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BREEDERS' DIRECTORY.

Cards of four lines or less will be inserted in the Breeders' Directory for \$15 per year or \$5.00 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.

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PIT GAME CHICKENS.—My chickens are known as the "Ray chickens." They are bred up from crosses of Nigger Foot Claibourns, Blue Shufflers, Georgia Shawnecks, Arkansas Travelers and Irish Pyles. They are dead game fighters. One cock, \$3; one cock and two hens, \$5; 13 eggs \$1.50, 26 eggs \$2.50. Address B. V. Ray, Kiowa, Kas.

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POULTRY.

SPECIAL SALE.—Zachary Taylor, Marion, Kas. Fifty S. C. B. Leghorn hens and pullets (Munger, McClave, Geer Bro.'s Hereford combination). All at the reduced price of \$3.50 per dozen, if taken in two weeks. One 90-point Silver Wyandotte cockerel, three B. P. Rock cockerels, six S. C. B. Leghorn cockerels. Am now ready to fill orders for eggs—S. C. B. White and Buff Leghorns, Wyandottes, B. P. Rocks and Black Langshans.

HARRY T. FORBES—FINE S. C. BROWN LEGHORNS on earth. Stock came from high-scoring birds, express to any part of the United States. Address 701 Polk St., Topeka, Kas.

ROSE-COMB WHITE LEGHORNS—The best layers on earth. Stock came from high-scoring birds. Eggs \$1 per setting. Belle Dille, Edgerton, Kas.

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CHOICE S. C. BROWN LEGHORN COCKERELS \$2 each this month. Evergreen fruit farm for sale. It is a beautiful farm. Stamp for reply. Belle L. Sproul, Frankfort Marshall Co., Kas.

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MULBERRY GROVE FARM.—Barred Plymouth Rocks and Black Minorcas. Eggs \$1.50 per thirteen, express prepaid. J. R. Cotton, Stark, Kas.

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SELECT HERD OF BERKSHIRES Of Large English families. Longfellow's Model, Major Lee and other prize-winning sires. First and second aged herds, first and second young herds, sweepstakes boar and sweepstakes sow at Kansas State fair. Pigs, all ages, in pairs and trios. G. W. BERRY, Berryton, Shawnee Co., Kas.

JAMES QUOROLLO, Kearney, Mo. Large Berkshires, S. C. Brown Leghorns and Bronze Turkeys. On H. & St. Joe, 28 miles northeast of Kansas City.

HILLSDALE HERD. Short-horn cattle and Poland-China hogs, bred by C. C. KEET, Verona, Neb. Prince Byron 10613 heads the herd. Stock for sale at all times. Visitors welcome. A fine lot of young male pigs for sale. Farm two miles north of Verona, Nebraska.

A. E. STALEY, Ottawa, Kansas. CHESTER WHITES and POLAND-CHINAS. Light Brahmas. Satisfy'n g'r'ntd.

S. McCULLOUGH, Ottawa, Kansas. Breeder of Pure-bred BERKSHIRE SWINE. Stock for sale at all times. Write for what you want. Satisfaction guaranteed.

P. A. PEARSON, Kinsley, Kansas. Breeder of Poland-China Swine. All ages for sale. Herd headed by Dandy Jim Jr. and Royalty Medium, a son of Free Trade.

T. A. HUBBARD, Rome, Kansas. Breeder of POLAND-CHINAS and LARGE ENGLISH BERKSHIRES. Two hundred head. All ages. Fifty boars and forty-five sows ready for buyers.

W. S. ATTEBURY, Rossville, Kansas. BREEDER OF Chester Whites Exclusively. Young stock at all times. Satisfaction guaranteed.

W. E. GRESHAM, Burrton, Kansas. Breeder of POLAND-CHINAS. Won six prizes, including first blue ribbon west of Mississippi at World's Fair. Stock all ages for sale.

R. S. COOK, Wichita, Kas., Breeder of Poland-Chinas. Won seven prizes at World's Fair—more than any single breeder west of Ohio.

CIRCLE U HERD POLAND-CHINA SWINE. W. H. Underwood, Hutchinson, - Kansas. Graceful's Index 9289 S. 27089 O., sire Seldom Seen 2d 23045 O., dam Graceful L. 28768 O. He was the sire of the Kansas World's Fair winners that won first, third and fourth prizes.

RIVERSIDE HERD Poland-China Swine. For sale sows bred to farrow in March, April and May. Also young stock at reasonable figures at all times. Satisfaction guaranteed. Correspondence as well as inspection invited. J. V. RANDOLPH, [Established 1868.] Emporia, Kas.

WALNUT GROVE STOCK FARM. POLAND-CHINA SWINE. For sale, aged and young stock at reasonable prices. The stock is select bred, of best strains and good individuals. Call or write for catalogue. Let me know what you want, and the matter shall have prompt and satisfactory attention. W. B. McCOY, Valley Falls, Kas.

JACKS and JENNETS FOR SALE. I have the largest and finest assortment in the State. Send for catalogue. A. W. HOPKINS, Peru, LaSalle Co., Ill.

Wholesale Prices! Thos. D. Hubbard, twenty years a wholesale merchant in New York city and Columbus, Ohio, having come to Kansas for his health, will supply at wholesale prices, Barbed Fence Wire, Wire Nails, Galvanized Chicken Fence Netting, Glazed Windows of all sizes for poultry houses, barns and other buildings, and all other requisites for breeders and farmers, free on board cars at St. Louis or at your own depot. For fuller information, address with stamp, THOS. D. HUBBARD, Kimball, Kansas.

Agricultural Matters.

FLAT PEA OR LATHYRUS SILVESTRIS.

