hackney Horse Society.—A. H. Godfrey, room 50, Astor Court Building, West Thirty-fourth street, New York City, secretary. Number of registrations: Stallions, 602; mares, 1,140; mares inspected and recorded, 117. Registration fees: Members' stallions, \$3; members' mares, \$2; non-members, \$3. Inspection fees: Mare or filly certified to by a "full-registered" hackney stallion, \$2; other mares, \$2, and actual expenses of inspectors. Affiliated foreign societies: English Hackney Horse Society, London, England, and Canadian Hackney Horse Society, Toronto, Canada.

American Percheron Horse Breeders' Association.—S. D. Thompson, Chicago, Ill., secretary.

American Shetland Pony Club.—Mor-

timer Levering, Lafayette, Ind., secretary.

American Shire Horse Breeders' Association.—Charles Burgess, Wenona, Ill., secretary. Number of registrations, 5,924; date of first entry, November 1, 1886. Registration fees: To members, for each animal, \$2; non-members, \$5; transfer, \$1. Affiliated foreign society: The Shire Horse Society of Great Britain, J. Slughgrove, secretary, Hanover Square, London, England. Eligible to registry: Stallions and dams whose sires and dams are recorded in the American book or the affiliated English book; stallions and mares recorded in the affiliated English book, and stallions having five top crosses and mares having four top crosses, in each case by sires recorded in the American book.

American Suffolk Punch Horse Association.—Alex. Galbraith, Janesville, Wis., secretary.

American Trotting Registry Association.—J. H. Steiner, room 1103, Ellsworth building, 355 Dearborn street, Chicago, Ill., secretary. Number of registrations: Last volume of registry contained about 18,000 registrations; previous volumes not so many; 14 in all; first published in 1871. Registration fees: To stockholders, \$1; non-stockholders, \$2; double for animals over two years old. Certificates of registration, 50 cents; transfers, 25 cents.

French Coach Horse Society of America.—S. D. Thompson, Chicago, Ill., secretary.

German, Hanoverian and Oldenburg Coach Horse Association of America, J. Crouch, Lafayette, Ind., secretary. Number of registrations, 600 stallions, 120 mares; date of first entry, December 30, 1889. Registration fees: To members, \$2.50; non-members, \$5 for each animal if application is made within four months of importation or birth, after that time, double fees. Transfers, \$1 to members, \$2 to non-members. Affiliated foreign society: None. Eligible to registry: Imported animals of properly authenticated foreign registry; native horses whose sires and dams are crosses, and mares having four crosses.

National French Draft Association.—C. E. Stubbs, Fairfield, Iowa, secretary. Number of registrations, 10,630; association organized February 9, 1876. Registration fees, \$2 to members, non-members, \$4; for transfer, \$1 to members, non-members, \$4; for transfer, \$1 to members, \$2 to non-members. Affiliated foreign society: French Draft Horse Stud Book. Eligible to registry: Imported animals properly vouched for by the affiliated French society; animals whose sires and dams are registered in the American book; stallions having five top crosses, and mares having four top crosses by sires recorded in the American book.

The American Morgan Register.—Joseph Battell, Middlebury, Vt., treasurer. Number of registrations, about 5,000; date of first volume, 1894. Registration fees: Stallions one year old or over, \$2; mares, geldings and colts under one year, \$1. Affiliated foreign society: None. Eligible to registry: Any meritorious animal tracing in direct male line to Justin Morgan, having at least one sixty-fourth of his blood; provided the dam and the sire's dam be of approved speed or roadster blood; any meritorious animal having one-thirty-second or more of the blood of Justin Morgan. Provided, the dam and the sire's dam be of approved speed or roadster blood; also any animal whose sire and dam are recorded in the Morgan Register.

The American Saddle Horse Breeders' Association.—I. B. Nall, Louisville, Ky., secretary. Number of registrations: Stallions and geldings, 1,572; mares, 1,895; date of first entry, July 31, 1891. Registration fees: To members, \$1; non-members, \$2; if registered during the year foaled, one-half. Eligible to registry: Horses having recognized gaits and tracing to registered animals under prescribed conditions.

The Oldenburg Coach Horse Association of America.—C. E. Stubbs, Fairfield, Iowa, secretary. Number of registrations, 200; association incorporated March 5, 1892. Registration fees: To members, \$2; to non-members, \$4. Transfers, \$1 to members; \$2 to non-members. If application is not made within one year from foaling or importation, the registration fee is \$5. Affiliated foreign society: Gesellschaft Zuchter Oldenburger Kutschperde, of Oldenburg, Germany. Eligible to registry: Any imported animal properly vouched for by the affiliated society; animals whose sires and dams are registered in the American book; stallions having five top crosses, and mares having four top crosses by sires registered in the American book.

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The Type for the Farmer.

I. C. WRIGHT, BEFORE IOWA SWINE BREEDERS' ASSOCIATION.

The subject assigned me to define to this association is one that will be somewhat of a task, as it is conceded that very few men see alike or have the same idea in regard to the same thing. You may take at random ten men out of the number present and have each one write out a description of what would be a type of a hog for the farmer, and no two of them would be anything near the same. You may select at random from our association any number of swine breeders, and no two of them would be likely to give the same description of a pig were he written to by a purchaser. If breeders differ so much how would it be possible for a type to be given that would be satisfactory even to a farmer? True, every breeder has his idea of what constitutes a perfect pig, but we see great men and great minds differ. Write to a breeder a description of a pig you want to purchase as a breeder to head your herd, and be sure to state plainly all the different points you wish the pig to have, and also what points you don't want him to have, and about three-fourths of the answers would be that they could fill the description to the very letter. And when the pig comes, what? Perhaps the very opposite to what you sent for. So we see that we all differ as to what constitutes a model pig.

The farmer's hog should be of medium length, deep body, broad back, straight sides and short legs, also to stand well up on feet. He should have a quiet disposition and be inclined to be a little lazy, so after being fed he will lie down and get the good of his corn. He should also have a neat head well set on the body, so that when fat and butchered there would be as little waste as possible. In producing such a hog it is very necessary to pay particular attention to the parent stock. In the first place, the sows should be well bred and a little lengthy, with good, well developed bodies, good feet and limbs, and should also be good sucklers.

The boar should be a good, thoroughbred, well-developed, compact animal of only medium length, and of great vitality and a good feeder, with good, medium bone, stand well up on his toes, but not of the long-bodied kind. The farmer wants a hog that will mature early, say, at six, eight or ten months, and average in weight from 200 to 350 pounds. The farmer is in the hog business for the money he can make out of it, and he wants a hog that will give him the greatest number of pounds of pork of the best quality in the shortest time and on the smallest amount of feed possible.

All farmers do not get good results from the hog. Raising hogs and making pork is a trade and has to be learned by experience. About three-fourths of the farmers get the experience but not the pork, and the other fourth make the pork and get the money.

DISCUSSION.

Mr. A. M. Caldwell—I do not want that paper to go by undiscussed. I think that is one of the best papers that has been read before this meeting. There is an idea out that the farmer's hog is one thing, and the breeder's hog is another. There is no greater fallacy than that. The breeder's hog is the farmer's hog. The one he describes is the one the breeder is trying to produce, and it is just the one for the farmer.

Dr. T. B. Hammer, of Des Moines—I think it is to the honor of Mr. Wright that there is nobody wishing to discuss this question, because we all feel as he did; I feel like the darkey did. He said they had had a big argument that morning, and being asked what it was about replied that his master had said that sweet potatoes grew better in sandy ground, and he said, "And I said so too." (Laughter.)

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Established in 1863.

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**NOTICE EXTRAORDINARY.
BLOCKS OF TWO.**

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

There is at present a probability that the Angus breeders will take part in the great Kansas City show and sale, notwithstanding the announcement a week ago that they would not be represented.

Henry Clews, the Wall Street broker, figures it out that the "shortage of the corn crop" will have little influence on the western demand for money. The extra size of the wheat crop and the higher prices of corn are expected to equalize the aggregate money values to about the usual level.

Volume 47 of the American Short-horn Herd Book, in 2 stout volumes, is received. Part 1 registers the bulls, and part 2 the cows. The volumes are ready for general distribution, and should be in the hands of every breeder of Shorthorns. Applications should be made to John W. Groves, secretary, Springfield, Ills.

Replying to inquiries from the editor of the KANSAS FARMER, Mr. Jas. H. Chenoweth, of Lathrop, Mo., says: "I would commence pasturing cow-peas when the pods begin to turn. The cow-peas do not grow well in cool weather, but grow very fast in hot dry weather. For early pasture would sow the early variety so they will be on hand in time for early drouth. In this country [about 40 miles east of Atchison, Kans.], can get them in as early as May 10. The blackeye is the earliest we have."

WOVEN WIRE AGAINST WOLVES.

That fencing against wolves is cheaper than feeding them on sheep and other domestic animals is proven by the experience of Mr. A. T. Howden, of Jetmore, Hodgeman County, Kans. Mr. Howden has been in the sheep business in his present locality for many years. His ranch consists of 12 sections of land. A few years ago he began fencing for the protection of ewes and lambs. He now has 7 miles of fence and will continue building more until his entire ranch is fenced into

pastures of suitable sizes for the most economical handling of sheep. A 26-inch Page woven wire fence with three barbed wires above proves an effectual barrier to enemies of the sheep.

Mr. Howden formerly kept Merino sheep, but has lately bred to Cheviot on account of the earlier maturity of the lambs. The Cheviots averaged 7 pounds of wool last season. This is less than he obtained from his Merino flock, but the cheviot wool brings a better price, while the profits on the mutton are greatly in favor of the Cheviot.

It is to be hoped that Mr. Howden's success in protecting his sheep in fenced pastures will result in the extension of this method and the establishment of a large and profitable sheep industry in Kansas.

"AGRICULTURE AT THE AGRICULTURAL COLLEGE."

In the Topeka Capital of last Sabbath morning there appeared two lengthy communications from the Kansas State Agricultural College, one from E. R. Nichols, president, the other from H. F. Roberts, professor of botany, and botanist of the Kansas Experiment Station. These were written as answers to an editorial which appeared in the KANSAS FARMER of August 15 under the heading, "Agriculture at the Agricultural College." Common courtesy would have suggested that these answers be first offered to the paper in which originated the editorial answered. But assuming that there was some weighty reason for this lapse of courtesy in a quarter where such refinements are to be expected, the KANSAS FARMER copies from its excellent contemporary the two letters, and follows with a cursory examination of some of their contents.

It will be remembered that the KANSAS FARMER editorial was in advocacy of a proposition unanimously submitted to the college regents by its committee on farm and experiment station, which committee consists of three eminent gentlemen, viz.: Hon. F. D. Coburn, secretary of the Kansas State Board of Agriculture; Capt. J. S. McDowell, a man of large experience and success in the practical affairs of the world; and Capt. S. J. Steward, a practical farmer, whose locality has repeatedly honored itself by electing him to the State Senate.

For convenience of reference the editor of the KANSAS FARMER has placed subheads in the lengthy articles copied from the Capital. These must not be considered as expressions of the writers of the articles, but only as land marks in a vast expanse of words, placed there by the editor.

From Prof. H. F. Roberts.

From an article in your issue of the 14th, entitled "Not Enough Agriculture," I would infer that it is not quite clear to the writer of the same, or to the writer of the quoted editorial from the Kansas Farmer, that anything is being done at the Kansas State Agricultural College and Experiment Station in the line of cereal-breeding, analogous to what has been accomplished in wheat-breeding at the Minnesota, and in corn-breeding at the Illinois experiment stations, and it seems to him highly desirable that experiments in this direction be inaugurated immediately. To remove the misapprehension likely to be aroused by the article in question, I desire to present the following facts for the consideration of your readers:

WHEAT-BREEDING AT THE KANSAS STATION.

Experiments in wheat-breeding were commenced at the Kansas Experiment Station in the fall of 1897, under the joint management of the botanical, chemical, and agricultural departments. Numerous varieties of wheat were planted to serve as parents for crosses to be made the following spring. In the spring of 1898, representatives from the botanical and agricultural departments entered upon the work of crossing or hybridizing many different varieties of wheat. This operation is a slow and difficult one, requiring care, skill, and judgment, and calling not only for great dexterity in the actual manipulations of crossing, but necessitating likewise intimate familiarity with the botanical characters of the wheat plant as a whole and special knowledge of the peculiar characteristics of all of the many different varieties to be experimented with. This knowledge is only acquired by years of experience and must be supplemented by chemical, milling, and baking tests before a variety of wheat can be adopted as a standard high-bred strain to be recommended for general growing.

THIRTEEN WORKERS IN 1898.

In all 855 heads were selected for crossing and 16,762 flowers were pollinated, of which 2,899 "set seed," making the percentage of success for the season's work, 17. The work done by the two departments operating together, according to the report for the year prepared by George L. Clothier, then assistant in the botanical department, is as follows:

BOTANICAL DEPARTMENT.	
No. of heads worked upon.....	840
No. of flowers pollinated.....	16,477
No. of seeds resulting.....	2,848
FARM DEPARTMENT.	
No. of heads worked upon.....	15
No. of flowers pollinated.....	285
No. of seeds resulting.....	51

This disproportion was due to the fact that the botanical department kept a force of 12 in the field including the botan-

ist and the assistant, while the farm department sent but 1 representative during the process of the experiments. This, as matter of fact, was the only season during which the farm department participated in the work of cereal-breeding, and from the spring of 1898 the wheat-breeding has been conducted by the botanical department alone.

FOUR WORKERS IN 1901.

Since the work of the chemical department in the wheat-breeding experiments is to consist of analyses of the different strains of wheat produced by cross-breeding and selection, its participation can not be expected until the accumulation of seeds of these strains in greater quantities. In the fall of 1898, 2,528 grains of crossed wheat, obtained as the result of the previous spring's work, were planted either in pots or experimental ground plots. These seeds represented 54 different crosses, originating from 19 varieties of wheat. Owing to an exceedingly severe winter, a large number of the varieties of wheat planted as intended parents for the following year's crossing, were killed. Furthermore the operations were hampered by lack of funds, so that in the spring of 1899 but 29 crosses were made, of which but 1 yielding 3 seeds, survived until the harvest of the next year. In the fall of 1899, 98 varieties of pure strains of wheat were planted as the stock for the selection of parents. Of these, 43 were obtained from the farm department to replace losses from the freeze of the previous winter; 18 from the United States Department of Agriculture, and 37 from various other sources. A record on cards was kept of the condition of these wheats through the winter of 1899-1900, and filed for future reference. In the spring of 1900, 825 heads from 12 different varieties were selected for crossing. In all 15,197 flowers were pollinated, out of which 3,222 "set seed," making the average of success for the season 21 per cent. These seeds are distributed among 43 crosses. In the present year, 4 persons from the botanical department continued the work of cross fertilization and selection. In the crossing 40 different varieties were involved as parents. In all 3,383 flowers were pollinated out of which 672 bore seed, making the average of success 29 per cent.

The botanical department has now on hand, as the result of the past three years of cross fertilization, 124 numbers of Kansas cross-bred wheat, 42 numbers having been lost, destroyed or discarded. In addition, the department has a considerable number of varieties of uncrossed wheats from which selected seed has been collected from year to year, with a view to breeding up desirable pure strains by selection alone. The work of crossing now needs to be supplemented by a number of years of careful selection from the very great number of variations arising as the result of cross-fertilization. Most of these variations will unquestionably ultimately have to be discarded, and the work of breeding concentrated upon those few to which experience points as the most promising from the standpoint of yield, resistance to drouth, and chinch-bugs, and to rust, and with respect to milling and baking qualities.

From this it will appear that work in wheat-breeding has been in progress at the Kansas Experiment Station for four years past, under the joint management of the botanical, chemical, and agricultural departments for the first year, and under the management of the first two departments for the succeeding three years.

THREE WORKERS NOW.

Almost all of the operations of cross-fertilizing, including the harvesting, threshing, and tabulating of results, has been done by student labor, under the direction and with the co-operation of the botanist and assistant. These students, although working for pay, which would be as nothing as compared with what an expert especially employed would expect, have attained a high degree of dexterity and skill in the manipulations, and can be depended upon for still better work in coming seasons. Three such men are now in the employ of the department. From year to year other students of equal ability will be found to take their places, as these graduate and leave the institution.

As the result of the 3 preceding seasons the botanical department had on hand for planting last fall, 78 pints of crossbred-wheats, distributed among 84 numbers. As the result of this year's work we have on hand at the present time in all, 173 pints of crossed wheat seed, belonging to 124 numbers, and 90 bushels of uncrossed seed belonging to 71 different varieties, and which have been obtained as the outcome of four years' careful selection. During the present year the wheat-breeding has been conducted on 5 acres of rented land 2 miles west of the college. The number of crosses attempted during this season was greatly less than in 1898 and 1899, for the reason that at the present time the successful crosses have resulted in seed from which have sprung such a large number of varieties, that it is the opinion of this department that the isolation of such varieties, and a process of rigid selection of the best of these will be more important for the next few years than the obtaining of a greatly increased number of crosses. In the words of a writer in the Journal of the Royal Agricultural Society, Third Series, Vol. 4, (1893), page 693, "the work of the cross-breeder begins with the delicate process of artificial fertilization, but it has to be continued for years in the careful selection of one or more desirable forms, and in their continued cultivation, until, after the persistent elimination of sports and defective plants a fixed variety is established."

THE DAKOTAS.

Minnesota is the only State besides Kansas in whose experiment station systematic and continuous work has been carried on in wheat-breeding, by cross fertilization and selection for the obtaining of improved varieties. While it is true, that the Minnesota station began "variety tests" of wheat in 1888 (as did the Kansas station, also), as a matter of fact, cross-breeding experiments were not commenced until some time after 1892.

The reason why wheat-breeding in the true sense of the term was not inaugurated earlier than 1898 in Kansas may find an explanation in the fact that while Minnesota and the Dakotas have been from the beginning pre-eminently and almost exclusively, wheat States, the State of Kansas has fluctuated continually between wheat and corn as a main staple. In the '70s, in the central part of the State, wheat was a universal crop. Wheat became,

however, in the late '80s an unpopular crop. To show the conditions referred to I will give this table of ratios of wheat acreages in the State from 1888 to 1892, taking wheat as 1:

1888	Corn.	6.24
1889	4.27
1890	2.47
1891	1.39
1892	1.36

THEREFORE DEFERRED.

From this it is at once apparent that wheat only gradually came back into favor. Would this station have been justified in launching into a line of experiments at once protracted and expensive in the breeding of wheat when corn was, to all appearances, destined to be the main crop of the State? What the botanical department did do at the time, was to inaugurate a series of experiments in cross-breeding and selection of corn. Meanwhile the Minnesota station, owing to the very evident fact that wheat was and would remain the staple crop of the State, was well justified in bending great energy in the direction of wheat improvement.

Following are statistics of wheat and corn acreages in Minnesota, Kansas, and North Dakota for 1888, taken from the report of the United States Secretary of Agriculture for 1889, pages 224, 225.

Minnesota	Wheat.	Corn.
Kansas	3,097,916	703,847
North Dakota	1,050,000	5,924,566
.....	2,161,429	18,886

In 1898, when this station inaugurated the wheat-breeding experiments the acreages in the States above mentioned was as follows:

Minnesota	Wheat.	Corn.
Kansas	4,965,159	954,125
North Dakota	4,573,198	8,302,628
.....	3,869,892	24,308

AN EXCELLENT REASON.

Thus it will be seen that by the time the Kansas station took up wheat-breeding the economic conditions were ripe for its inception. Let it be noticed, that as compared with the work in this direction done at this station, that which has been accomplished in one of the greatest of the almost exclusively wheat States of the country—North Dakota—is as nothing. So much for the wheat-breeding at the Kansas experiment station. The reason for not publishing details of this work as it has been carried on from year to year lies in the unwillingness which every scientific man feels to advertise results in advance of accomplishment. In the words of a writer on the subject of wheat improvement in Bulletin No. 2, Vol. 13, (July, 1900), of the Tennessee Experiment Station:

YEARS OF CONTINUOUS WORK.

