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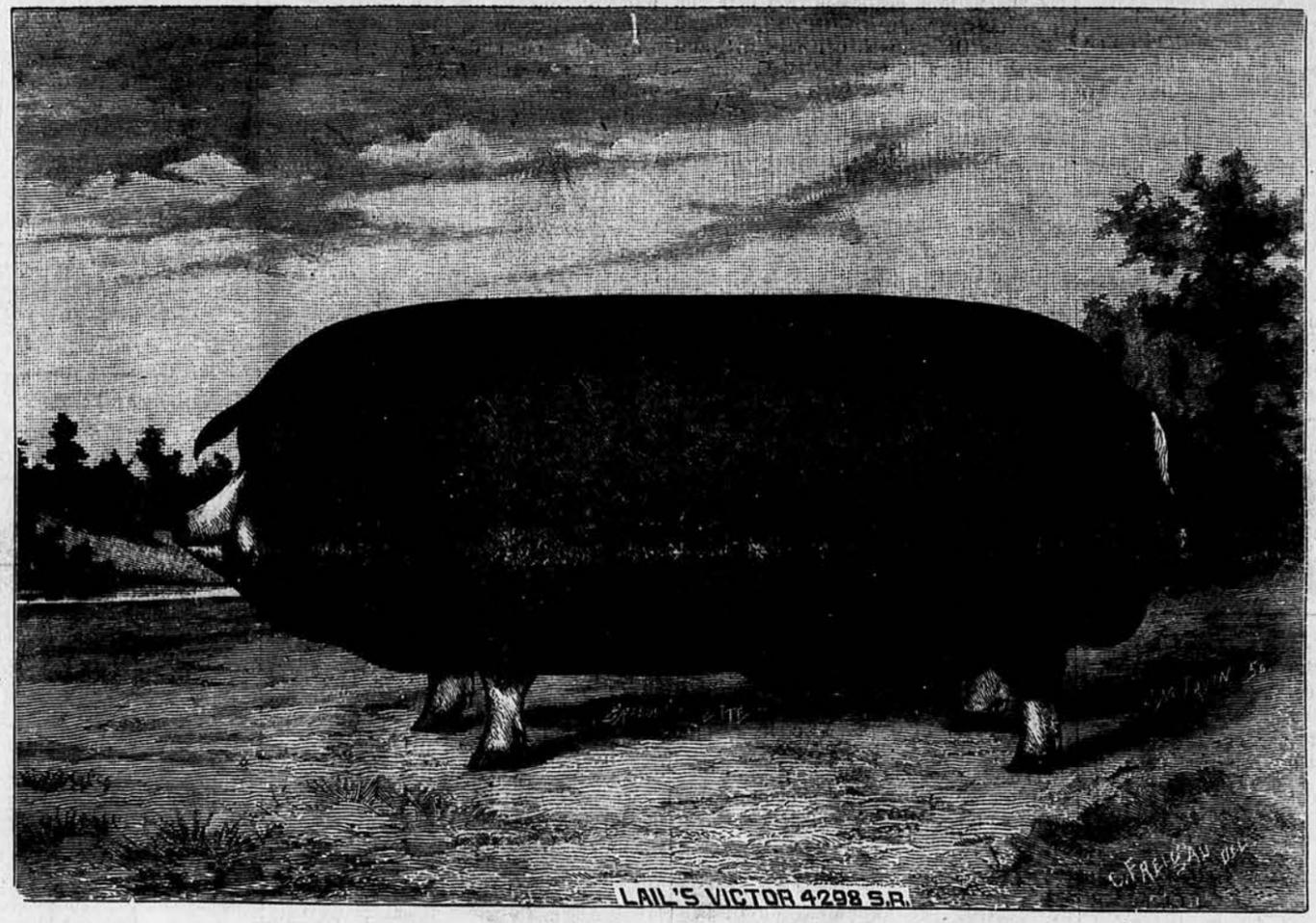
KANSAS FARMER



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LAIL'S VICTOR 4298 S.R.

LAIL'S VICTOR 4298 S., OWNED BY GEO. W. NULL, ODESSA, MO.

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BREEDERS' DIRECTORY.

Cards of four lines or less will be inserted in the Breeders' Directory for \$15 per year or \$3.00 for six months; each additional line, \$2.50 per year. A copy of the paper will be sent to the advertiser during the continuance of the card.

HORSES.

JOSEPH FUHRMAN, NORTH WICHITA, KAS.—Breeder of French Coach and Percheron horses. Pure-bred young stock, of both sexes, for sale; also, grade animals. Prices as low as same quality of stock can be had elsewhere. Time given if desired. Inspection invited. Letters promptly answered. Mention this paper.

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

CATTLE.

VALLEY GROVE HERD OF SHORT-HORNS.—For sale, choice young bulls and heifers at reasonable prices. Call on or address Thos. P. Babst, Dover, Kas.

NEOSHO VALLEY HERD OF SHORT-HORNS.—Imported Buccaneer at head. Registered bulls, heifers and cows at bed-rock prices. D. P. Norton, Council Grove, Kas.

H. W. CHENEY, North Topeka, Kas., breeder of HOLSTEIN-FRIESIAN CATTLE.—Farm four miles north of town.

CATTLE.

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From this herd were furnished some of the winners at the World's Fair. Write for catalogue. M. E. MOORE, CAMERON, MO.

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ASHLAND STOCK FARM HERD OF THOROUGHBRED POLAND-CHINA HOGS, SHORT-HORN CATTLE AND PLYMOUTH ROCK CHICKENS. Boars in service, Admiral Chip No. 7919 and Abbotsford No. 23351, full brother to second-prize yearling at Worlds Fair. Individual merit and gilt-edged pedigree my motto. Inspection of herd and correspondence solicited. M. C. Vansell, Muscotah, Atchison Co., Kas.

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FOR SALE—Pure-bred Dark Brahmas, Partridge Cochins, Houdans, S. L. Wyandottes. Hens, pullets and cockerels at \$1.50 each; young stock at 75 cents each. W. H. Rauch, Wichita, Kas.

A. B. DILLE & SONS, EDGERTON, KAS., breeders of choice B. P. Rocks, S. L. Wyandottes, Light Brahmas and M. B. Turkeys. Chicken eggs \$1 to \$2 per 15; turkey eggs \$3 per 11. Satisfaction guaranteed.

DUREKA POULTRY YARDS.—L. E. Pixley, Emporia, Kas., breeder of Plymouth Rocks, S. Wyandottes, Buff Cochins, B. and White Leghorns, B. Langshans, M. B. Turkeys and Pekin ducks. Chicks at all times. Eggs in season.

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D. TROTT, Abilene, Kas.—Pedigreed Poland-Chinas and Duroc-Jerseys. Also M. B. Turkeys, Light Brahma, Plymouth Rock, S. Wyandotte chickens and R. Pekin ducks. Eggs. Of the best. Cheap.

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TOPEKA HERD OF BERKSHIRES.—Strong-framed, mellow and prolific. State fair prize-winners and their produce for sale. Also, Pekin ducks of enormous size. H. B. COWLES, Topeka, Kas.

V. B. HOWEY, Box 13, Topeka, Kas., breeder and shipper of thoroughbred Poland-China and English Berkshire swine and Silver-Laced Wyandotte chickens.

OHIO IMPROVED CHESTER SWINE—Pure-bred and registered. Stock of all ages and both sexes for sale by H. S. Day, Dwight, Morris Co., Kas.

FOR SALE—Duroc-Jersey pigs; also Poland-China, Bronze turkeys, Toulouse geese, Pekin ducks, Barred Plymouth Rock and Brown Leghorn chickens. Ready to ship out. J. M. Young, Liberty, Kas.

DIETRICH & GENTRY, RICHMOND, KAS., (formerly Ottawa) have several fine, growthy young boars at very reasonable prices. Young sows can be bred to High Ideal 13115 S. A fine crop of fall pigs very cheap. Write. Attention KANSAS FARMER.

A. W. THEMANNSON, WATHENA, KAS.—Poland-China boars. Giltis bred to Graceful F. Sanders; he is by J. H. Sanders 27219 and out of Graceful F. 63408, by A. A., by Black U. S. sire and dam both first-prize winners at World's Fair and descendants of Black U. S.

Thoroughbred Duroc-Jersey Hogs
Registered stock, send for 44-page catalogue, prices and history, containing much other useful information to young breeders. Will be sent on receipt of stamp and address. J. M. STONEBAKER, Paola, Ill.
(Breeders' Directory continued on page 16.)

The Stock Interest.

THOROUGH-BRED STOCK SALES.

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

FEBRUARY 7—W. H. Wren, Marion, Poland-China swine.
 FEBRUARY 13—J. F. & P. C. Winterscheidt, Horton, and M. C. Vansell, Muscotah, Poland-China swine, combination.
 FEBRUARY 14—Dan W. Evans, Fairview, and J. A. Worley, Sabetha, Poland-China swine, combination.
 FEBRUARY 28—Jno. A. Dowell, Robinson, Poland-China swine.

ATTENTION, STOCKMEN.

Every stock-raiser and farmer who desires to improve his business is most cordially invited to use this department of the FARMER. It is your paper, and anything you desire to discuss concerning live stock husbandry you have space in these columns at your disposal.

The value and importance of an exchange of ideas and experiences cannot be overestimated and must result in untold benefits. As President Sutton said, in last week's issue, about the meetings of the Improved Stock Breeders' Association, they "are the birthplaces of thousands of useful ideas and the graveyards of many fallacies." That is exactly what we desire to make of this department of the KANSAS FARMER for 1895, for the farmers and stockmen of Kansas. Therefore, we urge our readers to use these columns for their own special benefit. Let us all get down to business and help each other. This is your medium of exchange. Use it. If you have made a success, don't be selfish, but tell our readers about it. If you are in doubt or difficulties or have failed in any way, let our readers know your trouble and make your desires known and thereby overcome your difficulties.

During the new year we propose to give from week to week many practical and useful suggestions and other information that will benefit those engaged in live stock husbandry in Kansas.

HOG CHOLERA AND SWINE PLAGUE.

(Continued from last week.)

APPEARANCES ON POST-MORTEM EXAMINATION.

The germs of hog cholera have a habit of collecting or growing in clumps in the blood vessels, which leads to a plugging of the smaller vessels with frequent rupture and escape of blood. This causes red spots where the blood leaves the vessels and collects in the solid tissues. These spots are variously referred to as petechiæ, ecchymoses, hemorrhages and extravasations of blood. They are common in hog cholera for the reason given. In swine plague the bacteria are evenly diffused through the blood, never form plugs, and therefore hemorrhages from this cause are not seen.

In the most acute forms of hog cholera the changes seen in the various organs consist principally of these red spots caused by hemorrhages of greater or less extent.

The spleen is generally enlarged to from two to four times its normal size, is soft, and engorged with blood.

The blood extravasations are frequent in the lymphatic glands; beneath the serous membranes of the thorax and abdomen, and particularly along the intestines; on the surface and in the substance of the lungs and kidneys; on the mucous surface of the stomach and intestines; and in the connective tissue beneath the skin. The contents of the intestines are sometimes covered with clotted blood.

The diseases of Europe which appear very closely related to our swine plague (*schweineseuche wildsueche*) also have a hemorrhagic form, but this has not been observed in America, although hemorrhagic inflammation of the stomach and intestines has been seen in swine plague. Cases of swine plague with external swellings caused by an infiltration of yellow lymph in the subcutaneous connective tissue, generally of the neck, have been seen, but are rare in this country.

The subacute and chronic forms of

hog cholera and swine plague are more common. In this form of hog cholera the principal changes are found in the large intestine and consist of ulcers which appear as circular, slightly projecting masses varying in color from yellowish to black. Occasionally these ulcers are slightly depressed and uneven in outline. When cut across, they are found to consist of a firm, solid growth extending nearly through the intestinal wall. They are most frequent in the cæcum, upper half of the colon, and on the ileo-cæcal valve.

In the chronic form of the disease the spleen is rarely enlarged; the lymphatic glands of the affected intestine are enlarged and tough. In the more acute cases lung lesions may be found, varying from collapse and œdema of the lung tissue to broncho-pneumonia.

In swine plague the lungs are often found inflamed, and to contain large numbers of small points, which may be made out by loss of color, where the life of the tissue has been destroyed (necrotic foci). There may be also found in the lungs large cheese-like masses from one and one-half to two inches in diameter. Inflammation of the serous membranes is very common in swine plague, and this may be found affecting the pleura, pericardium, and peritoneum, accompanied with fibrinous, inflammatory deposits on the surface of these membranes. There may be congestion of the mucous membrane of the intestines, particularly of the large intestine; or the disease in this region may be more intense and lead to a croupous inflammation with the formation of a fibrinous exudative deposit on the surface.

In hog cholera the first effect of the disease is believed to be upon the intestines, with secondary invasion of the lungs. In swine plague the first effect is believed to be upon the lungs, and the invasion of the intestines a subsequent process.

Briefly reviewing these changes, we find that the most characteristic lesions of hog cholera consist of:

- (1) Hemorrhages, particularly in the subcutaneous, submucous and subserous connective tissue; in the lymphatic glands and in the various organs of the body.
- (2) Ulcerations of the large intestines.
- (3) Collapse of lung tissue, and, less frequently, broncho-pneumonia.

The most characteristic lesions of swine plague are:

- (1) Inflammation of lungs; numerous small necrotic points in these organs, or a few larger cheesy masses.
- (2) Inflammation of serous membranes with fibrinous deposits.
- (3) Congestion of mucous membrane of intestine, or inflammation of the same with fibrinous deposits.

Notwithstanding this clear difference in typical cases, there are many outbreaks where it is difficult to make a diagnosis even after post-mortem examinations, because both diseases may be affecting the same animal at the same time, or the changes may resemble both diseases without being very characteristic of either. In such cases it is only by microscopic examinations and cultivation of the germs that a reliable diagnosis can be made.

THE CAUSE OF THESE DISEASES.

Both hog cholera and swine plague are caused by bacteria, which have now been so carefully studied that they may be easily identified by persons accustomed to bacteriological researches. The hog-cholera germs are slightly larger and more elongated than those of swine plague; they are provided with flagella, or long thread-like appendages, which enable them to move rapidly in liquids; while the swine-plague germs have no such organs, and are unable to move except as they are carried by the liquid in which they float.

Hog-cholera bacteria, when inoculated in minute doses, are fatal to mice, rabbits and guinea pigs, and in large doses may kill pigeons. Swine-plague germs are fatal to these animals and also to fowls.

Hog cholera may be produced experimentally (1) by exposing well hogs to diseased ones in the same pens; (2) by feeding the internal organs of the diseased carcasses or cultures of the

germs; (3) by hypodermic injection of cultures of the germs in doses of one-half to 1 cc. or greater.

Swine plague may be produced experimentally (1) by cohabitation; (2) by injecting cultures of the germs into the lung tissues.

In some outbreaks the swine-plague germs may produce the disease if they are injected hypodermically, but as a rule the swine plague of this country cannot be communicated in that way. Cultures of the bacteria of swine plague have been fed to hogs, and have been sprayed into the air which they were breathing, without causing the disease.

Both diseases are produced by injecting cultures of their respective germs directly into the blood vessels.

From the results of experiments with these diseases it has been concluded that the germs of hog cholera find their way into the bodies of swine principally with the food and drink and with the inspired air; while those of swine plague are taken almost entirely with the air, or, at least, they almost invariably gain entrance through the lungs.

Hog-cholera germs are very hardy and vigorous. They are able to multiply and live for a long time in the water of ponds and streams; they may live in the soil for at least three months, and in accumulations of straw and litter for a much longer time; they withstand drying and other adverse conditions in a remarkable manner.

The swine-plague germs, on the contrary, are very delicate and easily destroyed. They soon perish in water or by drying; the temperature for their growth must be more constant and every condition of life more favorable than is required for the hog-cholera germs. The swine-plague germs are widely distributed in nature and are probably present in all herds of swine, but they are not deadly to these animals except when their virulence has been increased or the resistance of the animals diminished by some unusual conditions. The hog-cholera germs, on the contrary, are not usually present and must be introduced from infected herds before this disease can be developed. The swine-plague germs may acquire sufficient virulence, by encountering proper conditions on one farm, to spread to adjoining farms in the same manner as hog cholera. There are, hence, practically the same conditions to guard against in the prevention of the two diseases.

DIAGNOSIS.

The first question that occurs to the owner of swine when disease appears among his animals is, What is the disease with which they are affected? It is important to briefly consider in this place the nature of the evidence upon which this question is to be answered.

If several animals are affected with the symptoms already enumerated, and if the same disease has been affecting the hogs on neighboring farms, we may decide that one or both of the diseases in question are present, since no other epizootic disease has been recognized in this country.

In anthrax districts there may be occasional small outbreaks of that disease, in which there is great inflammation and swelling of the tongue (glossanthrax), or of the throat (anthrax angina), or simply a fever with no local swellings. If the disease is anthrax, other species of animals, horses, cattle and sheep, will also be affected.

If, on examining the carcass after death, projecting button-like ulcers are found in the large intestines, we know that hog cholera is present. It must be remembered, however, that these ulcers are not found in the most acute cases, but only in the subacute or chronic form of the disease where life is prolonged a sufficient time for them to form.

If there is inflammation of the lungs, and particularly if cheese-like masses are found in the substance of these organs, the disease is probably swine plague.

Small blood spots in the tissues or scattered over the internal organs indicate hog cholera, while inflammation of the serous membranes indicates swine plague.

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on your boots and shoes, and you can polish them after using it. It will make harness water-proof also.

25c. worth is a fair trial—send your money back if you want it—a swob with each can. For pamphlet, free, "HOW TO TAKE CARE OF LEATHER," send to VACUUM OIL CO., Rochester, N. Y.

A bacteriological examination is the final test, but neither this nor inoculation experiments are available to the farmer, for whose use this bulletin is prepared.

PROGNOSIS.

The losses which result from outbreaks of hog cholera and swine plague depend partly upon the condition of the hogs—that is, upon their susceptibility to the disease—and partly upon the virulence of the contagion in the particular outbreak. If the animals are very susceptible and the contagion very virulent, the loss even in large herds may reach 90 to 95 or even 100 per cent. In those cases where the disease is allowed to run its course. In milder outbreaks or with animals more capable of resisting the contagion the losses vary from from 20 to 60 per cent. Toward the end of an outbreak a larger proportion of animals will recover than at the beginning. A portion of those recovering will fatten, but others remain lean, stunted in their growth, or never become really healthy animals.

(Concluded next week.)

Missouri Swine Breeders' Annual Meeting.

The second annual meeting of the Missouri Swine Breeders' Association is to be held at the opera house, in Chillicothe, under the auspices of the Commercial club, for the three days, January 8, 9 and 10, 1895. Our live stock field man, W. P. Brantley, will attend and report the meeting. Following is the program in full:

JANUARY 8—7:30 P. M.

Invocation, Rev. A. Davis.
 Address of welcome, Prof. A. L. Moore, Vice President Chillicothe Commercial club.

Response, Col. J. R. Rippey, Secretary State Board of Agriculture.

"Boom Prices and Their Effect" W. A. Hill, Belton, Missouri. Discussion led by H. C. Sydnor and W. B. Brown.

Recitation, Miss Nettie Cleary.
 "Some Drawbacks to the Breeding of Pure-bred Swine," June K. King, Marshall, Mo. Discussion led by J. S. Risk and Geo. W. Null.

Vocal music, Normal college ladies glee club.

JANUARY 9—9 A. M.

President's address, J. M. Vinton, McCredie, Mo.

"Is a Breeder of One Breed as Capable to Judge Other Breeds as He is Judge of the One He Breeds?" C. G. Spotts, Mt. Leonard. Discussion led by S. W. Fox and G. W. Falk.

"The Hog's Foot," T. A. Pew, Gamma, Mo. Discussion led by T. J. Stemmons and Capt. D. Gilson.

"Pure-bred Types," Hon. J. M. Welsh, Laclede; Mo. Discussion led by J. C. Canady and T. C. Wallace, Jr.

AFTERNOON SESSION—1:30 O'CLOCK.

"Breeders' Correspondence—How to Conduct It," Geo. P. Bellows, Marysville, Mo. Discussion led by John B. Thompson and J. A. West.

"Swine Food and Its Preparation," N. H. Gentry, Sedalia, Mo. Discussion led by J. T. Nunnally and Henry Klaas.

"Proper Age for Mating," E. Stoddard, Monroe City, Mo. Discussion led by J. W. Benefiel and John Morris.

"Care of the Brood Sow and Litter After Farrowing," P. Mayo, Clifton, Mo. Discussion led by S. A. Chitwood and J. G. Casida.

EVENING SESSION—7:30 O'CLOCK.

Recitation, Miss Katie Batsdorf.

"What is the Difference Between Thoroughbred Scrub and a Scrub Thoroughbred?" D. D. Smothers, Armstrong, Mo. Discussion led by W. N. Risky and John Willis.

"Outside Thoughts for Swine Breeders," L. A. Martin, Chillicothe, Mo.