The KANSAS FARMER continues to receive inquiries as to this much spoken of forage plant. We published last fall a detailed account of the experiments at Manhattan, from the pen of Prof. Georgeson, and give this week further account of the same matter from Prof. Georgeson's assistant, Mr. Burtis, but in order to fully satisfy the demand which the ever wide-awake readers of the KANSAS FARMER always make for the fullest possible information on every promising new thing, we reproduce below selections from a pamphlet recently issued by the "Lathyrus" Company, of Munich, exploiters of the seed:

"As far back as the year 1862, it occurred to W. Wagner, at that time a land steward, on the occasion of an expedition into the minor Carpathians for the purposes of study, that whilst all fodder plants had lost their leaves on account of the great drought, or from the sterile character of the land, a single group of plants, namely *Lathyrus silvestris* (flat pea), showed luxuriant growth, even in pure chalk grit. Involuntarily the thought occurred to him that a plant with such power of resistance to the influences of temperature, and thriving on so little, might play an important part in agriculture, if it were possible to use it as food for cattle.

"At the outset, two difficulties arose to hinder the realization of this idea. The fodder of the wild *Lathyrus* plant contains bitter alkaloids, disadvantages to cattle, such as cytisin, cathartine, and the bitter of gentian (*Gentianin*). These noxious properties had to be removed by cultivation. Further, as the wild seed of this plant only begins to germinate after lying several years in the ground, it was in this form totally valueless to the farmer. A complete transformation in this respect had also to be brought about. Wagner ventured upon these improvements, and, after twenty years continuous work, accomplished the task in the most ingenious and successful manner. By means of a process of cultivation of his own, the bitter matter of the wild *Lathyrus* plant gradually grew less until it had totally disappeared. At the same time the question of normal germination was solved.

"Plants about twenty-five years old, which in 1865 had been found in pure chalk shingle in the Carpathians, now yearly bear, after more than fifty years existence, luxuriant shoots from six to seven feet long. This is due to the uncommonly extended and vigorous action of the systems of roots which the plant possesses.

"W. Wagner thus succeeded in producing, in the cultivated *Lathyrus silvestris*, a fodder plant which, whilst it retains all the powers of resistance and frugality of its wild sister, surpasses to an almost double extent all other fodder plants in regard to feeding value.

"Loose, light land, which has been cultivated, should be selected; sandy loam or clayey sand is to be recommended.

"The land must be most carefully prepared, as in the case of rape or sweet turnip cultivation. Immediately after the first plowing and harrowing the roller should be passed over the field.

"Sowing is done on the ridge, with a drill, at a distance of twelve to thirteen inches between the rows, on the rolled field.

"In sowing without a machine, small furrows should be made, and the seed as thickly placed as, for instance, pine seed. The furrows are then covered and the land lightly pressed.

"In central Europe the time for sowing is from the beginning of April to the beginning of July, as in the case of summer corn.

"The seed should be put in at a depth of from three-fourths to one and one-half inches—(by no means deeper)—the seed being carefully covered with mould, and the field afterwards rolled.

"During the summer, weeding is necessary, as in the case of turnips.

"Seed sown at the rate of sixty-seven pounds to the acre will provide plants sufficient to cover some twelve acres for fodder production.

"The crop must be kept entirely free from weeds, which on arable land is easily done by hand hoeing three times. This work is best done by removing the weeds by hand. On particularly hard ground, it is advisable, at the

time of sowing, to put in some rape seed, in order to mark early the rows, and enable the first weeding to be done before the appearance of the young plants. Afterwards, the rape can easily be pulled up.

TRANSPLANTING.

"The *Lathyrus silvestris* Wagneri grows on sandy, stony ground, and even on steep slopes and shingle, but it must not be understood that it does not derive advantage from good soil. This, however, must be dry.

"The underground water must lie at least thirteen feet below the surface. Damp ground is absolutely unsuitable for the crop.

"The land is worked as deep and thoroughly as possible, as is done for rape or turnips.

"Local circumstances must determine whether the transplanting should take place in the autumn or in the spring. If the former is possible, the herbage of the young plants should be mowed, which can be done without any fear of rooting them up. The lifting of the plants is best effected on a large scale by means of the plow, removing the mould-board, and on a small scale by laterally laying the roots bare. If the plants are to be set in the spring, it is better not to mow them in the autumn.

"In general, the best season in central Europe for planting is from the beginning of April to the beginning of May, and the work can be commenced as soon as the young plants have begun to shoot; or the planting may be from the end of August to the end of October.

"About 30,000 young plants per acre are required, without reckoning those which may be afterwards needed to fill up blank places.

"Plants can be kept for fourteen days without any harm, in light and airy cellars, of a moderate temperature. They should be placed in thin layers, in slightly moistened sand, with tops uppermost. The tops should be carefully covered.

PLANTING.

"Just before being put into the ground the roots of the plants should be cut evenly with a knife.

"The plants are put in behind a deep-drawing plow. Care should be taken that the plow has only one horse, which must walk on the side of, and not in the furrow, otherwise the plants already set will be trodden under foot. After the land has been well loosened by thorough working, one horse is quite able to draw the plow. The plants are placed against the last furrow, to the right, at a distance apart of from ten to twelve inches, and at an angle of from 15° to 20°, and covered with the following furrow. The finishing off of the work is done by hand. Plants are put in every alternate furrow only. The tops of the plants should appear below the soil about one and one-half to two inches. It is good practice to tread down the soil sideways a little, as the sharp crest of a furrow is easily washed away by rain or snow thawing, thereby laying bare the stem of the plant, which becomes damaged by frost. Well covered plants are absolutely protected from freezing or from being winter-killed.

"On barren, stony, mountain slopes rather larger holes must be dug for the plants, and so much soil, or fine grit, put into the hole as is necessary to carefully imbed the roots (as in the case of young pines).

"In the first year the *Lathyrus* plant, like all plants which last for a long period, grow slowly. It must, therefore be thoroughly freed from weeds during the first summer. If it is desired to hasten the growth in the first year, a slight mixture of wood-ashes, or kainit, with Thomas phosphates, is recommended, but this manure must not be brought into direct contact with the roots. Fresh stable manure is by all means to be avoided.

"In the second year a single hoeing in spring will generally be found sufficient.