"This character of work is of necessity due to the fact that it is difficult to secure results of any value. This is due in part to the fact that it is difficult to secure desirable new characteristics, and the permanent engrafting of them is a long and difficult task. In attempting cross-breeding many failures will be encountered for one success. It is a hard matter to determine beforehand the characters in distinct varieties of wheat that will 'nick' well when crossed, and this makes the work rather empirical in nature and uncertain in its results."

WHY DOES KANSAS WORK ON A SMALL SCALE?

In view of these facts and the further fact that in Minnesota, with vastly greater funds available and with experiments conducted on a vastly larger scale, it has taken thirteen years to produce and "fix" 4 high grade varieties of wheat, and which are only just now being distributed among prominent farmers for more extensive planting, the Kansas station has reason to feel strongly encouraged.

BREEDING CORN AT THE KANSAS STATION IN 1888.

Now a word as to the work in corn-breeding at the Kansas station.

During the years 1888, 1889, and 1890, the botanical department of the station, under Professor Kellerman, carried on a most valuable series of experiments in the breeding of corn by cross-fertilization and selection, the results of which are reported in the first three annual reports of the station. After the departure of Professor Kellerman the corn-breeding was discontinued until 1898, when parallel experiments were commenced on the college plots and on lots in Manhattan (approximately bottom land). In May, 1898, 33 varieties of corn were planted for parents of prospective crosses. In this year 581 crosses were made, 302 in the town, and 278 on the college plots. A card catalogue of all these crosses is now completed with the observations recorded therein, which have been made up to the present time. In the fall of 1898 all of these numbers were planted, and close fertilized in the spring of 1899. The best ears of each variety were then selected and analyzed.

CAPITAL LETTERS.

In case more than one ear was analyzed the capital letters of the alphabet were used to designate them. The succession of letters also indicate decreasing grades in sizes of the ears. All of these ears from which rows of kernels had been taken for analysis were planted in the spring of 1900, and in the succeeding fall the best and the largest from the plants coming from the seed mentioned were gathered. This present spring descendants of all of the original 581 varieties have been planted with the exception of those numbers which have been discarded from year to year on the basis of the chemical analysis. It may be stated in general that the basis of selection of the corn from year to year and the basis for future crossing is the nitrogen content of the kernel. Where a variety has shown a manifest tendency toward a low producing capacity, however, it has been discarded in any event. The general lines of work planned for the future in corn-breeding will lie along the general practice, which has been for some time successfully followed in the Illinois experiment station.

TIME, MONEY, PROGRESS.

It is the opinion of the writer that considering the outlay in time and money, the people of Kansas have reason to be satisfied with the progress of cereal-breeding at the experiment station. We have succeeded in forming a plan of co-operation with the cerealist of the United States Department of Agriculture, which will en-

able the botanical department here to avail itself of the experience of government experts at absolutely no additional outlay in money on the part of the station.

The agricultural public of Kansas may rest assured that this work in cereal-breeding, so important to the State, will be pushed by the Kansas Experiment Station as fast as the funds made available for this purpose will permit.

Pres. E. R. Nichols in Sabbath Morning's Capital.

Some criticisms of the agricultural college, which recently appeared in the Kansas Farmer and copied in other papers, should, perhaps, be answered by placing the facts before the public.

THE LAW IN THE CASE.

"The leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislature of the States may respectfully prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

It will be seen from the above that the States, through their several boards of regents, have considerable latitude in the work to be done at the agricultural colleges, provided they include courses in agriculture, engineering, and military tactics. It is usually assumed that domestic science is properly a part of the work of the agricultural colleges.

KANSANS CHOICE.

Assuming that the first year students would select courses in the same ratio as the second, third and fourth year students did last year, the students in the different courses would be as follows: Men, total, 955; in agriculture, 363; in engineering, 308; in general science, 285; per cent in agriculture, 37.9; per cent in engineering, 32.2.

Table with 7 columns: State, Total, Agr., Eng., Dom., Per cent Agr., Per cent Eng., Per cent Dom. Rows include Kansas, Indiana, Iowa, Oklahoma, South Dakota.

The above is a comparison of the attendance and number of students in agriculture, engineering, and domestic science in States similar to Kansas. In Missouri, Illinois, Wisconsin, Minnesota, and Nebraska the agricultural college is a part of the university and no comparison can be made.

TWO TYPICAL VIEWS.

"There are in the West two typical views as to the purposes and proper scope of agricultural colleges. According to one view an agricultural college ought to be a high school for farmers' sons and daughters—a sort of finisher of the work of the common schools—perhaps a farmers' academy—at most a low grade university, where a little of a good many things should be taught with some illustrations from the farm and shop.

PRESIDENT NICHOLS INFERENCE.

This implies that the agricultural college of this State belongs to the former and not latter type as it should. An examination of the following four years course in agriculture will convince anyone that the course offered conforms to the latter type.

science 3, mathematics 5, drawing 3, English 5, oratory 2, history and economics 4. The sciences which precede agriculture in the above list are the foundation upon which agriculture rests and are essential to a proper understanding and appreciation of the subject.

All of the sciences in the agricultural course as well as in all other courses are taught by the laboratory method. In addition to this practice work each student puts in one hour a day in actual work under skilled instructors and with modern tools.

APPRECIATED.

That the value of the agricultural college is appreciated is shown by the increase of students during the last two years. The per cent of increase for the past six years is as follows: 1895-6, 13.1; 1896-7, 13.4; 1897-8, 9.4; 1898-9, 8.3; 1899-1900, 25.7; 1900-1, 20.8.

That the work of the college in the past has been appreciated is shown by the large number of graduates occupying prominent positions in the United States Department of Agriculture and by the still larger number serving as professors and teachers in the agricultural colleges and industrial schools—18 of these being young women teaching domestic science.

FIFTEEN THOUSAND DOLLARS.

Quoting again from the article referred to: "The fact will be recalled that the Kansas experiment station has had the appropriation of \$15,000 a year from Congress during the identical years in which like appropriations have been received by other States. In some lines of experimental work the Kansas station has issued reports of great value. It must be confessed, however, that our experiment station has not on the whole held a place in the front rank.

WHO EXPECTS IT?

It is hardly to be expected that the Kansas experiment station, with an annual appropriation of \$15,000 under the direction of 15 workers, could accomplish more in all lines of investigation than 50 odd experiment stations with an annual expenditure of over 1,000,000 dollars under the direction of 687 workers can accomplish. It is easy enough to pick a station here and there that has done more than the Kansas station in some particular line and in this way obscure and belittle the work actually done in Kansas.

The experiments with black leg during the past four years, and the sending out of hundreds of thousands of doses of vaccine during the last two years, have been worth more to the farmers of Kansas than the college and station have cost since their organization. The recent discovery that mouldy corn will cause death of horses will be very valuable to horse growers of the State.

PROMISING EXPERIMENTS IN PLANT-BREEDING.

The station has under way some very promising experiments with wheat, corn, grasses, etc. It already has 124 crossed varieties of wheat—more than any other station. That many of these are valuable is quite certain, and is nearly equally certain that a few will be valuable. The resolution introduced by the experiment station committee and postponed by the board involves the transfer of wheat crossing and selection experiments from the botanical department, where it has been successfully conducted for the past four years with the results indicated above, to the farm department.

ASKS FOR PROPHECY.

Will some one please tell the experiment station council what experiments to begin now, in order that ten years hence Kansas may excel all other stations in all lines of work. Will some one kindly predict the most valuable farm product in Kansas in 1901.

Comments by the Kansas Farmer on President Nichols' Paper.

We will first notice a few points in President Nichols' answer to the KANSAS FARMER in the Topeka Capital. The quotation of the law in the case is timely and establishes the fact that the colleges provided for in the act signed by Abraham Lincoln were expected to be decidedly utilitarian institutions. The time is not so very long gone when the question of "utilitarianism" and "anti-utilitarianism" was a very live one in discussions concerning educational institutions. In some it was settled in one way and in some another, with the

general result that during the last forty years utilitarianism has advanced. There may be still, however, an occasional antiquated educator to whom one would offer an unpardonable affront to call him a utilitarian. Such an educator would be greatly out of place in an agricultural college, and it is believed there are none in the admirable institution presided over by the writer of the article now under consideration.

In the editorial which seems to have called President Nichols before the public last Sabbath morning, the KANSAS FARMER alluded to the fact that the people of Kansas are an eminently practical people. They may indeed be said to be ultra-utilitarians. The farmers of the State are nearly a unit in favor of the education that is useful and believe that as good mental development can be had by learning things worth knowing as by giving attention to those not likely to be used.

In this connection the editor awaits explanation of the meaning intended by President Nichols in alluding to these as "the special courses for which SOME MIGHT MAINTAIN the agricultural colleges were especially endowed."

The "two typical views" quoted by the president from the KANSAS FARMER editorial are apparently conceded to be correct. In our editorial they were preceded by an example from New England in which radical action has recently been taken which seems to place the Eastern agricultural college in the class first described. But it is incomprehensible to the writer how President Nichols could wring from the quotation, or from the context, or from both quotation and context, the inference that "This implies that the agricultural college of this State belongs to the former and not to the latter class, as it should."

THE FIFTEEN THOUSAND DOLLARS.

The KANSAS FARMER is honored with another quotation from its editorial. In quoted paragraph the editor found it necessary to confess that while enjoying the congressional appropriation of \$15,000 a year for the identical years in which like appropriations have been had by other States, and while in some lines of work the Kansas station has issued reports of great value, yet on the whole our experiment station has not held a place in the front ranks. That honesty required this confession can not be regretted more by the president of the college than by the editor of the KANSAS FARMER.

Nobody expects that the Kansas Station "could accomplish more in all lines of investigation than 50 odd experiment stations * * * can accomplish." The KANSAS FARMER has always heralded the good work done by the Kansas station. The station workers are the servants of the State, notwithstanding the fact that the money to pay them is appropriated to the State by Congress. It is not belittling the station work for a citizen or a paper to direct attention to improvements that may be made in this work, and to prove that such improvements are possible by citing more advanced work in some particular line at other stations.

The KANSAS FARMER rejoices in the fact that the work of the station is appreciated by the people of the State as evidenced by the demand for its bulletins, and by the commendations of Secretary Wilson and the editor of Wallaces' Farmer. Possibly eminent loyalty to Kansas would have suggested allusion in this connection of some of the many commendations of this work freely extended by the agricultural and other press of the president's own State.

In enumerating experiments of value the president names "crop production"—by the farm department—"feeding steers"—by the farm department—"calves"—by the farm department—"pigs"—by the farm department—

"soy-beans"—by the farm department—"alfalfa"—by the farm department—"Kaffir-corn"—by the farm department—"black leg"—by the veterinary department—"mouldy corn"—probably by the veterinary department—and "very PROMISING experiments with wheat, corn, grasses, etc."—by the botanical department. Where are all the other departments of the station, Mr. President? Do they not also deserve honorable mention?

After stating that the resolution of the experiment station committee which has called out all of this discussion, involves the transfer of plant-breeding from the botanical to the farm department and that the present board is in favor of pushing seed-breeding and soil physics, the president extends a broad invitation, presumably to the people of Kansas, possibly to the residue of mankind also, to engage in prophecy and "predict the most valuable farm product in Kansas in 1911." This invitation might have been timely twenty centuries ago, but it hardly belongs to a discussion of present day scientific investigation. Nevertheless the writer will assume to foretell that the most valuable product of Kansas farms in 1911 will be brains.

Comments by the Kansas Farmer on Professor Roberts' Broadside.

It seems to have escaped the notice of Professor Roberts that the heading, "Not Enough Agriculture," was entirely different from the heading which appeared in the KANSAS FARMER above the editorial for the discussion of which he contributed two and a half columns to last Sabbath morning's Capital. The editorial which he discusses was headed "Agriculture at the Agricultural College." A little inadvertence like this in the learned professor is, however, gladly pardoned by the KANSAS FARMER.

Being at the head of the botanical department and having charge of the plant-breeding work it is entirely proper that Professor Roberts should confine his attention entirely to that branch of the subject considered in the KANSAS FARMER editorial. Fortunately for the writer hereof, Professor Roberts furnishes conclusive proof of the wisdom of the resolution of the experiment station committee proposing to remove the plant-breeding from his department.

In handling the subject Professor Roberts very properly considers the work of his department as a whole, giving the department credit for all that it has done since the introduction of plant-breeding by Professor Kellerman in 1888. Of course, the professor's sense of honor will also lead him to assume for his department full responsibility for the variable manner in which plant-breeding has been conducted.

As shown by Professor Roberts from the records of his department and from his personal knowledge, wheat-breeding was commenced at the Kansas Experiment Station in 1897. The botanical department then kept a force of 12 workers in the field. It is not stated how many were kept at the work in 1898, 1899, and 1900, but we are told that "In the present year 4 persons from the botanical department continued the work of cross-fertilization and selection, and that now 3 such men are in the employ of the department. Later on we are informed that corn-breeding was practiced in the department in 1888, 1889, and 1900. This on the departure of Professor Kellerman was discontinued for several years. A summary of the work of the botanical department in this confessedly most important branch may be made from Professor Roberts' statements, as follows:

SUMMARY.

1888, 1889, 1890.—"A most valuable series of experiments in breeding corn by cross-fertilization and selection."

1891, 1892, 1893, 1894, 1895, 1896.—Work of plant-breeding DISCONTINUED.

1897.—Thirteen men, twelve from the botanical department, at work at plant-breeding.

1901.—Four men at work at plant-breeding.

NOW. Three men at work at plant-breeding.

At the rate of decrease of these four years, how long will it take to place plant-breeding where it was in 1891-1896 inclusive?

Professor Roberts has indeed rendered a valuable service in reporting to the people of Kansas the "poor dying rate," at which plant-breeding is progressing at their experiment station. Never before were so strong reasons shown in favor of the resolution of the regents' committee on experiment sta-

(Continued on page 746).

The Home Circle.

CURFEW-TIDE.

The thrushes sing in every tree;
The shadows long and longer grow.
Broad sunbeams lie athwart the lea:
The oxen low;
Round roof and tower the swallows slide;
And slowly, slowly sinks the sun,
At curfew-tide,
When day is done.

Sweet Sleep, the night-time's fairest child,
O'er all the world her pinions spreads;
Each flower, beneath her influence mild,
Fresh fragrance sheds;
The owls, on silent wings and wide,
Sical from the woodlands, one by one,
At curfew-tide,
When day is done.

No more the clanging rookery rings
With voice of many a noisy bird;
The startled wood dove's clattering wings
No more are heard;
With sound like whispers faintly sighed,
Soft breezes through the treetops run,
At curfew-tide,
When day is done.

So may it be when life is spent,
When near another sun can rise,
Nor light one other joy present
To dying eyes;
Then softly may the spirit glide
To realms of rest, disturbed by none,
At curfew-tide,
When day is done.

—From Chambers' Journal.

The Man of the Week.

BENJAMIN THOMPSON.

(Born March 26, 1753; died August 21, 1814.)

The little town of Woburn, Massachusetts, is famous as the birthplace of Benjamin Thompson, one of the most useful of men. "Next to Franklin's," wrote Professor James Renwick in 1844, "his name is proudest among those of Americans who have gained distinction in the fields of science; and, like him, he was as remarkable for the practical character of his investigations as for the depth of his philosophical research."

And yet hardly one in ten of the readers of this sketch can recall a single thing for which Benjamin Thompson deserves remembrance. Who was he? This is the first question that will occur to the average reader. Let the answer be an outline of what he did before he received the title which has become a substitute for the name at the head of this article.

At 11 years of age young Thompson had learned all that the public school at Woburn was prepared to teach, and then attended school at Medford, where he is said to have made rapid progress. At 13 he was apprenticed to a merchant of Salem. When the stamp act was repealed he undertook to make the fireworks with which the townsfolk expected to celebrate the event. When he had recovered his sight, he returned to the store, where he worked till the non-importation agreement left the merchant without goods to sell. Then he taught school at Wilmington and continued his studies at home and at Harvard. At the time of the Boston massacre he was working in a dry-goods store. The trouble with the mother country again cost him his position and he spent his enforced leisure in study until he was invited, in the fall of 1770, to take charge of an academy in a New Hampshire town which the people still call Rumford, although its name had been changed five years before to what every school-boy knows as "Concord on the Merrimac." In Concord he was immediately received into the best society, and after two years of successful teaching he married a rich widow of that city. The position of the poor but brilliant student was now established, although he was less than 20 years old. Soon Governor Wentworth appointed him a major of militia—an honor which came near being his undoing; for it made every ambitious young officer his cordial enemy. Though there can now be no doubt of his loyalty to the colonies, his wife's wealth and his own position kept him from taking part with those who were actively opposing the constituted authorities. Suspicions were aroused; he was called a Tory; and on one occasion a mob of too ardent "patriots" planned to give him a coat of tar and feathers. He was wise enough to leave Concord, going first to Woburn, then to Charlestown, and finally to Boston, where he associated freely with British officers. Here his acquaintance with General Gage enabled him to save two deserting soldiers from punishment. This led to new suspicions, which were not allayed by his efforts to save the property of Harvard College, his service at Lexington, and his application for a commission in the army which drove Gage out of Boston. So it came about that he was compelled to run away from the people he was trying to help. The English were glad to accept his services; and General Gage sent him to England

with news of the battle of Bunker Hill. Major Thompson made so favorable an impression on the secretary of state for the colonies, that that officer, Lord George Germaine, offered him employment in his department. The offer was accepted, and before the Revolution ended the young Yankee had been advanced to the position of under secretary of state. In 1781 he was appointed major in the British army and sent to America to raise a regiment. But Cornwallis had already surrendered; so he had no need to fight against his countrymen. Before the treaty of peace was signed he returned to England with the title of lieutenant-colonel.

The war being ended, Colonel Thompson was without active employment; so he asked leave of absence to visit the continent. In the full uniform of a colonel of dragoons he witnessed a review of the French garrison at Strasburg, where his presence was taken as a compliment. An officer who had served with Rochambeau in America, and who was present when Cornwallis surrendered to Washington and his French allies, was so favorably impressed by the appearance and intelligence of the young colonel that he offered him a letter of introduction to his uncle, Charles Theodore, elector of Bavaria. Thompson visited the elector at Munich, and was offered employment, which he finally accepted, after having received the consent of the English king, who also conferred on him the honor of knighthood and relieved him of military duty with half pay for life. Sir Benjamin Thompson now returned to Munich, where the elector appointed him aide-de-camp and chamberlain.

It had become the habit of our Yankee to do things. So he reformed the Bavarian army, establishing workshops and gardens to give the soldiers employment and schools to educate them and their children. He increased the pay of the common soldiers and improved their rations. Munich was overrun with beggars of all degrees of poverty and boldness—an army of insistent men, women, and children who had reduced beggary to an industry. Thompson prepared a great workhouse, had every beggar arrested on the first day of January, 1790, arresting the first one himself. Beggary was stopped that very day. The workhouse was a social and economic success and also taught the world a great lesson in the care of beggars and the cure of beggary. By this time the New England boy had become a major-general and a member of the elector's council of state. In 1791 he was created a count of the Holy Roman Empire. Here his loyalty to his native land showed to the credit of the Bavarian administrator, who chose to be known as the Count of Rumford, thus honoring the town from which he had been driven by people too stupid to appreciate him in his youth.