"How to Keep Swine Healthy," T. A. Harris, La Mine, Mo. Discussion led by F. A. Scott and Chenoweth Brothers.

Music, vocal solo, Miss Gertrude E. Irelth.

JANUARY 10—9 A. M.

"What Style or Type Makes the Best Brood Sow?" C. N. Menefee, Prairie Home. Discussion led by J. L. Shoup and W. M. Penniston.

"Who is Most at Fault, the Breeder Who Breeds and Sells a Poor Individual or the Buyer Who Buys a Poor Individual?"

Fancy Pedigree or the Man Who Buys It?" Judge Turley, La Mine, Mo. Discussion led by R. Scott Fisher and C. W. Nuss.

"Swine Feeding and the Dairy," Levi Chubbuck, Kidder, Mo. Discussion led by M. L. Brooks and W. H. Bruns.

"Artichokes—How and Why I Raise and Feed Them," J. R. Goodding, Atlanta, Mo.

"Feeding Wheat—Best Method and What Price has Been Realized per Bushel by Feeding Same to Hogs." The roll of members will be called and they will be asked to give, in the fewest words possible, the results of their experience on this topic.

"How to Raise, Feed and Sell Hogs at a Profit," S. Y. Thornton, Blackwater, Mo. Discussion led by E. E. Axline and O. D. Kester.

"Pure Breeds vs. Cross Breeds From a Feeder's Standpoint," A. Allen, Kidder, Mo. Discussion led by Wm. Postlewaite and B. P. Green.

Kansas Improved Stock Breeders.

Program of the fifth annual meeting of the Kansas Improved Stock Breeders' Association, Hotel Throop club room, Topeka, Kas., Tuesday and Wednesday, January 8 and 9, 1895:

TUESDAY, JANUARY 8—10 A. M.

President's annual address.
Reports of officers.
Reports of committees.
Unfinished business.
Appointment of committees.
Reception of new members.

AFTERNOON SESSION—2 O'CLOCK.

"The Man Without a Breed," Col. J. F. True.

"Business Suggestions to Breeders," W. P. Brush.

"Dairy Breed for the General Farmer," H. M. Kirkpatrick, R. T. Stokes, C. F. Stone, M. S. Babcock, A. E. Jones.
Reception of new members.

EVENING SESSION—7:30 O'CLOCK.

"Pure Beef Breeds—Their Importance and Value to the Farmers." Discussion—Thos. P. Babst, Mr. Makin, J. M. Huber, J. M. Winter and J. B. McAfee.

Addresses—Short and Sweet. Hon. T. M. Potter, President State Board of Agriculture; Hon. Joab Mulvane; Hon. G. W. Glick; F. D. Coburn, Secretary State Board of Agriculture; A. G. Eyth, President Kansas State Dairy Association; M. L. Wortman, President Kansas State Poultry Association.

General remarks by members.
Reception of new members.

WEDNESDAY, JANUARY 9—9:30 A. M.

"The Horse Industry in Kansas," O. P. Updegraff, O. L. Thisler, C. M. Irwin, F. H. Avery.

"Sheep Husbandry in Kansas," E. D. King, H. M. Kirkpatrick, G. W. Glick, C. E. Westbrook.

"Needed Legislation." Discussion—W. B. Sutton, T. A. Hubbard, S. C. Orr, V. S., J. F. True, A. C. Jones.

"Kansas Live Stock Sanitary Laws," Geo. C. Pritchard, State Veterinarian.

AFTERNOON SESSION—2 O'CLOCK.

"Pure-Bred Swine for the Farmer." Discussion—W. E. Gresham, V. B. Howey, T. A. Hubbard, C. J. Huggins.

Letters from breeders.
"Good of the Order." General discussion by all the members.
Election of officers.
Reception of new members.

Special rates to members at Hotel Throop. Reduced rates on all railroads on the certificate plan. Pay your fare one way and take a receipt from your railroad agent.

H. A. HEATH, W. B. SUTTON,
Acting Secretary. President.

Kansas Swine Breeders.

EDITOR KANSAS FARMER:—The semi-annual meeting of Kansas Swine Breeders' Association will be held Monday, January 7, at 3 o'clock p. m., in Topeka. An interesting program is being prepared. The Kansas Swine Breeders' Association is the oldest and strongest live stock association in the State. The proceedings of its meetings in the past have been of the highest order, entertaining, social and of wide influence. All who are interested in swine-growing are invited to be present at the coming meeting.

GEO. W. BERRY, President.

Accommodations for One Hundred Hogs.

EDITOR KANSAS FARMER:—I intend the coming spring to put about fifteen brood sows on my farm, and having had no experience would like to have some of your readers give me plans for the buildings, pens, etc., necessary for their shelter and littering. No expensive plans desired, but the best for the least money. Also about what shelter pens would be required for the comfort of about 100 hogs.

Wichita, Kas. FARMER.

Any present subscriber who will send us one new subscriber and \$1, can have his or her present subscription extended thirteen weeks for this good act.

Agricultural Matters.

FARM ECONOMY, OR ECONOMY IN FARMING.

By R. W. Anderson, read before Cowley County Farmers' Institute, December 6, 1894.

Farmers have met in institutes in this and other counties in the State for several years, and many interesting topics have been discussed, many practical methods for facilitating farm work talked about, and some good theories suggested. But so far they have failed to touch on this topic. I am confident that not a man or woman attending this institute but what understands the meaning of the word economy as it is generally applied. But you will please pardon the assertion, that too many people interpret the word to mean the saving of money. But I wish to apply the term in several different ways in which the farmer can practice more economy than he will by curtailing expenses to save money.

I hope that I shall be able to prove to you that the saving of money is only a small item of economy with the farmer, for many of us realize that there is need of some radical changes in our farm work if we desire to make it more profitable and less irksome to the boys and girls. If we expect to sweep away the monotony and hardship of farm life and supplant it with comfort, happiness and prosperity, there is still greater need of making a change in the present system of farming in this country. Perhaps we will understand this better when we realize that about 50 per cent, of the work done on the farm is performed with too much of a rush. The farmer says: "Hurrah, boys, put 'er through; we've got a big lot of work before us and we'll have to rush it to get it done." This generally means rush and drive from March to December. Consequently, work is too often recklessly done, which is very poor economy! Man and beast are over-worked, often causing a derangement of body and mind, not only of the man himself, but the whole family is affected by the strain of over-work. The wife and children generally have an extra amount of labor to perform; they go to bed late, tired and sometimes almost worn out, get up early next morning and perhaps have the same routine of hard labor to go through with. And the horses, too, their strength and endurance are over-taxed, which shortens their lives of usefulness. There is no question in my mind but that, if they had the power of speech, they would say at such times that they were weary of life. To drive and rush a horse to the full extent of his power or endurance is no doubt cruelty to animals, but call it what you may, I would say there is no economy in it.

Holmes says:

"He prayeth best, who loveth best,
All things great and small,
For the dear Lord, that loveth us,
He created and loveth all."

Now, this rushing and over-working to put in a big crop that you may be able to count your acres of crops by the fifties and hundreds, or your bushels by the thousands, is not an economical way of farming. Quite frequently this over-work is the cause or foundation of some disease, and before a man reaches the noontime of life he finds himself a physical wreck. Then he realizes his mistake and is ready to acknowledge that it was not a very economical plan to follow.

The inventive minds of men have supplied us farmers with a variety of implements with which we can facilitate and expedite our work on the farm and economize largely in time and labor. One does not have to draw very largely on his imagination to see the fate of the farmer who would undertake to do his farm work by the plans and methods of thirty or forty years ago. But, no doubt, we could get some good economical lessons from those days that would be a great benefit to us and our farm, especially when we attribute many of the leaks and losses of the farm to the reckless and extravagant manner of doing farm work, which we will have to discard if we expect to keep pace with other industries. People engaged in other occupations are gradually

adopting the more economical, as well as the most scientific, plans and methods of doing their work. Observation teaches us that where the most economy is used, there is found the greater business thrift, which proves beyond a doubt that the farmer can be greatly benefited by adopting it more extensively on the farm.

When I see the attention that has been given of late years by the farmers of this county to the scientific principles which have been introduced and still continue to be discovered in this, the evening of the nineteenth century, and when I consider the energy with which the farmers of Kansas are endowed, and, knowing them to be intelligent, skillful farmers, I wonder why they have not received an impetuous desire to use more economy in their farming. But, on the other hand, I am forced to admit that too frequently we see farmers who have a mistaken idea of economy. Like other people they have a thirst for wealth, and, as a rule, wealth, with the farmer, means the possession of more acres, and too frequently more acres means more cares and more hard work for the family. For, in most cases, a debt is contracted. Consequently, a vigorous effort must be made to meet the obligation, and, to do this, denials to self and family of pleasures, comforts and education are too frequently made, and these farmers become strangers to the brighter side of farm life. Some may think this saving and accumulation is economy, and that a farmer will have to be very economical if he does it at the present prices of farm products. But I want to say it is unsound economy.

Now, there should be no question of greater importance to the farmers of this county, and I may say State, than that of economy in feeding stock. And with the opportunities we have in this day and age of our county and State of storing our minds with knowledge as to the properties and qualities of foods, it can not be attributed to ignorance, but an indifference, if a farmer continues to follow a routine of feeding practiced years ago. But few farmers thirty or forty years ago took much thought as to the best and most economical methods of feeding. With them it was grass one-half the year and corn the other half. But we have now learned that such a plan is not the most economical for us to follow. Experiments made at the State Agricultural college and experiment station prove that we need a mixed ration if we desire health, growth and fat in our animals. But to make it the more economical, let us add warm shelter, comfort, quiet and good, pure water. Well water is best, winter and summer. There is no economy in compelling your animals to drink water that is as cold as ice itself, of a cold, bleak winter's day, and they have to stand around and shake to make the blood circulate to warm that water. Don't compel them, in the summer, to drink water out of a pond that is full of filth and as warm as "dish water." Our animals appreciate good water, food and comfort just as much as we do, and you will realize more economy to the square inch by taking good care of your animals than in any other way you may apply it.

In conclusion, I would say that it is impossible to call your attention to the half that this subject demands. So it will be necessary to make a long story short, by saying that if any one desires to be an economical farmer he should, first, look to the health, comfort and pleasure of his family; second, economize in labor; third, keep good stock, but no more than he can feed and shelter well; fourth, protect his machinery by shelter and paint, as better care of farm machinery will lessen his expense; in that line one-half; fifth, don't allow manure to accumulate in corrals and about the stables and be leached by the rains when every load you put on a field is worth \$1 to you; sixth, look out for the little leaks and losses, as they will soon grow to be big ones. In short, turn over a new leaf in farming and see if the accounts won't balance up in favor of economy in farming.

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Has the Price of Wheat Touched Bottom?

A Chicago firm last week wired to Kansas City the following reply to an inquiry as to the future of the wheat market:

"The problem, what will be the future price of wheat in Chicago? is so broad and vexed that the average man is apt to take too narrow a view of the situation in his endeavor to solve it. If he lives in the so-called Northwest, where spring wheat is raised, he is too apt to be governed by the conditions existing near him and not to look beyond the southern boundaries of Minnesota. If he lives in the Southwest he pays too much attention to the wheat crop of Kansas, to its hot winds or its bugs, or to its favorable condition when such exist. If he lives elsewhere in our country he is governed too much by the general condition in the United States alone, forgetting or not paying sufficient attention to the fact that our competitors are numerous and important; that Russia, India, Australia, Argentine and even our own Pacific coast States, for they are virtually our competitors, are shipping wheat to the importing countries every month in the year. He makes up his mind what the future price should be and then is, perhaps, surprised and disappointed that his conclusions prove wrong, and wonders why it is. We speak of the future price of wheat in Chicago because this is one of the great markets of the world toward which every operator in wheat, no matter where he lives, is looking, and to which orders are constantly sent, enabling the handlers of cash grain in every country to continue their business with safety, resulting in its being the market in which so-called hedges are placed against the business of every other grain market.

"Another difficulty that an operator must face is his inability to know what it actually costs to raise wheat, or at what price it can be profitably sold. Years ago it would have seemed impossible that the price of wheat in this country should rule as low as it has for the past two years, and still the world goes on raising it as before; but wheat alone has not suffered in price. The great staple of our country, cotton, is equally if not more seriously depressed, and in the same list is iron, and, perhaps, as a natural result, business in this country is at a low ebb.

"The foregoing, perhaps, reads like the words of a man suffering from the 'blues,' but the reverse is true in our case, and we have simply tried to point out some of the influences that have led to present prices. Of the future we have great hope, and believe that prices are approximately as low as they will be at all."

Kaffir Corn Hay.

EDITOR KANSAS FARMER:—I sowed five acres of Kaffir corn with wheat drill, a bushel per acre, April 10, 1894. About the first of October I took self-binder and cut this Kaffir corn, using no twine, but allowing it to dump. It is nicer to use twine but more expensive. I then took wagon and hay-frame and hauled to stack. It is easy to pitch onto wagon, but a little hard to pitch off, being long. This five acres made more than twenty tons of feed that is almost as good as timothy. W. B. Beulah, Crawford Co.

Irrigation.

IRRIGATION—A PROBLEM IN MECHANICAL ENGINEERING.

So large and varied a subject as that of irrigation must needs take many kinds of workers to effect its presentation and solution. In any such question it is rare to find a man capable of being equally valuable at the various stages of the problem. In enlisting popular enthusiasm, presenting glittering generalities, and firing the ardor of a whole community, it is doubtful whether cold facts are as efficient as the warm and glowing pictures of the imagination. If these pictures have been painted on the well-woven canvas of obtainable facts, they may last.

The irrigation problem, it seems, has just passed through this very necessary preliminary stage. In a certain convention, held not long ago, over 90 per cent. of the subjects presented seemed to belong to this "boom" order. It seems to be pretty well believed now, however, that irrigation will do nearly all claimed for it, providing the water can be had. The former startled feeling that one had in yewing "the-look-on-this-and-then-on-that" pictures labeled "with irrigation" and "without irrigation" is giving place to a general I-told-you-so feeling. It is not likely that in future conventions it will seem as though the majority of speakers had been cautioned by that old doggerel concerning some one who wanted to go out to swim, but was cautioned not to go near the water.

The problem is getting nearer and nearer the two vital questions: first, is there water to be had? and second, how can we get it in the cheapest possible manner? It is evident that before all others this first must be answered. It has been answered partially in various ways, according to the locality, but yet there is a vast amount to be learned before a general answer can be given. The greatest number of answers seem to indicate a great quantity of water available from below.

If this subject were settled in ever so satisfactory a way, if the depths were a veritable ocean, or if only a moderate supply were available, the next problem would not be one of horticulture and farming, or methods of applying water, or what will grow and what will not grow, but one of mechanical engineering; namely, how to best raise that water. The question of available water is one which must be settled in the field by civil engineers, geologists and a good portable pumping plant. The problem of raising the water does not necessarily have to be solved in the field; in fact, this would be the poorest possible place for such experimenting, away from all the facilities of building, repairing and changing which is implied in experimenting.

There is a decided opinion that the successful irrigation of the next few years is to be that of a small area supplied from pumps run by wind power. Most important problems connected with this system are as yet unanswered. The general opinion that wind power costs nothing is a fallacy. It used to be thought that water power cost nothing, but it is rare to find a manufacturing plant of any size depending solely on water power, cheap as it seems. It may be that on account of reliability gasoline engines may be the cheaper in the long run. During the summer months and September a windmill finds the wind insufficient to run it during about one-third of the time, and when running during the summer months gives but two-thirds of the power it will develop during the rest of the year. This weakness during the critical season presents many questions as yet unanswered.

Of all the various windmills it is as necessary to the State and the irrigation problem that they be experimented with and the worthless "spotted," as that the duplicated and worthless varieties of garden vegetables be discovered. This cannot be done satisfactorily in general practice. The conditions are too dissimilar in adjoining plants. This work should be done where instruments of precision can be designed and made, and careful

tests of power and efficiency under similar conditions can be as carefully carried out as is done in the various mechanical engineering laboratories of the country in treating other mechanical problems. The irrigation agitation has brought no end of new pumping devices on the market, and no information as to the actual performance of either the new or the old forms is to be had which is good for any purpose of comparison. There have been exhaustive tests of large pumping plants, available to every engineer, but of the efficiency of small-power machines but very little is known. This is an important point in windmill practice, where the power is always small, averaging for a ten-foot mill, while it is running, about one-tenth horse-power.

There are many questions as to the proper and most efficient diameter of pump cylinder for a given depth of well and size of mill. There is no way of answering this except by actual experiment; and to be of value the experiment must be more carefully carried on than is possible in the hands of farmers and windmill agents.

Perhaps enough has been said to make the point that one of the most important points in irrigation is at present a mechanical engineering problem, and that for a quicker solution than can be had from the general experience of the country the problem must be put into the hands of mechanical engineers rather than into the hands of politicians or farmers.

If the experimenting is carried on in a cheap manner, the results will be cheap. The problem is difficult, for while instruments without number can be had for testing the largest engines, instruments for dealing with this windmill problem are yet to be designed. The experimenter should have the advantage of a machine shop and good artisans, and be free from cares, both political and educational.—Prof. H. P. Wood, in *Industrialist*.

Strawberries by Irrigation.

By B. F. Smith, of Lawrence, Kas., read before the State Irrigation Association, at Hutchinson, November 23, 1894.

It was about the 10th of May that I observed that my strawberry plants and the young crop of berries nearly ready to ripen were perishing for want of water. I then consulted Hicks, the weather man, of St. Louis, and looked up at the clouds for an appearance of rain; but there was no visible prospect in the near future for any help for suffering berry patches. Then information was sought for about the cost of pipes, hose, etc., from a reliable pump and water fixture firm of Lawrence, Kas.

They figured quite a large bill for pipe to be laid three feet below the surface of the soil; then the water company wanted me to pay them \$100 for water during the berry season. I hesitated at the expense a day or two, then I suggested to the firm laying the pipes on top of the ground, as I had no use for the water during the fall or winter season. In the meantime the water company agreed to let me have water at a rate of 15 cents per 1,000 gallons. So, getting prices down to suit me, I laid the pipes on top of the ground along the roadways through a two-acre berry patch. I used 700 feet of pipe. At intervals of a hundred feet I placed water-cocks or faucets for attaching a three-quarter inch hose. I had two short arms of the three-quarter inch pipe leading off from the main pipe each 100 feet, at the end of which are faucets, so that with a hundred feet of hose I could apply the water to the entire berry patch. Beginning at the first faucet I watered all within reach of it, then moved the hose to the second faucet, and so on until the whole patch was irrigated. At the beginning of the experiment I used a nozzle in the same manner that we water our lawns, but soon discovered that it took too long to supply a sufficiency of water. So I dispensed with the nozzle and let the water run out on the rows of berries from the end of the hose. The water was then applied at the rate of about a gallon to every twenty inches lengthwise of the row. This amount of water thoroughly soaked the rows, but not the entire

space between the rows. It would have taken double the amount of water for the spaces with no addition of berries. The irrigation was all done at night time, beginning at 6 o'clock in the evening and quitting at 6 in the morning. The time taken to go over the patch was about twenty-four hours, and the cost to apply the water was 10 cents an hour. I used about 17,000 gallons of water the first application and 16,000 gallons the second application.

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that you wish developed, any machine made, or castings of any kind? WE CAN DO IT.

TOPEKA FOUNDRY,
Cor. Andrew Jackson and Second Sts.,
TOPEKA, KAS.

Topeka last Saturday and formulated the following bill, and directed its subcommittee to have it introduced at the next session of the Legislature:

"Be it enacted by the Legislature of the State of Kansas: That the sum of \$10,000 be appropriated out of any funds not otherwise appropriated for the unexpired balance of the year ending June 30, 1895, and the sum of \$45,000 for the year ending June 30, 1896, and \$45,000 for the year ending June 30, 1897, to be expended by the State Board of Agriculture in behalf of developing the irrigation interests of the State, by the collection and dissemination of information, and in making any surveys, practical tests and experiments which may be judiciously undertaken by said board; provided, that none of said money shall be expended in the purchase of land."

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Prof. Robert Hay's Work in Irrigation.

Prof. Hay is now at home again. He arrived on Monday, last. He has been gone since the 1st of October, working out the geology of the water supply of parts of Kansas, Nebraska and Colorado, in a district on each side of the joint boundaries of the three States. In other words, the district is about fifteen miles on each side of the 102d meridian, through about two and one-half degrees of latitude from the valley of the North Platte to that of the South Fork of the Smoky Hill. The work has been done under the auspices of the United States geological survey, the new Director of which, Prof. Wolcott, procured a passage of a clause in the sundry civil bill during the last session of Congress, making a small appropriation for the beginning of an irrigation survey of the plains.