"It is better not to mow the crop in the autumn of the first year of planting. After the following spring mowing can be done as often as the plant has sufficiently developed (which is governed by climatic or local circumstances), that is, when it enters the flowering stage.

"The product is used either in its green state, or made into hay for fodder, like lucerne, red clover, etc.

"The period of growth, up to the ripening of the seed is about 150 days.

"The yield of fodder (hay) per acre is about three tons. The yield of seed per acre is about from 130 to 220 pounds, with about 4,700 pounds of straw.

"The fodder is consumed by all farm animals with great eagerness. On account of its nutritious properties, however, it is advisable to give the

Lathyrus fodder only with a mixture of straw, in the proportion of about one-half to two-thirds of the total food, in the form of chaff."

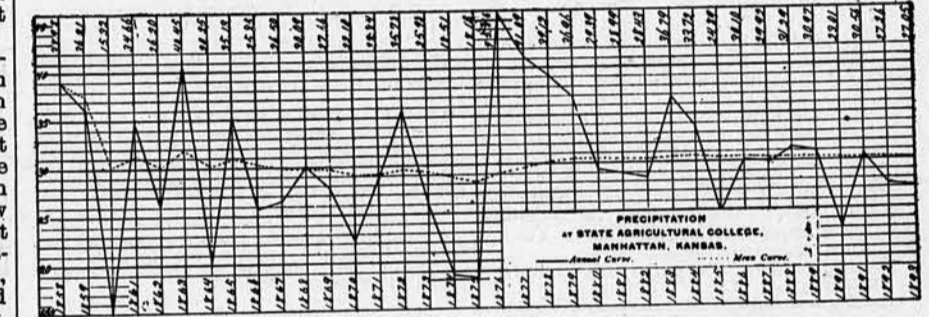
It will be seen that considerable tedious work is necessary to get the plants started and that great care is to be taken in procuring proper seed. It is doubtful whether the plant is as desirable as alfalfa for Kansas farmers and yet it is worth keeping in mind and learning more about. The *Lathyrus* Company, of Munich, offer to send free on application the "Practical Guide for Cultivating."

Rainfall at the Agricultural College.

There is probably no other meteorological element that affects crops so much as that of rainfall in a climate like that of Kansas. If one can by any means show that the rainfall is increasing, he is at once welcomed as a bearer of good news. The favorite seven-year grouping seems to have outlived its usefulness, if it ever had any. The means obtained by dividing the rainfall at the college into seven-year periods is shown in the second column of the accompanying table. These means should be alternately wet and dry, the first being wet; and each mean should be wetter than the preceding corresponding mean. The first three periods agree very well with these conditions, but the fourth and fifth seem to have been reversed. Died at the age of twenty-one!

Seven-year period.	Years.	Means.	Six-year period.	Years.	Means.	Eleven-yr. period.	Years.	Means.
1857-63	29.97	1858-63	31.97	1857-67	28.96			
1864-70	28.79	1864-69	27.58	1868-78	30.29			
1871-77	30.60	1870-75	24.90	1879-89	31.04			
1878-84	33.34	1876-81	38.93			
1885-91	28.08	1882-87	30.64			
.....	1888-93	28.36			

Dividing the rainfall into periods of six years, the means found in the fourth column of the table are obtained. These may be designated as wet, medium and



dry; wet, medium, dry, etc.; and each succeeding period is wetter than the preceding corresponding period.

The present rate of increase would require that the next six years give a mean of 40.72 inches, or a mean greater than six of the wettest years past will give. It is possible, but not probable. Died at the age of forty-two!

One other grouping may be given, that of eleven years corresponding to the periods of maximum sun spots. The means obtained from the eleven-year periods will be found in column six of the table. The increase of the second period over the first is one and one-tenth per cent., and the increase of the third period over the second is two and one-half per cent. These apparent increases might easily be brought about by errors in observations, even admitting the grouping a proper one. It is not unlikely that the increased cultivation of the soil, both in quantity and intensity, may cause some slight increase of rainfall. The following is from an article by Prof. Curtis in Bulletin No. 7, United States Department of Agriculture: "The single condition favorable to such an increase of rainfall [in Kansas, Nebraska, etc.] consists in the steadier and larger evaporation which no doubt takes place over the cultivated area, but the other conditions necessary to condense and precipitate this moisture over the same region are largely absent."

The accompanying cut illustrates the annual precipitation at the college for the past thirty-six years. The vertical lines represent years. At the bottom of the lines will be found the year, and at the top the rainfall in inches and hundredths. The horizontal lines represent inches of rainfall, in which the multiples of five are made heavier, and the number of inches placed at the left. The annual pre-

cipitation is indicated by the continuous line. It will be noticed that the least rain fell in 1860, and the most in 1876. Probably the most noticeable feature is the wide variations from year to year in the first part of the curve, and the much less variations in the last part. The greatest variation from normal in the last fifteen years was 7.21 inches, or nearly 24 per cent.; in the preceding fifteen years this was exceeded seven times, being nearly 58 per cent. variation in one instance.

If this small variation from normal has become permanent, it is worth more than increased rainfall with wide variations from year to year.

The normal, or mean curve, indicated by the dotted line in the diagram, seems to be the best test of whether the rainfall is actually increasing or decreasing. Omitting the first eight years, it will be seen that the normal curve was the highest in 1884, when it was 30.63 inches. Since then there has been nearly a uniform decrease, until now it is 30.06 inches.—Prof. E. R. Nichols, in *Industrialist*.

Notes from the Agricultural College Farm.

The ground is getting somewhat dry and wheat is showing need of rain.