And herein is the explanation of our ignorance of the work of Benjamin Thompson. Every student of physics knows him as Count Rumford. His scientific investigations began in America and were continued in England, where he became a fellow of the Royal Society in 1779. His absorbing duties in Bavaria could not take his thoughts from science. He made experiments to determine the explosive force of gunpowder and to test the strength of various materials, especially wrought-iron. He made important discoveries in light and heat and taught the world how to build fireplaces and chimneys that would not waste fuel and fill the room with smoke. He invented the thermometer and made other contributions to pure and applied science; and showed the genuineness of his devotion to investigation by instituting prizes to be awarded by the Royal Society of London and the American Academy of Sciences for the most important discoveries in light and heat. By his will he endowed the Rumford professorship in Harvard University.

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work is well illustrated by his efforts to improve the horses and cattle of Bavaria; to which end he imported the best breeds from other continental countries and distributed them among the Bavarian farmers. At this time a few of the famous English breeders were beginning their great improvements in live stock. Had Rumford's successors in authority possessed half his wisdom, Bavaria might now be famous for improved breeds of horses and cattle.

Ill health compelled Count Rumford to give up his official labors. In 1798 he left Bavaria, serving for a time as the private agent in England of the elector; and in 1802 he settled in Paris, where he spent the remainder of his life, in 1804 marrying the widow of the great chemist Lavoisier.

Denver, Col. D. W. WORKING.

Bedfellows in Mexico.

"I had a rather unhappy experience once, myself," said a listener, "but it was at a time when my nerves could not stand a great deal, and the shock was no surprise to me. I was really happy when I found that my eyes had played me no trick and that the things about me were real things. I had journeyed down into Mexico, for the purpose of spending some time. The trip was partly a business trip, and partly for such pleasure as I could get out of an experience in a country that was new to me. I ought to say here that I had never been in a tropical country. My life had been spent in the North, and whatever I knew about many of the forms of life in tropical sections was altogether theoretical. I had merely read about many of the things, but I learned afterwards that there were many things I had never dreamed of even in moments when my mind was inclined to conjure with the horrors of uneven sleep. Well, I found myself in Mexico, I was in the wilds of Mexico, and that, where one could find but few of the comforts known to the more advanced ways of living. I stopped with an old Mexican one night, and he put me in a dumpy little room off to myself. I slept on the floor, or rather, I started to sleep on the floor, and it was a dirt floor at that. I coiled up on a mattress made of some light material. I had just closed my eyes when I felt something scramble rapidly over my forehead. It startled me a bit, but I kept cool and still to see if it would happen again.

"It happened in less time than it takes to tell it. This thing kept up until the experiment was disorganizing my nerves, and I could stand it no longer. I got up and started out, and I felt the same thing happening to my feet. Partly panic-stricken, I rushed into the room of the old Mexican. 'Something in yonder,' I said, pointing toward my room. He took in the situation at once, and assured me that it was all right. He struck a light and went to the room with me to assure me that there was no danger. When I got back to my room I was paralyzed. Crawling over the walls of the hut and scampering over the floor, over the mattress on which I had lain, and running here and there, and everywhere, was a perfect army of lizards of all sizes, ages and varieties. I told the Mexican to leave me the light, and that I would occupy the room for the night. And so I did. But I did not sleep, for I did not want the lizards, however harmless and companionable they might be, to convert my face and forehead into a promenade. This wound up my experience in Mexico, and I scampered over the border as soon as possible, and since that time the wilder regions in the tropics have had no fascination for me."—New Orleans Times-Democrat.

Letters on Tissue Paper.

"In looking over some old papers the other day," said a wholesale merchant, "I ran across a very singular document. It was a letter of introduction sent forty years ago by one of my uncles, then in St. Louis, to his agent in San Francisco. It related to the disposal of a lot of goods which had been shipped by way of the Horn, and, although it contained over 15,000 words and a copy of a good-sized invoice, it was written on just two sheets of paper. The paper itself was a sort of tough, opaque tissue, very thin and light, and, when folded, the letter slipped into an envelope about three inches wide.

"Why it was got up in such a peculiar style was explained by the stamp in the corner, which was one of the old 'pony express' series of Wells, Fargo & Co., and was embellished with a picture of a man on horseback, spurring at a dead gallop across the plains. I

Out of Plumb.

When the wall is out of plumb the building is more or less unsafe, and the higher the wall is carried out of the perpendicular the greater the danger of collapse. It's about so with the health; it is out of plumb when the digestion is impaired, when there is a dull, sluggish feeling, with nervousness, irritability and sleeplessness. Every day that these symptoms are neglected increases the liability to physical collapse.



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"For three years I suffered untold agony," writes Mrs. H. R. White, of Stanstead, Stanstead Co., Quebec. "I would have spells of trembling and being sick at my stomach, pain in right side all the time; then it would work up into my stomach and such distress it is impossible to describe. I wrote to the World's Dispensary Medical Association, stating my case to them, and they very promptly answered and told me what to do. I took eight bottles of Dr. Pierce's Golden Medical Discovery, and five vials of Dr. Pierce's Pleasant Pellets. Thanks to Dr. Pierce and his medicine I am a well woman to-day. Dr. Pierce's medicines also cured my mother of liver complaint from which she has been a sufferer for fifteen years. We highly recommend these medicines to all suffering people."

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knew, of course, that the Pacific mail of the period was carried by relay express riders, but I never before realized what great pains were taken to reduce the weight to the lowest possible point. I am told that the letters were stored in little flat pouches under the flaps of the saddle and that they were always written on a specially prepared tissue.

"The one I have described must have occupied an expert clerk several days, for the penmanship, while microscopic, is beautifully executed, and as clear and legible as print. The stamp was of the denomination of 50 cents, and taken altogether it would be hard to find a more striking reminder of the astonishing progress that has been made in this country in a trifle over one generation. Everything about the little brown letter—its lightness, its compactness, and the cost of its carriage—spoke of dangers, difficulties, and rude, primitive conditions. It is difficult to realize that the route it traveled is now the great highway of a thousand rushing trains bearing the transcontinental commerce of the nation."—Philadelphia Times.

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The Young Folks.

JUST BE GLAD.

Oh, heart of mine, we shouldn't
Worry so.
What we've missed of calm we couldn't
Have you know.
What we've met of stormy pain,
And of sorrow's driving rain,
We can better meet again
If it blow.
We have erred in that dark hour
We have known,
When the tears fell with the shower,
All alone.

Were not shine and shower blent
As the gracious Master meant?
Let us temper our content
With His own.
For we know not every morrow
Can be sad;
So, forgetting all the sorrow
We have had,
Let us fold away our fears,
And put by our foolish tears,
And through all the coming years
Just be glad.
—James Whitcomb Riley.

As To Ceres.

TOM M'NEAL IN MAIL AND BREEZE.

"What about this statue of Ceres that I see is to be erected on the dome of the State house?" inquires a reader who has probably been too busy to post up to any great extent on mythology. "I understand," he continues, "that Ceres was some sort of a heathen goddess, but has she got any strings on Kansas, if so how and how many? I have even heard some rumors touching her character, and if this is true, the people of Kansas ought to know it. We want no statues of females on the top of the dome at whom can be pointed the finger of slander, or whose disposition to undue gayety in her youth will cause the citizens of this commonwealth to blush for shame."

It is true that Ceres' ancestry was nothing to blow about. She was reputed to have been the daughter of Saturn by his second wife, and if half the reports about Saturn are true, he was indeed a son-of-a-gun from away back, but we do not think her ancestry should be held against the girl after all these centuries. Her own record was fair considering the time she was born and the crowd of gods and goddesses she had to associate with.

Ceres had one daughter, a nice young goddess and a good looker. As she was attending a little lawn party one day along with the young set of deities among the 400, she was seen by the god Pluto, who became immediately and violently gone on her. Pluto was the god of the lower regions. He was a deity of morose temper and violent disposition who was liable to pry things up if they failed to go to suit him. From this tradition arises the profane expression in regard to prying up hades often heard in this day and generation. Proserpine, the daughter of Ceres, was not at all stuck on Pluto and besides she said the climate in the vicinity of his residence was entirely too sultry for her. She even declared that she would as soon go to Yuma, Ariz., for a permanent residence as to think of locating in Pluto's palace. Pluto, however, was a god, who, when he set his head on anything, was determined to have it go his way. He, therefore, made up a plan to catch Proserpine when she was on her road home from the party and carry her off in his chariot, which he proceeded to do. Proserpine yelled for her mother as Pluto grabbed her, but it was too late.

From that time on Ceres spent her time wandering around looking for her daughter. As she was sitting on a rock one day taking a rest and looking like a person who was having a rocky time of it, she was accosted by an old man who had his small capital invested in a flock of William and Nannie goats. Old man Celeus, the goat-keeper, had never been around much; in fact, it is doubtful if he had even been over in the adjoining county. He was not familiar with the gods and goddesses of that country and did not recognize Ceres, but he was a kind-hearted old rooster and thinking that Ceres might be troubled with corns or ingrowing toe nails or some other secret sorrow, he invited her into the house to rest. He also informed her that his boy was sick and that it appeared to him as if the kid would not be able to pull through. This excited the sympathy of Ceres. She stepped in and, giving the boy, Triptalemus, a kiss, she instantly restored him to health. This tickled old man Celeus and his wife immensely, but the next move by Ceres took the breath of the Celeus family. Ceres picked up little Triptalemus and threw him onto a bed of hot cinders. Of course little Trip yelled and his father rushed forward to drag him out of the hotness. Ceres remarked to the old man: "You made

a mistake; I intended to make your son immortal, but you have spoiled the business. I will, however, make him a wise and useful man."

Ceres, who was at the head of the agricultural department among the deities, proceeded to teach young Triptalemus how to plow and plant. She also gave him several packages of fine seed and put him onto the manner of raising the best crops. Under her teaching Triptalemus made a success as a farmer and finally became the most noted secretary of agriculture of his time. It seems to be a great pity that Triptalemus did not issue a report showing what crops in his opinion paid best. Trip seems to have been a good man, but he never was a success as an agricultural writer.

Now, by following this brief narrative our reader will begin to see why Ceres gets her statue on the State house dome. It was not because she was the patroness of husbandry so much as her good work in giving Triptalemus his start, teaching him how to make a plow and how to use it. Of course it wasn't much of a plow as plows go now; it was only a crooked stick with a bit of iron fastened on the end. Many and many a time has the handle of that stick plow bumped Triptalemus on the solar plexus and doubled him up so that he was wont to punctuate his remarks with the names of several deities as he expressed the wish that he had never seen Ceres or the blamed plow. By making a farmer out of Triptalemus Ceres showed that she regarded farming as the best business on earth and that the best thing that could be done for a young fellow was to make a good farmer out of him. It, therefore, becomes Kansas, as a great industrial State, to erect this statue in Ceres' honor.

Two Phases of the Robin.

Those who watch the conduct of the robins in the suburbs these days can easily understand why they are a favorite game with young sportsmen in Mississippi, where they winter in considerable flocks, and sing not.

The robin seems to have little to do in August but to feed himself abundantly while he waits until his young are strong enough for the long southward flight. It is well known that robins sometimes winter in the thickets of this region, perhaps because they find their young unfit for migration.

You may recognize the young robins now by their form and size, although they are very different in their markings from the parent birds. The breast is speckled instead of having that warm, brownish red which has earned the robin his pleasant name of redbreast, an importation, by the way, from England. The back of the young robin, too, is barred and flecked in a fashion that helps to distinguish him from his elders. The young also still have an awkwardness and timidity very different from the bouncing ease and sauciness of their elders.

You may see them hunting for worms on suburban lawns and watching keenly for the approach of human beings. It seems pretty plain that the young have yet to learn that their kind is the favorite among the semi-domestic birds of lawn and orchard, the consciousness of which fact gives the full-grown robin his confidence in the presence of men.

The gregarious instinct of the robin, hardly to be noticed in the spring, is plainly revealed by midsummer. For several weeks past one could never enter a suburban field within easy reach of water without scaring up perhaps a dozen robins. The flocks seem to increase in size as the season advances, though they are never large. Near the time for migrating, the birds seem uneasy. They sweep the fields in furies, and call to one another in excited tones. Then some morning the lover of the birds wakes to find only a few robins left in the region, doubtless, those who feel themselves unable to essay the southern flight, or delay in hopes that their young may gain strength sufficient for migration.

Cock robin himself is a much less beautiful bird when the time for his southern flight arrives than he is in April, May and June. His breast has paled a little, and his voice is harsh. It is the mating season that makes him beautiful and a poet. His high strong lilt is admirably expressive of his fine self-reliant character, and is genuinely poetic in quality. But it is an unmistakable love song, without too much idealism. No one could ever read in it the religious significance that one always associates with the music of the wood-thrush.

In fact, the robin is a very fit bird to be the favorite of the practical and hard-headed Anglo-Saxon portion of the American people, and when he ceases

to be a lover and a poet he exhibits a hard materialism that is said to be characteristic of his special admirers. It is only a few years since a southern resident of New York caught shooting robins on Staten Island, defended himself on the ground that the robin was not a song bird, but a harsh-voiced and voracious creature, fit only for the spit. He spoke of the robin as he had known him in the south, having never seen him under the transforming influence of the romantic passion called love.—New York Sun.

Quick Work With Eels.

Down Fulton market way there is always something interesting to be seen. It may be, in the season, men in the street frying soft-shell crabs, or it may be men selling live hard-shell crabs, which they pick up with wooden tongs made for the purpose to put them in a paper bag; it's a common thing for people to buy live crabs and carry them home with them in a bag.

You might see here somebody skinning eels, though that is something rather unusual, sufficiently so to attract always a little knot of lookers-on, who stand and watch the operation with interest. Among the bunch of gazers there is very likely on man at least who never before saw eels skinned, and who is surprised to discover that the expert does not skin the eel, but rather, as one might say, eels the skin. That is to say, he does not strip the skin off of the eel, but he strips the eel clear of the skin.

Piled up, corded up, on a board or barrel, behind which the eel expert stands, there are hundreds of eels, piled with heads all to the rear, handy to seize upon. The only implement used in the work is a stout knife with a short fixed blade. Laying an eel, back down, upon the board the cleaner makes with that short, stout knife one transverse cut three-quarters through it, just below its head. With a single deft sweep of the knife he slits the eel down with one movement, and cleans it out totally with another, almost before one is aware that this has been done at all, and then he proceeds to skin the eel, an operation that requires, besides knowing how to do it, strength and skill.

Once more the knife is brought into play, and this time the blade is worked under the end of the body from where the first cut was made and downward in the direction of the tail, to the extent of an inch. That inch is what the expert gets his hold on. Holding the eel up now by the head with the left hand and holding it stationary and firmly, he grasps that freed inch of eel between the thumb of the right hand, on one side of it, and the blade of the knife, pressing hard, but not cutting into it on the other. And then, with the firm clutch that he has thus got upon it, and holding the left hand stationary he strips the eel forward and downward with the right, fairly stripping it clear of its skin with a single continuous movement. At the end of this, with a curving sweep through the air, he throws the dressed eel upon a pile of its kind, while the skin he tosses into a barrel. Then he picks up another eel from the pile in front of him and repeats the operation, and it is all so quickly and so deftly done that you have to keep your eye on him not to miss any of the five movements in which the whole work is comprised.—New York Sun.

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"AGRICULTURE AT THE AGRICULTURAL COLLEGE."

(Continued from page 743.)

tion transferring plant-breeding from the botanical to the farm department. Professor Roberts goes much into detail as to the numbers of flowers crossed, and how on one occasion the farm department, the United States Department of Agriculture, and others, furnished seed of pure strains because of the work of the botanical department for one year, but "three seeds survived until the harvest of the next year." He is quite exact in his descriptions of the work, even telling an anxious public that in some cases "capital letters of the alphabet were used * * *"

LOGIC AND STATISTICS.

Elaborate logic and some statistics are produced to show that when Kansas was raising much less wheat than corn it is unreasonable to expect that the experiment station would have engaged in breeding improved strains of wheat. Are we to understand that the same logic and the same statistics justify the discontinuance of the work of breeding corn from 1890 to 1897?

That years of continuous work are necessary to produce the results attainable by plant-breeding is well understood. Nobody blames the botanical department for publishing nothing as to its plant-breeding when it had nothing to publish. It is not a question of publishing, but of doing.

The opinion is expressed by Professor Roberts "that considering the outlay of time and money the people of Kansas have reason to be satisfied with the progress of cereal-breeding at the experiment station."

It is this opinion, so manifest in the work as it has been allowed to languish, that justifies the resolution, now pending before the regents, transferring plant-breeding to the farm department and directing that it be pushed with all possible vigor. We use the term "plant-breeding," while the botanist of the experiment station refers to "cereal-breeding," as if the cereals were the only plants worthy of the breeder's attention. Of cereals, he mentions work with wheat and corn as if they were the only cereals needing development along the lines of adaptation to the peculiar conditions of Kansas. Is he not aware that in the spring of 1901 the farmers of Kansas sowed 1,168,338 acres of oats from which they harvested almost nothing but straw? Is it not worth while to at least try to develop a strain of oats so adapted to our conditions as to save the few millions of dollars lost for want of it? Barley is a most excellent feed for the production of the highest grades of pork. Does not our botanist think it worth while to breed barley to suit our climate? Kaffir-corn is a great crop in Kansas. Does not our botanist think it possible to reduce some of its undesirable, and to enhance some of its desirable characteristics? Alfalfa is the king of forage plants. There appears to be several varieties differing in excellence. Does not Professor Roberts think it worth while, by cross-fertilization, by selection, to combine these excellencies in a new breed of alfalfa? Soy-beans are among the most valuable plants introduced from the Orient. As viewed by the practical man they have two faults. Their yield is light, and the excessive content of oil clogs the appetite of some animals. Their value would be greatly multiplied could these faults be remedied by the plant-breeder. Our native grasses possess excellencies which make them worth millions to Kansas. Can our plant-breeder not try to breed for example the blue-stem so as to make it a fair seed producer, and at the same time to increase the digestibility of the hay?

Corn and wheat are indeed great and worthy of the plant-breeder's attention. Had our station continued its work, so well begun in 1888, and succeeded as Illinois and Minnesota are succeeding, the results this season should have been beyond any estimate heretofore made. As shown by the KANSAS FARMER'S investigation of acreages this State had this season 5,377,719 acres of wheat. Minnesota reports the production of strains of wheat, the increased yield of which amounts to 2 to 3 bushels an acre. Applying the lower figure to the Kansas acreage would have given an increase of 10,755,438 bushels, which at 50 cents, the price at which wheat is selling in the interior of the State, would add the handsome increase of \$5,377,719 to this season's income of the

farmers of Kansas. A like addition to the yield of corn applied to the 6,824,675 acres planted this season would bring at half of present prices \$3,412,332.

The peculiarity of the present season calls attention anew to the necessity of attending to other characteristics as well as the chemical composition of corn. The plant-breeder who shall develop a drouth-proof breed of corn will deserve a monument.

It may be mentioned by the botanist, in discussing the suggestions herein contained as to cross-breeding soy-beans, alfalfa, etc., that there is no known way to secure their cross-fertilization. It is peculiarly a work for the botanist to find a way. The application of the method when formed may well be left to the agriculturist. The improvements wrought by plant-breeding depend quite as much upon suitable agricultural conditions—upon soil and cultivation as upon crossing and selection. What breeder of thoroughbred stock would think of entrusting the work to a professor of zoology? What breeder of thoroughbred stock but would like to secure the services of the head of the farm department to superintend the work?

There is enough work along the lines of pure investigation to employ the energies of the botanist for a life time.

Professor Roberts is a young man of ability, the son of a prominent citizen, and eminent physician at Manhattan. In discussing his paper the KANSAS FARMER wishes him only well. The editor will rejoice in every one of the triumphs the future may hold for him. We shall be glad to see him take up lines of investigation so plainly indicated by the present state of the science of botany, leaving the application of his discoveries, so far as they shall pertain to plant-breeding, for the farm department just as similar knowledge as to animal life gained by the zoologist is made available to the farm department in the breeding of animals.

A FORMER EDITOR OF THE KANSAS FARMER PASSES OVER.