The work of Prof. Hay was, at his suggestion, done in the region indicated above, so that it might be of use to the three States, and though it is limited as to the facts collected to the region investigated—or nearly so—yet the deductions from them are of wide application, and regions where the application can be made will be indicated in the report on which the Professor is now busy. It is intended to submit this report and that of others engaged in similar work under the appropriation in other parts of the plains, to the present session of Congress, so that if the facts brought out are deemed of sufficient interest the work may be continued on a larger scale, and what can be learned of the water supply of plains will be made known to the inhabitants thereof. If Congress does not take up this work, the coming Topeka Legislature ought to give Prof. Hay the opportunity with the State Engineer of completing it, as far as Kansas is concerned.

Prof. Hay says that the counties in the northwest of Kansas seem now fully alive to the necessity of using the water they have. Cheyenne county is irrigating from the underflow and springs of the Republican river, and Wallace is using the water of the Smoky and sundry creeks in the same way, and is pumping some water on to higher land, while Sherman county has tackled the problem of irrigating the high prairie from wells over 100 feet deep. Windmills, pumps and earthen tanks are being put in, and the land is being wet now in many cases. Before spring there will be about 100 plants in use. Irrigation goes.—*Junction City Union.*

The Underflow.

From "Irrigation Along the Arkansas in Western Kansas," by Prof. E. C. Murphy, of the State University.

The subject of the underflow of the plains has been investigated by the United States Department of Agriculture. This investigation for the Arkansas valley consisted in running three stadia lines north and south across the valley, thus getting the elevations of wells and their distances apart on or in the vicinity of the lines. The distance from the surface to water in each well, and the strata passed through were noted. Thus the position and inclination of the upper surface of this underground water was ascertained. These lines are known as the Garden City, Dodge City and Great Bend lines. The latter being east of the eastern limit of the arid region will not be considered.

The Garden City line extends from a point on Ladder creek, a branch of the Republican, about forty-two miles north of Garden City, to Loco, a place about forty miles south of Garden City. The surface of the water is shown from the wells along this line to be inclined south at a nearly uniform rate of 2.4 feet to the mile, the difference in elevation of the water surface at the ends of the line being 220 feet. North of Garden City the surface of the country slopes south, so that this water is quite near the surface. South of Garden City the surface slopes in the opposite direction to that of the water surface, hence the wells are deep. Near the south end of the line they are 200 feet deep.

The Dodge City line extends from a point on the Pawnee fork, about thirty-four miles north of Dodge to a point

ten miles south, thence southwest twenty-five miles to Fowler, Meade county. North of the river the wells on this line show no well-defined water-bearing stratum. In a few of them the water is a little above that in the river, in most of them it is below river level. South of the river this water surface is well defined and slopes a little to the south. The wells are deep, the surface of the country being high.

This water-bearing stratum is sand or gravel, or a mixture of these. Its thickness varies a good deal. In some places it is so thin that the wells pass through it, in others it is of unknown thickness. An experimental well at Garden City showed it to be 320 feet in thickness at that place.

From observations at a few places it appears that this body of water is moving very slowly from northwest to southeast.

The source of this underflow is important, for this water-bearing stratum is a vast reservoir filled with water; when the quantity of water taken from it yearly is greater than that supplied to it, its surface must lower, and eventually the supply will give out. It was formerly thought that this water came from the mountains, brought down by streams. The underflow investigation, referred to above, seems to show that such is not the case. Take the Garden City line, for example, the water in the wells north of the Arkansas is at a greater elevation than that in the river, hence this water cannot come from the Arkansas. The water at the north end of this line is more than 200 feet above that in the Platte river, hence it cannot come from this mountain stream. It is believed by some to come from the rainfall on the plains. Some streams which rise in eastern Colorado and western Kansas disappear in a low area in Scott, Finney and Kearney counties and are thought to supply the underflow of this area. It cannot, however, be said to be proved that all of the underflow of the plains comes from the rainfall on the plains. Be the source of this underflow what it may, wells in it which have furnished a large amount of water for years show no sign of failure or diminution.

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the Land of Big Red Apples, is an attractive and interesting book, handsomely illustrated with views of south Missouri scenery including the famous Olden fruit farm of 3,000 acres in Howell county. It pertains to fruit-raising in that great fruit belt of America, the southern slope of the Ozarks and will prove of great value, not only to fruit-growers, but to every farmer and home-seeker looking for a farm and a home.

Mailed free. Address, J. E. Lockwood, Kansas City, Mo.

Publishers' Paragraphs.

W. D. Howells is writing a series of articles for the next volume of the *Youth's Companion*, under the title of "An Editor's Relations With Young Authors."

It seems hardly possible, but nevertheless it is true, that on an average every fifty-fifth person you meet wears W. L. Douglas shoes. Did you ever realize what an immense undertaking it is to supply one article of wearing apparel to over one million people?

The Kansas Weekly *Capital* publishes more Kansas news than any other weekly paper. A free sample copy will be sent on application to THE TOPEKA CAPITAL CO., Topeka, Kas. Or send \$1.50 to this office for KANSAS FARMER one year and also *Capital* twice a week.

Delano Seed Co., whose advertisement appears elsewhere in this issue, has sent us a specimen of their new Nebraska *Iron-Clad* yellow seed corn. They write that it is sure to be a "winner" in Kansas. It produced eighty bushels per acre in Nebraska last year without irrigation.

Notice four advertisements of Kansas City Grain and Seed Co., on sixteenth page. The President and Manager of this company is J. L. Reynolds, of the old firm of Trumbull, Reynolds & Allen. Readers of KANSAS FARMER, no doubt, have become perfectly familiar with all these names. More substantial ones it would be difficult to find.

THE UNTERRIFIED.—The Topeka *Advocate* still champions the cause of the 118 000 unterrified Populists of Kansas and their brothers in other States, yet it talks politics in such an unprejudiced way that it is read by many Republicans, Democrats and Prohibitionists. You can get it for \$1 a year, 25 cents for three months. The *Advocate* and KANSAS FARMER a year for \$1.50.

James Qurollo, Kearney, Mo., a regular advertiser in the KANSAS FARMER, writes: "At the Mid-Continental Poultry show we won prizes as follows, on Single-combed Brown Leghorns: First and second on hen; first and second on pullet; first and second on pen. In special we won three of the \$10 gold pieces offered by James Forsythe, of Owego, N. Y., on best Single-combed Brown Leghorn hen, pullet and pen; also the elegant \$50 chair special on second largest exhibit. There were 164 Single-combed Brown Leghorns in competition. December 11 to 14, at the Missouri State Poultry show, we exhibited seven Single-combed Brown Leghorns and won six premiums, as follows: First and third on cockerel; first, second and third on pullet; first on pen; also the *Rural World* silver medal given for the highest-scoring pen owned and bred by exhibitors (in the Mediterranean class). The Berkshires are doing fine; have a few nice pigs for sale."

Horse Markets Reviewed.

KANSAS CITY.

W. S. Tough & Son, managers of the Kansas City Stock Yards Co.'s horse and mule department, report the market during the past week as showing the effects of the holidays, there being very little doing. Some little trading in the cheaper grades, but most of this was at retail. Advices show that there is considerable stock in the country waiting to come in, and there will also be quite a number of buyers on the market during the coming week. Prices, however, have not made any change for the better.

The mule market was fairly active. There was more trading than for some time. Only the smooth-haired, fat and good-quality mules brought anything like a fair price. Rough-haired, mean-colored and rough-coupled mules were a drag and hard to dispose of. There will probably be more demand from now on than at any time during the past season. Shippers must select mules with quality or lose money.

Actual business practice through the United States mail at Wichita Commercial College, Y. M. C. A. building.

Now--The Time to Make Money!

Last month I cleared, after paying all expenses, \$175.46; the month before, \$149.93, and have at the same time attended to my regular business. I believe any one, anywhere, can do as well, as I have not a particularly good location and no experience. When you have an article that every family wants, it is very easy selling it. It seems strange that a good, cheap dishwasher was never before placed on the market. With the Climax, which sells at \$5, you can wash and dry the dishes for a family in two minutes, without putting the hands in water; as soon as people see the washer work, they want one, and that is why so much money can be made so quickly. For full particulars address the Climax Manufacturing Co., Columbus, O. I feel convinced that any lady or gentleman, in any location, can make from \$5 to \$10 a day, as every family will very soon have a dish-washer. Try it, and publish your experience for the benefit of others.

Seed Corn!

New NEBRASKA IRON-CLAD—made 80 bushels per acre in Nebraska in 1894, without irrigation. A cross between the well-known Golden Beauty and Early Yellow Dent. Sample ear, 10 cents, postpaid. Early Thompson and King of Earlies, 60 bushels per acre, without irrigation in Nebraska. Send for our new catalogue.

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Seed Grower, PHILADELPHIA, PA.

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In writing to advertisers please state that saw their advertisement in the KANSAS FARMER.

The Home Circle.

To Correspondents.

The matter for the HOME CIRCLE is selected Wednesday of the week before the paper is printed. Manuscript received after that almost invariably goes over to the next week, unless it is very short and very good. Correspondents will govern themselves accordingly.

UNDER THE LEAVES.

"Why search for flowers any more?" she said, turning aside to leave the quiet wood; Yet all undaunted her companion stood, A shaft of sunlight falling on her head "For me no flowers ever bloom!" she cried; "Always and ever have I looked in vain! Only the dull brown leaves like leaves of pain Drifting around my feet from every side!"

"Nay, dear," the other answered tenderly, Standing undaunted in the shadowy place; "Under the leaves some flower there may be, Or some shy buds that promise all things sweet. And kneeling, with a smile upon her face, Uncovered blossoms at her very feet!"
—Jenn Kate Ludlum.

LIFE.

The world was made when a man was born; He must taste for himself the forbidden springs, He can never take warning from old-fashioned things: He must fight as a boy, he must drink as a youth, He must kiss, he must love, he must swear to the truth Of the friend of his soul, he must laugh to scorn The hint of duty in a woman's eyes That are as clear as the wells of Paradise, And so he goes on, till the world grows old, Till his tongue has grown cautious, his heart has grown cold, Till the smile leaves his mouth, and the ring leaves his hand, And he shirks the bright headache you ask him to quaff; He grows formal with men, and with women polite, And distrustful of both when they're out of his sight; Then he cuts for his palate, and drinks for his head, And loves for his pleasure—and 'tis 'tme he was dead!
—John Boyce O'Reilly.

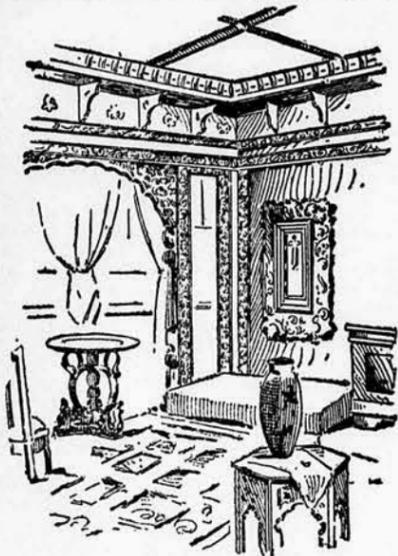
THE HOUSE BEAUTIFUL.

Some Pleasing Ideas Imported from the Far East.

White and Gold to Give Way to More Comfortable Colors—A Charming Japanese Room, Neat as Wax—An Indian Corner.

After the deserts of white and gold which our modern drawing rooms show us, a little oasis in the shape of an oriental interior is very welcome. We, whose bodies are not encased in iron corsets or padded satin coats, feel keenly the need of a rest more yielding and solid than that afforded by the spindle-legged, dainty, fragile Louis XV. chair or sofa, pretty and dainty though they be.

A charming room is in Japanese style and quite as clean and dainty in appearance as a Louis XVI. apartment. The floors are covered with greenish white matting, the walls are of sliding panels, which are carved with stocks and chrysanthemums; hung at intervals around the room are panels of



INDIAN CORNER.

white silk embroidered in delicate colors. The furniture is composed of very roomy wicker chairs, cushions heaped on a low divan, covered with a rug, in one corner; and a long bamboo sofa. The windows are of plain glass, covered with white paper, on which are tints of greens, pinks and blues, which, as one looks steadily, resolve themselves into gay and lightly-drawn pictures of birds and flowers, and women with wonderful almond-shaped eyes, and wonderful pomegranate mouths.

A Japanese room is very charming in summer, but its rather bare beauty is not very inviting in winter. A Turkish room is very comfortable and extremely inviting as an antechamber off one's library. One arranged for a popular bachelor of New York was all done in the reds and blacks met with so often in the oriental rugs, and was a wonder of comfort and effectiveness.

The walls were painted a dull red, with a deep fringe of black and gold design on a red ground. A dado of Turkish rugs, which reached to a height of six feet, went around the entire room, giving it an air of untold warmth and comfort. One corner was partitioned off by lattice work, painted black. In this corner was a divan built to go across the corner and covered with a soft mattress and a scarlet silk shawl. On the walls hung queer old medals, miniatures of fair women set in frames of coral, tigers' teeth and old coins. A pipe rack, on which hung meerschaums, Indian clay pipes and "hookahs from Stamboul," occupied a niche, while pictures—all odd ones—were scattered about in every direction. The window had a seat cushioned in scarlet and a yard of fret-work painted black formed a perfect cozy corner. A wrought iron lamp hung from the ceiling, and a tiny coffee-stand, inlaid with pearl and holding a coffee set of egg-shell fineness, gave the last touches to this very eccentric and effective apartment.

An Indian corner makes a very handsome bit in any house, and a description of an Indian room may not come amiss. The walls and ceiling were divided into panels, each of which contained a most delicate design in Indian wood carving. A dado of rugs reached from the floor to the height of four feet. Its doors were exquisitely carved in bas-relief, and great mirrors, with tremendous elaborately-carved frames, are placed among the walls, while rare tapestries of linen decorated with blue and red figures and accompanied by odd characters in black ink, spell out to those who know Hindustani the legend of some goddess of India. An Indian corner is suggested in our picture, which, without the cost and study which the room above described involved, would be artistic and pretty.—N. Y. Advertiser.

Napery for the Household.

In embroidering napery, if a house-keeper delights in color wrought on white, it is a good plan to border or finish the corners with broidery or scrolls or flowers of the same color as the china to be used with it. Thus, china decorated in red, or blue, or gold, goes well with linen wrought in the selfsame color, though it may be in two or more shades. Three corners of the cloth, napkins and doilies may be worked in some conventional design, and the fourth side filled with the owner's monogram. In this case the monogram should be nine inches deep or even more. This involves much work, and is only possible to amateurs of leisure. To many minds all white is only suitable for napery, except, perhaps, on occasion, a parti-colored counterpane. It must be confessed that this suits taste of a chaste order.

Best Way to Cook Cranberries.

One quart of cranberries, one pound of sugar, one pint of water. Wash the cranberries, then put them on the fire with the water, but in a covered saucepan. Let them simmer until each cranberry bursts open; then remove the cover of the saucepan, add the sugar, and let them all boil for twenty minutes without the cover. The cranberries must never be stirred from the time they are placed on the fire. This is an unerring recipe for a most delicious preparation of cranberries.

How to Retain Beauty.

Lady Londonderry, whose exquisite rose and white loveliness time has not the heart to despoil, attributes her youthful freshness to the practice of spending one out of every ten days in bed. She sleeps until she wakens naturally, takes a warm bath, and goes back to bed again, where she partakes of a light breakfast, remaining in bed resting until six o'clock in the evening, while her maid reads to her a light novel. At six o'clock she puts on her dressing robe and has her dinner served in her room, and reclines on her sofa until ten o'clock.

WEDDING CAKE BOXES.

The Latest Styles and Materials for These Popular Souvenirs.

The origin of the custom of taking home a gift of wedding cake to "dream on" is apparently without record, and yet the present fad of distributing pieces of the bride cake in dainty boxes is the outgrowth of the old-time superstition.

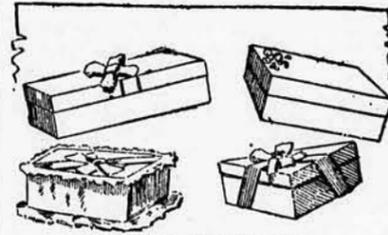
However, it is seldom "the" cake which is sent out in boxes, but that of an inferior quality, which possibly serves the purpose just as well in bringing "pleasing dreams and slumbers light" to those who place it beneath their pillows.

It is surprising to one uninformed to know how varied are the styles, shapes and sizes of these souvenir wedding cake boxes. One leading manufacturer makes wedding cake boxes in fifteen styles and a half dozen or more sizes, which are sold from \$4 to \$40 a hundred.

The most popular style and those of which the greater number are sold are those at \$4.50 a hundred, which are plainly and simply made of moire paper, with a silver edge about the lid. The boxes are all hand made, with the greatest care, by women and girls, and if the slightest mar from paste or imperfection from rough edges is perceptible, after finishing, the box is cast out.

The more elaborate styles are made upon special orders, and sometimes are marvels of expensive beauty, perhaps by hand painting, by the stamping of a monogram in silver, and so on. For one wedding of recent date, the souvenir boxes were of white satin, hand painted, and cost \$180.

A novelty, really more dainty and attractive than the satin, is the Buedingen box, which is covered with fine crepe paper in white. The box opens like a casket, is either square or oblong and all round the cover is a tiny frill of the crepe paper. A narrow moire



WEDDING CAKE BOXES.

ribbon is fastened at opposite corners of the cover only, and ties in a full bow at the top, which obviates the necessity of untying the bow of ribbon every time the box is opened. The ribbons are put on almost entirely in this manner, so that the box may be preserved for a long while as a receptacle for jewels or trinkets on the dressing table. These crepe paper boxes cost \$18 a hundred and inside have a folder of heavy paper which protects the cake from greasing through the box. An ornamental edging of lace paper adds a tasteful finish to the inside.

Another dainty box, which requires no ribbon to enhance its attractions, is the one illustrated, with a cover decorated in silver. The box is square, and in one corner is a design in bowknots, which unite "two hearts that beat as one." It is covered with watered paper and has a silver rim to the cover.

Many of the long and narrow boxes have a monogram stamped in one corner, in either gold or silver, showing the intertwined initials of the surnames of both bride and groom. The triangular box is novel, but less popular than the others, as it is rather difficult, as well as wasteful, to cut the cake to fit in it.

All of these shapes may be carried out in crepe paper, either with or without a frill about the cover. The caterer, as a rule, attends to the matter of the souvenir boxes, which relieves the household of one of the many duties which crowd in upon one's wedding day.—Ella Starr, in N. Y. Recorder.

IVORY



FOR CLOTHES.

THE PROCTER & GAMBLE CO., CANTON, OHIO.

German Christmas Cakes.

Into one quart of molasses (New Orleans is best) put a tablespoonful of black pepper, one of cinnamon, a teaspoonful of ground cloves and the grated rind of two oranges and one lemon. Let this stand a day. Then add flour enough to make rather a stiff dough, add about four teaspoonfuls of baking powder, which must be mixed with the flour, and a large spoonful of lard. Roll out the dough into long strips about as thick as your finger (working in more flour if too soft to roll), and with a sharp knife cut into pieces the size of a nut about half an inch long. Bake in a hot oven. Be careful not to put the nuts too close together in the pans or they will stick together. If they do, break them apart while hot.—Ladies' Home Journal.

Keep the Children Busy.

Teach children to do little things about the house. It trains them to be useful, not awkward, in later and more important affairs; it gives them occupation while they are small, and it really is an assistance to the mother in the end, although she always feels during the training period that it is much easier to do the thing herself than to show another how. This last excuse has done much to make selfish, idle, unhandy members of an older society, and should be remembered, in its effects, by the mother while her little ones are beginning to learn all things, good and bad, at her knee. Occupation makes happiness, and occupation cannot be acquired too young.

Milk in the Sick Room.

When a milk diet is prescribed for one who has an acid stomach, it is often best to add a little lime water to it. Lime water is made by turning two quarts of hot water over a piece of unslacked lime an inch square. When it is slacked, stir and let stand over night. In the morning pour off as much liquid as is clear and bottle it. To half a pint of milk add a teaspoonful of lime water. Lime-water tablets ready for use are to be found at most pharmacies. Albumenized milk is made by putting the whites of two eggs in a glass jar with one pint of milk, and shaking them thoroughly.

Interesting circulars sent to farmers. Send name to Bureau of Immigration, Spokane, Wash.

Six Thousand Square Miles of Wealth.

The vast fertile valleys of the two Indian reservations in northeastern Utah, soon to be open to settlers comprise about 3,500,000 acres of the finest agricultural and grazing lands. The direct line to Uintah and Uncompahgre reservations is by the Union Pacific system via Echo and Park City. E. L. LOMAX, G. P. & T. A., U. P. system, Omaha, Neb.

INCORPORATED OCTOBER 29, 1894.

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Object.—To provide a home for penitent fallen women, and to rescue them from lives of shame; to reclaim, educate and instruct them in industrial pursuits, and to restore them, when possible, unto their homes and parents. BENEVOLENT FRIENDS, this institution is non-sectarian and non-partisan—each worker freely doing her part to "rescue the perishing, lift up the fallen and tell them of Jesus, the mighty to save." God is blessing the work and good is being done. Now, we want you to "help just a little" and enable us to do still greater good. The erring daughters must be reclaimed, they are more often stoned against than sinning. The Savior said, "Neither do I condemn thee; go in peace and sin no more." Address REV. LYDIA A. NEWBERRY, WICHITA, KAN.