For the past three years *Lathyrus silvestris*, or "flat pea," has been under trial on the college farm. This plant is a genus of leguminous plants. It is a European species and has been introduced into this country in the last few years. It is advertised as the "great fodder plant" and the greatest natural "nitriding" fertilizer. The results here, so far, are very discouraging. We have tried to get a start from the seed, and also by importing plants a year old and transplanting them. First, about one seed out of six that were planted to the hill, grew. Next,

the seed was four weeks coming up. The hills were all marked and the ground weeded twice before the seed came up. The growth during the summer was very slow and the ground had to be constantly weeded to keep the plants from being choked out. By fall the plants had made a growth of about six inches. The transplanted plants did but little better. Thus far our experience coincides with that of most persons who tried the plant. Every one who grows the plants from seed will have this trouble the first year. But few of our plants survived the next winter, and what did made but a weak growth the next summer and perished. Probably the plant failed to do well in our soil, as it has a stiff clay subsoil, and alfalfa does not grow well in it. This plant is like alfalfa in that the roots grow deep and do best in a loose, sandy soil. Further tests will be made of it this year on a larger scale. The seed is very expensive—\$5 a pound—and six pounds are required to seed an acre. This plant is very successfully grown in many parts of the United States now and has proved itself worthy of trial.

Inquiries are received about the "black hullless" barley. It was grown for the first time on the college farm last summer. It produced well there. It differs from common barley in that the glume comes off in threshing, and the kernels are black. Our plan is to seed several acres with it this spring.

Now is the most interesting time to go over our wheat experiments in the field. One of the most interesting experiments is where we have wheat seeded at intervals of ten days apart, from August 20 to November 1. On the first seeding we have a good "stand" and growth, and from this downward we have a gradation, but not regular, to the last seeding, where there is about one-third of a "stand" of

small, weak plants about an inch and a half high that have not tillered any. The early seedlings are growing vigorously, but the last seedlings will perish soon if we do not have rain.

The grass seeding that has been under progress the last week was finished Friday. It required fifty-three hours to "cross drill" the twenty-four acres. This is divided into three fields, which would make some difference in the time required. The drill was set to seed a little over one and a fourth bushels of wheat to the acre. The seed cost \$2.63 per acre. The hard wind that blew the 10th did not interfere with the drilling or blow any of the seed out of the ground.—*F. C. Bur-tis, in Industrialist.*

Feeding Wheat.

In a late issue of the *Farm, Field and Fireside*, J. M. Rice, of Blaine county, Oklahoma, gives his experience in feeding wheat, as follows:

"Some months ago we reported favorably upon feeding wheat, both to hogs and horses, having had good results with it, after we learned to soak it well. Just at hand we have the more careful experiments of a farmer in the older part of Oklahoma, and his conclusions are that with hogs at \$4.50 he made 75 cents per bushel out of his wheat.

"With the majority of farmers there were not the hogs to feed it to, and with many of them it was their only money crop and it had to go at a low price and other feed used. As to its future use in feeding, that will depend on the relative price of other grains and the price of stock.

"In this new section of Oklahoma it might be said corn, wheat and oats are selling at the same price at present, but this ratio is not likely to continue; but the three grains will be nearer the same price per bushel than in almost any other section, even in coming years.

"While the acreage of corn is greater than wheat in Oklahoma, being respectively 284,284 and 222,310, yet in this central section wheat will predominate and consequently local demand is likely to keep corn a little above ordinary market price. The weight of the two grains being nearly the same, and with wheat an almost certain crop, with more uncertainties as to corn, the probabilities are that until there is a strong reaction in the wheat market, it is likely to be fed largely.

The acreage of oats is about one-half that of wheat, but as more land is put into cultivation this will be greater in proportion. At present there is not enough in this section for seed, as nearly all first year's breaking was sown to winter wheat, and but little left for oats, while the fresh sod was planted to corn and forage crops. So another year will find much more of oats and price reduced to about one-half that of wheat.

"As to whether to feed wheat, each farmer should understand the relative feeding value of the different grains, not only as shown by chemical analysis but by actual feeding tests, and then decide in consideration of the respective prices whether it is more profitable to feed or sell. According to chemical analysis wheat has a nutritive ratio of 1 to 5.8 and is classed among the balanced foods, as the old rule is 1 to 5, that is, one part of the nitrogenous to five of the carbonaceous. Corn has a nutritive ratio of 1 to 8.6 and oats 1 to 6.1 and are both classed as carbonaceous foods. That is, too much of the carbohydrates or heat and fat-producing elements for ordinary feed, but all right for fattening animals. So in theory wheat per pound is not so valuable as either oats or corn for fattening, but better for meat, that is muscle, and milk."

Everybody should know what a good medicine Dr. Bull's Cough Syrup is; it has cured many thousands and will cure you.

To Catarrh Sufferers.

A clergyman, after years of suffering, from that loathsome disease, catarrh, and vainly trying every known remedy, at last found a medicine which completely cured and saved him from death. Any sufferer from this dreadful disease sending his name and address to Prof. Lawrence, 88 Warren street, New York, will receive the means of cure free and postpaid.

The Stock Interest.

THOROUGHbred STOCK SALES.

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

APRIL 18—Sotham & Co., Herefords, Chillcothe, Mo.
OCTOBER 4—C. C. Keyt, Short-horn cattle and Poland-Chinas, Verdon, Neb.

How to Keep Swine Healthy.

At the Brown County Farmers' Institute the question of how to keep swine healthy was discussed by practical farmers. The following report of the remarks made is from the *Hiawatha Journal*:

Mr. Fadely was the first to respond. He had much experience. When we raise hogs we must make it a success every year. Three years out of five don't pay. First, hogs must have good range and good comfortable quarters. They must have exercise to develop constitution. Save the best thrifty female pigs for sows and change the male every year. In buying a male for breeding don't take one that has been stuffed and crowded from pig up. He raised hogs ten years on the farm. He gives the hogs about sixty acres to run on and develop a good constitution. He only lost two hogs of sickness. He thinks his 250-pound hogs only cost him twenty bushels of corn, besides the grass range. The corn is given in full feed the last months. He sells at ten and eleven months old. He does not believe in patent feeders or water supplies. They accumulate filth and breed disease. He waters in a trough. He often rakes together the cobs and other litter in dry times and burns them and covers them, sometimes with oats and sometimes puts on salt, too. The hogs relish this and it is good for them. The hog is the poor man's friend in this corn-growing country. There is more money in hogs than anything else for farmers.