On Wednesday, August 21, Mr. E. E. Ewing, formerly editor of the KANSAS FARMER, died in Philadelphia. In 1878, Mr. Ewing was associated with Major J. K. Hudson in conducting the FARMER. They made a vigorous and useful paper of it, developing its merits, which compared favorably with those of the best agricultural papers in the land. It was in the KANSAS FARMER office, under the management of Hudson & Ewing, that the Topeka Daily Capital was established. Later Mr. Ewing withdrew from the Capital and devoted his attention entirely to the KANSAS FARMER. In the issue of March 30, 1881, Mr. Ewing had the following:

GOOD-BYE.

Farewell, Farewell: is a lonely sound that is often breathed with a sigh; But give me that better word that speaks from the heart, good-bye.

"With this issue of the FARMER we take leave of our numerous family of readers and correspondents with whom we have grown so familiar as to seem to move among them daily, not in spirit through the written letter and printed page, but by actual sight and personal presence. We feel sorry at parting thus suddenly with such a retinue of warm friends, but the decree of fate, or "business," has so determined.

"We have disposed of the KANSAS FARMER to a firm which will be known as the "KANSAS FARMER COMPANY," who at once take charge of the paper. The future management of the FARMER will be in hands of an experienced editor of an agricultural paper, and whatever prestige it may have acquired as an earnest advocate of the rights of farmers and an agricultural journal, we feel safe in assuring our readers will be sustained under the new management.

"For the past eight weeks we have been prostrated by an attack of fever which has utterly incapacitated us for any business or labor, and during that time Mr. F. D. Coburn, whose services we were very fortunate in securing, has had the entire editorial management of the FARMER. We need not remind our readers that though a young man, Mr. Coburn's editorial work in these weeks shows his superior ability and peculiar fitness to fill the editorial chair of an agricultural journal.

"And now, gentle readers and correspondents, consigning the "Old Reliable" to safe and experienced hands, we bid you, one and all, a fervent good-bye."

Mr. Moses Sauerback, living near Lawrence, exhibited in that city stalks of corn from his field which would seem to substantiate his claim that his corn

ACRES OF KANSAS CROPS IN 1901.

Detailed Estimates by the Kansas Farmer.

Table with columns: County, Wheat, Corn, Kaffir-corn, Sorghum, Millet and Hungarian, Alfalfa, Other tame grasses. Lists acreage for various counties including Allen, Anderson, Atchison, Barber, Barton, Bourbon, Brown, Butler, Chase, Chautauqua, Cherokee, Cheyenne, Clark, Clay, Cloud, Coffey, Comanche, Cowley, Crawford, Decatur, Dickinson, Doniphan, Douglas, Edwards, Elk, Ellis, Ellsworth, Finney, Ford, Franklin, Geary, Gove, Graham, Grant, Gray, Greeley, Greenwood, Hamilton, Harper, Harvey, Haskell, Hodgeman, Jackson, Jefferson, Jewell, Johnson, Kearney, Kingman, Kiowa, Labette, Lane, Leavenworth, Lincoln, Linn, Logan, Lyon, Marion, Marshall, McPherson, Meade, Miami, Mitchell, Montgomery, Morris, Morton, Nemaha, Neosho, Ness, Norton, Osage, Osborn, Ottawa, Pawnee, Phillips, Pottawatomie, Pratt, Pawlins, Reno, Republic, Rice, Riley, Rooks, Rush, Russell, Saline, Scott, Sedgwick, Seward, Shawnee, Sheridan, Sherman, Smith, Stafford, Stanton, Stevens, Sumner, Thomas, Trego, Wabausee, Wallace, Washington, Wichita, Wilson, Woodson, Wyandotte, and a Total row.

will make 50 bushels per acre. Mr. Sauerback did not stop cultivating his corn when the drouth began, and it is to the continued working of the ground that he attributes his success. There will be much corn along the Kaw valley despite the drouth.

Secretary William H. Barnes, of the Kansas State Horticultural Society, reports that the fruit crop of the State, comprising apples, pears, peaches, plums, and grapes, is very promising, and, with good weather, will be abundant in all fruit-growing counties. Some have more than ever before in their history. Apples, and in fact all fruit, is freer from insect depredations and fungous diseases than usual. There will be a larger proportion of first-grade apples than ever. Trees generally are in excellent condition, mainly owing to the excessive spring rains.

What He Overlooked.

"I have a most uncomfortable feeling," said the Iceman. "It seems to me as if I had overlooked something today."

"It isn't possible that you have forgotten to raise the price, is it?" asked his wife.

"By George! That's just what it is!" he exclaimed. "I knew I had neglected one of my daily duties."—Chicago Post.

Population of Principal Cities.

According to a compilation of the assessors' and county clerks' official returns for 1901, just completed by the State Board of Agriculture, there are 111 cities and towns in Kansas having 1,000 inhabitants or more. Seventy-three municipalities belonging to such a list have gained 19,343, Kansas City distancing all others with an increase of 5,761, while 37 others lost 8,160 and 1 made no return. Lyndon, Scranton, Downs, Phillipsburg, Enterprise, and Goodland have fallen below the 1,000 mark, and Lincoln with a gain of 342, Oskaloosa 319, Cedar Vale 97, Stafford 79, Hanover 67, and Oberlin 54, have been added to the list. The relative rank of the eight cities having the largest number of inhabitants remains the same as one year ago. Hutchinson, Emporia, and Parsons now precede Galena in the order named, the latter occupying 12th instead of 9th place. Iola passes Salina and Newton; Winfield and Independence each advance one point; Junction City drops three and Abilene one. Some of the other cities that have shifted their rank are Horton which rises above Cherryvale, El Dorado and Abilene; Manhattan climbs from 35th to 27th place; Clay Center drops from 25th to 35th place, Cherryvale 29th to 33rd, Osawatimie 34th to 36th. Paola now precedes Holton; Mc-

Pherson takes 34th instead of 36th place, Burlington 44th instead of 46th, Beloit 45th instead of 47th. Oswego jumps from 49th to 47th, Chetopa 56th to 48th, Sterling 54th to 52d, Caldwell 60th to 54th, and Lindsborg 78th to 71st. Girard goes from 40th to 41st, changing places with Rosedale. Great Bend falls from 42d to 46th, Dodge City 44th to 49th, Kingman 53d to 62d, Wamego 59th to 64th. Herington now ranks 57th instead of 64th, Neodesha 59th instead of 70th, Frontenac 60th instead of 65th, Ellsworth 61st instead of 71st, Larned 65th instead of 73d, Washington 73d instead of 77th, and Yates Center 67th instead of 72d. Scammon dropped from 61st to 72d place, Sabetha 62d to 78th, Fredonia 67th to 74th, and St. Marys 80th to 85th.

The following table gives the cities and towns having 1,000 or more inhabitants, in the order of their rank, and the population of each, together with its gain or loss since one year ago:

Rank.	Name.	Pop.	Gain.	Loss.
1	Kansas City	53,625	5,761	
2	Topeka	38,067	1,285	
3	Wichita	24,472	686	
4	Leavenworth	22,392	336	
5	Atchison*	16,617		
6	Pittsburg	12,676	296	
7	Lawrence	11,358		78
8	Fort Scott	10,751		222
9	Hutchinson	10,009	374	
10	Emporia	9,477	688	
11	Parsons	8,846	143	
12	Galena	8,017		2,494
13	Ottawa	7,447		12
14	Arkansas City	7,045		378
15	Iola	6,757	634	
16	Salina	6,657	154	
17	Winfield	6,571	512	
18	Newton	6,525	48	
19	Argentine	6,515	622	
20	Independence	6,228	390	
21	Coffeyville	5,259	211	
22	Chanute	4,953	53	
23	Junction City	4,889		594
24	Wellington	4,406	60	
25	Concordia	4,008	238	
26	Horton	3,871	367	
27	Manhattan	3,827	612	
28	Ablene	3,615	76	
29	El Dorado	3,565		84
30	Olathe	3,429	14	
31	Paola	3,375	11	
32	Holton	3,305		75
33	Cherryvale	3,278		348
34	McPherson	3,251	47	
35	Clay Center	3,121		796
36	Osawatimie	3,098		193
37	Weir City	3,097	6	
38	Hiawatha	2,874		102
39	Osage City	2,865		91
40	Rosedale	2,784		54
41	Girard	2,670		80
42	Columbus	2,603	189	
43	Council Grove	2,557	72	
44	Burlington	2,437	43	
45	Beloit	2,423	52	
46	Great Bend	2,258		237
47	Oswego	2,249	43	
48	Chetopa	2,209	249	
49	Dodge City	2,199		254
50	Eureka	2,183		10
51	Garnett	2,125	7	
52	Sterling	2,082	22	
53	Marysville	2,061		16
54	Caldwell	2,014	183	
55	Belleville	1,984		22
56	Seneca	1,941	9	
57	Herington	1,924	171	
58	Marion	1,863		37
59	Neodesha	1,823	143	
60	Frontenac	1,822	79	
61	Ellsworth	1,819	168	
62	Kingman	1,800		269
63	Minneapolis	1,775	13	
64	Wamego	1,769		109
65	Larned	1,741	186	
66	Lyons	1,740	19	
67	Yates Center	1,719	81	
68	Humboldt	1,700		41
69	Empire City	1,688		557
70	Peabody	1,605		82
71	Lindsborg	1,584	125	
72	Scammon	1,572		230
73	Washington	1,555	53	
74	Fredonia	1,555		174
75	Hays City	1,550	259	
76	Burlingame	1,537		4
77	Baxter Springs	1,535		4
78	Sabetha	1,524		246
79	Garden City	1,478		66
80	Cherokee	1,439	107	
81	Pleasanton	1,351	35	
82	Erle	1,334	66	
83	Valley Falls	1,304	231	
84	Oskaloosa	1,295	319	
85	St. Marys	1,281		44
86	Sedan	1,274	16	
87	Clyde	1,265	10	
88	Anthony	1,263	62	
89	Frankfort	1,246	93	
90	Norton	1,245	152	
91	Pratt	1,241	55	
92	Harper	1,218	58	
93	Lincoln	1,217	342	
94	La Cygne	1,204	189	
95	Caney	1,201	174	
96	Florence	1,169	18	
97	Augusta	1,167		37
98	Russell	1,165	63	
99	Osborne	1,119	1	
100	Nickerson	1,089	60	
101	Smith Center	1,082	21	
102	Ellis	1,081	78	
103	St. Paul	1,066	53	
104	Howard	1,062		29
105	Stafford	1,056	79	
106	Alma	1,020		8
107	Baldwin	1,019		74
108	Blue Rapids	1,019		63
109	Hanover	1,007	67	
110	Cedar Vale	1,006	97	
111	Oberlin	1,003	54	

* Population in 1899; no later enumeration.

Should Timothy Meadows Be Disced?

EDITOR KANSAS FARMER:—Please give me all the information you can in regard to discing timothy meadows. Is it beneficial, and when is the proper time? WM. BROWN.

Humboldt, Kans.

This inquiry was referred to Professor Cotterell, who answers as follows:

"I have had no experience in discing timothy meadow and am afraid that it

might not be safe on account of the bulb at the base of the timothy plant. Discing is beneficial to English and Kentucky blue grass and orchard grass, and is a necessity for the best development of alfalfa. Discing may be done to advantage with these plants whenever the grass is short enough for the disc to work and the ground is in condition to be stirred."

The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the Kansas Farmer. Give age, color, and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply, all letters for this department should give the enquirer's postoffice, should be signed with his full name, and should be addressed to the Veterinary Department, Kansas Farmer, Topeka, Kans.

Curvature of Spine.—I have a cow five years old that has a crooked back. This happened about three and one-half months ago, just before she had her calf. After the calf was born her back straightened a little. It is worse at night when she is full of grass. She holds her flesh quite well and gives plenty of milk. JAMES W. MOTES.

Silver Lake, Kans.

Answer.—It is caused probably by impaction of the rumen. You might try a pound of epsom salts as a drench, and repeat it in twenty-four hours. Then follow up with the following powders twice a day: Three ounces nux vomica, pulverized; 6 ounces bicarbonate of soda; 4 ounces of soda. Mix together and divide into 20 powders.

Not sufficient symptoms to diagnose the disease.—I have a calf one year old that is in bad condition. He is in good pasture and has not shed off his old hair yet. At times he slobbers at the mouth. His teeth seem to be in good condition. W. M. C.

Topeka, Kans.

Answer.—I would suggest a careful examination of his teeth, throat, and tongue, and then if nothing is found, have him tested for tuberculosis with tuberculin, and report again.

Periodic Ophthalmia.—Can you tell me what is the most general cause of blindness in horses? We have 4 that are either partly or wholly blind. At first they seem to be moon eyed, but it is not long before they are totally blind. We have a plank floor in our barn. Can that have anything to do with it? Bern, Kans. F. SCHAAF.

Answer.—You probably have periodic ophthalmia, which is hereditary, and the board floor would only aggravate the disease. If the floor were open and a great amount of ammonia arises therefrom it might cause a disease of the eyes, but would not be likely to destroy the eyes so rapidly.

Keratitis Contagiosa.—Several of my cattle are affected with sore eyes. They first water, then in a day or two a white scum appears. Usually one eye is affected first, then in a few days the other eye follows suite. They seem to be totally blind for a few days. They are in good pasture, but fall in milk and flesh when in this condition. It does not affect their appetites. Topeka, Kans. J. W. FERGUSON.

Answer.—It is a contagious inflammation of the eyes or cornea in cattle. Keep them in a dark stable during the day time or tie a cloth over their eyes to keep out the light. Bathe them with hot water twice a day, then take 3 grains of nitrate of silver in 2 ounces of rain water. Mix and drop in 10 drops twice a day.

Wart.—I have a mare 4 years old that was burned on the fetlock of the right front foot with a lariat rope. This happened before I bought her. It left a large soft wart that half fills the fetlock. What can I do for her? Chicopee, Kans. THOMAS MOORE.

Answer.—Cut the wart off even with the skin and cauterize it with a red hot iron. When the scab comes off clean, cauterize again with a stick of caustic potash. Afterwards use 2 ounces of oxide of zinc and 12 ounces of glycerine. Mix and apply twice a day.

Looking for Work.

From the Philadelphia Record. "Yes, ma'am," said the ragged fat man, "I'm looking for work. Yer ain't got no odd jobs of scrubbin' or washin' ter be did, have yer?" "Why, you surely don't do scrubbing or work of that sort?" said the housekeeper. "Sure not. I'm lookin' fur work fur me wife."

THE KANSAS SITUATION.

Kansas is all right. The State has all she needs, if not all she wants. Kansas is short on corn only. The State has produced the largest and best crop of wheat in her whole history. All other grain and forage crops have been good, with the exception of oats. The present condition of the pasture and the main forage crops consisting of sorghum, Kaffir-corn, millet and Hungarian is excellent. In fact at this period of the year Kansas has never presented a more beautiful green aspect than now. Almost the entire area of the State received beautiful rains early in August. The stubble ground has been plowed and is now available for fall seeding of wheat, alfalfa, and other forage crops, which will furnish additional late fall and winter pasturage for stock.

In view of the conflicting and exaggerated reports of the great damage to the Kansas corn crops, and in order that our readers might know the true situation, a member of the KANSAS FARMER staff has personally visited nearly every portion of the State, interviewing the farmers, making personal observations of present conditions and the feeling of the people. In this issue of the paper is presented a conservative and uncolored view of the Kansas situation for 1901, the present condition of the corn and forage crops and prospects for fall and winter pasturage.

In another part of this paper we present a complete tabulated report by counties of the area of production of grains, grasses, and forage crops, which may be summarized as follows:

	Acres.
Wheat	5,377,719
Corn	6,824,675
Kaffir-corn	519,156
Sorghum	601,711
Millet	385,801
Alfalfa	235,295
Tame grasses	845,659
Rye	232,185
Oats	1,168,338

In addition to the above there may be added, as stock food, the prairie hay crop, and 5,000,000 tons of wheat straw and the pasturage afforded by the regular grazing land, meadows, and the new crop of wheat.

The present condition of the pastures of the State, with the exception in a few counties, is very much better now than ever before at this time of the year, and the supply is ample for the live stock of the State. In western Kansas, there is a surplus of pasturage and forage and stock is in demand for the utilization of the same.

The Kansas department of agriculture estimates that there is 40,000,000 bushels of old corn on hand and the KANSAS FARMER estimates that the new crop will amount to at least 84,000,000 bushels more.

One of the manifest benefits resulting from the July drouth and scare has been the preservation and complete utilization of the present crop of corn fodder. Corn harvesters have been used on a scale never before attempted, probably ten to one over previous years, and the corn and fodder has been saved in its entirety. Much of this will be shredded and baled for winter feeding operations. The corn, nubbin, and fodder crop will be worth more to Kansas feeders than any 100,000,000 bushel crop ever produced. In eastern Kansas considerable areas of the corn land will be seeded to wheat and alfalfa this fall.

In view of the great heat and drouth which prevailed during July farmers and stock raisers became greatly alarmed for fear of a total corn failure, loss of pastures, and scarcity of stock water. No attempt was made to conceal their fears. In fact their prospective woe was published broadcast throughout the land. Some of the stock men became panicky and let some of the stock go at a sacrifice, while many others were preparing to ship to western pastures. But timely and bountiful rains during the latter part of July and during the present month restored and replenished the pastures before any considerable number of cattle and hogs were disposed of at a sacrifice. The rains came in time to save the bulk of the late corn and fortunately 80 per cent of the corn crop was late. Had the corn been as far advanced as usual in July the loss would have been as great as pictured by the published reports. The bulk of the corn being listed and receiving late cultivation the roots were at such a depth that the dust mulch preserved their vitality and when the rains came the late corn showed remarkable recuperative power and as a consequence there will be a fair crop of corn throughout the regular corn belt.

In this issue we present the views and observations of other competent

authorities which seems to thoroughly coincide with our own views and observations as to the Kansas situation.

Observations as to Present Conditions in Kansas.

J. F. LEE, DWIGHT, MORRIS COUNTY, KANS.

Morris County will have plenty of corn and some to spare. Oats was a failure, and we do not try to raise wheat, but Kaffir-corn is going to make a full crop. Both sowed and planted sorghum will yield a good crop. Early potatoes are not good. We are going to have more feed than we can use. Prairie hay as good as last year and millet is fair. Some pieces will make good seed. Alfalfa will yield 4 tons per acre, and there is going to be a large acreage sown this fall if we have rain.

EUGENE RUST, TRAFFIC MANAGER KANSAS CITY STOCK YARDS.

Kansas looks green, fresh and bright. The remarkable recuperative power of its soil was never better proven than now. Green pastures, exceptional foliage of orchards and groves, and rich coloring of all forage plants proclaim its complete redemption from the drouth.

There is feed in plenty to winter her usual amount of stock, and promises of a much better yield of corn than is generally supposed. There is more roughness for feed than ever before. Rains have been general and of sufficient quantity to make from 5 to 12 bushels of corn to the acre over a large section of the State and in localities double that amount. Kaffir-corn and sorghum, of which there is a large acreage, is in fine condition, while millet and alfalfa will make large crops. This will largely compensate for the loss of corn and provide plenty of feed and forage for all stock on hand.

Pastures are getting in fine condition and stock is doing as well as in early summer. The northern section covered

SENT FREE TO WEAK MEN

Charity, the Noblest Impulse of Man, Exemplified by a Well Known Missourian.