The Young Folks.

WHAT MAKES A MAN?

What makes a man? Not length of years
In paltry living spent;
'Tis not the b'a ded coat he wears,
His collar neatly bent;
'Tis not his stylish gait or mien,
His club or social clan;
'Tis not his height n' r age, I ween—
These never made a man.

What makes a man? Not hoarded gain,
Not hon'rs pricely piled,
Not all the dead by Cæsar's slain,
Not trium' h's hero child;
N' t plume or ba' ne', sword or belt,
Since war's wild note began,
Have those serene virtues dealt
Which makes the perfect man.

What makes a man? Not wisdom's art
Nor le'ring's cultured lore;
Not languag'e, though we know by heart
The to' gnos of ev'ry shore;
Not all the know'ldg' to' e gleaned
In life's bri'f, mo' tal span;
Not all the gems by o'ce in screened
Have might to make a man.

What makes a man? 'Tis not the power
That wields a deadly blow;
A giant in his at' eight may tower,
And yet no virtue kn'w.
'Tis not the workman's rugged skill
That draws the ma' rion's plan;
He may do all of this and still
Be only half a man.

What makes a man? Not rank or birth,
Nor glory's purple gown,
His monarchy may be the earth,
His b'dge croa'ion's c'own;
Not princely gear, nor robes of state,
No yet religion's ban—
Th' so make the m' an official great,
But not the nobler man.

What makes a man? Oh, not the dust
We tread ben' ath the sod!
But higher still life's solemn trust,
T' e breath of nature's God,
The inner soul and not f'rsooth,
The o' iter walls we scan,
Ho, e, co'rave, honor, love and truth—
These make the perfect man.

—L. L. Knight.

DARWIN'S EARTHWORMS.

A Great Man's Interesting and Instructive Experiments.

In one of his last essays Richard Jeffries referred with great enthusiasm to Mr. Darwin's book on earthworms, speaking of it as especially valuable to the practical farmer, as well as interesting to the unscientific lover of country life and field learning.

The book has, moreover, a larger than common measure of the peculiar charm that characterizes all Mr. Darwin's literary work, the charm of homely industry and fascinating research delightfully recorded.

The introduction speaks of the thin layer of mold on the earth's surface, the "dirt," commonly supposed to be much deeper than it is, as being constantly altered and added to by the action of earthworms. Astonishing statistics are given concerning the number of them to the square foot in common soil, and the amount of earth



MR. DARWIN IN HIS GARDEN.

thrown to the surface in a year by "castings." One is already interested, and then ready to offer respect to the worm, when it is further shown that earthworms possess important "mental qualities."

A diagram showing the structure of the worm is given, but the book deals rather with the psychology than with the anatomy of earthworms. The series of experiments recorded demonstrating that earthworms have power of attention, discrimination and social instincts is delightful, for not only does one see Darwin at home with the flowerpot, containing the worms, at his elbow for daily consideration, month after month, but one becomes personally interested in the earthworms as a colony. It is possible to feel sorry when one of them dies.

Fat, squirming earthworms brought to the surface by a chance spadeful of soil in the garden seem to be there by chance, mere in-earth dwellers. But Darwin began his work among them by regarding each as an individual of well-developed intelligence and inhabiting a carefully made house of his own; an individual with whims and fancies, even.

The experiments which were to test the earthworm's mental capacities were for the most part very simple and homely, all the household taking part.

It is amusing to follow Mr. Darwin up and down the garden walks with his lantern, perhaps crawling cautiously on his hands and knees, surprising the earthworm at his nightly toil—the searcher assisted not infrequently by "my sons." And it is entertaining to picture him with a covered lantern personating the moon, shedding a dim light over the flowerpot where the worm colony were kept to test their sensibility to light.

To see if they objected to change of temperature, he drew near tenderly with the heated poker; only one of the worms "dashed into its burrow," which settled the point of the degree of development of their temperature sense.

They were taken to the parlor to listen to the piano and bassoon, fed with familiar and unfamiliar kinds of food and treated in all ways with the greatest care and consideration.

To demonstrate the existence of sense of touch was less important; everyone knows how ill at ease the earthworm is out of its natural contact with common soil. But Darwin's object was to find out what a practically deaf, blind and dumb individual, such as the earthworm is, would do under unusual conditions to make itself comfortable. That worms rarely do have a choice in the matter of food and even architecture is no longer absurd, in the light of Mr. Darwin's years-long researches. But with all these facts accepted, we are still unprepared to hear that an earthworm is sometimes ill. It is true that with his one species of parasite he is very low in the scale compared with man exalted by his several dozen species. But it is a fact that his one parasite can cause the earthworm so much discomfort that he crawls away from his cherished home to die by the wayside in great despair. There is Darwin's hearty assurance to comfort us that the worm really suffers less, however, than his actions would imply. —Louise Lyndon, in Chicago Inter Ocean.

Only Mamma's Alfonsino.

The little king of Spain begins to have a clear idea of his royal dignity, and not long ago reminded the duke of Veragua of it. The duke, it will be remembered, is a descendant of Christopher Columbus and was a distinguished guest at the Chicago fair. The duke, seeing the king at play in the garden of the royal palace, went up to him, and holding out his hand, said: "How do you do, Alfonsino?" But the young monarch drew back a step, looked at the nobleman from head to foot, and answered in the tone of a person who was deeply offended: "Senor, I am not your Alfonsino. I'm only my mamma's Alfonsino. To you I am his majesty."

Poll Is Always on the Alert.

One of Uncle Sam's most faithful servants in Maine, but one that draws no salary, lives at the Portland Head Lighthouse. It is a large gray parrot, brought from Africa some time ago, and presented to the keeper of the light. The bird soon noticed that when the fog began to blow in from the ocean somebody would cry out: "Fog coming in; blow the horn!" One day the fog suddenly began to come in thick, and the men did not notice it. But Poll did, and croaked out: "Fog coming in; blow the horn!" Ever since then, whenever fog is perceptible, Poll never fails to give warning.

Makes His Dog Run the Press.

Thomas Meredith, a Chicago lad, owns a printing press and a Newfoundland dog. At first glance there doesn't seem to be much connection between them, but Thomas has made one. He has rigged up a power treadmill, in which he fastens the dog. In this way he gains sufficient power to run his printing press, which is of course not a very large one.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder

ABSOLUTELY PURE

SOMETHING ABOUT GOLF.

A Scotch Game Which Is Becoming Popular in Our Country.

The game of golf, which has been played in Scotland for centuries, is now becoming popular in the United States. The object of the game is to knock a ball over a course prepared for the purpose in a less number of strokes than your antagonist. At certain intervals there are holes into which the ball must be knocked. After it has been placed in one of these holes, the player takes it out, and placing it upon a little handful of earth, called a "tee," "drives" it in the direction of the next hole.

The object of a "drive" generally is to send the ball as far as possible. The player rests the weight of the body on the left foot, which is on a line with the ball. The right foot is placed diagonally back of the left at an easy bracing distance. The body is kept stationary and is bent well forward so that when the ball is struck the hands are a little above and in front of the left knee. The "driver," the club used in making a "drive," is a long, rather flexible stick, much like a whip-stock, except that it is bent upward and broadened at the end where the ball is struck. The player swings this well up over the right shoulder two or three times just to get his hand in and produce an effect, does a little wrist motion to see that the muscles of his fore-arm are all right, looks in the direction of the next hole two or three



TWO POSITIONS IN GOLF.

times, gets a sure footing and at last makes a stroke, and the little white ball sails off into the air or skins over the ground.

Almost every play has to be made with a special "cleek" or instrument adapted for the purpose. There is the "cleek" with a metal point for playing over ordinary ground between holes, the "lofter" for raising the ball over obstacles, otherwise "bunkers" and "hazards," the "putters" for "putting" the ball into a hole at a short distance, and others. The player preparing for a stroke is said to be "addressing the ball."

The grounds where the game is played are called the "links," and the boys who carry the club around for the players are called the "caddies." The game is said to be well adapted for women and girls, though the most of those who play are men and boys.

The accompanying illustration shows two of the positions taken in the game, the left being that known as "addressing the ball," the right preparing for a "drive." The two figures in the picture bear no relation to each other, being put side by side merely for convenience; that is to say, two players do not stand as here pictured, side by side, when playing.—American Agriculturist.

A Boy of Some Weight.

Herbert D. Parker, of Meriden, Conn., although only seventeen years of age, tips the beam at two hundred and fifty pounds.

THE DOCTOR SKIPPED.

Funny Story of a Rajah and a Lot of Seidlitz Powders.

An English doctor attached to the court of a rajah made himself almost indispensable to his highness. He had fortunately also made a friend of the prime minister. On one occasion his highness, being slightly indisposed, had taken, by the doctor's advice, a seidlitz powder, with which he had expressed himself delighted. Its tendency to "boil and fizz ready to blow your nose off," seemed to him to "scatter coolness," and he appeared so much better after taking it that the doctor felt himself justified in joining a hunting party.

Presently a horseman from the palace, in the confidential employ of the prime minister, galloped to him.

"My master bids me," he said, "to tell you that his highness has broken open your medicine-chest, and taken first all the white powders and then all the blue."

"Gracious goodness!" cried the doctor; "there were twenty-three of each of them!"

"My master adds," continued the messenger, dropping his voice, "that you had better make for the frontier without a moment's delay."

This the doctor did, and very quickly.—Golden Days.

The Reason.

First Crow—Do you know, I think that small boy Tommy is just a crow like ourselves?

Second Crow—Indeed! Why?
First Crow—His mother asked him why he'd done several things the other day, and what do you suppose his replies were?

Second Crow—I give it up. What?
First Crow—"Cause."—Harper's Young People.

Homes for the Homeless.

The opening of two Indian reservations in northeastern Utah to settlers opens up over three and one-half million acres of fine agricultural and stock-raising land for home-seekers.

The Uintah and Uncompahgre reservations are reached by the only direct route, the Union Pacific system, via Echo and Park City. E. L. LOMAX, G. P. & T. A., U. P. system, Omaha, Neb.

When the Kicks Come In

Is not the title of a new song, nor does it refer to the backward action of that much-maligned animal, the mule.

It is a phrase used by the inhabitants of Oklahoma to designate the approaching opening of the fruitful acres of the Kickapoo Indian reservation.

If you wish to find out all about the Kickapoo lands, as well as those belonging to the Wichita and Comanche tribes—where cotton, wheat and fruits will pay handsomely—ask G. T. Nicholson, G. P. A., Santa Fe Route, Topeka, Kas., for a free copy of Oklahoma folder.

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ESTABLISHED IN 1863.

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Annual cards in the Breeders' Directory, consisting of four lines or less, for \$15.00 per year, including a copy of KANSAS FARMER free.

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

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

All advertising intended for the current week should reach this office not later than Monday.
Every advertiser will receive a copy of the paper free during the publication of the advertisement.

Address all orders—

KANSAS FARMER CO., Topeka, Kas.

In order to be in the advance guard for the prosperity of 1895, it is important to be a subscriber for the "old reliable" KANSAS FARMER.

We have on hand three "Mary Jane Dishwashers." The price is \$3 each. But to close out we will send one dishwasher free to any one sending us five subscriptions and \$5.

We want our readers to secure for us thousands of new subscribers for the KANSAS FARMER and we will pay well for such work. If you will get up a list, write this office for liberal terms.

Every farmer who desires to improve financially and in his vocation from this time on is cordially invited to subscribe for the old reliable KANSAS FARMER, a medium which will help do it.

The cheapest and best way to break up monotony and to make life and home enjoyable is to provide plenty of good reading. Take the county paper; take a State political paper; take the KANSAS FARMER; take a good monthly magazine—take these, if no more.

Every farmer in Kansas, and especially the breeders and stock-raisers, should have the greatest live stock journal in the world, the *Breeder's Gazette*, of Chicago, price \$2 a year. We make a special offer of it and the KANSAS FARMER, both papers one year, for only \$2. Subscribe now through this office.

The announcement of the annual meeting of the Standard Chester White Record Association shows a fine program, in which Kansas is represented by J. M. Young, of Liberty, Kas. The meeting will be held at Hotel English, at Indianapolis, Ind., January 10. All breeders of Chester Whites are invited.

During December and January many of our readers in renewing their subscriptions desire also to send for other periodicals and get them at a combination rate. If such will send us a postal card, asking for price on a given list of papers, we will be pleased to answer, and can furnish subscription to any periodical published in America, even if it is not in our regular clubbing list as advertised in our supplement.

The State Irrigation convention, held at Hutchinson, November 23 and 24, is acknowledged by the press to be the greatest ever held anywhere. Full proceedings are now being printed and will be issued from Topeka about holiday time. Send \$1 to H. V. Hinckley, Secretary of Executive committee, box 242, Topeka, Kas., and get membership receipt in the Kansas Irrigation Association and four copies of proceedings.

IS 1895 AN EPOCH?

It can be said of the conditions which affected the well-being of humanity in 1894, that they were, on the average and in the aggregate, not worse than those of 1893—possibly not quite so bad—only this and nothing more. Of the prospects for 1895, it is not possible to speak with so much certainty. The general impression is that times are to be better. The ground of this improved confidence has scarcely been distinctly stated. But the fact of its general prevalence is itself an assurance of its realization. Confidence is a large part of the capital on which prosperity is builded. It is fortunate for the new year that distrust is disappearing, and, while there are few other omens that point to better times than in the recent past, this one element is sufficient to revive the productive energies of the nation, and such revival is, itself, the maker and builder of prosperity.

It is well to assume that seasons will be propitious, and, also, to shape our industries that we shall not fail should the showers be lacking in their wonted frequency. The investigations of recent years have done much to enable the farmer to provide against the effects of drought. It is fair to presume that the immediate future will do as much in this direction as has been done by the recent past.

But for the farmer who owns productive land and tills it the future appears with no uncertain promise. He who will study a map of the world, and, observing the fertile areas which have recently been occupied by civilized man for the first time, and will place beside a table of yet available areas for such occupancy another table showing the world's increase of civilized population, cannot fail to conclude that the time for great surplus of agricultural products over demands for the same is rapidly being transferred from the future to the past. By some careful students of this element in the progress of mankind, the year 1895 has been named as the pivotal year, the year in which the demand for the farmers' products shall overtake and surpass the supply. It is worth while to live at this epoch and to observe the world's changes at their beginnings. Especially is it worth while to be a farmer at this time and to be among those for whom the change will bring prosperity rather than to be among those engaged in the fierce contention for opportunity to work at continually over-crowding wage services.

THE NEW BUILDING AT THE AGRICULTURAL COLLEGE.

It will be a matter of self-gratulation to every good Kansan, whether he be a farmer or not, to realize the material progress that is being made by the State Agricultural college, at Manhattan.

Prominent in the onward steps of this institution is the erection of a new Library and Agricultural Science hall, which was dedicated under the auspices of the Kansas Academy of Science on the evening of December 28, last. The occasion was one of special interest as marking an event in the history of the institution as well as in the prominence and representative character of the men who took part in the exercises of dedication.

The dedicatory exercises were held in connection with a banquet given by the faculty to the Academy of Science and invited guests, and among the speakers on this occasion may be named ex-Governor Geo. T. Anthony, ex-Governor Geo. W. Glick; Judge W. B. Sutton, of Russell; Chancellor F. H. Snow, Prof. S. W. Williston and Dr. L. E. Sayre, of the State University; Prof. F. A. Waugh, of Oklahoma Agricultural college; Dr. A. H. Thompson, of Topeka; Secretary F. D. Coburn, of the State Board of Agriculture; Hon. Wm. Knipe and Rev. Washington Marlatt, of Manhattan; State Architect Seymour Davis and Hon. W. D. Street, President of the Board of Regents. Hon. T. M. Potter, President of the State Board of Agriculture; Prof. M. L. Ward, of Ottawa University; Prof. Harshbarger, of Washburn college; State Geologist Robert Hay, Repre-

sentative A. C. Sherman, of Shawnee county, are among the other prominent men present.

The new building stands nearly 200 feet southeast of College hall and fronts to the north and east. It is built of the famous Manhattan white limestone, which is not excelled for beauty and quality in the West. The main structure is about 100 feet square and is two stories high, with a twelve-foot basement and a very large attic. The basement contains five large rooms, two of which are used for society halls, one for a ladies' gymnasium and the others for various purposes. On the main floor is contained a class-room for zoology, entomology and geology, a biological laboratory and a private laboratory for the Professor, both provided with north light, an office, a museum hall measuring about 40x60 feet, and reaching with its two galleries to the attic, girls' and boys' wardrobes, water closets, stairways, etc. The second floor shows the same number of rooms with nearly the same arrangement, and is to be occupied by the department of botany. There will be in addition on this floor an experiment station laboratory, and a class-room for civics. On the east side this floor can be entered directly from the outside, and the closing of a single door will completely sever it from the floors above. All partitions are of solid stone wall or partition tiling and the ceiling of corrugated iron, making the basement entirely fire-proof.

The library wing is only one story high above the main floor, and extends west from the main part. It has been built so as to permit of an extension. Some day, probably not a dozen years after date, the library will again have outgrown its quarters and ask for more space. The stack-room will then be extended southward from fifty to 100 feet and end in an octagonal art gallery. The stack-room has inside measure of nearly 35x81 feet. An open arch connects it with a reading-room measuring about 18x35 feet. At the other end, to the north, is the outside entrance to the library, and a small work-room for the librarian. The stack-room will contain two tiers of book-stacks, one above the other, and will provide shelving for about 60,000 volumes. Since the catalogue enumerates but 20,000 volumes, only a part of the shelving will be put in place for the present. All stacks and shelving will be made of steel. A stairway and an elevator will connect the librarian's work-room with basement, where the government reports, manuscripts, duplicate volumes, etc., will ultimately be stored.

For some time the new Library and Science hall will be the sentinel of the groups of buildings on the hill, but the growth of the largest agricultural school in the world will soon make it necessary to erect still more buildings.

A number of departments are already much crowded in their present quarters and the Legislature will be asked to provide new quarters for them. When a great institution like this ceases to grow it begins to die, and it is to be hoped that the new Legislature will be as liberal as the last one was.

FARMERS' INSTITUTES.

The KANSAS FARMER invites officers of farmers' institutes to give date and place of meeting of all institutes to be held under their direction. The Agricultural college will considerably increase the number of institutes in which it will participate, and asks that local institute officers who desire assistance from the professors in conducting these meetings will make their applications to the President or Secretary as early as possible.

The following institutes have been arranged for by the college in addition to those already held:

Gardner, Johnson county, January 17 and 18, Prof. Walters and Prof. Fall-
yer.

Hiawatha, Brown county, January 24, 25 and 26, Prof. Graham and Prof. Georgeson.

Garden City, Finney county, January 29, 30 and 31, Prof. Mason.

Stockton, Rooks county, January 31 and February 1, Dr. Mayo and Prof. Will.

Russell, Russell county, February 7 and 8, Professors Mason and Kedzie.

KANSAS IRRIGATION'S NEEDS.

The question as to what the Legislature of 1895 should do for irrigation is of sufficient importance to call forth considerable discussion in the public press. The fact that a very large area of most fertile land in this State is losing its inhabitants after they have made a brave fight for homes in a land of sunshine, whose only lack is sufficient moisture in the soil at certain seasons, is a mournful one, and is made doubly sad by the conviction that such movement is sooner or later to be succeeded by a reverse tide of population which will find prosperity where these found adversity, loss, suffering, despair.

The first solution of the problem to suggest itself to most humanitarians is for the State or the nation to construct great irrigation works, providing water for the thirsty soil of the western Kansas farmer. This is immediately met by the political economist with the charge of paternalism, a charge grave enough to sentence a saint to execution. And the humanitarian in this, as often in other instances, is short-sighted and decides the case before he has learned the circumstances, before he has heard the evidence. Great irrigation works are essential in some countries—in some of the States and Territories of this country. They may also at some time have their use in Kansas. But at the present time and for some years in the future the irrigation development of Kansas will for the most part consist of individual plants, wherewith each separate irrigator will secure from resources on or under his own land, water for his crops.

It may be suggested that if this be true then the State has nothing to do in the matter. This being true, the duty of the State is certainly greatly modified. This being true, the gorgeous schemes with speculative attractions to which State aid might be attracted cannot exist.

A few points which have been often stated in one form or another may here be mentioned on account of the assistance they will afford in determining whether the State should do anything, and, if anything, what it should do.