Question.—"Do you ring hogs?"
Answer.—No; rooting does the hog good and the land good, too. It loosens hide-bound grass land.

Mr. Douthart gave some experience in hog cholera. He gave carbolic acid according to advice. But he lost all his hogs, though using the remedy a month before the cholera struck him.

Mr. Hildwine thinks dead animals are thrown out too carelessly.

H. F. Mellenbruch asks, is it an established fact that hog cholera is propagated by the dead hogs?

Mr. Detwiler said we breed too much from young hogs. Breed not only to fine quality but hardness. Too young breeding deteriorates the animal.

Mr. Eli Zimmerman says, save your breeding hogs not from gilts, but from older sows, to give them size and constitution. He was very unfortunate with cholera. The last ten years he lost \$6,000 worth of hogs, yet he made more out of hogs than anything else. He uses Poke root powder now for hog cholera with success.

Chairman McCrerey said, do not give medicine too fast or indiscriminately. Learn first what is the matter. Nearly all sickness is called hog cholera. He lost a great many hogs one year, and piled them up to burn; the fire was put out by a shower, and the other hogs ate the charred meat—no more died after that.

Mr. Worley was then seen to be present, and was called on for his paper. He said that the hog holds his high position despite of law or political parties. He is not hurt by the repeal of Sherman law or Wilson bill. Only hog cholera affects him. Good sanitary conditions cannot wholly prevent disease but it does much. Let their quarters be comfortable. In winter change their bed at least once a week. Have only a few—say four—sleep in one pen is best. They will not overlay, as they will when many lay together. A moderation of corn, with clover in the summer for the young hogs to run on, is a good diet to develop body and constitution. This leaves them in good shape to begin heavier feed when the new corn crop comes in. The sanitary conditions must not be overlooked during the summer. Plenty of shade to lay in, and pure water should be accessible to the hogs. There is objection to the drinking places (as barrels) that

accumulate filth when the hogs wash their faces in said watering places.

Mr. Lichty said, he lived fifteen years on the same farm and had no hog cholera. He used strict quarantine. When cholera breaks out don't take out the sick ones, but take out the healthy ones and put them in a clean lot not yet infected and keep them carefully separate. This is the safest way to save hogs. The old pen is infected and the disease will spread there. The infection don't spread through the air. Only the excrements of the sick taken into the food of others spread the disease. Mr. Lichty has a peculiar clay his hogs ate, digging deep into the bank to get enough. It seemed to him, this clay is a medicine for them.

Mr. Peter Pfeiffer wants that clay analyzed.

Mr. McCrerey knew of hogs that had eaten such clay, yet when cholera struck the lot, all died. He also knew of it catching through fences.

Mr. Anderson thinks hog lots should be changed; put them on fresh ground often.

Mr. Sherman had his hogs always on the same ground, yet healthy hogs. Prevention is best. Keep hogs in good plight. He used as a remedy oil cake and salts fed once a week. This keeps the system in good condition and enables it to throw off disease.

Mr. McCrerey thinks action in hogs is conducive to health.

From a Kansas Sheepman.

EDITOR KANSAS FARMER:—The question is often asked, "Are you going out of sheep raising?" No. Can any one tell me of anything that is better? Cattle and hogs are coming down, wheat don't pay, and will go lower if a good crop this year. Some few years ago we would have our shearing festival and bring out our best sheep, and have a good time, and your paper was always represented there. Our township had from 12,000 to 15,000 sheep at that time. Where are they to-day? Nearly all gone to market. Not many more cattle, and shippers tell me not as many hogs, but more wheat.

In order to become a prosperous nation we must raise the wool that makes our clothes, as well as the food that we consume. We have as fine a climate in Kansas, and as healthy for sheep as the plains of Australia, or the pampas of South America. Perhaps they can raise wool a little cheaper than we can, but what will you sell to them in exchange? Wheat they don't want, because they raise more than they consume. Let us raise our own wool, consume our products on the farm, not pay so much to the railroads and steamship lines to haul our products back and forth, and then we will become more prosperous.

As Kansas is one of the best States to raise sheep in, we must look around and see what is the best kind of sheep to raise. We want a sheep that is hardy and robust and can stand our extreme dry and hot summers, and cold in winter, and no sheep is better adapted to our climate than the Delaine Merino. I have tried the wrinkly ones, but they are too much of a pet sheep for the range. It takes too much grain for producing the gum or grease, and that don't sell for very much. They are very poor breeders and have no mutton form and won't feed profitably. The Delaines are a good mutton form when bred that way (have some so-called Delaine only in wool), and are good breeders.

There is a great deal of waste on the farm that sheep will consume that cattle will not. You can turn them in stubble fields after harvest and they will grow fat on the big sunflowers and weeds that sap the best soils of our State. Give them one bushel of corn to the hundred head per day and plenty of fodder and straw, for winter feed, and your sheep will be fat and bring in something for return for feed. And if you have ground that will raise alfalfa, give them plenty of it, and you won't need much grain. I find that alfalfa that is threshed for seed is the best feed to fatten sheep. I have fed twelve ram lambs with it all winter and have not given them very much grain, and the last month and a half I haven't given them any grain, and they are doing well and will average one hun-

Lung Troubles

show a tendency toward Consumption. A Cough is often the beginning. *Don't wait* until your condition is more serious. Take

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the Cream of Cod-liver Oil, *at once*. It overcomes all the conditions that invite the Consumption Germs. *Physicians*, the world over, endorse it.

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dred pounds at ten months old, one weighing one hundred pounds at eight months. I also find in feeding these twelve lambs that they did not consume any more than one cow, as I carried it in bushel basket and could measure it out to cow and lambs. Alfalfa was very dry when I threshed it and cut up fine.

We need more woolen factories, and also scouring mills in our State, as our wools will get dirty and be discriminated against when we ship East.

To those that have sheep, I say keep them. As soon as the rush to market is over, sheep will come back to old prices again. Flock-masters are somewhat like the sheep they own. When they get started, all want to go one way, and it seems useless to try to stop them. J. N. GRAU.