W. S. Harter, an honored and influential citizen of Nevada, Mo., makes a statement and an over-generous offer that comes in the shape of a proclamation of health to all afflicted with lost vitality and its kindred



ailments. His case was a most pitiable one; nightly emissions so draining that his constitution was weakened to such a degree that it was impossible for him to perform his duties. He spent hundreds of dollars for remedies and to specialists, but could not regain his vitality or check the awful nightly emissions. One day a brother lodge member called his attention to a remedy, in fact implored Mr. Harter to take the remedy for his affliction; he did so and in one month's time was entirely cured, his constitution rejuvenated, and his vitality regained. To-day he is a man in every sense which that word would imply. Mr. Harter is not what one would call an immensely rich man, but his gratitude for this marvelous remedy is so great, that he says he intends making his life's labor that of putting this remedy in the hands of all those afflicted as he was. Mr. Harter being a very conscientious man, thought perhaps the remedy may not prove in every case so wonderfully beneficial as it did in his. For this reason he gave 50 sufferers the treatment, and in every instance the same wonderful results were experienced as was in his case; so he now says he will send every sufferer of this death-dealing disease, Lost Manhood and its kindred ailments, absolutely free the means which directed him to health and contentment. At Nevada, Mo., there is located State Asylum No. 3, in which there are at present about 700 patients; Mr. Harter claims that upon good authority he is informed that about 75 per cent of these unfortunates lost their minds through this disease and the awful drainage brought upon them through nightly emissions. With this awful picture ever before him, he believes it is his duty to humanity to save those now upon a brink of destruction, which is much worse than death. Any reader sending name and address to Mr. W. S. Harter, 517 Ash Street, Nevada, Mo., will receive without delay, and free of charge, this wonderful knowledge.

PILES TRIAL TREATMENT FREE. We will forfeit \$50 for any case of Internal, External or Itching Piles the Germ File Cure fails to cure. Instant and permanent relief. Write at once, Germ Medical Co., 215 E. 3d St., Cincinnati, O.

by the Central branch and as far west as Phillips County shows a large acreage of Kaffir-corn, sorghum, millet and alfalfa, scarcely an acre of which shows any damage from the drouth. The same conditions prevail to the southern line of the State. Marshall, Jackson, Nemaha and Wabaunsee counties give promise of fair yields of corn owing to late planting.

The sensational reports of damage to the Kansas corn crop have been largely overdrawn. Farmers will save a larger share of the forage crop and there will be feed in abundance, but the number of cattle to be fed will be less than a year ago. The best wheat crop the State ever produced both in quantity and quality has been harvested, while the fruit crop will be large. The people generally are feeling very much encouraged over the improved condition of crops, and it is no wonder, for the change has been marvelous. I have seen and speak with assurance.

J. C. MOHLER, ASSISTANT SECRETARY KANSAS STATE BOARD OF AGRICULTURE.

Only those who have witnessed something of the amazing changes in the general outlook in the last three weeks could credit their magnitude. The earlier weather conditions have been a cause of inconvenience to many people rather than the cause of great loss, and the unpleasant conditions of a few weeks ago are rapidly being overlooked or forgotten.

Sam Hill, live stock agent of the Union Pacific, who has been out in Kansas a good deal both before and since the rains, says: "It's wonderful how conditions have improved. I should say the outlook for the Kansas farmer has improved 40 to 50 per cent since the drouth was broken. The people have stopped shipping out their stock because of lack of feed. They have plenty of pasture now and are going to have more corn than people who haven't been out in the cornfields recently think."

N. DOUTHITT, GENERAL LIVE STOCK AGENT MISSOURI PACIFIC.

I have been down in the southern and southwestern parts of the State recently, and I was astonished at the improvement in the appearances of the farms. There is plenty of pasture now, and people are shipping stock cattle back to the same sections from which they shipped them a month or so ago. People who sacrificed their cattle are now stocking up again, encouraged by the unusually fine pasture, the improved condition of the corn, and the certainty of having a large crop of forage one kind and another. Along our lines from Illinois to the Arkansas line, down about Elgin, and from Kansas City to Yates Center the outlook is most encouraging.

ELI TITUS, GENERAL LIVE STOCK AGENT OF THE SANTA FE.

Reports received indicate a marvelous improvement in condition along the Santa Fe lines in Kansas. It is difficult to estimate the improvement to the corn crop, but it is considerable. But the improvement because of pasture in abundance, fodder and forage is great. A month ago it looked mighty blue for the Kansas farmer, but to-day his condition is little worse than usual at this season.

HALL REED, ASSISTANT LIVE STOCK AGENT OF THE ROCK ISLAND.

The reports from the territory penetrated by the Rock Island are flattering in the extreme. Shippers and farmers whom I have met during the past two weeks are unanimous in saying that conditions have improved 50 per cent since the rains began. They tell me that in many places where there appeared to be no hope of corn they are now expecting 10 to 15 bushels to the acre. The amount of forage being raised is immense.

CAPTAIN IRA F. COLLINS, KANSAS CITY.

In the territory which I visited there will be from 10 to 30 bushels of corn to the acre, provided, of course, conditions continue the remainder of the season as favorable as they have been during the past three weeks. Corn that even two weeks ago it was thought would not even make nubbins promises now to yield from 10 to 15 bushels of good, sound ears to the acre. Of course a return of the dry, hot weather for a short time would effectually destroy the corn prospects.

John Sheve, of Ellis, Neb., one of the leading farmers and feeders of southern Nebraska, told me that with favorable weather from now on he would have 35 bushels of corn to the acre. A prominent feeder and farmer at Tecumseh, Neb., told me he would have from 35 to 40 bushels to the acre, and that many of his neighbors would do as well. Three weeks ago, he said, he did not think a

single steer would be fed in that vicinity. They are buying a few feeders now and if the weather continues favorable a good many cattle will be fed there.

Jacob Lichty, of Morrill, is one of the leading farmers and feeders of Brown County, Kansas. You can get some idea of his feeding operations when I tell you he has 550 head of cattle on full feed now. He owns a number of farms and raises a large acreage of corn every year. He called me up by telephone the first of the week and told me he had spent Sunday making a careful examination of his corn fields with a view to finding out just what the prospects for corn were. He found many stalks on which the ears were just filling out, the grains just forming on the cobs. Every one of these, he said, would make an ear of corn provided the weather continued favorable. He estimates that he would have at least 30 bushels of corn to the acre. He said that he had thought that he would not need any more feeders this fall, but that he had changed his mind, and expected to buy some more.

These are a few straws which show the direction of the wind. The farmers of the West are not at all discouraged, and the outlook for them is very much brighter than it was three weeks or a month ago. I was up at Beatrice a few days ago the guest of a banker who owns a number of farms in that part of the country. We drove out into the country and saw many corn fields which I am satisfied, from my own observation, will make 30 to 40 bushels to the acre. We went into some of the fields and examined the corn. I noticed the same thing Mr. Lichty spoke of to me. There were many ears on which the grains were just forming. There is no doubt that they will make good ears if the weather is favorable the remainder of the season.

D. A. WARREN, BLUE MOUND, LINN COUNTY, KANSAS.

Improvement in conditions in my county during the past three weeks has been simply marvelous. We had a good wheat crop to begin with. The oats and hay crops weren't worth much, and before the rains set in there was scarcely any grass to be seen. Corn looked very bad, and the prospect was there wouldn't be enough to pay for the husking. But now everything is changed. The grass is as fine to-day as it was in May. Cattle are doing well on it. The crab-grass has sprung up as if by magic and the fields are covered with it. Stock eat it readily and get fat on it. Kaffir-corn and sorghum are in fine condition and will make good crops. There is a good deal of millet and it promises a good crop. The Kaffir-corn is as good as I have ever seen it.

During the drouth many farmers were forced to sell their cattle, but they are buying others now, and paying \$8 to \$10 a head more for them than they received for the ones they sold. But they figure that even at that rate they can make money on them. Barring a shortage on the corn crop we haven't anything to complain of, and we aren't complaining of it very much, for the prospect is that it will be made up by an abundance of other feed.

JOHN R. MULVANE, PRESIDENT BANK OF TOPEKA.

The business of the State will not be seriously affected by the drouth. The 75 per cent loss on the corn crop of 1901 will be offset by two and one-fourth times the price on the old corn on hand, which, with the new crop, will certainly make 80,000,000 bushels at two and one-fourth times the price, to which add 10 cents per bushel increase value of 90,000,000 bushels of wheat.

Then can be added 50 per cent of the 1 cent per pound increase on fat cattle, the other 50 per cent of the 1 cent per pound will more than cover loss on stock, to which add 50 per cent of the 1 1/4 cents per pound increase in the price of fat hogs. The other 50 per cent of the increase will far more than cover any loss incident to the replacement of stock hogs.

The substantial prosperity of the State of Kansas will not be checked. The immense wheat crop with good prices and the widespread distribution of its proceeds will reach more pockets than any other crop we raise. The curtailment of credits may equal about 20 per cent, chiefly in cattle feeding paper, and from a widespread spirit of economy, but not of necessity. By way of offsets, the alfalfa, Kaffir-corn and sorghum are all drouth-resisters and will make rich forage. The acreage of these crops in Kansas has increased 1000 per cent in seven years.

"The dairy interests of the State have doubled each year for the last ten years. This industry is looked upon with the



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same favor as our best agricultural industries.

"The banks of the State of Kansas at the last report in July showed about \$70,000,000 on deposit. Being an agricultural State the good bulk of this money belongs to the farmers. With more cattle and hogs in the State, more bushels of wheat than at any previous year, less debt, with our farms better improved, our pianos and rubber tired buggies bought and paid for, we anticipate only a hesitancy in the general business of the State."

Kansas Fairs in 1901.

Following is a list of fairs to be held in Kansas in 1901, their dates, locations, and secretaries, as reported to the State board of agriculture and compiled by Secretary Coburn:

Allen County Agricultural Society—C. H. Wheaton, secretary, Iola; September 10-13.
Brown County Fair Association—G. W. Harrington, secretary, Hiawatha; September 17-20.

Butler County Fair Association—H. M. Balch, secretary, Eldorado; October 8-11.
Chautauqua County—Hewips Park and Fair Association—N. G. Marsh, secretary, Cedar Vale; September 25-28.

Coffey County Fair Association—A. L. Hutchens, secretary, Burlington; September 10-13.

Cowley County—Eastern Cowley Fair Association—J. M. Henderson, secretary, Burden; dates not yet chosen.
Finney County Agricultural Society—D. A. Mims, secretary, Garden City; August 21-23.

Greeley County Fair Association—J. C. Newman, secretary, Tribune; September 6-7.

Harvey County Agricultural Society—John C. Nicholson, secretary, Newton; September 24-27.

Jackson County Agricultural and Fair Association—S. B. McGrew, secretary, Holton; September 24-27.

Jefferson County Agricultural and Mechanical Association—Edwin Snyder, secretary, Oskaloosa; September 3-6.

Jewell County Agricultural Fair Association—C. F. Horne, secretary, Mankato; September 17-20.

Marshall County—Frankfort Fair Association—J. D. Gregg, secretary, Frankfort; September 17-20.

Miami County Agricultural and Mechanical Association—W. H. Bradbury, secretary, Paola; September 24-27.

Montgomery County—Coffeyville Fair and Park Association—R. Y. Kennedy, secretary, Coffeyville; August 13-17.

Morris County Exposition Company—M. F. Amrine, secretary, Council Grove; September 24-27.

Neosho County Fair Association—H. Lodge, secretary, Erie; August 27-30.

Neosho County—Chanute Agricultural, Fair, Park, and Driving Association—A. E. Timpane, secretary, Chanute; September 3-6.

Ness County Agricultural Association—H. C. Taylor, secretary, Ness City; October 2-5.

Norton County Agricultural Association—J. L. Miller, secretary, Norton; September 18-20.

Osage County Fair Association—C. Curtis, secretary, Burlingame; September 17-20.

Reno County—Central Kansas Agricultural Fair and Live Stock Association—Ed. M. Moore, secretary, Hutchinson; September 2-6.

Rice County Agricultural Association—C. Hawkins, secretary, Sterling; September 11-14.

Riley County Agricultural Society—R. T. Worboys, secretary, Riley; September 24-26.

Rooks County Fair Association—J. Q. Adams, secretary, Stockton; September 10-13.

Sedgwick County—Wichita State Fair Association—H. G. Toler, secretary, Wichita; October 1-4.

Stafford County Fair Association—John W. Lill, secretary, St. John; August 28-30.

Sumner County—Mulvane Agricultural Society—John A. Reed, secretary, Mulvane; September 27-28.

Wilson County—Fredonia Agricultural Association—J. T. Cooper, secretary, Fredonia; August 20-23.

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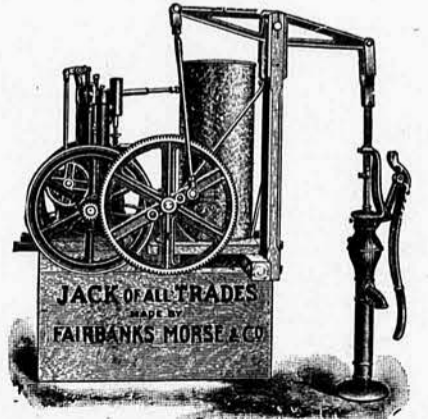
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In the Dairy.

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

Summary of Calf Experiments.

The experiments recently published on this page indicate very clearly that unless a cow gives considerably more milk than is needed for the calf it will not pay to milk her. Since it costs about \$8.00 to pay for milking the cow, and about \$6 to raise a calf on skim-milk, a cow must produce, to be a profitable milker, at least \$16 worth of butter fat. This leaves the skim-milk to pay for the hauling. With 4 per cent tests 15 1/2 cent butter fat this would mean 2,600 pounds of milk per annum. If calves are fed on whole milk the amount required would be still greater. In this case a cow must produce \$26.50 worth of butter fat which under the same conditions would mean a yield of 4,275 pounds of milk. This is assuming that the cows get no more extra feed than received by the one nursing the calf. This does not mean that cows giving the amount of milk above indicated are really profitable dairy animals, for usually a dairy cow will consume more grain than one nursing a calf, but it indicates to the man who has dual purpose animals what his beefy cows must yield in order to pay for the expense of milking the cow and raising the calf.

Under the condition of these experiments 10 average cows would yield 55,540 pounds of milk containing butter fat worth \$338.32 and skim-milk worth \$74.98, 10 calves worth at least \$18 apiece at 6 months of age, \$180 making a total credit of \$593.30. On the debit side are to be charged \$210 for feed of cows (2,350 pounds grain, 4,500 pounds or roughness and pasture), \$125 for caring for the cows, \$79.80 for feed and care of the calves, \$69.42 for hauling milk to the creamery. This makes a total debit of \$484.22. Subtracting this from the total credit we have a profit of \$109.08 or \$10.91 per head, where calves are raised on skim-milk.

With the whole milk calves the above items will be the same except the feed and care of the calves which will be \$184.70 instead of \$79.80, which will reduce the total profit to \$4.18, or 42 cents per head.

If the summary of these two lots be figured on the basis of the college herd with the 25 per cent of unprofitable cows stricken out the total profits in the case of skim-milk calves would be \$143.58 or \$14.36 per head. With the whole milk calves the profit would be increased to \$38.68, or \$3.87 per head. The calves nursed by the cows would be credited with \$20 per head, the price at which they were sold at the end of the experiment. They are to be debited with \$12 per head, the cost of keeping the cow. This leaves a profit of \$8 per head. Under these conditions there is more profit in letting the calf run with the cow than by raising it by hand on whole milk unless a man is so situated as to want to get work at 12 1/2 cents per hour in which case he would add \$12.50 per cow to his annual income.

The profit per hundred pounds of gain is \$4.68 for the skim-milk lot, 14 cents for the whole milk, and \$2.93 for the calves nursed by the cows. D. H. O.

Enterprising Tonganoxie.

On August 16 Secretary F. D. Coburn and the dairy editor attended a farmers'

institute at Tonganoxie, Kans. This is a place where considerable interest is manifested in dairying. One of the first men we met was "Farmer Brown" who, when he found that we were to talk on dairying, pulled out his Hoard's Dairyman and remarked that he had just been reading along that line. "Farmer Brown," although very busy with work, took time to be at the institute and helped to make it a success.

As soon as we stepped into the Creamery we found the churn full of butter, the milk vat full of milk and the cream vat rapidly filling. In the receiving room hung a list of 136 patrons, and opposite these names were comparatively few small figures, but many large ones, several patrons delivering over 400 pounds of milk daily. Notwithstanding the long dry season of June and July these patrons were in good spirits and were well pleased with their creamery, having received 19 cents for butter fat delivered in July.

A short time before the rains came several of the farmers in this community became discouraged and were ready to sell their stock. Mr. Laming, Jr., cashier of Tonganoxie State Bank, urged them to hold onto their stock and promised to loan them money to tide over next winter if they needed it. To show his faith in the outcome as well as a matter of financial investment Mr. Laming went to Kansas City and bought 197 head of cows that were to calve in the late summer or fall. This encouraged the farmers who wanted to sell, and when the rains came everybody was happy to think they had not been so foolish as to sell their stock at such a great sacrifice.

This year's dry spell has been a lesson to the farmers of Leavenworth county. They are now talking alfalfa, Kaffir-corn and silos. Some farmers have already sown alfalfa and many others were getting ready to sow it. The interest in alfalfa was shown by the large number of questions asked about it. There were 5 men who had silos ready to fill and others were talking about building.

The women were a prominent feature in the success of the institute. Although experts in domestic lines they did not confine their entire attention to that subject. Mrs. Cora Bullard, daughter of Fred Wellhouse, the apple king, had mastered E. B. Cowgill's tables on comparative values of feeds and could tell better than most men what was the most economical feed to buy at the present market value.

Tonganoxie has reason to be proud of her enterprising people, and the gratifying point is that this enterprise is not to be satisfied with present attainments, but will push forward to get the very best there is to be had.

D. H. O.

An Advanced Register for Guernsey Cattle.

In order to encourage the rearing and breeding of Guernsey cattle of high individual record in the production of dairy products the American Guernsey Cattle Club has adopted rules for the establishment of an advanced register. The scheme contemplates public supervision associated with or authorized by the Experiment Station in the State in which the test is made. All records will be upon the butter fat basis, i. e. crediting the cow with what she actually produces without considering the uncertainties of butter-making by the dairyman. The conditions for entry vary with the age of the animals, being the lowest when 2 years old and the highest when 5. The animals, may be entered under any one or more of the following three records. First, A year's milk record of 6,000 pounds for a cow whose record commences when she is 2 years old or under; for each day the animal is over 2 years old at the beginning of her years record, the amount of milk she will be required to produce in the year, will be established by adding 3.65 pounds for every such day to the 6,000 pounds required when 2 years old. This ratio is applicable until the animal is 5 years old, when the required amount will have reached 10,000 pounds, which will be the amount of milk required of all cows 5 years old or over.

Second, A year's butter fat record of 250.5 pounds if the record is commenced before the cow is a two-year-old. One tenth of a pound of butter fat will be added to this for each day the animal is over 2 years old at the beginning of her year's record. This ratio will continue until the animal is 5 years old when the required amount of butter fat will be 360 pounds.

Third, A seven days butter fat record of 10 pounds for a cow whose record commences when she is 2 years old or under. For each day over two years .000456 of a pound will be added to this

10 pounds, until the animal is 5 years old when the required amount will have reached 15 pounds.

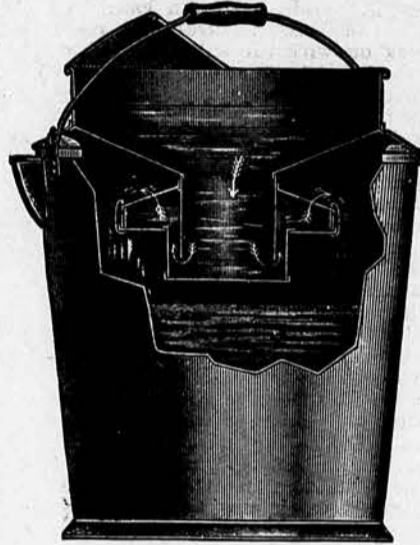
Considerable interest has been awakened by the Guernsey breed in the work done by the Home Butter Test. This has encouraged the Guernsey cattle club in the adoption of the above plans with the hope of putting in permanent form the work the breed is capable of doing.