The portion of the State's area most needing irrigation will depend chiefly upon two ways of obtaining water. Under much of this portion of the State there is a phenomenal underground reservoir of water, which is kept constantly full by additions from the rainfall of the region and from water brought in by streams whose sources are in the Rocky mountains. This reservoir contains coarse sand and gravel, bottomed by impervious rocks or clays and covered with soil of surprising fertility and adaptability to cultivation. This stratum of water-bearing sand and gravel varies in thickness from a few hundred feet to a few inches, and in some places it is not wanting. The water supply available on any farm thus varies from the greatest abundance to little or nothing. The thickness of the soil above the water-bearing stratum varies from a few feet to at least 200 feet. Two questions then confront the farmer who would obtain water for irrigation from the great underground reservoir: First, has he under his particular farm sufficient water available? Second, is the depth such that he can afford to provide the plant and pump it? These are questions easily answered as to large areas, but requiring expensive experimentation as to other large areas. This investigation the settler is unable to undertake, both because he lacks the means and because he lacks the scientific acquirements needed to guide him. This investigation can be made by the State at small expense so as to furnish reliable information of the practicability of irrigation in large areas.

Another series of conditions prevails in other sections of the semi-arid portion of the State. In these, as well as in much of the eastern half, water for irrigation is to be obtained by saving storm waters in artificial reservoirs. These must be intelligently located, and this can only be done, in the majority of cases, by the use of such information as is derived from a general topographical survey. Some of these reservoirs will be large and will im-

pound vast quantities of water, which, in case of accident, would cause great havoc to life and property below. Thus, in all parts of the State, where irrigation is thought of, the great want of the people is information. People are not generally asking that the State construct reservoirs, or dig ditches, or erect any kind of works for them. Indeed, the Kansan is generally a man who likes to paddle his own canoe. There may be, and doubtless are, grave differences of opinion on social questions, and there are those who hold advanced socialistic views as to what may ultimately be desirable as to the organization of society. In general, however, the farmers are individualists. And, whatever views are held on these questions, those desiring to employ irrigation as an insurance of good crops recognize the fact that the information which the State, and the State alone, can now develop and make available, is needed now, and that its acquisition should not be delayed pending a distant settlement of disputed questions of social ethics.

The one point on which all are agreed is that an irrigation survey of the State is needed; that its immediate prosecution will enable many, who have held on with the desperation almost of despair, to retain their homes, to develop their resources and to become prosperous citizens. It will also show others, whose local conditions will be found to be against the probability of profitable irrigation, that it is wisest for them to no longer fight against fate, but to change locations, selecting homes where there is a certainty of making a living.

The recognition of the necessity for an irrigation survey and of the importance of a proper administration of the waters of the State, has created such an impression that it is not surprising that several propositions, to be presented to the Legislature, have been developed. Some of these call for the creation of elaborate organizations for the prosecution of the work. It is fortunate in this connection that the Kansas Irrigation Association recently held a meeting at which the matter of legislative action was thoroughly discussed and the judgment of the meeting formally expressed to the effect that an irrigation survey should be made in the least expensive way possible, and this may best be done by the State Board of Agriculture. Anything more elaborate than asked by the irrigators themselves cannot be expected. That the interests of the State will be promoted by a conservative carrying out of their propositions is not to be doubted. Estimates as to the expense of doing the necessary work vary between wide ranges. As to these the KANSAS FARMER inclines to the more conservative views and believes the survey can be made, with judicious expedition and including necessary experiments, at a cost not exceeding \$20,000 per year.

SEND POLITICAL ARTICLES TO POLITICAL PAPERS.

It was with some hesitancy that we admitted to the columns of the KANSAS FARMER, recently, a letter from Dr. E. P. Miller, of New York, on the "Discussion of Economic Science." In the hope that the discussion would soon end, and that it would, in no case, take a partisan political turn, Dr. Miller's paper was printed, together with some comments by the editor. Instead of manifesting signs of short life, however, the discussion threatens to grow to immense proportions, unless speedily subjected to the executioner's axe in the hands of the editor. Not only has Dr. Miller followed his letter with others, but the opposite side has been taken up vigorously by able writers, and there lie on the editor's desk now two replies to Dr. Miller and doubtless there are in course of preparation at this moment enough manuscript to fill four pages of the KANSAS FARMER. These discussions on money, a subject which, divested of partisan prejudice and the machinations of interested operators, is simple and easily understood, would doubtless, if given free scope, fill the KANSAS FARMER to the utter crowding out of such matters as the "Stock Interest," "Agricultural Mat-

ters," "Irrigation," "The Home Circle," "Young Folks," "Horticulture," "The Family Doctor," "In the Dairy," "The Poultry Yard," "The Apiary" and "The Veterinarian." Of course, this will never do, for, while it appears not unlikely that the "financiers" will have their way, and that silver will never again be allowed to occupy a place as money of ultimate payment, and that greenbacks will be eliminated from our money and their place taken by interest-bearing bonds and bank bills—while these things appear to be written in the book of Fate, and, if so, are sure to make prosperity harder than it ought to be for farmers and all other producers, it behooves the KANSAS FARMER to at least confine the discussion within very narrow limits, and to devote its energies and its pages to the collection and dissemination of such information as shall enable its readers to make a living and enjoy a degree of prosperity under the most adverse conditions which can be brought about.

It was shown last week that the interest in methods of feeding and in crops likely to be remunerative far transcends that in discussions of "Agricultural Depression." It is no less true that farmers are weary of the endless wrangle about the money question and the tariff. We shall, therefore, ask our friends who are or who believe themselves to be burdened with wisdom on these subjects, to offer their contributions to the able political papers wherein such discussions are welcomed, provided they further the interests of the political party to which the paper receiving the communication belongs. And, since there are newspapers representative of all political views, all can be accommodated, while the FARMER will assist its readers to provide material sustenance for the combatants.

KANSAS CELERY.

The writer had the pleasure, a few days since, of partaking of a dinner, an important part of which was some of the largest, whitest, most deliciously flavored celery that we ever saw. The pleasure enjoyed on that occasion was not decreased when it was learned that this celery was grown on a Clay county farm, in that driest of all recent summers, the season of 1894. It was also learned that the farmer who grew it was then selling it to the local dealers for 75 cents per dozen bunches, and that he had a very considerable crop, which they were anxious to buy at that price. Shortly before the discovery of this Clay county find the writer had purchased some celery which was said to have been raised in Colorado by irrigation. Northern celery was offered at the same time and price, but a curiosity to know what irrigation would do for this valuable plant decided the choice in favor of the Colorado product. When prepared for the table we found that the celery dish contained one of the sharpest little bits of disappointment experienced for some time. The Colorado celery was a tough and brutal failure. Celery that is only tolerable is like an egg that is only tolerable—it cannot mingle in good society in Kansas.

Of course, it is always true that in raising celery, as in doing anything else, a very large element of success lies in the know how, and no good results can be obtained without proper care and culture. One of the chief elements of success in growing celery lies in the necessity of making the plant attain a rapid growth. To do this requires plenty of water and some labor in banking or shading the plants at the proper time, and if this is not done and the plant is allowed to grow slowly and to toughen in the sun as it grows, no amount of bleaching will make it palatable.

The dietetic and even medicinal values of this plant are so great, and the demand for it so large, that it is sure to have an important place in the newer agriculture which is to follow the better solution of some of the irrigation problems now pending.

This plant has such a quieting effect upon the nerves, is so beneficial as a stomach regulator for a dyspeptic, and is such a delicious addition to the fall and winter bill of fare, that every farmer should have a patch of it or waste a couple of seasons in finding out why he don't.

WHEAT ESTIMATES.

Statisticians who figure on the amount of wheat on hands, after all reports of production have been completed and with the best obtainable facilities for determining what has been done with the product, differ so widely in their estimates that confidence in conclusions is impossible for those who know only of results. Thus, in last week's trade review, R. G. Dun & Co. say:

"Wheat has declined 1/2 cent, though Western receipts have been only 1,712,098 bushels, against 3,109,832 for the same week last year, but since August 1 receipts have been a little larger than last year, but the visible supply is the largest known. Exports in December from both coasts have been a little larger than last year, but for the crop year about 20,000,000 bushels smaller. The Western estimate, usually regarded with most confidence, is that the crop will reach 515,000,000 bushels, which will leave for export, with stocks brought over, more than 200,000,000 bushels, of which only 75,000,000 bushels have gone abroad."

While agreeing with the above as to the estimate of the year's production, the Cincinnati Price Current arrives at a far different conclusion as to the exportable quantity for the year. It will be seen that this difference arises from the fact that Dun's report takes no account of the amount of wheat fed to stock, placed by the Price Current at 75,000,000 bushels, as follows:

"The results of a careful revision of estimates of the 1894 production of wheat, in detail by States, leads to the conclusion that previous calculations with reference to the spring grain have not fully represented the yield, and that the results justify 165,000,000 bushels as this portion of the crop, and approximately 350,000,000 for winter grain—making a total of 515,000,000 bushels, and giving 125,000,000 bushels as the indicated exportable quantity (including previous surplus), of which quantity the exports to January 1 will be about 77,000,000. This deduction is based on 75,000,000 bushels as the year's quantity consumed by animals."

Beerbohm's Corn Trade List, of London, England, contains, in its December 7 number, a careful letter from C. Wood Davis, of Peotone, Kas., in which the estimate of exportable wheat is much less than that of the Price Current and only about one-fifth as much as claimed by Dun. The following from Mr. Davis' discussion will be read with interest:

"Assuming that the final estimate of 1894 will differ from the Bureau's October indication in the same ratio as did that of 1893, it will show the wheat crop of 1894 to have been about 460,000,000 bushels. Upon the assumption that such will be the final estimate the account with the last four crops will stand as follows (in bushels):

Crop of 1891.....	700,000,000
" 1892.....	600,000,000
" 1893.....	896,000,000
" 1894.....	460,000,000
Wheat harvested, 1891 to 1894, inclusive.....	2,156,000,000
CONTRA.	
Home consumption 1891-92.....	357,000,000
" " 1892-93.....	356,000,000
" " 1893-94.....	363,000,000
" " July to November 15, 1894.....	150,000,000
Exports 1891-92.....	236,000,000
" 1892-93.....	192,000,000
" 1893-94.....	164,000,000
" July 1 to November 17, 1894.....	60,000,000
Added to visible supply since July, 1891.....	69,000,000
Fed to animals up to November 15, 1894.....	50,000,000
	1,980,000,000
In farm and other private granaries November 15, 1894.....	176,000,000

"That present invisible stores do not exceed the indicated 176,000,000 bushels is evidenced by conditions obtaining in all the winter wheat districts, where millers, only four months after the opening of the harvest year, find it difficult to secure the required supplies. So great is the dearth, only four months after harvest, in most of the winter wheat districts, that millers are forced to either resort to the warehouses of the great market centers, or go to distant producing districts for the needed supplies. Even for that portion of their supplies drawn from the regions adjacent to their mills they are forced to pay from 1 to 10 cents a bushel more than the wheat would net the grower if shipped to the great centers. This is also true, measurably, of the spring wheat districts. Such conditions, at this season of the year, are wholly unprecedented, and show an unusually early exhaustion of farm stocks. This is shown quite as plainly by the receipts at the primary markets, which are now but little greater than from the very small crop of 1890, as well as by the difficulty with which the country millers secure the required supplies, just as it is shown by the fact that ever since harvest spot wheat has, in the Northwest, commanded a premium over 'futures,' 'futures' that have enabled

dealers in phantom grain to keep the price at Chicago from advancing as rapidly as at Liverpool. That is, the 'option dealers' by offering their paper contracts, that carry no delivery of actual product, have been able to keep prices at Chicago below the parity of those obtaining in the American and European consuming districts.

"That the extraordinary crops of 1891 and 1892 were greatly underestimated is shown by the proportion of old wheat—the proportion in a vast number of districts reaching a half—that was marketed during the 1893-94 harvest year. It was the marketing in 1893-94 of such quantities of wheat from the harvests of 1891 and 1892 that gave a semblance of verity to the assertions that the crop of 1893 had been officially underestimated, and incited those having but partial knowledge of conditions in the producing districts to assume that the official estimate of the 1893 crop was as defective as those relating to the phenomenal crops of 1891 and 1892.

"The foregoing tabulation shows that there could have been no material underestimate of the crop of 1893, nor yet of that of 1894, if the crops of 1891 and 1892 were as large as the Bureau's critics claim, or as great as they unquestionably were.

"In case the supplies in private and farm granaries do not exceed the 176,000,000 indicated in the preceding tabulation, plus 82,000,000 bushels in the visible, or an aggregate of 258,000,000 bushels, it will be impracticable to export more than 40,000,000 bushels during the remainder of the harvest year, and not reduce the reserves below anything heretofore known. Some 18,000,000 bushels will be required for spring seeding; about 175,000,000 bushels will be used for bread and in the arts, and probably 30,000,000 bushels will hereafter be fed to domestic animals, leaving but 48,000,000 bushels for export, and to serve as reserves at the end of the harvest year. Known conditions point to such an ending of the supplies resulting from the last four American harvests, supplies that have been so plethoric as to drive prices to the lowest level of the century.

"As the world's acreage is, with no more than average yields per acre, deficient at least 8 per cent., or 16,000,000 acres, it is wholly improbable that any person now living will live long enough to see a return of like conditions or such prices as were so recently current."

It will be observed that Mr. Davis carries his estimates of "home consumption" and "fed to animals" only to November 17. His letter is made the subject of very favorable comment by the editor of England's great statistical journal.

The fact has generally been overlooked that, while phenomenal crops have usually been under-estimated, short crops following them have quite as certainly been over-estimated. This is scarcely avoidable under the system of collation of reports by the compilers of agricultural statistics. They are prone to consider anything surprising as erroneous and to apply their corrections to returns showing unusual results.

Where "doctors" do so much disagree, how shall the layman arrive at any conclusions?

Boiled Paint for Shingles.

EDITOR KANSAS FARMER:—Nearly three months since I proposed my plans through the FARMER for a bank barn with stable under it, and asked for suggestions for improvement. Without receiving any I went on and built, promising to report how cooking shingles in oil and paint went, for I once before recommended this to a farmer friend, through your paper. I used 14,000 six-inch cypress shingles; could not well keep them in the hot paint without falling in all over, therefore we baptized them twelve inches up while the paint and oil were boiling. It took seventy gallons of raw oil and forty pounds best red mineral paint, at a cost of about \$3.25 per 1,000, or double first cost of the shingles. I intend to put on a full coat of paint in the early summer, and believe it will pay, or in other words, never give out or decay.

Eureka, Kas. J. F. WOODROW.

Forestry Notice.

Those wishing to receive a share of the free distribution of seedling forest trees by the State Forestry Department can make application at any time previous to March 1, 1895. The report of this department is now in the hands of the State Printer and will be furnished applicants as soon as printed. Owing to a lack of sufficient printing fund they may not be finished before the last of January. County papers please copy. E. D. WHEELER, Commissioner of Forestry. Ogallah, Kas.

Horticulture.

DOES MULCHING RETARD THE MATURITY OF FRUITS?

Prof. L. H. Bailey, of Cornell University Experiment Station, has issued a bulletin discussing this subject in a way which cannot fail to be interesting and profitable to every horticulturist. The following excerpts from the bulletin give the substance of it:

"The last winter was severe at Ithaca. The ground froze deep in December, and the frost did not leave it until the middle of March. Upon the 28th of February, 1893, the snow being well settled and a foot and more deep in the open fields, heavy mulches, of coarse manure and litter from horse stables, were placed about apples, almonds, buffaloberries, blackberries, raspberries, currants, gooseberries, grapes, juneberries, peaches and quinces; and strawberries were mulched later. Observations were also made upon roses which were mulched in the fall for winter protection.

"The apples and other tree-fruits comprised trees which were set in the spring of 1889. Half of a large wagon-load of mulch was placed about each tree, covering the snow deep for a distance of three feet or more in all directions. The small fruits were mulched heavily to the middle of the rows, or three and a half to four feet in each direction. A heavy wagon-load of mulch was sufficient to cover about ten feet of row. On the 29th of March, these mulches were examined, and, although the frost had left the fields fully ten days before, the earth under the cover was still solidly frozen and from six to eight inches of snow persisted. Here, then, was an excellent opportunity to study the effects of a cold soil upon the vegetation of plants. On the 13th of April there was still frost and snow under the gooseberry mulches, and yet both mulched and unmulched plants seemed to be starting alike. It was apparent that the temperature of the soil exerted no influence upon the swelling of the buds, for the buds which projected above the mulch were as forward as those upon untreated plants, while the buds immediately under the mulch, upon the same twig, were wholly dormant. Shoots of which the tips were caught under the mulch showed perfectly dormant buds at both ends, while the protruding middle portion was as forward as twigs upon unmulched plants. Moreover, the protruding portions of the mulched plants maintained their forwardness, and produced leaves, flowers and fruit at the same time as the contiguous plants which were not treated. Crandall currants, juneberries, roses, grapes and all the tree-fruits, behaved similarly throughout the season. The mulched blackberries, raspberries and Victoria currants seemed to be a day or two behind the others in starting, but they very soon caught up and there was no difference in season of bloom and maturity of fruit.

"With the strawberries the case was far different. General Putnam and Oregon Everbearing were mulched March 25, when the ground was completely thawed out. The mulch covered the plants and the entire space between the rows to the depth of three inches. On the 15th of May this mulch was removed. At this time, the unmulched plants were in full leaf and were nearly ready to bloom. The plants under mulch were just starting into leaf and the growth was weak and bleached. The plants were endeavoring to push themselves through the cover to the light and air. The mulch was forked off the plants, and they gradually assumed a normal color and habit, and bloomed June 1. The bloom was delayed from ten days to two weeks, according to the depth of the covering. The plants did not seem to recover entirely, however, and the fruitage was somewhat lighter than on the normal plants; but it was delayed about a week.

"All this is what the botanist would have expected. It is well known that plants store up starchy matters in their bulbs or branches to be used in the growth of the adjacent parts in early

spring. The earliest bloom of spring is supported by this store of nutriment, rather than by food freshly appropriated from the soil. This is well illustrated by placing well-matured twigs of apple or willow in vases of water in winter, when the buds will burst and flowers will often appear. It was admirably enforced by a simple experiment which we made last winter in connection with this inquiry. On the 15th of February, a branch of a nectarine tree which stood alongside the horticultural laboratory was drawn into the office through a window. This office was maintained at the temperature of a living room. On the 6th of April, the buds began to swell, and the young leaves had reached a length of three-fourths inch a week later. The leaves finally attained their full size upon this branch, before the buds upon the remaining portion of the plant had begun to swell. This experiment is by no means a novel one, for essentially the same thing has heretofore been accomplished with the vine and other plants; but it must impress upon the reader the fact that much of the bursting vegetation of springtime is supported by a local store of nutriment, and is more or less independent of root action.

"These various experiments and observations show that a mulch can retard flowers and fruit only when it covers the top of the plant as well as the soil. If the ground could be kept frozen for a sufficiently long period after vegetation begins, the plant would consume its supply of stored food and might then be checked from inactivity of the root, but this would evidently be at the expense of injury to the plant; but, in practice, it is fortunately impossible to hold the frost in the soil so long. It is evident, too, that the covering of strawberries and other low plants for the purpose of retarding fruit, must be practiced with caution, for a mulch of sufficient depth to measurably delay vegetation is apt to bleach and injure the young growth, and to lessen the crop. Yet it can sometimes be used to good effect, and fruiting can be delayed a week, perhaps even more."

Planting Potatoes--Raising Sweet Potato and Other Plants.

EDITOR KANSAS FARMER:—A friend in South Omaha, Neb., writes as follows: "I think the Early Kansas potato is the one I have been looking for for the past five years. I put in my potatoes with an Aspinwall planter. It is the most perfect machine I ever saw. It will plant, with one man and team, eight to ten acres per day, and do it better than the most careful man can do it by hand. Potatoes, cabbage and tomatoes are my main crop. I wish you would tell me how to sprout sweet potatoes. I have bought plants heretofore, but want to try to raise them myself."

How the Aspinwall people must enjoy reading such letters as this. Now, I think this machine could be improved. The wedge-shaped shoe that makes the drill ought to be changed to a small double plow, or a good cultivator shovel. I will never admit that this machine can do better work than I can by hand. Of course, if a man plants many acres this machine is just the thing, but with only from one to three acres, I would much prefer to plant by hand. I am a little cranky about planting my potatoes, and there is no machine made that can handle potatoes as carefully and as well as the human hand. I shall have more to say about this in the future.

I have made a business of sprouting sweet potatoes for many years, and although it is very simple to do so, yet I find I am all at sea about how to write it up. I prepare my hot-bed by putting on top of the ground (in the bed) about eight inches of horse manure that has been under the horses' feet for two or three days, being careful to take it out from under the horses and not out of the manure pile, as it has not yet been brought up to a heat and is constantly receiving ammonia in the urine, also moisture that prevents its heating, but in two or three days it will be just on the point of heating. Now, I am careful not to take too much manure,

as too much is worse than none at all. We simply need enough to prevent the potatoes getting cool, or chilled on the lower sides and do not want enough to heat them, as many suppose. I tramp this loose manure down to four inches. This is a plenty, and more than four inches would be too much. Remember, we do not need any bottom heat, but must apply the heat from above. Put about an inch or two of earth over the manure and then pack in the potatoes as tight as they will fit in. If you take the trouble to select some of a more perfect shape than others, put them by themselves in one end of the bed, and cover with earth from two to four inches deep and put on the glass.