Asherville, Kas.

The Southdown Situation.

The FARMER has received a communication from a very intelligent fancier and breeder of Southdown sheep, stating why that breed is preferred. From his article the following is quoted:

"The present low, and the uncertainty of the future price for wool has caused the marketing of many of all kinds of sheep. This has, for the time being, affected the mutton breeds by lowering the price for mutton. The large surplus of all breeds thus disposed of will, for the future, make the call for mutton sheep more regular and prices higher. In addition to this, the change from wool-growing to mutton-producing will make a large and increasing demand for Southdowns for introducing their mutton qualities into flocks now bred solely for wool. The indications, then, are that the Southdown interests may be benefited instead of hurt by the conditions now so harmful to wool-growing.

"Breeders should press the claims for the superiority of the Southdowns, and by the registry of their unrecorded breeding animals place themselves in position to take advantage of the situation."

The reasons why Southdowns are preferred are as follows:

"Because they are so hardy. Because they herd in large numbers. Because they are the earliest to mature. Because they market more meat to the acre than any other live stock. Because it costs less to produce their meat than any other domestic animal. Because they produce the best meat; their mutton is best graded with fat and lean; is the juiciest and best flavored. Because mutton is worth more than wool. Because they are certain in impressing their good qualities upon other breeds. Because they are the most beautiful. Because they are the best sheep in the country."

A Banker's Experience.

J. V. Shipp, Banker of Midway, Ky., writes: "My two barren mares were made to breed with the Perfect Impregnator, bought of Specialty Manufacturing Co., Carrollton, Mo."

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Irrigation.

THE WATER AND THE METHOD.

By Maj. J. W. Powell, Director U. S. Geological Survey, read before Kansas Irrigation Association, at Wichita.

(Continued from last week.)

There yet remains the fourth method of securing the run-off waters, namely, that of utilizing the streams, as springs, brooks, creeks and rivers. Where the streams are perennial they may be tapped by ditches or canals, and the waters taken directly to the lands, but this method is only available during the season of irrigation, and if irrigating works are not developed in other directions the water of the streams can be utilized only during the season of irrigation, which lasts in this climate not more than two or three months, and the water runs to waste for nine or ten months of the year. To secure the volume of water which runs during the season when irrigation is not practiced, it is necessary that these waters should be stored in reservoirs, and the run-off of the fall, winter and early spring months held back until the time of irrigation. This part of the subject need not be discussed on this occasion, because perennial streams are very few in western Kansas. To a large extent the streams are intermittent; the brooks and creeks only carry water in seasons of storm, and these intermittent streams are the ones to be caught, and for this purpose the storm waters must be stored. This is, perhaps, the most important source of water for western Kansas. A larger volume can be secured from the capture of the storm waters than from any other source, but the conditions for capturing this storm water require most careful consideration. Storm waters are caught in China, Persia, India, Russia, Mexico, and in other portions of the world, so that there has already been much experience in the use of these waters. They are the most fertile of all waters used in irrigation, for they carry as dissolved or partially dissolved matters, many fertilizing elements, which are exceedingly valuable to the irrigated lands, but rigid conditions for their utilization are imposed upon the irrigation engineer.

In the first place, all storm waters are muddy. All the coarse material is an injury to the land; only the very fine silt and the dissolved materials are valuable for agriculture. The sands must be discharged from the water, or the lands are injured thereby. Now, as all storm waters have to be stored in reservoirs, unless properly managed they are filled up and soon destroyed by deposits of sand. It is therefore often necessary to construct the reservoirs on sites where settling tanks must be discharged of their sand by using a portion of the flood waters. Near the entrance of the storm waters canal into the reservoir, it is necessary to construct a little basin into which the waters are turned, and where the velocity of the flow is checked so that the sand falls to the bottom to be discharged by a side flow from time to time, with a small portion of the water, which is thus wasted. Practice shows that this method of discharging the sands from the waters can be used to great advantage.

There is still another condition. When we come to study the drainage course of a storm water stream, it will be found that the principal flood stream is several or many miles in length, and into this, lateral streams discharge their share of water. It is rarely the case that a reservoir can be successfully maintained along the course of a principal drainage line.

Rainfall comes in a very irregular way. We have gentle showers and terrific storms. If the waters would fall from the heavens regularly and systematically in gentle showers, they could be controlled by irrigation works with little expense, but the fall of water is excessively variable, and sometimes great storms come, and these great storms must be taken into consideration. The floods of great storm waters can be controlled only at an enormous expense. Mighty dams must be constructed or they will be destroyed, and

the expense of such structure is too great a tax on agriculture. Usually you cannot go into a great storm water ravine and control it successfully. Often in one single storm more water falls from the heavens than in all the rest of the year, and it is this mighty flood that must be controlled. Experience has taught an important lesson in this respect. The reservoir sites must not be selected along the course of such principal channels, but in some lateral ravine, valley or other depression; then the water of the greater ravine must be turned from its course by a low diverting dam, or a number of low diverting dams, and carried in canals to the reservoir site. A diverting dam is not expensive, and if a great storm carries it away it can be replaced, and where the topographical conditions are favorable and the materials necessary are cheap, every such dam can be constructed so that when the storm comes in its greatest power the excess of water may flow on and not destroy the works. By constructing the reservoirs in lateral depressions out of the main channel two ends are secured. First, the reservoir itself can be cheaply constructed and still be safe; second, the flood waters can be discharged of their coarse sands. With some exceptions which I cannot stop here to explain, as the conditions are intricate and much time would be required, it is found necessary for the utilization of storm waters that lateral reservoirs should be constructed.

There is still a third fact that requires careful consideration. When reservoirs and canals are first constructed they are not water-tight. The water seeps through their walls into the adjacent soil and is largely lost, and this is especially the case with storm water reservoirs and canals, so that for the first year or two the constructor of such works will often be disappointed. He will not collect the quantity of water which he had anticipated, but in time the canals and reservoirs will become silted and made water-tight. When this is accomplished the maximum of success by capturing water through this method is reached.