The Ideal Milk Pail.

H. M. BAINER.

For strictly sanitary purposes the "Ideal" milk pail can hardly be excelled. The pail is composed of two parts, the pail and the cover. The cover fits closely to the pail and is so constructed that all foreign substances will settle in a cup below, and the milk proper will pass upwards through the strainers, and will flow over into the pail in an almost pure condition, nothing being allowed to enter the milk.

When the pail is full it is emptied through a spout and the cover does not need to be removed, thus leaving no possibility of hair or dirt to enter the milk. It has been tried at the Kansas State Experiment Station.



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The points for and against it are as follows:

- For—
1. It is strictly sanitary.
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 3. Milk can be emptied into a can without straining, except through a cloth.

Against—

1. It is harder to keep clean than other pails.
2. Where each cow's milk is weighed, the pail has to be weighed back each time on account of the foam that remains in it and the cover. The amount varies from .2 to .5 of a pound.

More Experience With Green Sorghum.

After reading press bulletin No. 100, published in the KANSAS FARMER of August 15, Mr. J. B. Remington, of Osawatomie, writes: "My attention has been drawn to your circular letter of August 13, 1901, regarding pasture of cattle on fields of growing sorghum. From time to time I have noticed letters and published articles along this line and speaking of the practice as one of great risk and danger.

"For a number of years I have practiced sowing sorghum for pasture, letting the herd in upon it when small, say 4 inches high. Have always turned them upon it and let them have all they wanted from the first, and then stay upon it until eaten out in the fall. I have never even had so much as a sick animal. For several years I have sown a field of sorghum upon which to turn my feeding cattle in the fall, and about September 1, when this was 4 to 6 feet high and in full seed, but yet green, have taken my corn bunks, filled them full of shelled corn, and set them in the field where cattle could have free access to them; then I have turned my large feeders in the sorghum and let them eat all they wanted of it. When full I let them go to the corn troughs, and it never sickened or foundered a steer. In fact it is the only way I have ever been able to start cattle on a full feed or without some apparent shrinkage or loss of time, but under this treatment they run in the field and to their corn, gaining from the first day.

"Another thing: I have taken 1,000 pound feeders from dry prairie pasture, driven them, in August, 4 miles in two days, turning them upon this kind of feed, tired, empty and hungry, and as stated before not one ever was made sick. There are plenty of my neighbors who have been witnesses to this fact. If I wished to fatten a bunch of cattle



for the market quickly, cheaply and without trouble, would do it that way. Can beat the ordinary time required by not less than thirty days.

"I write this because my experience has been so different from the advice you give."

Six Scrub Kansas Cows.

JOHN M. GUY.

Last spring we were milking six cows, 3 of them were half Holstein and the other 3 were high grade Shorthorns. One of the first named had passed her prime and one of the other two had been milking since last December. Of the three last mentioned two were heifers. There was no skimming-station near us so we made butter and took it to the store and got 11 cents for it. We live near a small town where nearly every family keeps a cow of their own. There was no home demand and the store keeper could only pay shipping prices. Finally the Continental Creamery Company put in a skimming-station a little over 4 miles away and I said we would not churn another pound of butter to sell, started to send milk to the station the first of June and below you will see the record of the 6 cows for the month of June:

366 pounds of milk. Test 4.1. Butter fat 150.3 pounds at 16 cents \$24.12, making an average of \$4 per cow.

During a third of that time my cows only had water twice a day as the grass had played out in the home pasture and the water in my other pasture had dried up. I thought the cows did well under the conditions. Under favorable circumstances the cows would have given 500 more pounds of milk in the month. Have spoken to quite a number to send their milk to the skimming-station but they are afraid of getting cheated. There was a party who had a station in Wakefield and at the end of the month some of the patrons who sent milk from 4 or 5 cows had a bill sent to them for from 40 cents up for one can. Now I want to say to the readers of this paper that all creamery companies are not such frauds, and those who send milk to our station will be satisfied, and if a mistake occurs I am quite sure it will be made good.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" and Catalogue 237 free. West Chester, Pa.

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Send for catalogues containing much information it will be to your interest to know if you are thinking of buying some other make.

VT. FARM MACHINE CO., BELLows FALLS, VT.

Kansas Sheep Feeding Stations.

The Rock Island is just finishing work for the present on its sheep and feeding yards at McFarland, Kans., the junction of its Colorado, Oklahoma-Texas and Texas-New Mexico lines, 100 miles from Kansas City. The yards are located on 1,060 acres of ground that cost about \$30,000, and \$30,000 more has already been spent on improvement.

The work is not nearly completed and will be resumed in the early winter, when preparations will be made to feed the sheep coming to market. Those arriving now are grass fed, and the pasturage surrounding the yards is used for that purpose. The extent of the improvements to be made for this winter's feeding is dependent upon the probable number of sheep to be fed at the McFarland yards.

Two sets of conditions which have not heretofore existed make it practically impossible to closely estimate the probable demands upon the feeding yards. One of these is the drouth and the consequent high price of feed-stuffs at McFarland, which will greatly lessen the amount of feeding. The other is the Liberal-El Paso extension of the Rock Island, opening up to that road an immense sheep growing territory that has never before been tributary to it.

Traffic officials of the Rock Island have estimated that 1,000,000 sheep a year will be shipped from stations on the Liberal extension, and most of these are expected to come to the Kansas City market. The effect of drouth conditions upon these shipments and their stopping at McFarland for feeding purposes will be learned before it will be definitely decided what improvements will be made this year. As the demand for the feeding yards grows they will be extended to meet the necessities. Warehouses, dipping facilities, etc., have already been provided.

The Rock Island has extensive sheep feeding yards at Stockdale, 60 miles out of Chicago. W. A. Remington, superintendent of stock yards of the company, who was in Kansas City, en route from his headquarters at Chicago to McFarland, to look over the new yards, said at the Stockdale yards last year, the company spent \$49,600 for feed stuffs. The Santa Fe is putting in sheep feeding yards at Emporia, the Burlington has them at Lincoln, and the Union Pacific has under consideration the erection of such yards on the Kansas Pacific, at Manhattan, Kans.

With the yardage improvement and feeding facilities, together with the extension of Kansas City lines into the sheep growing districts, it is expected that a much more important sheep market will be developed here in the near future.

Forecasts a Hog Famine.

"There is an unusually large proportion of sows and stock hogs in the supplies now coming to this market," says a prominent local stockman, "and I can't see anything but higher prices next spring and summer as the result. The farmer who is sending in this kind of stuff hasn't the corn to feed them with, and is forced to let them go. One load of hogs yesterday had not a barrow in the whole 80 head. The most of this kind are not in condition to command the best prices the market affords, but they are selling, and at good prices, too. It means a scarcity of stock hogs next spring, and a scarcity of fat hogs a little later. I look for 8-cent hogs next spring if this keeps up much longer."

Another salesman says: "Anything with any 'kill' to it whatever is selling, but there is some stuff coming that hasn't 'kill.' We're getting a good many 75 to 125 pound pigs that should not be marketed at their age and weight, but there is no corn to feed them, and shipping them is the only thing left. I would not be surprised to see even 10-

cent hogs next year. You can count on \$4 hogs when you have 25 cent corn, and about \$8 hogs when corn is worth 50 cents, and that proportion holds good most of the time.

"The government regulations prohibit the shipment of hogs back to the country, on account of the danger of spreading the cholera. If it were not for this provision, there would be a bonanza for the man that has the money and the corn in buying up the young pigs and stock hogs that are coming so freely."—Drovers Telegram.

Shorthorns in Evidence.

EDITOR KANSAS FARMER:—It is with no small degree of satisfaction that the American Shorthorn Breeders' Association congratulates all breeders on the continued prosperous condition and the bright outlook for the breed, in spite of the severe drouth that has prevailed throughout the corn belt States. Cattle breeders everywhere will hail with joy the report of the splendid sale of Geo. Harding & Son, at Chicago, August 7, where nearly 60 Shorthorns made an average \$657. This was a choice lot of cattle, being carefully selected from three most excellent herds, and at the prices realized some of these cattle were no doubt sold at a loss. But the action of Messrs. Harding in resolutely going on with the sale, and the confidence shown by the men who bought the cattle, under conditions calculated to test men's nerve, will prove a source of inspiration and encouragement to all breeders. The effect of the drouth has no doubt been exaggerated in some localities, but admitting its severity, is it not better for the cattlemen to resolutely face the conditions and preserve valuable breeding animals by some economy in the more costly feed and by utilizing the cheaper food stuff which is ordinarily wasted on most farms, than to dispose of his cattle at a sacrifice?

The cattleman who makes such a sacrifice will surely regret it during next spring and summer when the price of beef has gone beyond the high price of 1895, and is soaring around the high point of 1882, and under this stimulus, pedigreed cattle are being sold at enhanced values. After a while the rains will come and grass when touched by the magic wand of water and sunshine will respond to the touch and grow and grow until the fields, which are now "brown and sere," shall be carpeted with a wonderful growth of green. And since nature often compensates for partial failure it is not at all unreasonable to expect a fall growth of grass, particularly blue grass, that will carry cattle well into the winter months. The Association desires to assure the breeders that the four great national shows and sales to be held under its authority will be made as good as possible. No effort will be spared. To accomplish this purpose the co-operation of all breeders is earnestly requested. Bring your choice specimens for exhibition or sale, but if you can not exhibit your cattle, encourage fair managers by your presence. The date for show at Hamline, Minn., is September 2 to 7. The sale of Shorthorns will be Tuesday, Sept. 3, at 10 a. m.

The show at Louisville will be September 23 to 28, and the Shorthorn sale September 26, probably in the afternoon.

Kansas City show October 21 to 31. Chicago show, December 1 to 7. B. O. COWAN, Ass't. Sec'y.

Keep the body healthy at this season by using Prickly Ash Bitters. It is a necessary condition to successfully resist malarial germs.

Daily Excursions to Buffalo and New York.

via the Nickel Plate Road. Through trains to New York City without change. Vestibuled sleepers Chicago to Boston; dining cars on all trains. Meals served on American club plan at from 35 cents to \$1. Write John Y. Calahan, General Agent, 111 Adams St., Chicago, for particulars. (No. 20.)

Brain Markets.

Conducted by James Butler, secretary of the Farmers' Co-operative Grain and Live Stock Association.

"The human race is divided into two classes,—those who go ahead and do something, and those who sit still and say, why wasn't it done the other way."—Oliver W. Holmes.

Grain Markets to 2 p. m., August 26.

As predicted in our last letter, wheat is now on the decline, mainly caused by large receipts from the country, which gives the big manipulators a chance to break the price. Receipts in Kansas City to-day were 419 cars, as compared with 676 cars one year ago; but while our receipts are a little less than last year, the northwest receipts are the bug bear and will be used as a lever to force down the price.

Receipts in the spring wheat territory were 687 cars to-day in comparison with 657 one year ago. The conditions of the northwestern spring wheat is poor, only a small per cent of same graded No. 2, which condition is always against the price.

The visible supply decreased 762,000 bushels this week. It is a very rare occurrence to have the visible supply of wheat decrease at this time of the year. Of course, the enormous exports are responsible for this state of affairs; exports were over 6,000,000 bushels last week, and are 820,000 bushels to-day, which condition vouches in eloquent terms for foreign necessities.

We do not look for any material advance in prices until farmers decide to hold back their supplies, thus causing the manipulators to bid for wheat.

Closing quotations were as follows: Chicago.—No. 2 red wheat, 70½ to 71c; No. 2 hard wheat, 69¾c; No. 2 corn, 55c.

Kansas City.—No. 2 red wheat, 68c; No. 2 hard wheat, 65½ to 66c; No. 2 corn, 56¼ to 57c.

WEEKLY WEATHER CROP BULLETIN.

Weekly weather crop bulletin of the Kansas Weather Service, for the week ending August 29, 1901, prepared by T. B. Jennings, Station Director.

GENERAL CONDITIONS.


The week was warm with slight rainfall. The scarcity of rain was not felt particularly, except that in many counties the ground is too dry for plowing. In the eastern division good rains fell in Jefferson, Leavenworth, Wyandotte, and northern Douglas. In the middle division good rains fell in Rush. In the western division there were good rains in Decatur, Norton, and Morton. Chinch-bugs are appearing in Lincoln and Jewell Counties. There were good dews at night.

RESULTS.**EASTERN DIVISION.**

Crops continue in good condition as a rule throughout the eastern division. Late corn is being cut for fodder in Bourbon, Montgomery and Woodson, improving in Coffey, and promising well in Marshall, Nemaha and Shawnee; is drying up in Jackson. Plowing for wheat is about finished in Pottawatomie, is advanced in Anderson and Marshall, and begun in Nemaha. The forage crops promise well in all counties and will make more than expected in Chautauqua; are good in Jefferson, Bourbon, Lyon, Marshall, Montgomery, Nemaha, and Shawnee; are fair in Woodson; and in need of rain in Anderson. All fruits are doing well in Anderson and peaches are ripe. All counties except Wilson report fruit in good condition. Plowing in Chautauqua nearly finished and progressing rapidly in Coffey, Jackson, Lyon, and Shawnee. Hay in Montgomery will make a fair yield, will be good in Woodson, and will make more than expected early in the season in Franklin.

MIDDLE DIVISION.

There will be little corn in Cowley; in Jewell and Lincoln the chinch-bugs are appearing and corn has been cut to save it; in McPherson and Kingman corn is being cut for fodder. The rains were too late to make corn in Stafford, and in Republic the corn is being harvested with binders. The pastures in Cowley, Jewell, and Smith are in need of rain and will be short, but in Sedgwick they are green. Fodder is doing well in Smith, and is being cut in Cowley and Washington. The forage crop is light in Rush. Reno, McPherson, and



In every town and village may be had, the

Mica Axle Grease

that makes your horses glad.

Made by Standard Oil Co.

Cowley report ground too dry for plowing. In Harvey and Kingman plowing is being done. Hay is scarce in McPherson. Fruit is damaged in Smith.

WESTERN DIVISION.

Late corn will make a fair crop in Decatur; a good crop in Gove; a fair crop in Lane, and is improved in Thomas. Pastures in Norton and Grant have improved and the rains have helped the grass in Wallace. Fodder in Lane is being cut and has improved in Norton. The second crop in Morton will be better than the first. Cattle are doing well on the ranges in Finney. It is too dry for plowing in Ford and Ness. Alfalfa will make a light crop on the third cutting in Finney and is in the stack in Ford. Apples are falling in Wallace and fruit is doing well in Gove. Wheat not in good condition in Lane.

His Opinion.

"Well, what do you think of things?" asked one fly of another. "I," replied the other fly, "am in favor of the open door and the screenless window."—Pittsburg Chronicle-Telegraph.

Only \$45 California and Back.

That's the first class round-trip rate, open to everybody, from

Topeka to San Francisco, via the Santa Fe.

Account General Convention of Episcopal Church.

On sale September 19 to 27.

Tickets good via Los Angeles and for return until November 15.

Only line under one management all the way from Chicago to California.

Only line for both Grand Canyon of Arizona and Yosemite.

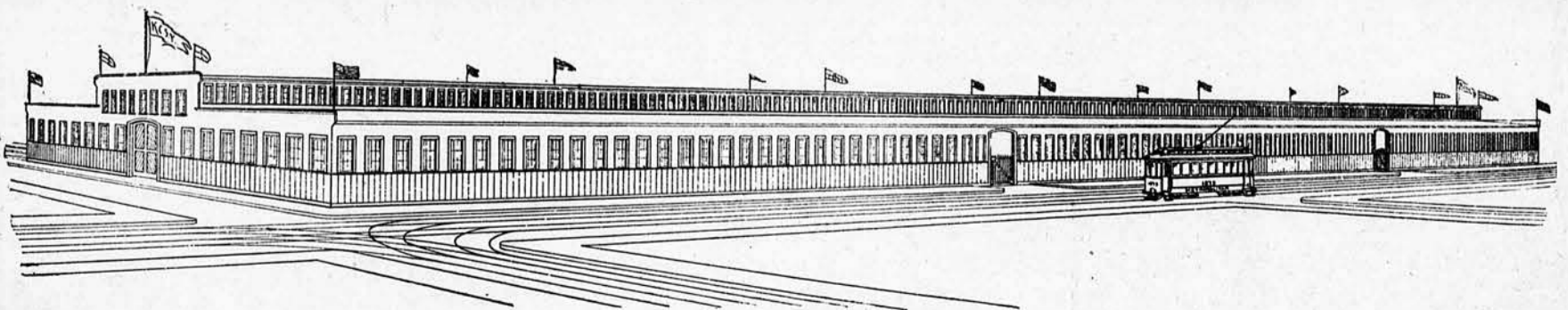
Only line to California with Harvey meal service.

Write for descriptive literature.

Santa Fe.

T. L. King,

Agent, A. T. & S. F. R'y, Topeka, Kansas.

A New Barn to House 1,500 Cattle, Expressly for "The American Royal" Cattle Show.

The above is a fac simile of the architect's drawing for the new barn which is now under course of construction by the Kansas City Stock Yards Company to cost \$40,000. It is 800 feet long and will comfortably house all the cattle which will be shown in the great event on October 21-26.

Polo Duro Stock Farm.

It is a rare treat to the student and lover of improved stock to have the privilege, recently enjoyed by a Kansas Farmer representative, of visiting an ideal stock breeding establishment in Kansas, such as the Polo Duro Stock Farm, designed by nature to be what its able and enterprising owners, Hanna & Co., have made it, the premier Shorthorn and Percheron breeding establishment of the West.

The Polo Duro Stock Farm is located adjoining the city of Howard, the county seat of Elk county, Kans., on the Howard branch of the Santa Fe railroad, 17 miles south of Emporia. The farm has a frontage of nearly a mile against the town site, and comprises 1900 acres of fertile land in the beautiful Paw Paw valley.

The herd of Shorthorns now exceeds 200 head and is undoubtedly the strongest herd of Scotch Shorthorns in the State, if not in the West. In establishing the herd in 1882 it was with the idea of making it a quality herd by intelligent and scientific breeding, and now after a decade of practical experience the satisfactory success achieved is an evident fact. In 1884 Scotch topped bulls were introduced and from this on the best blood obtainable has been recruited. In 1898 Mr. S. C. Hanna, the manager, visited England and Scotland, resulting in the selection of 13 head, 3 bulls and 10 females, out of the herds of William Upper Mill, situated in Northern Scotland. Two of the bulls Mariner 135024 and Collynie 135022 were retained for service in the Polo Duro herd. The 10 females were specially selected to add additional strength to the herd. Mariner is an Upper Mill Missle, his dam being the famous old cow, Missle 88, by Ventriloquist. His sire was the pure Cruickshank bull, Golden Ray, by the famous Scottish Archer and out of the well known Cruickshank cow Guelder Rose. One finds in this pedigree the best known to the Scotch bred cattle. Individually, Mariner is a bull of great scale,

at the national show to be held in Kansas City in October, meantime Kansas Farmer readers can be supplied with a few good things from this establishment at reasonable prices. Messrs. Hanna & Co.'s private catalogue is a model, an object lesson that other breeders should emulate who desire to give out definite information as to the breeding herd.

Herefords and Profits.

Editor Kansas Farmer:—The American Royal cattle show at Kansas City, October 21 to 26, will not, in my opinion, suffer to any appreciable extent by reason of the shortage in the corn crop of this section. From my advice I can say that not one Hereford breeder who had consigned cattle to the sale will withdraw his entries for this reason, nor will the breeders who contemplated showing be discouraged by the outlook.

The facts are that the pure bred cattle business is not very seriously effected by the many things that may temporarily destroy the profit in handling native cattle. The margin of profit for the Hereford breeder is so much greater that the few dollars per head that may mean ruin to the man who raises or feeds natives can still be lost and a fair profit remain.