Not much moisture is needed to start them, but after they are up they must have considerable of it.

One of my neighbors has always failed to sprout his and I am satisfied he put in too much horse manure; yet he thinks he did not put in enough and will put in twenty-four inches next year, and will, of course, make a failure. They can be raised without any horse manure at all, and this is proof, that we do not need bottom heat.

To sum up, I believe the whole danger lies in putting in, too much horse manure. I often cut the sprouts down with a pair of sheep shears and keep them back until the stems turn dark red, then put them out. These will be very strong plants and will, in every instance, raise the largest potatoes. It is a positive fact that small plants set out a week or two ahead will never equal large ones put out later. Dwarf them down in height and thus force them to grow larger around and stronger and you have the secret.

This is more forcible when applied to tomatoes than to any other plant. The large, coarse plants that we set out always seem to make the largest and earliest vines.

This year I shall plant my tomatoes in old two-pound cans that have had the bottom and side seam melted out and have wires around to keep them in shape. I shall only allow one plant to a can and shall dwarf the top, and will have the cans inside a hot-bed with glass top. Shall plant the seed rather earlier than usual and dwarf the tops one or more times and then transplant can and all, leaving the cans to protect the plant.

Brother Thomas, of Bingham, Iowa, writes me to put tin around the young plants to keep away cut-worms, etc. It would be a good plan, and to leave the cans around the vines would answer as well. For 50 cents I can get fifty bushels of old cans, and my boy likes to melt a pile of them with hay for fuel. Would space permit I would tell how to use these cans on melons.

I tried six of the leading varieties of sweet potatoes, and after three years decided that the Early Golden was the best one for my local market and for profit. They will grow three crops of sprouts as quickly as any other would two, and as I sell plants, this is a big item. As I am the oldest potato-raiser here, of course this strain has the lead now in our local market. At Iola, these potatoes cannot be sold at all, as they demand the Jersey and the Nansmond. The Early Golden is the earliest and largest, but I think the Jersey is the sweetest. One must raise those which his own market demands.

CLARENCE J. NORTON.

Morantown, Kas.

Notes for January.

BY N. J. SHEPHERD, ELDON, MO.

Now is a good time to plan out the next season's work.

When the ground is frozen is a good time haul out manure.

If there is a thaw-out it is often a good plan to plow sod land.

Have you found out where your profits came from last year?

The colder and stormier the weather the more feed the stock will require.

During the winter is the farmer's best time for studying improved methods of farming.

It is quite an item to get everything done during the winter that will save time in the spring.

While there is leisure is a good time to make out and order the seeds needed for spring planting.

If the lambs come early it is very impor-

tant that the ewes should have comfortable quarters and be fed sufficient to keep in a good condition.

It is usually a good plan to order seeds from responsible seedmen that advertise in the KANSAS FARMER.

With all crops it is important to get everything done in good season and some preparatory work is necessary if this is done.

A little extra care now in keeping the stock in a good condition will be of material aid in securing a better growth in the spring.

Selling cheap and buying high is one of the ways that helps to make farming unprofitable, and this applies to all products of the farm.

In a majority of cases farmers with a very little trouble can have a good supply of ice at a low cost, if the work is done in good season.

If not done before, pruning and cleaning up the orchard can be done to a good advantage at any time this month that the trees are not frozen.

When an orchard is to be set out in the spring it will save considerable time if the ground is carefully platted out now and stakes are set where each tree is to grow.

Plan to grow nearly or quite all that you eat in the family. You may think you can buy them cheaper, but if you have no money to buy with it will be more economical to raise.

If the growing pigs can be kept thrifty during the next ten weeks they will be easier to fatten after grass starts to grow. It is only by keeping thrifty in winter that fall pigs can be made profitable.

If anything like a regular system of rotation is carried out it can be done to a better advantage if the farm is all platted out into fields and each field is numbered. Such a system would also help materially in keeping accounts with the different operations.

Invited to send for my latest price list of small fruits, Half million strawberry plants, 300,000 Progress, Kansas and Queen of West raspberry plants. B. F. Smith, Box 6, Lawrence, Kas. Mention this paper.

A. H. GRISEA, Prop'r Kansas Home Nurseries, Lawrence, Kas., grows trees for commercial and family orchards—the Kansas Raspberry, Blackberries, standard and new Strawberries—also shade and evergreen trees adapted to the West.

Something New in Musk-melons

The White Persian, the largest and best flavored on earth. Nothing better to be desired. Write for prices and particulars to Larkin Commission Co., Wichita, Kas. Mention FARMER.

Mount Hope Nurseries.

27th year. Have for sale a complete assortment of fruit trees, especially of the leading commercial sorts. Also making a specialty of extra hardy peaches, Crosby, Bokara, etc., 28 deg. below zero and a crop. For circulars and prices address the proprietors.

A. C. GREISA & BRO.
Lawrence, Kas.

Lee's Summit Star Nurseries.

ESTABLISHED IN 1869.

Choice fruit and ornamental trees, including small fruits, evergreens, roses and shrubbery. A specialty of supplying trees for commercial orchards. Also shade trees. Plant while you can get the best trees at the lowest prices. Send for catalogue. Address (mentioning this paper) M. BUTTERFIELD, - Lee's Summit, Mo.

BONNER SPRINGS NURSERIES

We shall offer in the spring, 1893, at surprisingly low prices, a large stock of apple trees—mostly Gano, Ben Davis and Jonathan—the apples. Also small fruits of all kinds, Greenhouse bedding plants and bulbs for spring planting; asparagus, evergreens and a general collection of nursery stock, all being of the leading and most popular kinds.

Address H. H. KERN, Manager,
Bonner Springs, Kas.

ESTABLISHED IN 1873.

WILLIS NURSERIES.

Contain a general assortment of choice fruit trees and other nursery stock, which we offer for sale in lots to suit. Our prices are low—stock and packing the very best. Write for free catalogue and always mention name of this paper. A special lot of choice well-grown two-year-old apple trees for sale.

Address A. WILLIS, Ottawa, Kansas.



The best Pruner ever made. Will cut any limb not exceeding 1½ inches in diameter. One man can do more work with it than five men can with any other. Agents wanted in every State in the Union. Address—

ORCHARD PRUNER CO., Ottawa, Kansas.
[Mention KANSAS FARMER.]

In the Dairy.

Conducted by A. E. JONES, of Oakland Dairy Farm. Address all communications Topeka, Kas.

Petitions for Oleo Legislation.

Petitions are being circulated over the State by those interested in pure milk and butter, which read as follows:

To the House and Senate of the State of Kansas: We, the undersigned, citizens of the county of _____, State of Kansas, do hereby pray and petition your honorable body for the enactment of a law to prevent deception in the production and sale of milk and the manufacture and sale of imitation butter and cheese, and to create a Dairy Commissioner.

Those interested in this subject, who have not received the blank petitions, please write the dairy editor of the FARMER and they will be mailed at once, with full instructions.

The Fight Against Oleo.

There never was a time when there was such a general determination to bring the manufacturers and dealers in oleo to account as there is now. From all parts of the country we hear of movements being made with the view of having the fraudulent traffic in oleo stopped, and we feel encouraged to hope that at last something will be accomplished. All we need is a general law that will compel manufacturers to either leave oleo uncolored or to color it some distinctive color that will distinguish it from butter; and also to allow each State to govern its sale within its own territory. When we get oleo under such legislation that it will have to be sold on its own merits (?) dairymen will have only themselves to blame if they make no money in their business.

And the filled cheese fraud requires attending to so soon as oleo is out of the way. Some one has said that if all the cheese made in this country were good the supply would not be enough for our own wants, and we believe the statement to be true. The kind of cheese our markets have been flooded with is such as to drive consumers away from them. There is no more wholesome food than good cheese, and there is none so economical for the laboring class to buy, and if our cheese were uniformly good the demand for them would increase and we would soon be in a position where we would not have to seek a foreign market for our surplus.

The finer kinds of cheese can be made as well in this country as in any other; we have the cows, the feed, the climate and we can get the skill. Let us make good cheese and butter and market our entire product at home.—*National Stockman and Farmer.*

Benefits Derived From Dairy School.

The Wisconsin dairy school is very proud of what one of its scholars has lately accomplished. For the benefit of our young men readers we will tell it. Mr. Patten, of Milwaukee, had a fine herd of Jerseys, and he wanted an intelligent young man to take charge of them. He advertised, offering a short course tuition at the dairy school. Young Pfeiffer, son of a widow, secured the scholarship and attended the short course. He learned to make butter and handle the hand separator, and at the close of the school he went to Mr. Patten's farm and took charge of the Jersey herd. Although he never knew anything about butter-making before taking the short course, he has been making butter that has been selling all summer above the market, and it was in this dairy that the two pails of butter were made that took the first premium at the Wisconsin State fair. As the Professor who reports the case, says: "Young Pfeiffer, from being a common drudge, has become a skilled workman and has honorably won for himself a place in the front ranks of Wisconsin butter-makers, and is in a position to easily win a pecuniary competence and the position of an influential citizen." This young man's experience should be an object lesson to ambitious young men, who, for a few dollars and a few months' application to hard study, can master a trade that will render them independent and honored citizens. A few years ago in

order to get a "dairy education" a young man had to pay some dairyman to allow him to work on his farm for a couple of years, and he came out filled with the local prejudice of that farm and knew comparatively little of the use of modern machinery in the dairy. These schools tell all about the new machines and give the reasons for everything that is done so far as human information has reached. He will also learn something about the markets which is a most useful bit of information if you want to make money. By all means, attend a school if you can, and the probabilities are that the State you live in has now all the appliances for such a school at the experiment station, but can get no one to attend the school. If you are interested in the matter, write and find out. You may be living within a few miles of the very thing you are most in need of that can be had merely for the asking.

Improved Milk Test.

The accuracy of the Babcock method for testing milk was proved in the World's Columbian dairy tests, at Chicago. The milk of each of the three herds of twenty-five cows was creamed and churned daily. The skim-milk and buttermilk were tested, and the butter from each herd analyzed every day. The butter fat, found by testing the milk of each of the seventy-five cows, was nearly all accounted for by the analyses of the skim-milk, buttermilk and butter. E. H. Farrington, of the Illinois Station, who superintended the analyses, suggests (B. 27) the following precautions in using the Babcock test (Wisconsin Station B. 36): An acid having a specific gravity of 1.82 should be used with milk at 60° to 70° F. If the acid is stronger, cool the milk. With weaker acid warm the milk. When measuring the acid into the test bottles, hold the bottom at an angle that will cause the acid to follow the inside walls to the bottom of the bottle, and not drop through the milk in the center of the bottle. If properly poured into the test bottle, there will be a distinct layer of milk and acid, with little or no black color between them. Thoroughly mix the milk and acid as soon as measured into the test bottle. A better separation of fat is obtained by mixing at once than by allowing the two liquids to stand unmixed in the bottles until enough tests have been measured out to fill the centrifuge. After whirling the centrifuge with the test bottles for five minutes, add hot water until the test bottle is just filled up to the neck. Run the centrifuge for one minute, and then fill neck of the test bottles with hot water and run the centrifuge another minute. Adding the necessary hot water in two portions is often a great help in getting a clean separation of the fat. When the test bottles are taken from the centrifuge, they are put into water at 140° to 160° F., and the per cent. of fat is read at that temperature. Too low results will be obtained if the centrifuge does not have sufficient speed. The machines have to be watched, as constant use wears some of them so that the speed designed by the manufacturer is not obtained. When testing skim-milks or buttermilks which have less than two-tenths of 1 per cent. of fat, the reading should be made immediately on taking the test bottle from the centrifuge. Otherwise, on cooling, the contraction of the liquid in the bottle will often leave the fat spread over the inside surface of the measuring tube. In these tests each cow's milk was successfully analyzed, both separately and in combination with the rest.

Dairy Notes.

Restricting oleo means better care and feed for the meek-eyed dairy cow.

If restrictive measures are placed on oleo, then the necessity of a dairy school will be more apparent.

The vote in the Iowa House last winter on the oleo bill was eighty-one for and only five against. The same bill passed the Senate by a vote of thirty-two to two.

The intelligent dairyman must study incessantly. Every cow has her peculiarities which must be considered

and adaptations made in food and treatment. Success in almost everything is won by attention to details, and this is particularly true of dairying.

Every member of the next Legislature should be instructed before he leaves home to work for the best interests of his district in respect to agriculture and dairying.

Mrs. M. L. Robbins, of Winthrop, Me., has averaged nearly a ton of butter a year for the last fourteen years. She has six or seven thoroughbred Jerseys, and the milk is managed in the old-fashioned manner, being set in shallow pans.

The sale of oleo benefits no one except the manufacturers. The dairy industry, besides increasing the taxable property of the State thousands of dollars annually, gives employment to hundreds of men and teams, enriches our farms, fattens the pigs and calves and pays our debts promptly. Nothing is so effectual in lifting the mortgage as the dairy cow.

The new oleo law in Iowa is having a beneficial effect all around, according to a letter received from Commissioner Boardman, which says: "One dealer in Des Moines that had usually disposed of large quantities of the stuff, reported that in November his sales were only seven pounds. The keepers of hotels and restaurants say they had rather use pure butter on their tables voluntarily than be compelled to put up the placards which read, 'Imitation Butter Used Here.'"

The color of milk is no safe guide to its richness in fat contents. The stripings of milk are usually from six to eight times as rich in butter fat as the milk given by the same cow when she is fresh. There is very little difference in the color. The Babcock test is the only infallible method of determining the richness of milk. Lactochrome is the scientific name for the coloring matter in milk, and the amount depends on the individual character of the cow first, and upon the components of her food in the second place.

Appreciates the Farmer.

EDITOR KANSAS FARMER:—I here enclose to you \$1 for renewal for the KANSAS FARMER. Although I am a blacksmith, it is the most interesting newspaper of them all.

TOM R. BROWN.

South McAlester, I. T.

The Hunting Season.

EDITOR KANSAS FARMER:—I see the sports of the State want our game laws changed, i. e., made better for them. I hope in our interest they will be required to have a written permit before they can legally hunt on our farms. I have much trouble now to keep people from killing my quails, something I don't do myself.

Success, Kas. J. J. J.

The law now provides punishment for hunting out of season, which is the greater part of the year. It is understood that the sports are trying to have the "season" shortened, which will benefit the farmer also. No one can legally hunt on another's farm without his permission. It is a great nuisance to have crops and meadows run over and damaged, and no one has a right to complain if the law is invoked to prevent it.

Beware of Ointments for Catarrh that Contain Mercury.

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is ten-fold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally and is made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free. Sold by Druggists, price 75c. per bottle.

MORE BUTTER than you ever marketed before and **more money** per pound than it ever brought. That's the result of owning a **CRYSTAL CREAMERY.**

Glass cans instead of tin-cools from the top. Write for our free book, "Good Butter, and How to make it." Agents Wanted.

Crystal Creamery Co., 29 Concord St., Lansing, Mich.

The Apiary.

Yellow Italians are Vicious.

There seems to be a sort of impression among the farmers in our own vicinity that extra yellow bees must be extra pure Italians. Judging by the way the orders have run for the yellow stock, this impression must be general; but every practical queen-breeder knows that is a mistake. The five-banders are simply sports, selected for color, from Italian stock—that is all. And, by the way, some of them sting; it would almost seem as if they had "sported" a little from Cyprian stock. We have quite a large number of colonies of extra yellow bees in our yard, and our apiary has never had crosser bees, or bees more inclined to rob, than this year. They bred like Cyprians, and then stopped long before the ordinary Italians. We shall get them all out of our yard another season, unless their temper and robbing propensities improve.—Ohio Farmer.

The Removing of Honey.

When hive sections are full the work of removing them is made less hazardous by the aid of the smoker that is in such common use, but too free smoking is barbarous and unprofitable. The cone-shaped bee escape is a device every modern bee man ought to have. It is merely a cone made of fine wire net 3 inches in diameter at one end and open at the apex, so that only one bee at a time can pass through it. This is fastened to a hole in a board the size of the hive, the base of the cone level with the top of the board. When sections are to be removed, this bee escape is placed between them and the body of the hive. The bees pour into the open mouth of the cone and descend through its apex into the hive, soon leaving the desired case clear. They rarely find their way back through the escape. It can be put in place instantly, is effective, and so simple that anybody can construct one.—Farm and Home.

Around the Apiary.

BEES are profitable because they gather up and store what would otherwise be wasted.

HIVES should have on an average thirty pounds of good honey or sugar sirup in store to begin the winter.

It is hardly a safe plan to depend upon feeding the bees during the winter. It is often too cold to do this.

A GARGLE made of sage tea and sweetened with honey is one of the best remedies for croup and hoarseness.

COUGHING may be quickly relieved by mixing barley water with honey and the juice of lemons, and drinking it warm.

THERE are no lazy bees. If they are idle it is because the flowers are not secreting, or else there is something wrong in the hive.

BEES can be wintered in the cellar, provided the cellar is not too damp, and care is taken to have a moderately cool, even temperature.

UNLESS care is taken to put the bees away in good condition in the fall it will be useless to expect to find them strong and vigorous in the spring.

ONE decided advantage in wintering the bees in a good cellar is that they can be kept on about half the stores that would be needed if left unprotected on the summer stands.—St. Louis Republic.

We have on hand three "Mary Jane Dishwashers." The price is \$3 each. But to close out we will send one dishwasher free to any one sending us five subscriptions and \$5.

DE LAVAL CREAM SEPARATORS

Address, for catalogue and particulars, Or THE DE LAVAL SEPARATOR CO., ELGIN, ILL. 74 Cortlandt Street, New York.



MOSELEY'S OCCIDENT CREAMERY. SOLD ON MERIT. Send for Special Introductory Offer. FREIGHT PAID BY US. MOSELEY & PRITCHARD Manufacturing Co., Clinton, Iowa.

The Family Doctor.

Conducted by HENRY W. ROBY, M. D., consulting and operating surgeon, Topeka, Kas., to whom all correspondence relating to this department should be addressed. Correspondents wishing answers and prescriptions by mail will please enclose one dollar when they write.

"How Shall I Eat?"

"John came neither eating nor drinking, and they say he hath a devil."

A correspondent asks this question: "I have a mind for feasting forth to-night. How and what shall I eat?" The Family Doctor respectfully suggests that you eat with a knife and fork, like a gentleman at the King's table. Of course, it is all a matter of taste and necessity as to what you eat. The world is full of wrinkles on eating. The Esquimau sits down to a pot of walrus and dips his hand in the kettle and takes what suits his taste. The Digger Indian squats by a hot hole in the ground and scoops out with his unwashed hands as many roasted grasshoppers as his appetite calls for. That is a matter of taste. The Mexican eats his tortilla and washes it down with his pulque, regardless of the ceremonials incident to a Lord Mayor's dinner in London. The Spaniard sups his ollapodrida from a silver spoon or a wooden ladle, as he happens to be rich or poor, and asks no better feast for gods or men. The Greenlander cuts a strip of narwhal, dripping with unctuosity, and eats it on the way to see his girl with the same sang-froid as Shakespeare ate an apple on his way to see Anne Hathaway. The Hawaiian lops down to his pan of poi with all the physical levitation with which a school-girl lolls over chalk, slate pencils or lollipops. The Jew eschews the swineherd and chews the fatting of the flock. They will chew gum but not pork. The Gentile feeds fat on hams and sausage, buckwheat cakes, corn dodgers and all the other foods of civilization. The Hindoo eats rice and curry and is never willing to curry favor with other men by feeding them flesh or eating it himself. The Chinaman, with his chopsticks, eats rice, rats and edible birds' nests, while you probably could not raise a grain of rice to your mouth with all the chopsticks this side of Confucius. Frenchmen eat frogs and horses; Irishmen eat potatoes and peas; the Englishman eats beef and mutton; the Australian eats kangaroo and dugong; the Polynesians eat sand fleas and pythons. You may imitate any one of these great anthropological subdivisions of mankind, according to which one of them has bidden you forth to the feast. When you are in Rhineland, do as the Rhinelanders do.

When the British General, Tarlton, once visited General Marion, he was bidden to a feast of sweet potatoes, without butter or salt, and his high-grade English breeding closed his mouth against all murmuring or complaint, and a British officer ate with the American and then wrote home and told King George that he never could whip the Yankee rebels, for they thought enough of their cause to actually live on sweet potatoes. That incident shows the value of setting an example in hospitality. Do as others do. Christ dipped his hand in the sop with Judas.

The ways of eating are too numerous to mention. They are as multitudinous as the things to be eaten. Take oranges, for an example. One man sets his teeth in, like biting into a pear; another carefully peels it round and round, like an apple; another splits the rind, like the lines of longitude on a schoolmaster's globe; another cuts it in hemispheres at its equator, and then spoons out the juice and pulp. And some lady of unhappy memory says the best way to eat an orange is to disrobe and get into the bath-tub with it, so that when you are done you can dispense with the finger-bowl and napkin of the hotel diner. Now, I suggest, that when orange time comes at the table of your host, you observe the method pursued by him and follow that at his table. And if you are invited out often enough you may get to try all these methods. Some people eat standing. You and I did it when we were small boys on the farm. You know there never were any too many chairs in the house, and when company came, they had to have the chairs. And I suggest that now, as you are grown somewhat larger, you try always to get a seat at table or ask to be excused until the second table. Of course, instances occur where there is no second table, a picnic, for instance, and that might leave you out, as it did the finicky fellows at Belshazzar's feast.