There is yet a fourth consideration we have not noticed, which applies to all stored waters from perennial streams and storm streams, namely, the reservoirs must be as deep as possible in proportion to the area of their surface. If the reservoirs are shallow, they are comparatively valueless themselves, because the evaporation in dry regions is very great. Four or five inches may evaporate in one month, and this is just as great for a reservoir five feet deep as it is for a reservoir 100 feet deep. For the construction of storm water reservoirs most careful topographical surveys are necessary. First, the works that are constructed must be related to the catchment area. The larger the catchment area, the stronger must be the works, that the great flood may not destroy them. With a knowledge of the rainfall of the country, the engineer who constructs the works must determine the magnitude and power of the floods which are likely to occur. These floods do not come every year. The great floods are ten, twenty and fifty years apart, but when they do come they must be met, either by proper engineering conditions or by strong works, and the facts necessary for the construction of such works must be determined by irrigation surveys.

I have attempted to explain, in the simplest manner possible, how irrigation can be conducted in western Kansas, where the conditions are much like those of the great plains of the north and south, but where they differ in a most remarkable manner from the conditions that are found in the great Rocky mountain region, where the peaks are the prime condensers of rainfall; where the clouds gather and the storms fall and the snow fills the gulches. From these mountain heights creeks and rivers run, and the clear, cold waters of the mountain regions are the stores of moisture with which the valley lands are to be redeemed. These clear torrent streams are to be controlled, and lakes with clear, cold, emerald waters are to be transferred

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into reservoirs, and elevated mountain valleys are to have their outlets inclosed to become impounding basins for mountain streams, but in western Kansas and elsewhere in the sub-humid region of the great plains the streams from upon the hills and in the valleys where forests are not found, where sand hills are often discovered, and where fierce dry winds sweep the dust and sands from the plateaus, mesas and low benches of land, into valleys that are cut by intermittent streams, fed chiefly by the storm waters, every stream when it does flow is turbid with sands. Here also another condition prevails. The lands are in some seasons supplied with an abundant rainfall for agriculture, so that without irrigation there are years of plenty alternating with years of famine. All the lands are fertile, all the lands are rich, all the lands yield a bountiful harvest when the rainfall is bountiful; but the most fertile lands are parched with desolating winds when the air lacks moisture, and under these desolating siroccos vegetation withers and dies. When the torrid wind comes the farmer cries for help, and this aid can come permanently and from year to year only through the aid of irrigation. This device is not new to history; the oldest and greatest agriculture of all the world is carried on by its aid; the most extended industrial experience of mankind is connected with the control of water for irrigation. For many centuries, throughout various regions of the world, the rivers have been spread upon the land; waters have been stored in reservoirs; flood plain waters have been extracted from the sands and the soils, and rocks beneath the surface have yielded their fluid fertilizers. From all this experience recorded in the history of oriental nations, and in the traditions of South America, Central America, and by the principles that have been learned by the irrigation of more than 4,000,000 acres of land in the United States within the last few decades, much knowledge has been acquired, and we have learned how and to what extent artesian waters can be used; we have learned how and to what extent pump wells can be used; we have learned how and to what extent flood plain waters can be used, and we have learned how and to what extent storm waters can be used. From all this history and experience the irrigation engineer is entitled to expound certain great facts and principles which I have endeavored to set forth for your consideration in terms devoid of technicalities and in plain speech without exaggeration and devoid of literary or oratorical embellishment. I have tried to show the four chief sources of water—in artesian basins, in subterranean fountains of well water, in flood plain sands, and in storm-born streams. I have also tried to show their relative importance. I have tried to set forth the class of facts which ought to be discovered by a geological survey to be of practical value to the irrigating farmer. I have tried to set forth the matter in such a way as to give you no exaggerated idea of the extent to which irrigation can be carried on in western Kansas, and have told you fairly that I do not believe that more than 5 per cent. of the country can be fertilized by the agencies which I have pointed

out. I have tried to point to you some of the prime conditions that must be observed in the development of the water resources of the country. I hope that I have not wholly failed.

The lands in western Kansas that can be irrigated are in small tracts, scattered widely, usually through lands of great fertility that also can be used for agriculture by rainfall farming in years of plentiful moisture. Thus the agriculturist of western Kansas has a double resource. One by common agriculture, sometimes yielding great profit, sometimes failing; the other always yielding an abundant harvest.

Irrigation farming has peculiar characteristics. It is a higher and more scientific industry than rain farming; it succeeds only by what is known as intensive culture, or what is better described as scientific culture. To prepare the lands for farming great expenditures must be made for every acre, as hydraulic works must be constructed. When the works are constructed the waters must be delivered to the growing plants by the square yard; the soil must be carefully prepared and cultivation must be minute and thorough. To make such agriculture pay, such crops must be raised as will yield the greatest value per acre. The irrigated lands are better adapted to the growth of orchards, vineyards, gardens, hop yards, tobacco and cotton fields. The great valleys of the orient, as the Nile and the Po, are not more favorably situated than the valleys of Kansas, and the granaries of the plains can successfully compete with the granaries of the old world.

All the lands in western Kansas cannot be irrigated, and in no State or country in the world can more than 10 per cent. of the land be irrigated. The catchment area must always be at least ten times as great as the irrigated area. It must sometimes be twenty and even fifty times the irrigated areas, so that conditions in Kansas are much like those of other lands. When lands are once redeemed and placed under scientific management by the artificial utilization of water, most prosperous and bountiful homes are developed. Irrigation civilization must necessarily be of the highest character, and happy are the people who control the waters for themselves, and who do not supinely wait upon fickle laws of climate.

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*The possibility of the phenomenal success that has crowned the efforts of this medical association would have been deemed a chimerical dream a dozen years ago. From Chicago Globe's account of the World's Fair office of the Erie Medical Co.

Horse Markets Reviewed.