Again, there is no animal to be found on the farm that can give a better account of himself on a diet of roughness than can a Hereford. That there will be a great deal of corn fodder and like feed is very evident, and the proper way to get the best returns from this is through the medium of a Hereford. Breeding the pure bred stock has saved numerous Kansans during previously unfavorable seasons, and it is likely such seasons will occur again. A few Herefords in your pasture is the best solution of the question of how to make money with cattle and 60-cent corn.

C. R. THOMAS,
Secretary Hereford Breeders' Ass'n.
Kansas City, Mo.

O. B. Whitaker, of Shady Bend, Lincoln County, Kansas. The cow, Belinda, is bred to that splendid bull, Archibald Mc. Sunny Slope Prince 10261 cost Mr. Whitaker the snug sum of \$525 in the sale ring. He is one of the best products of Sunny Slope farm at Emporia, and has been bred to 30 of the best cows in Mr. Whitaker's herd.

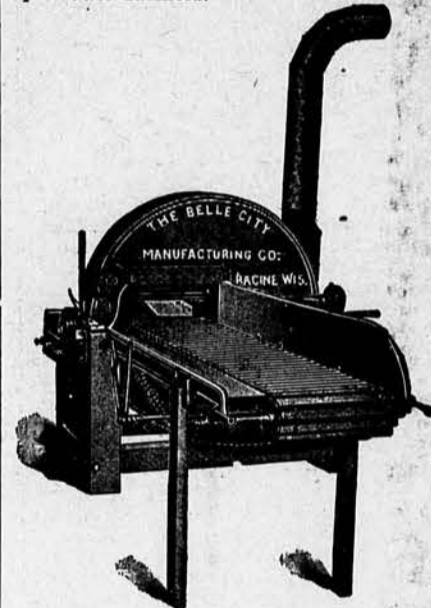
Geo. B. Ross, breeder of Shorthorns, Lyons, Kans., purchased a new herd bull of which he says: "I found just what I wanted at H. C. Duncan's. I bought one of his herd bulls—Victor Dudding, 143438, caived September 7, 1898; sire Baron Dudding 125042, out of Orange Blossom of Wildwood, vol. 40. He is a beautiful rich red, splendid all over individual with a good disposition. I consider myself very fortunate in securing him. Rockefeller bought a full brother to him at \$625.00."

In the swine, cattle, and sheep classes at the Pan-American live stock show there is an aggregation of 2,700 animals, divided as follows: 28 swine exhibitors, 87 cattle exhibitors, 46 sheep exhibitors. The entries for the horse classes have been extended until September 1, and the indications are that in the horse show there will be about 800. The judgment of the different classes of live stock will take place as follows: Swine, August 23 and 29; cattle, September 16 and 17; sheep, September 25 and 26; horses, October 9 and 10; poultry and pet stock, October 23 and 24.

A. L. Sullivan, manager of the Lincoln Importing Horse Co., of Lincoln, Nebr., to a Kansas Farmer representative said: "Capt. Wescott sailed on last Wednesday, steamer Oceanica, for Europe for the purpose of buying and landing here about the 10th of October the grandest lot of Percheron and Shire stallions ever brought into this Western country. Our new corporation have purchased the old site known as the Importing Draft Horse Com-

uted to by many famous writers, and so thoroughly illustrated that it surpassed even the most expensive book which had up to that time been issued. In those days the magazine was printed from two sets of plates only, and when these were worn out it was impossible, without a great loss of time, to put further editions on the press. The newsdealers, taking advantage of this condition, raised the price of the Cosmopolitans World's Fair number to one dollar a copy. A few sales were even made toward the close at the phenomenal figure of five dollars. Undoubtedly this happening is unique in the history of magazine literature. The Cosmopolitan will endeavor to repeat its past success, with a Pan-American Exposition number, which will be even more attractive, if possible, than its World's Fair predecessor.

The Belle City Mfg. Co., of Racine Junction, Wis., have a new attachment for their feed cutters and are now putting on blower carriers, as well as the different styles of carriers they have used before on their power machines. There will be a large shortage of feed this fall in many sections where the drought has cut off hay and corn fodder, and this is when the demand for feed cutters will come in, as the value of cutting is well known to most up-to-date farmers.



This company are really the pioneers in the manufacture of fodder and ensilage cutters, and we recommend that our readers write to them for their latest printed matter, etc. Their advertisement will be found in another column.

POULTRY BREEDERS' DIRECTORY.

WHITE WYANDOTTE COCKERELS For Sale. C. W. Staley, Rose Hill, Butler Co., Kans.

HIGH-SCORING, PRIZE-WINNING, Cornish Indian Games, W. P. Rocks, Black Langshans. Eggs \$1 per 12. Mrs. J. C. Strong, Moran, Kans.

BELGIAN HARES...

Belgian hare fry beats chicken, and a good breeding pair of hares will keep you supplied all the year round. I can supply you in the finest breeding stock at \$8.50 per pair; \$5 per trio, until further notice.

A. H. DUFF, Larned, Kansas.

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

STANDARD POULTRY.

Barred Plymouth Rocks, White Plymouth Rocks, Partridge Cochins, Buff Cochins, Light Brahmans, Black Langshans, Silver Wyandottes, White Wyandottes, Silver Spangled Hamburgs, Brown Leghorns, and Belgian Hares. All Our Breeding Pens of this season at Bottom Prices, also Spring Chicks. Prices now less than half of winter prices. Fine Exhibition and Breeding Stock of Rare Quality. Write Me Your Wants. Circular Free.
A. H. DUFF, Larned, Kansas.

CASH PRIZES For Poultry Raisers.

Believing that fresh cut Green Bone is one of the greatest aids to successful and profitable poultry raising, the publishers of this paper will pay a cash **Prize of \$10** for the best article, not exceeding 500 words in length, on **The Use and Value of Fresh Cut Green Bone as Poultry Food.**

CONDITIONS.
The article must be written by one who has had actual experience in the cutting and feeding of bone. The name of any special bone cutter must not be mentioned in the article. The article must be in our hands on or before August 15. Announcement of the prize winner will be made in our first issue in September. Articles submitted will become the property of this paper.

\$100 CASH PRIZE. Other agricultural papers are making the above offer. Each paper will award one \$10.00 Cash Prize. The articles winning these \$10 prizes will then be submitted to a committee of competent judges (to be announced later), who will select the best article of all, for which a Grand Prize of \$100 will be paid. Every one of our readers who is familiar with the use of cut green bone stands a chance of winning these prizes. Send in your article at once.
Address GREEN BONE PRIZE, Care KANSAS FARMER.

Time extended for above mentioned articles, to September first.



Alfalfa Meadow Farm
BREEDERS OF
POLAND CHINA SWINE
C. M. IRWIN. S. C. DUNCAN

BREEDING ESTABLISHMENT. Wichita, Kansas.

length, width and possesses the required bull character as a promising sire. His get, both sons and daughters, so far sustain his ability as a sire of the better class of beef cattle.

The young herd bull, Imp. Lord Cowslip, a two-year-old was purchased last year from Wm. Duthie of Scotland and arrived at Polo Duro early this year. He was sired by Lord of Fame, whose bull calves averaged \$1,000 at the Collynie sale last year. Lord Cowslip's dam, Cowslip 26th, is a noted prize-winner and is regarded as one of the greatest cows in England or Scotland. Lord Cowslip is a bull of great scale, great length and depth, long hind-quarters, straight back, straight hind legs, and good thighs and flanks; good head, horn and style. Mr. Hanna is certainly justified in being proud of his chief lieutenant at Polo Duro.

The registered females are mostly straight Scotch or Cruickshank breeding, while the American bred cows are the get of such noted bulls as Imported Royal Pirate, Imported King of Aberdeen, Imp. Scotchman, Imp. Cupbearer, Imp. Gay Monarch, Imp. Proud Archer, and Young Abbottsburn, with the blood of Imp. Princess Alice through the get of her great son, Royal Knight. Of the 9 imported cows it is quite difficult to select a favorite, however, the writer considered Imp. Golden Queen by Goldspur, and Imp. Roseleaf by Scottish Archer, a full sister to Royal Archer, as the best of the imported females. Messrs. Hanna & Co. have also over 100 head of pure-bred females that are probably the best lot of unregistered Shorthorns in the entire country—a good place to select winning material for fat stock shows or for the large breeder of range cattle.

The registered Percherons number about 25 head of stallions and mares that possess the same high quality accorded the cattle division. The horses are strong in the blood of Brilliant 1271, and headed by the inbred Brilliant stallion, Direct 18839, a son of Bendago by Brilliant 1271. His dam, Fenelo, was by Fenelon, a son of Brilliant. The dam of Bendago was the famous sweepstakes prize-winner, Julia, by LeFerte. They are all dark colors, mostly blacks. Individually and collectively these horses are particularly noticeable for bone and substance as well as great size and rare quality.

Palo Duro will be properly represented

Gossip About Stock.

Remember the big combination sale of Angora goats to be held at the Kansas City stock yards on Wednesday, September 4, 1901. Both registered and high grades will be sold.

Newton Bros., of Whiting, Kans., have withdrawn the announcement of a public sale of Duroc-Jersey swine, as they will be able to dispose of the stock at private sale in view of the prices asked.

Col. J. N. Harshberger, the Kansas auctioneer, informs the Kansas Farmer that M. C. Vansell, of Muscotah, Kans., will hold a public sale of Poland-China hogs and a few Shorthorn bulls. Mr. Vansell always has an attractive offering. This sale will be held on October 8, 1901.

Hood Farm Topics is a 36-page publication, devoted to Hood Farm Stock and proprietary remedies. It also contains much valuable information about common ailments of live stock, as well as mankind. It is well worth having and will be sent free to readers of the Kansas Farmer who will request the same of C. I. Hood Co., Lowell, Mass.

J. W. and J. C. Robinson, proprietors of the Whitewater Falls Stock Farm, Towanda, Kans., write: "We have just increased our herd of registered Percheons by the addition of two good imported Black Percheron stallions 5 and 6 years old. We are fitting a bunch of 18 here for the fall fairs. Expect to show at Hutchinson first. We now have 18 stallions of all ages for sale. Stock doing fine since the late rains, and pastures are good."

We call the attention of our readers to the change in the advertisement of Snyder Bros., Winfield, Kans., who offer some great bargains at special sale. A Kansas Farmer representative visited the breeding establishment last week and will have something of interest concerning the same in later issues of this paper. Buyers can depend on getting good reliable stock and fair, conscientious treatment with this firm.

Attention is directed to the first page illustration of 2 notable Herefords in the Alfalfa Meadow Farm Herd, owned by

pany's ground. As you will know and all others who have ever visited our place, we are the best equipped of any concern in the West to handle draft horses. We propose to take hold of this new institution with more energy and more life, than ever before."

Evans-Snyder-Buel Co.'s review of last week's Kansas City hog market says: Receipts of hogs this week amount to 39,400, a decrease of about 600 as compared with last week. Moderate receipts and a higher provision market has put a strong undertone to the hog market, and prices for the week have advanced 10 to 15 cents per hundred, Thursday being the high day, top reaching \$8.27½ for choice heavy hogs. The spread in prices is just about the same as it has been for some time, and we would advise shippers when buying to bear this in mind and buy hogs on their merits. The quality of hogs this week is about the same as last. There is not quite as much light trashy stuff coming, there being very little demand for this kind, while all good grades are wanted and sell readily.

Publishers' Paragraphs.

The "Frisco Line" has issued an attractive account of the oil fields on its several routes. This beautiful illustrated pamphlet is well worth sending for. It will especially interest those for whom oil has attractions.

"Piggies Troubles" is a new book containing much valuable information for swine breeders. It contains a lot of new matter written by the most prominent authorities on the American continent. It tells what to do and how to do it. It is chock full of suggestions that can not but help to better the swine breeder's condition and we are authorized by the publishers, The Zenner Disinfectant Co., manufacturers of Zenoleum, to say that any one addressing that company at 61 Bates St., Detroit, Mich., and mentioning this paper, will receive free of charge a copy of this work. We advise our readers to write at once before the supply is exhausted as the edition is limited.

The sale of thousands of copies of a ten-cent magazine at one dollar apiece was a very curious happening at the time of the Chicago World's Fair. The Cosmopolitan prepared a World's Fair number, contrib-

Horticulture.

How to Fight the Codling Moth.

O. P. GILLETTE, IN PRESS BULLETIN COLORADO EXPERIMENT STATION.

Many orchardists spray for the codling moth and still grow very wormy apples. The writer knows of an orchard near the experiment station that was sprayed with an arsenical mixture three times last summer and in which fully 80 per cent of the fruit was wormy at the time of picking in September. Another orchard in the same neighborhood was sprayed twice and had less than 2 per cent of wormy fruit at picking time. What made the difference? Why is it that one man sprays his orchard and has very little wormy fruit and his neighbor, who also sprays, has nearly all of his apples wormy? This is a question often asked and frequently difficult to answer satisfactorily. That a reason exists for the different results there can be no doubt. The object of this paper is to give the best directions that we can at present for the successful treatment of this insect. Perhaps it will explain to some why they have not met with better success in the past.

WHEN TO SPRAY.

No date can be fixed upon, yet spraying must be done at the right time if the best results are to be obtained. The right time is immediately after the blossoms fall and before the calyces of the forming apples close. If there are belated blossoms on the trees after the great mass of bloom has fallen, do not wait for them if some of the calyces are closing. If the trees do not all bloom nearly together, spray the early blooming trees first and then in a few days spray the others. Repeat the application in one week, or, at the latest, ten days.

HOW TO SPRAY.

Be thorough with the work. It will take more time and material, but if spraying for this insect will pay at all it will pay best to do the work well. Use a nozzle that throws a medium fine spray, not a mist, and direct it so that the liquid will be thrown into every blossom or calyx. A misty spray will not carry as well into the blossoms. To make a thorough application, it will be necessary to direct the spray from, at least, two sides of the tree, and if the tree is large, it will be almost necessary to apply from all four sides. In many orchards the trees are so closely set, so large, and poorly pruned, that it is impossible to make a thoroughly good treatment for the destruction of codling moth larvae.

The one who directs the nozzle for the spraying will find it a great advantage to be elevated as high as the bed of a wagon box at least. If the trees are large, it will be well to use a step-ladder or a dry-goods box in the wagon to elevate him still more.

NUMBER OF APPLICATIONS.

Orchardists differ widely in opinion as to the number of applications that should be made. Some, noticing that the worms are most abundant late in the summer, think that spraying should be continued throughout the season of growth and report excellent results from spraying five or six or more times. However, it is the opinion of those who have tested the matter most thoroughly at the various experiment stations of the country that it does not pay to spray more than twice, if the two applications are properly made at the best time.

POISON TO USE.

Here again opinions differ. Probably Paris green is as effectual as any if well applied and if the liquid is kept thoroughly agitated during the spraying. Scheele's green would probably be as effectual as Paris green, is cheaper, and remains in suspension in water better. London purple and arsenate of lime are readily kept in suspension in water but are slower in their action than the above mentioned poisons, and probably less effectual in their death-dealing power. They have the advantage of being very cheap. Arsenate of lead is kept in suspension without difficulty and is remarkable for its adhesive quality and its entire harmlessness to foliage unless used in great excess. It kills slowly and its value for the destruction of the codling moth has not been very definitely determined.

PREPARATION OF THE POISONS.

Paris green, Scheele's green and London purple may be used in the proportion of 1 pound to 160 gallons of water. It is best to mix the poison in a small amount of water first and then in the full amount for which it was prepared. For each pound of poison used, add to the water one or two pounds of freshly slaked lime. This will lessen the

liability of the poison to burn the foliage.

Arsenate of lime, by the Kedzie formula is prepared as follows: "Boil two pounds of white arsenic and eight pounds of soda for fifteen minutes in 2 gallons of water. Put into a jug and label 'poison.' When ready to spray, slake 2 pounds of lime and stir it into 40 gallons of water, adding a pint of mixture from the jug."

If this formula is followed, be sure to use a full measure of fresh lump lime, otherwise some of the arsenic will be left in solution in the water and will kill foliage.

A somewhat simpler method of preparing arsenate of lime is to boil together for three-quarters of an hour 1 pound white arsenic, 2 pounds fresh lime, 1 gallon water. Use one quart of this to an ordinary barrel of water (about 40 gallons).

If a stock solution of this poison is kept, be sure to label it plainly "poison," and it would be well to put in some kind of coloring matter besides.

If arsenate of lead is employed, use not less than one and one-half pounds to 50 gallons of water. Lime need not be added to this preparation.

If more than two applications are made, do not use the poisons in more than two-thirds of the above strengths after the second treatment.

OTHER REMEDIAL AND PREVENTIVE MEASURES.

Bandages of burlap or other cheap fabric placed about the trunks of the trees from the middle of June till September will collect large numbers of the larvae which gather beneath them for the purpose of changing to the pupa and then to the moth stage. If these bands are removed once in a week or ten days, quite a large percentage of the worms may be collected and destroyed. A bandage 4 inches wide and having two or three thicknesses of cloth is of good size and may be held in place by means of a single carpet tack thrust through the overlapping ends into the bark of the tree. A band thus held may be quickly taken off and replaced.

Gathering and destroying fallen fruit either by hand or by means of hogs or sheep turned into the orchard, will help some to keep the codling moth in check, but most of the worms leave the apples before they fall. After apples have lain on the ground for three or four days almost no worms can be found in them.

Protect cellar doors and windows with screens wherever apples are kept so that moths hatching in the cellar can not escape to the orchard.

Clean culture and the removal of all rubbish in and about the orchard will make it more difficult for the worms to find suitable hiding places for the winter.

Scraping the loose bark from trunk and branches will also remove many a safe hiding place for worms during winter.

No one should be discouraged because he does not meet with as complete success in the use of the above remedies as he had hoped the first year. He who persistently and intelligently uses them through a series of years will be almost certain of a degree of success that will convince him of their value.

Marketing Fruit.

There is due each year on the Akron market a man with Red Astrachan apples for sale. His arrival varies with the season from July 5 to 20. This year it was about the latter date. Although apparently a farmer I believe he must be a labor union man for he acknowledges no degree of excellence. The runty, wilted, terribly wormy apple ranks just as high as the fair, nearly ripe one, and all have an equal chance on the top of the baskets. There is a funny man on the market who designates this apple man as "Mr. Worms," and this year stepped up to his wagon as the man drove up with a dozen baskets of apples gathered impartially off the ground, with a cheery "good morning, Mr. Worms, Worms is your name, I think." "No, sir," the man answered shortly, "my name is Cornassel." "Oh, I beg your pardon," said the funny man as he slowly fingered a June drop with three or four big worm holes in it, "I thought it was Worms."

Mr. Cornassel thought he ought to have \$1 per bushel for his apples as the commission men were selling Missouri Early Harvests at \$1.30 but he finally let a huckster have the lot at 40 cents per bushel. I was curious to know how the huckster came out and asked him three days later. He claimed that he only sold about a bushel and dumped the rest. He said: "Why, Mr. Pierce, I can sell poor apples pretty well, but as poor ones as those are no good." I rather think from a money point of view that Cornassel was ahead, as

there was not more than two bushels of eatable apples in the six and I got 40 cents per half-bushel basket that morning for the best grade I could make of windfall Tetofsky.