Some very nice people prefer to eat gregariously. I have seen several hundred people all eating at once, and St. Matthew tells of one picnic where 5,000 people all sat on the grass and picked a good luncheon out of five loaves and two fishes and left a dozen baskets of fragments behind. But people do not all like to eat that way. Some declare that eating is vulgar and ought to be done in private, as the Mohammedans do. It would not be wise for you to eat as did old John Falstaff, for Mrs. Quickly told the Lord Chief Justice that he had eaten

her out of house and home. That was hard on his boarding-house.

To come closer to the point of manner, in the matter, I advise you to chew all your solid food, not as the cow does, after you leave the table, but do it leisurely at the table. That is a splendid ruse by which to avoid eating too much at a sixteen-course dinner. Tea, coffee, milk and soup are not well adapted for chewing. So you may make the solecism of drinking your food while eating it. And unless by some special dispensation of providence, your mouth has been cut from ear to ear, do not try to eat out of the side of your spoon. Leave that most idiotic of table manners to the brainless girth-busters who seek the most awkward way of doing everything. The point of a spoon goes into one's mouth much easier than the whole broadside of it, and the edges serve to hold your mustache out of the soup. You will not be an object of envy when your mustache is dripping with gravy. The books on etiquette say you should not shovel food into your mouth with your knife, and that a four-tined fork was invented to be used as a conveyer—a go-between—from plate to mouth. There is another folly in some works on table manners, that you may well reprehend and relinquish. That is the practice among snobs, fops and finicky people of eating pie with a fork only. Many pie-crusts are as tough as beef steak. Some of it would almost answer for sole-leather or water-proof shoes, and I insist that an instrument made and edged for cutting will go through it better, smoother and more artistically than a mere pitch-fork or any other hoisting device. All utility has the element of appropriateness in it. So has the knife in every-day pie-crust. Other men had tried in vain to untie the Gordian knot with forks, tooth-picks and the like, but King Alexander said, "Boys, that is just like trying to eat pie with a fork. Your means are not wholly adequate to the end to be attained. In the absence of a knife, my sword will do, see?" And he cut it very neatly, and the world has always since then called him Alexander the Great.

Gossip About Stock.

Our Chicago correspondent looks for a decided improvement in the horse market, owing to the presence of the number of Southern and foreign buyers. Good caunks and draft horses are especially strong and already show an advance of from 10 to 25 per cent. over any in a few weeks.

Swine-breeders will have an instructive and interesting session at the annual meeting of the Kansas Swine Breeders' Association, at Topeka, on January 7. In addition to the sessions there will be a number of pure-bred animals of different breeds for score-card practice. A number of swine-breeders have notified the FARMER they will be here.

That eminent and popular breeder of Berkshires and Poland-Chinas, T. A. Hubbard, Rome, Kas., in a recent letter drops the following hint to parties wanting good stock: "I am nicely fixed and want to sell. Have about twenty-five males, of both breeds, and fifty sows bred and to breed, for sale. Some Stem-Winders. The fall has been delightful so far, very warm and a little too dry for wheat to grow fast. Wheat is looking well and the acreage is large. Hogs are mostly gone to market, every one selling short on account of scarcity of feed, some selling all they have."

DR. ORR'S BOOK.—Readers of the KANSAS FARMER will be pleased to know that arrangements have been made whereby they can obtain this concise and well nigh invaluable "Farmer's Ready Reference or Handbook of Diseases of Horses and Cattle" in combination with this paper at a slight saving in cost.

The separate prices of these are:
Dr. Orr's Book.....\$1.50
KANSAS FARMER, one year.....1.00
Total.....\$2.50

Two dollars sent either to the Kansas Farmer Co., Topeka, or to Dr. S. C. Orr, Manhattan, will secure both, making a saving of 50 cents.

In calling attention to the advertisement of George Topping, Cedar Point, Kas., which appears in the KANSAS FARMER "Breeders' Directory," we desire to call attention, also, to his individual animals. Bomford's Pride 30859, by Royal Winner 28399, bred by Edward Burbridge, of England, out of Dockery's Bomford 24521, bred by John B. Thompson, of Plattsmouth, Mo., is certainly a royal-bred sow. Her litter of eight pigs, raised this year, are the finest he ever had farrowed. He will sell part of them. This young sow, whose blood lines trace into the best veins in England and the United States, cannot help being heard from in the breeding pen and show ring. His other brood sows of the Longfellow, Black Girl and Royal Beauty families, all of which are fine animals of good individual merit and fully developed. His sows have proved to be very prolific, farrowing him an average of ten to twelve pigs for the past four years. Concerning Bomford's

Pride, Mr. Thompson says: "She was our best show gilt under 6 months in 1893; she won first in class and was in lot of five pigs that won first at the Blue Grass Palace and Exposition, at Creston, Ia.; at Iowa State fair she was first in class; she was first at Kansas City and St. Louis in class, and with Bomford's Queen 30860, was in litter shown with dam, that won second at Kansas City and first at St. Louis over sow and litter they had been placed second to in Kansas City. They also won special prize at St. Louis, given by the American Berkshire Association and valued at \$50."

Mr. W. H. Wren, the successful breeder of registered Poland-China swine, whose farm lies near Marion, in Marion county, Kansas, announces that his semi-annual reduction sale will take place on the farm, on Thursday, February 7, 1895. He proposes to offer about sixty head, and among them will be about twenty bred sows sired by Longfellow, of World's Fair fame, L's Tecumseh, El Capitan, Kansas Chief and others. A few aged sows will also be included in the catalogue. The most important feature of the sale will be the strong array of gilts and yearling sows that have been or will be bred to Wren's Medium 12387, by the noted Happy Medium and out of Best of 1890 by Young U. S. Best of 1890. His blood lines trace three times to Tom Corwin 2d through his sire and twice through dam. The older females that will be included in the offerings will be bred to Corwin White Face, a half brother to J. H. Sanders, of Columbian fame, while his dam was by Royalty, the sire of Free Trade. More will be given later on concerning the offerings, and in the meantime remember the date of sale, Thursday, February 7, 1895.

Among others heard from by our field man last week was the well-known Missouri breeder, Mr. D. F. Risk, of Weston. Among other things stated in his letter was that he never had as good success raising pigs as he has had this year. "My crop of February, March and April farrows aggregated about 125 head and generally all were good ones. Along last winter I looked for a poor trade this year, but I have been happily disappointed, for to my great surprise trade has been just splendid, and at fairly good prices. This week I sent some young fellows away, going to three States, and my last young boar that is ready for service will be shipped next Monday. I have, however, a grand good yearling boar that I could spare and about twenty-five gilts, some of which are as good as I ever raised, and you know that is saying a good deal. They will weigh from 250 to 275 pounds. One of a February litter went yesterday that weighed, in an average-weight crate, just 400 pounds, and you know that is not bad for a February pig. I have bred about sixty aged females and gilts and hope to be still stronger in offerings for next year's trade, when I hope to merit a fair share of the Kansas trade. I like to read

the KANSAS FARMER, especially the live stock items, as I am always glad to learn how my fellow breeders are getting along everywhere throughout the West. I, in common with others, have been feeding wheat and will soon have fed 1,000 bushels, so you see it has taken some time at the slop barrel. Although it takes time and study for a well-balanced ration to bring about the best results in the feed lot, it pays handsomely in the final come-out."

A few days since, our field man, Mr. Brush, when visiting in Brown county, reports, that in company with Col. Eli Zimmerman, the well-known breeder and live stock auctioneer, of Hiawatha, they visited the farm and herd of Mr. C. D. Swaim, situated eight miles west of White Cloud, in northeast Brown county. The herd of Poland-Chinas was founded in 1888 and re-enforced from time to time until now it consists of about sixty head, all ages. Doing service at the head of the herd is the yearling harem king, Trenton Victor 12955 S., he by Victor 2994 S and he by Perfection Chin 3175 S.; dam Tecumseh Girl 27164 S., by Trenton Tecumseh 6741 S. and out of Miss Best on Earth 20117 S. He was bred by the well-known Missouri breeders, P. Mayo & Son, of Clifton Hill. He is now in his fourteen-months form, and if he keeps a-coming will make one of the big, smooth fellows, such as every modern Poland breeder wants in his herd. In the brooder division are ten harem queens belonging to such families as Prince All Right, Elected, Black U. S., Tecumseh and others. The spring and summer farrows of 1893 were very successful ones, and such were their promise that ten of them have been selected and will be reserved in the herd. About twenty-five nice, broad-backed, mellow young sows are coming on in good form and awaiting the call of a new master. The visitor finds in an adjoining paddock ten young boars belonging to the April, 1893, farrows that ought to go out into good hands as they are above the average of those found in Kansas Poland-China herds. Some few of the aged females have been bred to a young chap, Model Tecumseh, a son of Hoosier Tecumseh 10993 S. He is a very promising youngster, remarkably well conformed in all the requirements of the modern Poland standard, belonging to the kind that is sure to be drawn for the final show ring left. Among the females that have come in to strengthen the herd is a daughter of Benton's Last, the famous sire owned by the noted Nebraska breeders, Messrs. Colthar & Leonard. Another one in close company is the young Miss Tecumseh Free Trade, by

ONLY 10% ABOVE ACTUAL COST. We are manufacturers for BABY ORNAMENTAL BED CHAIRS, \$3 boys a strong, serviceable, Baby Carriage, other styles ranging from \$5 to \$25.00, fully warranted for 2 years—shipped on 10 days trial, freight paid, no money in advance. Send and Hattan Chairs from \$1.60 up. We save you all millinery's profit on our goods, and ship direct from factory at only 10 per cent. above actual cost. Highest references as to our material and workmanship. Write for our handsome catalogue. Address, OXFORD MFG. CO., Furniture Dept., 771342 Wabash Av., Chicago

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Feeders, Attention!

WHAT ARE YOU DOING?
FEEDING WHEAT INSTEAD OF CORN?
EXPECT TO MAKE A HATFUL OF MONEY?

We hope you will, and to help you do it we offer a friendly word of warning. Those who know, say wheat fed to farm animals acts as an astringent, and causes constipation; therefore something else must be combined with the wheat to overcome this difficulty. You cannot put on flesh and fat unless the digestive organs are in a healthy condition, so that the food can be easily and properly assimilated. This can be secured by feeding an article that is not only a natural food but also a regulator of the system. If you will feed OLD PROCE'S GROUND LINSEED CAKE (OIL MEAL) you will find that your animals will eat more wheat, grow faster, take on flesh and fat faster, keep in good health, and put money in your pocket. Hog feeders particularly should give heed to these suggestions. For prices and further particulars, address

TOPEKA LINSEED OIL WORKS, Topeka, Kansas.

The Kansas City Stock Yards

Are the most complete and commodious in the West and the second largest in the world. Higher prices are realized here than further east. This is due to the fact that stock marketed here is in better condition and has less shrinkage, having been shipped a shorter distance; and also to there being located at these yards eight packing houses, with an aggregate daily capacity of 9,000 cattle, 40,000 hogs and 4,000 sheep. There are in regular attendance sharp, competitive buyers for the packing houses of Chicago, Omaha, St. Louis, Indianapolis, Cincinnati, New York and Boston. All of the eighteen railroads running into Kansas City have direct connection with the yards.

	Cattle and calves.	Hogs.	Sheep.	Horses and mules.	Cars.
Official Receipts, 1893.....	1,746,828	1,948,373	569,517	35,097	99,755
Slaughtered in Kansas City.....	956,792	1,427,763	372,385		
Sold to feeders.....	249,017	10,125	71,284		
Sold to shippers.....	860,237	510,489	15,200		
Total sold in Kansas City.....	1,566,046	1,948,357	458,869	22,522	

O. F. MORSE, E. E. RICHARDSON, H. P. CHILD, E. RUST,
General Manager. Secretary and Treasurer. Assistant Gen. Manager. Superintendent.

Tecumseh Free Trade, owned by Martin Meisenheimer, of Hiawatha. Right along in line is a daughter of Billy Wilkes 9809 S., that is a "plum good one."

The reader will find, on a careful inspection of our first-page illustration, that gives a life-like presentation of the noted Missouri-bred Poland-China harem king, Lail's Victor 4298 S., that he is one of the best individuals now on the soil of old Missouri.

Give the Farmer Facts.

The average planter has but little use for finely-spun theory, whether it pertains to the relation of his condition to politics or whether it deals with the best ways and means of growing the best crops.

GEO. W. CAMPBELL. A. B. HUNT. J. W. ADAMS.

Campbell, Hunt & Adams, LIVE Stock Salesmen.

Stock Yards, Kansas City, Mo.

Rooms 38 to 86, Live Stock Exchange.

MARKET REPORTS.

KANSAS CITY LIVE STOCK. KANSAS CITY, Dec. 31.—Cattle—Receipts since Saturday, 4,201; calves, 79; shipped Saturday, 1,427; calves, 59.

DRESSED BEEF AND EXPORT STEERS. 23.....1,339 \$4.65 42.....1,409 \$4.60 12.....1,266 4.50 21.....1,208 4.20

WESTERN STEERS. 23.....1,169 \$4.03 102.....1,158 \$3.85 10 Col..... 970 3.20 20..... 982 2.70

COWS AND HEIFERS. 1.....1,170 \$3.40 3.....1,220 \$3.25 23..... 776 3.20 23.....1,000 3.10

WESTERN COWS. 42 N. M.... 720 \$1.75 41 Ariz.... 645 \$1.75

TEXAS AND INDIAN STEERS. 21 Corn....1,238 \$4.25 100 C. meal.1,354 \$4.05 27..... 999 3.70 50 C. meal.1,093 3.90

TEXAS AND INDIAN COWS. 4..... 315 \$2.75 1..... 790 \$2.60 93..... 801 2.25 2..... 880 2.30

STOCKERS AND FEEDERS. 16..... 836 \$3.30 19 N. M. yr. 42 \$2.10

HOGS—Receipts since Saturday, 3,892; shipped Saturday, 567. The market was active, 100 higher and in some cases 15 to 200 higher.

CHICAGO LIVE STOCK. CHICAGO, Dec. 31.—Hogs—Receipts, 18,000; official Saturday, 9,913; shipments Saturday, 6,439; left over, about 1,800; quality fair, market active and firm, prices 50 to 100 higher.

CATTLE—Receipts, 11,000; official Saturday, 1,079; shipments Saturday, 703; market firm; best lots 5 to 10c higher; other grades unchanged.

SHEEP—Receipts, 11,000; official Saturday, 7,345; shipments Saturday, 228; market steady for best; easy for common.

ST. LOUIS LIVE STOCK. ST. LOUIS, Dec. 31.—Cattle—Receipts, 2,800; market active and 10c higher. Hogs—Receipts, 2,500; market brisk, 10 to 15c higher; heavy, \$4.50 to \$4.70; mixed, \$1.30 to \$1.60; light, \$4.20 to \$4.40.

CHICAGO GRAIN AND PROVISIONS. Dec. 31. Open'd High'st Low'st Closing

Wh't—Dec..... 53% 53% 53% 53% May..... 57% 57% 57% 57%

Corn—Dec..... 45% 45% 45% 45% Jan..... 45% 45% 45% 45%

Oats—Dec..... 28% 28% 28% 28% Jan..... 28% 28% 28% 28%

Pork—Dec..... 11 45 11 45 11 45 11 45 Jan..... 11 40 11 52% 11 40 11 52%

Lard—Dec..... 6 82% 6 82% 6 82% 6 82% Jan..... 6 77% 6 82% 6 77% 6 82%

Ribs—Dec..... 5 80 5 80 5 80 5 80 Jan..... 5 75 5 80 5 72% 5 80

St. Louis Grain. ST. LOUIS, Dec. 31.—Receipts, wheat, 3,756 bu.; a year ago was a holiday; corn, 62,645 bu.;

KANSAS CITY PRODUCE. KANSAS CITY, Dec. 31.—Eggs—Receipts light; the market is quite firm; strictly fresh, 16 to 16 1/2c.

Butter—Receipts, fair; the market is quiet and steady; extra fancy separator, 20 to 21c; fancy, 18 to 19c; fair, 16 to 17c; dairy, fancy, 14 to 15c; fair, 13c; fancy roll, 12 to 14c; fair roll, 10 1/2 to 11c; packing, steady, 7 to 8c; old, 5 to 6c.

Poultry—Receipts fair; the market is firm; hens, 4 1/2c; mixed springs, 5 1/2 to 6c; roosters, 15c; dressed chickens, 5 to 7c; turkeys, plentiful, 6 to 6 1/2c; dressed turkeys, active, 7 to 8c; ducks, firm, 6c; geese, soarse, 6c; pigeons, dull, 75c per doz.

Apples—Receipts light, supply small; the market is dull and steady; standard packed ranged from \$2.50 to \$3.00 per bbl.; others, \$2.25 to \$2.50; fancy stand, \$3.25 to \$3.50; Jennettings, \$1.50 to \$2.25 per bbl.

Lemons, quiet, \$3.25 to \$4.50. Oranges, soarse, quiet, firm; Florida, \$2.75 to \$3.50. Cranberries, firm; Cape Cod, \$10.00 to \$11.00 per bbl.; Jersey, \$10.00 to \$10.50.

Vegetables—Potatoes, receipts light; market exceedingly dull; ordinary kinds, common, 45 to 55c per bu.; sweet potatoes, red, 15 to 20c per bu.;

yellow, 25 to 30c per bu.;

Utah and Colorado, choice, 55 to 60c per bu. Cabbage, plentiful, market firmer, 75c per 100; Michigan, \$18.00 to \$20.00 per ton. Cauliflower, small, 45 to 50c per doz.;

large, 75c per doz.

Horse Owners! Try GOMBAULT'S Caustic Balsam. A Safe Speedy and Positive Cure. The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action.

LIVE STOCK AUCTIONEERS. J. M. HOSMER, Live Stock Auctioneer, Maryville, Mo. Fine stock a specialty. I respectfully solicit your business and guarantee satisfaction. Terms reasonable. Secure Cates early.

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S. A. SAWYER, FINE STOCK AUCTIONEER—N. Manhattan, Riley Co., Kas. Have thirteen different sets of stud books and herd books of cattle and hogs. Compile catalogues. Retained by the City Stock Yards, Denver, Colo., to make all their large combination sales of horses and cattle.

THE STRAY LIST. FOR WEEK ENDING DEC. 19, 1894. Cherokee county—P. M. Humphrey, clerk.

TWO MULES—Taken up by James H. Deal, in Neosho tp., P. O. Melrose, November 14, 1894, two mare mules, brown and bay, fifteen and one-half hands high, 14 years old, mealy nose; valued at \$50.

WOODSON COUNTY—H. H. McCormick, clerk. MARE—Taken up by D. D. Story, in Toronto tp., P. O. Toronto, December 12, 1894, one two-year-old filly.

GREENWOOD COUNTY—J. F. Hoffman, clerk. HEIFER—Taken up by L. N. Shook, in Janesville tp., December 1, 1894, one black heifer, 2 years old, white spot above left eye and white on left jaw; valued at \$12.

THREE HORSES—Taken up by Thomas Bland, in South Salem tp., November 23, 1894, one iron-gray gelding, 4 years old, valued at \$35; one light bay filly, blazed face, white hind feet, valued at \$30; one dark bay mare, 6 or 7 years old, in foal, valued at \$35.

STEER—Taken up by John M. Cochran, December 7, 1894, one red steer, 2 years old, branded O under straight line on right hip, crop and underbit off right ear, small white spot in forehead, dehorned.

FOR WEEK ENDING DEC. 26, 1894. Coffey county—T. N. Bell, clerk. COW—Taken up by J. W. Allen, in California tp., November 1, 1894, one red and white spotted cow, 10 years old, branded on right hip with letter D; muley; valued at \$12.

SHAWNEE COUNTY—Chas. T. McCabe, clerk. STEER—Taken up by E. Higgins, Mission tp., P. O. Topeka, one black yearling steer, small ring in right ear, left ear clipped; valued at \$13.

GREENWOOD COUNTY—J. F. Hoffman, clerk. COW AND CALF—Taken up by Cella Oliver, in Eureka tp., December 10, 1894, one dark red cow, white under the belly, dehorned, 6 or 7 years old, indistinct brand on left hip like T; also roan bull calf, valued at \$20.

TWO PONIES—Taken up by E. E. Bollinger, in Eureka tp., December 12, 1894, one dark bay mare pony, 4 years old, weight 800 pounds, and one light bay mare pony, 4 years old, weight 900 pounds; valued at \$15.

NEOSHO COUNTY—W. P. Wright, clerk. HORSE—Taken up by C. F. Bogle, in Canville tp., December 8, 1894, one dark bay horse, fifteen hands high, 8 years old, heavy mane and tall, white spot in forehead and on tip of nose, hind feet white, branded on right thigh; valued at \$25.

CHAUTAQUA COUNTY—G. W. Arnold, clerk. HORSES—Taken up by G. M. Norris, Notaze, one dark bay horse 2 years old and one light bay horse 4 years old, both marked with O; valued at \$20.

WABAUNSEE COUNTY—J. R. Henderson, clerk. STEER—Taken up by C. D. Poulter, in Rock Creek tp., one red steer 1 year old, no marks or brands, white spot in each flank, small white spot on right hip and white in face; valued at \$13.

WILSON COUNTY—V. L. Polson, clerk. MARE—Taken up by A. J. Shetter, of Cedar tp., P. O. Altoona, on November 19, 1894, one iron gray mare 3 years old, two white spots in face, fresh wire cuts, one on knee and one on breast.

FOR WEEK ENDING JANUARY 2, 1895. Chautauqua county—G. W. Arnold, clerk. STEER—Taken up by J. B. Kincaid, in Little Caney tp., one pale red steer, 4 years old, under-slope in each ear, indescribable brands on both sides.

CHASE COUNTY—M. K. Harman, clerk. MARE—Taken up by W. M. Kendall, in Toledo tp., P. O. Cottonwood Falls, December 10, 1894, one bay mare, black legs, no visible marks or brands; valued at \$20.

OTTAWA COUNTY—J. S. Richmond, clerk. STEER—Taken up by Peter H. Gabhart, in Durham tp., P. O. Oak Hill, November 18, 1894, one brown two-year-old Western steer, branded with two parallel semi-circles on each shoulder and letter H on left hip; valued at \$14.

The FARMER has made arrangements by which we are enabled to make a number of good Premium Offers for new subscribers. Those interested in raising a CLUB should send us postal card for Premium Supplement.

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\$17 SPRAY PUMP \$5.50 EXPRESS PAID, for Will spray a 10 acre orchard per day. Endorsed by the leading Entomologists of the U. S. 60,000 in use. Satisfaction guaranteed or money refunded. Illustrated catalogue on spraying free. Rapid sellers. Our agents are making from \$5 to \$20 per day. Mention this paper. Address P. C. LEWIS MFG. CO., Box 76. Catskill, N. Y.

STAHL'S EXCELSIOR. Spraying Outfits kill insects, prevent leaf blight and wormy fruit. Insure a heavy yield of all fruit and vegetable crops. Thousands in use. Send 6 cts. for catalog and full treatise on spraying. Circulars free. Address WILLIAM STAHL, QUINCY, ILL.

Nebraska Feed Steamer. GIVEN AWAY IN ONE YEAR. If it does not save its cost. MARTIN & MORRISSEY MFG. CO., OMAHA, NEB. Agents wanted.

SLOW BUT SURE. In these days of rapid transit, 2 1/2 miles per hour would be called slow, but if the traveler was making as he went along, the most perfect, complete, self-regulating wire fence ever heard of, it would alter the case. Our factory, with its increased capacity, will turn out that amount per hour, and as we run 24 hours per day in the spring, 64 miles will be the daily product. The demand always keeps up with the supply. PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

METAL WHEELS for your WAGONS. Any size you want, 20 to 66 in. high. Tires 1 to 8 in. wide—hubs to fit any axle. Saves cost many times in a season to have set of low wheels to fit your wagon for hauling grain, fodder, manure, hogs, etc. No resetting of tires. Cat's free. Address EMPIRE MFG. CO., Quincy, Ill.

W. L. DOUGLAS \$3 SHOE IS THE BEST. FIT FOR A KING. \$5. CORDOVAN. FRENCH & ENAMELLED CALF. \$4.35 FINE CALF & KANGAROO. \$3.50 POLICE, 3 SOLES. \$2.50 \$2. WORKINGMEN'S. -EXTRA FINE-. \$2.175 BOYS' SCHOOL SHOES. -LADIES-. \$3.25 \$2.175 BEST DONGOLA. SEND FOR CATALOGUE. W. L. DOUGLAS, BROCKTON, MASS. Over One Million People wear the W. L. Douglas \$3 & \$4 Shoes. All our shoes are equally satisfactory. They give the best value for the money. They equal custom shoes in style and fit. Their wearing qualities are unsurpassed. The prices are uniform, stamped on sole. From \$1 to \$3 saved over other makes. If your dealer cannot supply you we can. In writing to our advertisers please say you saw their advertisement in the KANSAS FARMER.

The Poultry Yard

EXCELLENT DESIGN.

Plan and Description of Combined Poultry and Pigeon House.

A poultry house with a loft especially fitted up for the accommodation of pigeons is shown in the accompanying illustrations from sketches by Webb Donnell. The poultry quarters have an addition fitted with wire netting in front in summer, as seen in Fig. 1, and windows in winter which serves as a scratching and dusting-room, communication being had with it from the main poultry-room. The diagram Fig.



FIG. 1.—PERSPECTIVE VIEW OF COMBINATION POULTRY HOUSE.

2 shows the inside arrangement when the building is used for two breeds. Such an arrangement secures exceedingly warm roosting quarters for both flocks, as the recess occupied by the roosts can be shut off from the main room to some extent by placing partitions in front of the roosts, extending

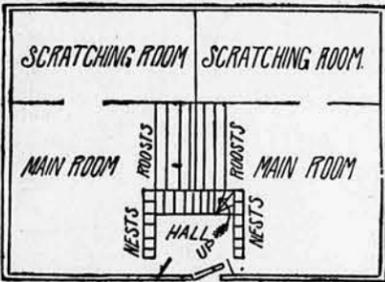


FIG. 2.—GROUND PLAN.

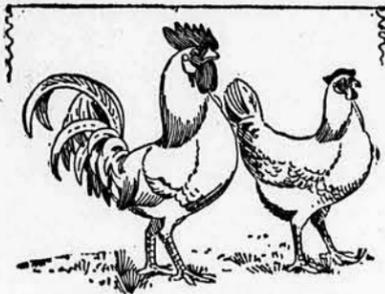
from the ceiling, but not reaching to the floor. The warm air from the bodies of the fowls is thus kept around and above the birds while on their roosts.—American Agriculturist.

THE LEGHORN FAMILY.

Description of the Most Popular of the Non-Sitting Breeds.

The Leghorn family embraces many varieties—the white, the brown, the Dominique, the buff, the black and the rose-combed white. They originated in Leghorn, Italy—hence their name—but were brought to this country by way of England. They have become completely acclimated, and are quite hardy.

The Leghorns are the most popular breed for eggs. They are non-sitters, and, if kept under favorable conditions, will lay plenty of eggs during the winter. It is essential, however, that their quarters be kept warm, or the combs are liable to freeze. Being



PRIZE WHITE LEGHORNS.

of small size, they require less food than some of the larger varieties of fowl and also mature earlier. They are restless and nervous and excellent foragers. They do not stand confinement well.

The most esteemed varieties of this family are the white and the brown. Both are equally hardy and good layers, but the white has the advantage of producing much larger eggs than the brown. In this respect the white compares most favorably with the Minorcas, while the flavor of its eggs is admitted to be superior. As market poultry, their small size is against them, the male seldom exceeding seven pounds in weight when fully matured, and the female rarely reaching five pounds.—N. Y. World.

KANSAS FARMER sewing machine—the best—\$20.

A Word About Incubators.

Do not be deceived with the idea that incubators need no care. The vest that can be made require attention; but as an incubator hatches out hundreds of chicks at once, the care bestowed is not great, considering the vast amount of work performed, as compared with hatching by the aid of hens. An incubator can be made to hatch at any time, but not so with the hens. We are aware that failures may at times occur, but then the hens often fail. They break their eggs, abandon their nests, trample their chicks, and do many other things which place them at a disadvantage also. The incubator is an inanimate machine, and requires intelligence in its management, and if the operator is unwilling to devote a portion of his time to supplying the brain work he cannot expect to meet with success. The hen is governed by natural instinct, and yet she needs watching to a certain extent. It is only by intelligent labor that results are to be expected.—Prairie Farmer.

The Product of a Hen.

A hen is not old until she is aged five or six years. The longest period of productive life of a hen is probably that of a Brown Leghorn, which was killed by accident at the age of ten years, then having nearly 2,000 eggs to her credit. This is vouched for by a respectable and truthful poultryman of Massachusetts who made a special business of breeding this variety and was very successful with it. Light Brahmas have been known to live quite as long as this and yield as well as at the beginning. But as a rule it is not desirable to keep fowls over the second year, because the young birds increase so numerously and the old ones become tough and unfit for the table. Fanciers who look at the feathers as the principal virtue of a fowl will doubtless keep a favorite as long as she lays eggs, as in the case of the Brown Leghorn above mentioned.

Fattening Poultry on Turnips.

An experiment has lately been tried of feeding geese with turnips, cut in small pieces like dice, but less in size, and put into a trough of water; with this food alone the effect was that six geese, each when lean weighing only nine pounds, actually gained twenty pounds each in about three weeks' fattening. Malt is an excellent food for geese and turkeys; grains are preferred for the sake of economy, unless for immediate and rapid fattening. The grains should be boiled afresh. Other cheap articles for fattening are oatmeal and treacle, barley meal and milk, boiled oats and ground malt. Corn before given to fowls should always be crushed and soaked in water. The food will thus go further and it will help digestion. Hens fed thus have been known to lay during the whole of the winter months.

Leaky Poultry House Roofs.

A small hole in the roof will do incalculable damage to a flock by keeping the house damp and cold. Evaporation of moisture is always at the expense of loss of warmth, and the failure to stop a crack may cause an expense for more food, as the body of the fowl is kept warm by the food, and the more comfortable the quarters the less food required. Dry cold, where the fowls are not exposed to the winds, will not cause as much sickness as dampness, and especially when the rain not only leaks down on the floor, but also on the fowls as well. Close the leaks before the weather becomes cold.—Farm and Fireside.

Dry Yards for Poultry.

There are acres upon acres of poor and unproductive land that could be utilized to advantage in poultry raising. The soil that is best for poultry is a dry, sandy soil, and such a soil is calculated to subdue the many diseases that are peculiar to poultry. The yards should be rolling and well drained to prevent dampness. If our farmers should utilize such a piece of land for their fowls, they would realize a profit that could not otherwise be made. The ground will naturally be brought to a certain degree of fertility from the droppings, and in a short while, if desired, the land may be used for crops.—Farmer's Voice.

Send for our latest premium and clubbing list.

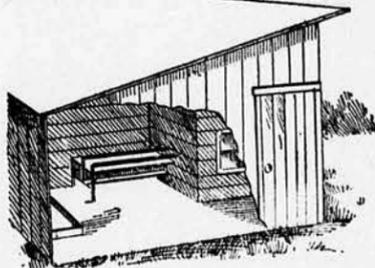
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J. R. KILLOUGH & SONS, Richmond, Kansas, Breeders of POLAND-CHINA SWINE. The very best strains. Nothing but first-class stock will be shipped to any. Come and see us or write.

BROWN COUNTY HERD, PEDIGREED POLAND-CHINAS. ELI ZIMMERMAN, Hiawatha, Kas. 46 brood sows in herd, headed by Black U. S. Nemo (Vol. 9), Model Wilkes (Vol. 9), Sunset Chip (Vol. 9) and Billy Bundy (Vol. 9). Female lines: All Right, Short Stop, King L.X.L. Wilkes, Free Trade, Wannamaker. Aged sows, bred gilts and fall pigs for sale.

MARTIN MEISENHEIMER, Registered Poland-China Swine. Hiawatha, Brown Co., Kas. 20 brood sows, headed by Tecumseh Free Trade 10783 S., assisted by a son of Ben's Last 5837 S. Some of best females bred to Butler's Darkness, Black U. S. Nemo (Vol. 9) and Victor M. Jr. (Vol. 9) Correspondence and inspection invited.

E. E. AXLINE, OAK GROVE, MO., (Jackson Co.) Poland-Chinas. Breeder and shipper pure bred registered stock. Dugan 10213 S. and Western Wilkes (Vol. 9) head the herd. Write or come.

DOGS. HIGHLAND KENNELS, TOPEKA, KAS.—Great Danes and Fox Terriers. The first prize and sweepstakes winner, Great Dane King William, in stud. Dogs boarded and treated for all diseases; also, remedies by mail. Correspondence solicited.

VETERINARY SURGEON. DR. U. B. MCCURDY, Veterinary Surgeon. Graduate Ontario Veterinary college, Toronto, Canada. Can be consulted on all diseases of domestic animals at office or by mail. Office: 114 West Fifth Street, Topeka, Kas.

TWO-CENT COLUMN. "For Sale," "Wanted," "For Exchange," and small advertisements for short time, will be charged two cents per word for each insertion. Initials or a number counted as one word. Cash with the order. Special!—All orders received for the column from subscribers, for a limited time, will be accepted at one-half the above rates, cash with order. It will pay. Try it!

ORDER OUR MISSOURI VALLEY GROWN SEED corn. Best matured; plenty rain; full of oil and vitality; selected, cleaned, lipped. Three-bushel, ten-ounce burlap sacks, straight white or yellow, \$2.25 per sack, f. o. b., Kansas City. Kansas City Grain and Seed Co.

WANTED—Sale bills, horse bills, catalogues and other printing. A specialty at the Mail job printing rooms, 900 North Kansas Ave., North Topeka.

A FINE LOT OF RED KAFFIR CORN SEED—The best, surest, dry year crop that grows, \$1 per bushel, sack included. N. P. Wiley, Pretty Prairie, Reno Co., Kas.

FOR SALE—Single-combed Brown Leghorn cockerels, \$1 each. George Topping, Cedar Point, Chase Co., Kas.

WHEN YOU GO TO TOPEKA STOP AT THE St. Nicholas Hotel, first door north of post-office. Re-opened and newly furnished throughout. Good meals, 15 cents; nicely furnished rooms, 25 and 30 cents. A. T. Pigg, proprietor.

FOR SALE OR EXCHANGE—Sixty-five acres clear land, four miles from State house. Want more land, not farther west than Wabaunsee county. Box 100, Topeka.

READ.—Famous Duroc-Jersey and Poland-Chinas for sale cheap. Great breeders, rustlers and growers. D. Trott, Abilene, Kas.

COCKERELS FOR SALE—Buff Cochins, Light O Brahma, Buff Leghorn, White Minorca and Barred Plymouth Rock. Will sell for \$1.25, or \$1 each where more than one is taken. Mrs. E. E. Bernard & Son, Dunlap, Morris Co., Kas.

WANTED—Millet, cane and Jerusalem corn. Send samples. Trumbull Seed Co., Kansas City, Mo.

WANTED—To buy a first-class incubator in good condition. Must be cheap. Address Lock Box 149, Peabody, Kas.

WE CAN FURNISH CORN, OATS, MILL FEED, bran, flour, ground wheat or feed wheat in car lots. Write or wire. Hodges & Seymour, Wichita, Kas. Mention Kansas Farmer.

WANTED—Millet, cane, Kaffir and Jerusalem corn. Send samples. Kansas City Grain and Seed Co.

IRRIGATION PUMPS.—For prices of irrigation pumps used by the editor of KANSAS FARMER write to Prescott & Co., Topeka, Kas.

THE most successful farmers and gardeners buy their seed directly from the growers; for this reason we raise largely the most risky kinds, especially Cabbage and Onion Seed. This latter is extra fine this season. No catalogue contains more varieties of vegetable seed, and none more of the new that are really good—see outside cover for an illustrated selection from our new specialties, which we will sell at half rates. Catalogue free. J. J. H. GREGORY & SON, Seed Growers, MARBLEHEAD, MASS.

TWO-CENT COLUMN--CONTINUED. WE MAKE A GOOD FARMER'S SPRING WAGON, two lazy backs and let-down end-gate, for \$55. Warranted. Kinley & Lannan, 424-426 Jackson street, Topeka.

SUNNYSIDE—YAKIMA VALLEY.—Irrigated Sluice. Produce apples, pears, prunes, peaches, hops, alfalfa. Worth \$50 to \$600 per acre. "Twenty acres enough." For map, prices, particulars, write F. H. Hagerty, Sunnyside, Washington.

FARM LOANS—I have arrangements to negotiate loans with funds of a life company at a low rate of interest on long time. Correspondence solicited at 110 West Sixth Ave., Topeka, Kas. Milo Norton, Agent.

LARGE ENGLISH BERKSHIRES—Young sows of choicest breeding and individuality, bred to our grand imported boar; also, choice young boars. Special prices to immediate buyers. Wm. B. Sutton & Son, Russell, Kas.

FOR SALE—Fifty acres, ten acres, within eighty rods of Santa Fe depot. Used for farm and gardening. Lot of hotbeds, good house and barn, lots of water, fruit of all kinds. All well improved. Price, \$3,500. Apply to Geo. Lelsner, Carbondale, Kas.

CLOSING OUT—Entire stock of Hamburgs, incubators, brooders, bone-mill, clover-cutter, etc., on account of death of wife. J. P. Lucas, Topeka, Kas.

FOR EXCHANGE FOR ALFALFA, SORGHUM or red Kaffir corn seed, several pure-bred Poland-China boars, read for service. J. H. Taylor, Pearl, Kas.

WANTED—To trade a \$50 scholarship in Pond's Business college for a good milch cow. W. B. Roby, 316 west Eighth St., Topeka.

LINSEED OIL MEAL (OLD PROCESS) FOR sale, car lots and less. Send for prices. Kansas City Grain and Seed Co.

YOUNG BULLS for sale. Short-horns and Herefords. Prices reasonable. Address Peter Sim, Wakarusa, Shawnee county, Kas.

WANTED—Buyers for Large English Berkshires. One hundred pure-bred pigs, farrowed in March and April, are offered for sale at from \$70 to \$15 each. Farm two miles west of city. Riverside Stock Farm, North Topeka, Kas.

EARLY KANSAS SEED POTATOES—Three pounds, by mail, postpaid, 50 cents; fifteen pounds, f. o. b., \$1. The most prolific, hardest and best table potato ever grown in Allen county. C. Norton, Morantown, Kas.

YORKSHIRES—The grass hogs. Langshans, the winter layers. Leghorns, the everlasting layers. Prize stock. James Burton, Jamestown, Kas.

FOR SALE—Sixty Mammoth Bronze turkeys, from 7 to 10 lbs. weight; hens averaging 97. In November, 1894, at Warrensburg and Sedalia shows, I won four first, six second and five third. Eggs in season. Toms, \$2.50; hens, \$1.50. Mrs. F. W. Ives, Knob Noster, Mo.

SEND TO-DAY FOR FREE SAMPLE COPY OF Smith's Fruit Farmer, a practical Western horticultural journal, 50 cents a year. Smith's Fruit Farmer, Topeka, Kas.

WANTED—Car-load of 1894 alfalfa, German millet, cane and Evergreen broomcorn seed. Address Geo. A. Arnold, Box 146, Kearney, Neb.

CHEAP FOR SIXTY DAYS—Great big Light Brahma and beautiful Black Langshans. Wm. Plummer, Osage City, Kas.

ALFALFA SEED. Fresh stock. W. P. Haywood, Lakin, Kas.

KANSAS CITY GRAIN AND SEED CO. Buy, sell, grain, millstuff, seed grain, millet, cane, Kaffir corn, alfalfa, clover, timothy, flaxseed, popcorn. Kansas City, Mo.

FRESH ALFALFA SEED. Crop of 1894. MCBETH & KINNISON, GARDEN CITY, KANSAS.

Kansas Redeemed! As a result business is "picking up" wonderfully and prices are looking better in all lines. In Farm Property there will be no exception. Prices that now range are exceeding low—they are bound to advance, and lucky is he who gets a farm in this section of Kansas between this and spring. I have hundreds of way down bargains. First come, first served. You can better yourself now and have money left for other use. Write me now or come and see. Car fare refunded to all purchasers. Address WALTER LATIMER, Garnett, Kansas.

Farmers, Spay Your Sows For fall fattening. Also your Nannies, Ewes and Gilt Dogs, with Howsley's Spaying Mixture. Easily used, quick, absolutely certain and safe. Price, \$3 per bottle; \$2 half bottle. One bottle spays one hundred head. Write for testimonials and particulars. THE HOWSLEY SPAYING CO., Kansas City, Mo., or New Orleans, La.

Farm for Sale---160 Acres! FIRST-CLASS FARM AT A BARGAIN. All good buildings. House with six rooms, with large cellar. Two barns, one of them entirely new and cost \$1,200. Good bearing orchard of 150 apple trees and other fruit. Out buildings all in first-class condition. Two good, never-failing wells. One new windmill. Good fences of hedge, stone and wire on all sides of the farm, and also cross fences. Good shelter for stock on creek bottom. I will sell this farm at less than cost. Write me for further particulars, or, better still, come and see the farm, which is near Carbondale and within a half mile of school house. LEONARD HEISEL, Box 11, Carbondale, Kas.