The question of turning worthless fruit into money is not open to discussion but I might say in passing that Mr. Cornassel is not alone in this line. I have known church-supporting men in western New York to thin their Lombard plums when rotting and ship them to Ohio to be sold as green gages, and New Jersey sons of Quakers to ship immature and worthless Keiffer pears to Cleveland and Columbus for a market. Fruit may be worthless from two causes, decay or inherent defects, the latter being the result of poor culture, insects, and premature gathering. Any market shows more or less decaying fruit in second hands for which the producer is not responsible. Of sound fruit all markets recognize several grades and certain kinds have given names to brands even in berries. Strawberries are known to commission men as Warfields or Gandies, one embracing dark-colored berries, the other large red ones. In cap raspberries, Palmers embrace, Souhegan, Tyler Conrath and Palmer, while Kansas, Cumberland and Gregg all go as the latter, although the varieties have little in common save season and size. In blackberries Erie is the trade mark for all extra large fruit, while Snyder may include runty specimens of most anything as small as Snyder.

All fruit sellers now recognize the importance of grading fruit and if the grower does not do it, somebody else will and the cost comes out of the grower, an ungraded article commanding but little if any more than the lowest grade. It should be a part of the business of each producer to study the demands of his market and the different grades handled and conform to it. As a rule the highest grade commands a relatively higher price and pains should be taken to make the grade as high as possible.

After this season of the year little can be accomplished in this direction by culture, but much may be done by letting the fruit thoroughly mature, and by careful handling. Fruit should not be all gathered at once, but picked as it matures, making at least three pickings, of all except winter apples and pears, the earliest ripening of which are generally harvested by the wind. The early winter apples such as Grimes, Canada Red, Northern Spy, Hubbardston, Esopus Spitzenburg and Rambo, I find it pays to make two pickings of. For packages to sell from the wagon the common so-called half bushel market basket is the best, costing 30 cents per dozen (25 cents in Cleveland.—Eds.). They can not be heaped much as compared with a round bushel package, and when the price is 60 cents or more per bushel the half bushel baskets are shy enough in measure to nearly make up for throwing in the basket, and the fruit sells more readily in a clean new basket, than in a dirty old potato crate. Finally a strict following of the golden rule is best in the long run, and any wide departure habitually followed in putting up fruit will make your name "Dennis" if it is not "Worms."—L. B. Pierce, in Ohio Farmer.

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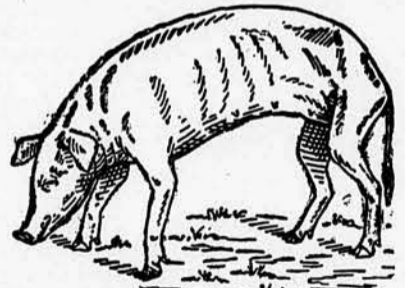
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Grange Department.

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

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

NATIONAL GRANGE.

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

KANSAS STATE GRANGE.

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

The Grange Outlook.

N. J. BACHELDER.

The grange outlook was never better than to-day. The number of new granges reported by Secretary Trimball for the year ending June 30, exceeds that for any recent previous year, and marvelous accessions to the membership are reported in all sections of the country. Vigorous efforts are being made to revive the grange interest in the State of Kentucky which promises to be successful, and this State will be welcomed back to the grange column with gladness and rejoicing. No serious internal strife seems to exist in the granges in any section of the country. The greatest harmony prevails, and unprecedented enthusiasm in some sections. These things point in unmistakable language to the excellent condition of the order, and the prospect for continued growth and prosperity in the grange States. Vigorous efforts will soon be commenced in the matters of national legislation recommended by the grange, and a comprehensive campaign along this line inaugurated. The grange is commanding the respect of the influential people of the country as it never has before and as it should for years to come.

The Grange an Educator and Co-operator.

The following excerpts from an address delivered by Hon. A. P. Reardon, lecturer of the Kansas State Grange, at the celebration of the 25th anniversary of the Johnson County Cooperation Association, will be read with interest by every patron.

"History has demonstrated the fact, beyond a doubt, that the broadest minds and clearest heads come from the boys and girls that grow up to manhood and womanhood on the farms. He is the loyal patriot, although never boasting nor bragging of deeds that he has done to save the honor of the nation's flag. He feels himself a son of liberty; his country and God are cherished and revered by him.

"Being recognized as a potent factor in the stability and a promoter of the best interests of our nation we have a right to organize ourselves into a school of education. As an educator and co-operator the grange stands preëminent to-day. Every session of a subordinate grange should be a day of school advantages to teach how to save the fruits of labor, how to make farm life more profitable, how to make happier and brighter homes. Let us do all we can in a legitimate and proper manner to advance the cause of education, for it is not only the corner-stone of the order, but the dependence and hope of the nation. I fully believe that the principles of the grange and its real objects were never better appreciated than now. Your labor in Johnson County is not only appreciated by you people here, but its influence is felt throughout the entire width and breadth of our land. I find the conviction growing upon me that the grange has become and will continue a permanent institution.

"I know that a bright future is in store for those who follow its precepts and that as time passes our order will grow in strength and usefulness and honor. The great things the grange has accomplished is seen in greater socialities in enighborhoods, an improved system in farming, brighter, happier and more attractive homes and many instances where charity is freely dispensed. No one can fail to note the advancement in temperance, morality and religion, and in all works that tend to develop a higher and better citizenship. We would like to see every husbandman and matron magnify their calling by joining and standing up for the grange as they should. Then their sons and daughters will become members of the order, which will make it perpetual as was the desire of its founders, for we realize that the silent forces started in the grange by its founders, are ever at work, shaping the lives and destinies of its members and of the nation.

"But let us remember that in unity

there is strength, and the possibilities lying before our order can only be measured by the amount and quality of energy put forth by each individual member to attain toward the desired end.

"We want to instill into the minds of the farmers and their families that they should strive to have a full share of social culture and enjoyment. That they should share in the educational advantages and training which go to prepare the farmer for success in life and for the responsible duties of citizenship. Martin Luther wisely said: 'The prosperity of a nation depends not on the advantages of its revenue, nor on the strength of its fortifications, or in the beauty of its public buildings, but it consists in the number of cultivated citizens; in its men of education and of character; here are to be found its true interest, its chief strength and power.'

"Now, how can the farmers secure for themselves and families these privileges and advantages that rightfully belong to them? There is only one way. They must organize their forces and go to work systematically and persistently for this purpose or there is no help for them. 'The Lord helps them that help themselves,' but the Lord will never do for any man what they can do for themselves and there is no human power strong enough to oppress and rob the farmer of a fair share of his earnings or honors if he will make available the power of the millions engaged in tilling the soil. And we, as well as any other class of American citizens, are entitled to our rights.

"Will the farmer of to-day, by proper and legitimate means, secure for himself and family what is surely his rights, or will he continue to allow others by organized methods to rob him of his just share of the rewards of his labor and patriotic service, and leave to his children a heritage of wrong? As a taxpayer the farmer has always borne his full share and even more of the burdens of government as a conservator of the peace. The farmer has never failed to uphold the law in the community in which he lives. When a portion of our people sought to destroy the government the first to respond to the call for help were the brave boys from the farm homes of our country. They were among the bravest of her defenders and when victory crowned her efforts and the grand old stars and stripes floated over our nation, they returned to their farms well knowing that an enormous debt had been incurred in the struggle for existence as a nation. They soon brought from their farms the wherewith to pay a large portion of this and re-establish the financial standing of the United States. As health producers and creditor the farmers have rendered important service. To-day all intelligent men recognize the fact that the prosperity of the nation is dependent upon the success of the farmer in tilling the soil. We, as patrons, only speak for the farmer a fair share of the wealth which we produce. That they do not receive it is acknowledged by every intelligent citizen."

The Grange and Its Work.

Taking the grange as a social factor and regarding it from that point of view, and we think this is the main view, it has a tendency to develop the farmer instead of the farm; it emancipates him from the isolated being that he was, bringing him in touch with the great fold and consequently removing that obnoxious expression "the illiterate hayseed."

All of the granges possess some fluent speakers and we take pride in their debate, expecting in the coming future to hear from them in the halls of State, advocating the rights of farmers, equal taxation, county salaries bill, practical economy in all departments and appropriations for institutes with hearty will. But how about the others who are just as competent and interested but still lacking the confidence, not having had any experience since their school days probably; but we rejoice to see them coming slowly forward, under the social influence and encouragement of their brother farmers, and we are surprised to see the store of knowledge, hesitatingly given at first, and as time goes on see them gathering confidence and able to express their views clearly and with ease.

There is no reason why every man or woman of sound mind should not be capable of speaking intelligently on most of the questions presented at our grange meetings. It is possible, if we are educated up to it, and through the social influences of the grange, we will lose that awkward self-consciousness and bear ourselves creditably in whatever circumstance we may be placed. We should feel as much at home among our neighbors as in our own kitchen,

and be at ease in our best attire as in our working clothes.

It is a great mistake to suppose that persons can shut themselves, comparatively speaking, from their neighbors and be truly educated. Men and women are the true educators of their fellow beings, and the little world around them is the school in which all true men and women must find their education.

We have heard some say, when asked to join the grange: "We think we do our duty if we attend to our own business and stay at home." Stay at home is not always a positive virtue and we regret to find that it has a tendency to make us prejudiced and narrow-minded; not tolerant of other people. How many impressions, wrongly formed, are brushed away like cobwebs during the social hours of the grange, when members from the same township, who have lived within a few miles of each other for perhaps twenty years, meet for the first time. Afterwards we hear such comments as: "Why, we never thought Mrs. A. was so nice," also, "Mrs. B. is just as friendly as she can be, and I never thought I would like her," consequently we look forward to see all differences in religion and politics buried,

and each community dwelling together harmoniously as one universal brotherhood.—Michigan Farmer.

Deafness Can Not Be Cured

by local applications, as they can not reach the diseased portion of the ear. There is only one way to cure Deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed Deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by Catarrh, which is nothing but an inflamed condition of the mucous surfaces.

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MARKET REPORTS.

Kansas City, Aug. 26.—Cattle—Receipts, 10,003. The market was steady to weak. Representative sales:

SHIPPING AND DRESSED BEEF STEERS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

WESTERN STEERS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

WESTERN COWS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

TEXAS AND INDIAN STEERS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

TEXAS AND INDIAN COWS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

OKLAHOMA STEERS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

OKLAHOMA COWS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

NATIVE HEIFERS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

NATIVE COWS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

NATIVE FEEDERS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

NATIVE STOCKERS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

STOCK COWS AND HEIFERS.

Table with 3 columns: No., Ave. Price, No. and 3 rows of data.

Hogs—Receipts, 3,215. The market was 5 to 10 cents higher. Representative sales:

Table with 4 columns: No., Av. Price, No., Av. Price and 4 rows of data.

Chicago Live Stock.

Chicago, Aug. 26.—Cattle—Receipts, 24,000. Good to prime steers, \$5.30@6.30; stockers and feeders, \$2.25@4.25; Texas steers, \$3.40@5.00.

Hogs—Receipts, 32,000. Mixed and butchers, \$5.75@6.40; bulk of sales, \$5.95@6.25.

Sheep—Receipts, 20,000. Good to choice wethers, \$3.25@4.00; western sheep, \$3.00@3.50; native lambs, \$3.00@5.10.

St. Louis Live Stock.

St. Louis, Aug. 26.—Cattle—Receipts, 3,000. Native steers, \$4.00@6.15; stockers and feeders, \$2.20@4.00; Texas and Indian steers, \$3.25@3.75.

Hogs—Receipts, 3,000. Pigs and lights, \$5.85@6.00; butchers, \$6.10@6.40.

Sheep—Receipts, 1,500. Native sheep, \$2.75@5.25; lambs, \$3.25@5.00.

Omaha Live Stock.

Omaha, Aug. 26.—Cattle—Receipts, 4,600. Native beef steers, \$4.00@5.90; western steers, \$3.50@4.50; Texas steers, \$3.25@4.30; stockers and feeders, \$2.60@4.25.

Hogs—Receipts, 4,000. Heavy, \$5.97 1/2@6.05; bulk of sales, \$5.95@6.00.

Sheep—Receipts, 6,100. Common and stock sheep, \$2.25@2.90; lambs, \$3.75@5.00.

Kansas City Grain.

Kansas City, Aug. 26.—Wheat—Sales by sample on track:

Hard—No. 2, 65@65 1/2c; No. 3, 65@66 1/2c. Soft—No. 2, 69@69 1/2c; No. 3, 67@68 1/2c.

Mixed Corn—No. 2, 56 1/2@57c; No. 3, 56 1/2c. White Corn—No. 2, 58 1/2c; No. 3, 57@57 1/2c.

Mixed Oats—No. 2, 38@38 1/2c; No. 3, 37 1/2@38c.

White Oats—No. 2, 38@39c; No. 3, 38c. Rye—No. 2, nominally 57@58c.

Prairie Hay—\$6.00@13.50; timothy, \$8.00@12.50; clover, \$9.50@11.00; alfalfa, \$9.00@11.00; straw, \$4.00.

Linseed oil cake, car lots, \$30.00 per ton.

Chicago Cash Grain.

Chicago, Aug. 26.—Wheat—No. 2 red, 70 1/2@71c; No. 3, 69 1/2@70 1/2c; No. 2 hard winter, 69 1/2@69 3/4c; No. 3, 69 1/2@69 3/4c; No. 1 northern spring, 71@72c; No. 2, 69 1/2@72c; No. 3, 66@71c.

Corn—No. 2, 54 1/2@55c; No. 3, 54@54 1/2c. Oats—No. 2, 33 1/2@34 1/2c; No. 3, 33 1/2c.

Futures: Wheat—August, 69 1/2c; September, 69 1/2c; October, 70c; December, 71 1/2c; May, 75 1/2c. Corn—August, 53c; September, 53 1/2c; May, 57 1/2c. Oats—August, 33c; September, 33 1/2c; October, 33 1/2c; December, 34 1/2c; May, 37c.

St. Louis Cash Grain.

St. Louis, Aug. 26.—Wheat—No. 2 red cash, elevator, 70 1/2c; track, 71 1/2@72c; No. 2 hard, 69@70c. Corn—No. 2 cash, 55 1/2c; track, 56 1/2c. Oats—No. 2 cash, 37c; track, 37 1/2@38 1/2c; No. 2 white, 38 1/2@39c.

Kansas City Produce.

Kansas City, Aug. 26.—Eggs—Fresh, 12c doz. Butter—Creamery, extra fancy separator, 16c; firsts, 16 1/2c; dairy, fancy, 14c.

packing stock, 12c; cheese, northern full cream, 12c; Missouri and Kansas full cream, 10c.

Poultry—Hens—live, 6 1/2c; roosters, 12 1/2c each; broilers, 9 1/2c lb.; ducks, young, 6c; turkey hens, 6c; young toms, 4c; old toms, 4c; pigeons, \$1.00 doz. Choice scalded dressed poultry is above these prices.

Potatoes—New, \$1.40@1.60 per bushel in small lots; car lots, \$1.35@1.40; sweets, \$1.75@2.00 per bushel.

Fruit—New apples, 40@75c per bushel crate; peaches, 40@55c per four-basket crate; pears, \$2.25 per box.

Vegetables—Tomatoes, home grown, 85c@1.00 4-basket crate; beans, \$1.00@1.25 per bushel. Cabbage, \$3.00@3.25 per crate. Onions, \$1.00@1.25 bushel in job lots; cucumbers, 50@65c per bushel crate.

Melons—Cantaloupes, per standard crate, \$1.00@2.00; Rocky Fords, \$1.75@2.25 crate; watermelons, per dozen, \$1.50@3.00.

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, or seven words or less, per week. Initials or a number counted as one word. Cash with the order. It will pay. Try it!

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

CATTLE.

FOR SALE—A highly bred registered St. Lambert bull, 10 months old. O. E. Haley, Ottawa, Kans.

WANTED—Immediately—50 head of spring calves; (grade Shorthorns or Herefords preferred.) Box 127, Pawnee, Okla.

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The Stray List.

For Week Ending August 15. Graham County—R. B. Garnett, Clerk.

MARE—Taken up by J. F. Blackman, in Gettysburg tp., (P. O. Morland), April 5, 1901, one bay mare, about 5 years old, weight 1,000 pounds, star in forehead. Also one bay horse colt, about 1 year old, star in forehead; total value \$40.

Montgomery County—D. S. James, Clerk. PONY—Taken up by Enos Patchett, in Fawn Creek tp., (P. O. Deering), August 5, 1901, one light sorrel pony, 4 years old, four feet high, slit in left ear, small star in forehead.

Montgomery County—D. S. James, Clerk. HORSE—Taken up by H. Hanson, in Rutland tp., July 18, 1901, one sorrel horse, 6 years old, both hind feet white, some white on left front foot, slit in end of left ear.

For Week Ending August 22. Rice County—J. D. Bright, Clerk.

MARE—Taken up by G. C. Allinger, in Farmer tp., (P. O. Bushton), July 11, 1901, one bay mare, 10 years old, branded H D on left hip; valued at \$40.

Rice County—J. D. Bright, Clerk. MARE—Taken up by G. C. Allinger, in Farmer tp., (P. O. Bushton), July 11, 1901, one grey mare, 7 years old, branded with a heart on left leg; valued at \$25.

Rice County—J. D. Bright, Clerk. MARE—Taken up by G. C. Allinger, in Farmer tp., (P. O. Bushton), July 11, 1901, one bay mare, 9 years old, branded N 3 on left shoulder; valued at \$25.

Shawnee County—Jno. M. Wright, Clerk. HEIFER—Taken up by H. M. Hewins, in Dover tp., (P. O. Dover), July 15, 1901, one yellow Jersey heifer, 1 year old, tip of left ear cut off, and box brand on left hip.

Cowley county—Geo. W. Sloan, Clerk. CALF—Taken up by D. C. McKinlay, in Ninnescah tp., (P. O. Seely), July, 1901, one red yearling male calf; valued at \$12.

Montgomery County—D. S. James, Clerk. PONY—Taken up by H. L. Russell, in Drum Creek tp., (P. O. Independence), one sorrel pony, 4 years old, cross on left shoulder, right ear tipped forward at center.

Week Ending August 29. Pratt County—John Mawdsley, Clerk.

COW—Taken up by J. P. Gibbons, in Saratoga tp., August 5, 1901, one white and yellow cow, branded Y on left hip, crop off both ears; valued at \$15.

Cherokee County—S. W. Swinney, Clerk. COW—Taken up by Jno. A. Carlson, in Ross tp., August 20, 1901, one dark red milch cow, 6 years old, weight 900 pounds, some white on belly and sides, star in face.

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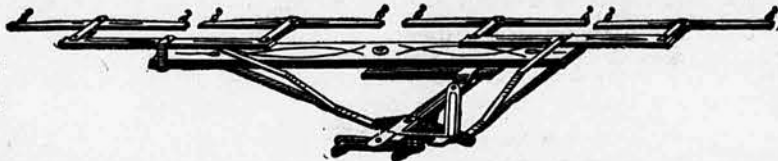
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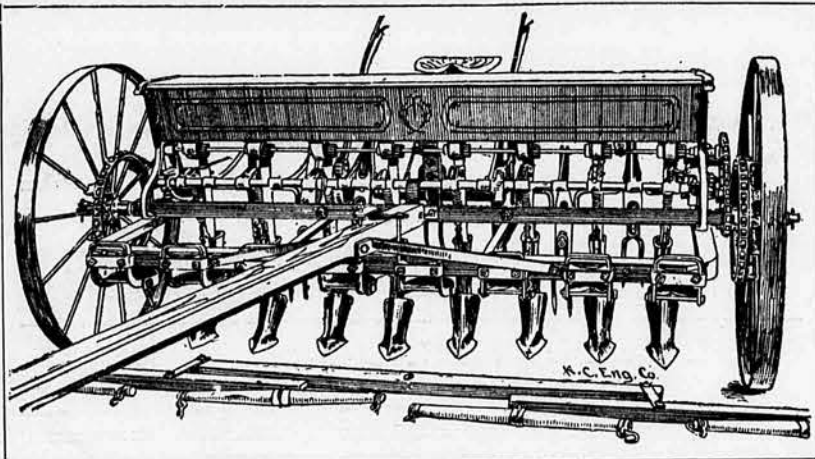
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