W. S. Tough & Son, managers of the Kansas City stock yards horse and mule department, report an unusually large number of buyers on the market with only an average run of horses. There was considerable inquiry for classes. Heavy draft seem to be suffering somewhat, as the Eastern trade is not as strong as it might be. The Southern demand is as strong as ever, and there are a number of buyers on the market with loads partially filled waiting for the coming week. Prices strong at quotations, and \$2.50 to \$10 higher on toppy, nice styled drivers and actors.

The mule market is comparatively active on all classes. Good miners, fifteen to sixteen hands high, are the most sought after. Flesh and quality bring the price.

Kansas City Stock Markets.

Our correspondent at Kansas City writes under date March 22:

"Our receipts this week 29,500 cattle, 43,600 hogs, 10,000 sheep, against 27,400 cattle, 47,488 hogs and 6,841 sheep the previous week; and 16,200 cattle, 29,600 hogs and 15,000 sheep same week a year ago.

"Our receipts to-day 2,917 cattle, 8,096 hogs and 1,862 sheep. Our markets on fat cattle are very bad. Yesterday and to-day were not only the worst days of the year, but decidedly the worst on heavy fat cattle for four years, very good fat 1,400 to 1,550-pound steers selling at \$3.75 to \$3.90, and would take something extra to bring 4 cents. Nothing sold above \$3.80 to-day and only one load sold at this price, weighing 1,587 pounds, while very good 1,300 to 1,350-pound steers sold at \$3.50. Light run of good heavy cattle here to-day. Good, straight young cows and heifers have held up better than steers and but little change in prices since last week. Bulls a little lower for smooth good ones; rough ones dull and lower. Stockers and feeders 5 to 10 cents lower than a week ago. Veal calves hardly as good as last week.

"Our receipts of hogs 4,000 less than previous week and prices only a shade better than a week ago; tops to day \$4.45.

"Sheep receipts have been over 3,000 more than previous week and market steady to a little higher, being 40 to 50 cents higher than the low time two or three weeks ago."

King of Veterinary Remedies.

Gombaults Caustic Balsam is known as the king of remedies, and every owner of a lame or unsound horse should not despair in effecting a cure until he has given this great stable remedy a fair trial. It has won its good name after some twelve years of exhaustive tests in the treatment of curb, splint, sweeney, capped hock, strained tendons, founder, wind puffs, skin diseases, thrush, pink-eye, etc., and to-day stands without a rival as a curative agent for the ills that equine flesh is heir to. The importers, The Lawrence-Williams Co., Cleveland, O., claim that it is safe and speedy in its effects, and guarantee that a single tablespoonful will produce more actual, honest results than a whole bottle of any liniment or spavin cure now on the market. Every bottle sold is warranted. Horsemen should see to it that the Caustic Balsam is included in their stable outfit, particularly during the coming hot campaign, when accidents are liable to happen at any moment, and when such a remedy may be needed for immediate use. Write for full descriptive circular, testimonials, etc.—Clark's Horse Review, editorial.

Initiative and Referendum Lectures

On direct legislation. For information and history, as well as plan for State organization, write to W. P. BRUSH, Topeka, Kas.

A Splendid Free Offer.

We have the best and surest remedy in all the world for the speedy and permanent cure of Dyspepsia, Indigestion, Biliousness, Constipation, Liver Complaint, Sick Headache, Nervous Debility, Rheumatism, and even Consumption in its early stages. We will gladly send a valuable free trial package postpaid to any reader of this paper who will send us his or her name and address. If it does not do what we claim the loss is ours not yours. Write to-day. Address EGYPTIAN DRUG CO., 29 Park Row, New York

NATIONAL DAIRYMAN. MONTHLY. \$1.00 PER YEAR.

Being replete with expert information upon all questions relating to the Dairy; Butter and Cheesemaking, under department heads, attractively arranged and beautifully printed on the finest plated paper, with elegant illustrations and timely comments, is easily the best Dairy paper published West of the Mississippi, and is the

LEADER OF ADVANCED THOUGHT

on all subjects of material interest to the Farming, Dairying, Breeding, Fruit-growing, and allied interests in the West. You cannot afford to be without it.

SEND FOR SAMPLE COPY, 10c.

National Dairyman Publishing Company, No. 19 Gibraltar Bldg., Kansas City, Mo.

DEHORN Your calves with THE JOHN MARCH CO.'S Chemical Dehorner. Six years successful. At Druggists or Proprietor, 17-19 River St., Chicago. The application of any other substance is an infringement of patent 476,877.

Gossip About Stock.

The sale of jacks and jennets, as heretofore announced by J. B. Vancleave, Lake City, Mo., took place last Saturday at Independence, Mo. The attendance was good and among the crowd of onlookers were many prominent jack-breeders, who, knowing the reputation of Mr. J. C. Vancleave, deceased, turned out and secured many of the choice individuals. Buyers came from Kansas, Indian Territory, Texas, Arkansas and Missouri. The prices ranged from \$400 to \$1,030, the seven-year-old Clinton topping the sale. It was apparent that those intending to breed for mules wanted matured jacks, yet five April or May, 1893, jack colts averaged \$165, demonstrating that with a good foundation jack-breeding was profitable. The forty head of imported Spanish jacks belonging to the firm, J. B. Vancleave & Bro., are on the open market and right good ones they are, too. No better could be found in Spain. Several of these went at private sale at very satisfactory prices.

The FARMER desires to call the attention of its readers, especially those engaged in the breeding of live stock, to the catalogue of Hereford cattle owned by the Messrs. Sotham & Co., Chillicothe, Mo. We are agreeably surprised in its method of presenting the blood lines of ancestry in tabulated pedigree. The line of argument presented appears unanswerable, and we believe will meet the approval of all who are interested in the breeding of pedigreed live stock. One of the several observations found in the introduction to the volume is, "The time has passed when loose methods, half-fed and no care engraft even a supposed merit in beef breeds. Practical stockmen now place a premium on well-bred, well-fed, well-cared for stock, and financial success in the cattle business is reached by those who intelligently apply these truths, whether in selecting breeding stock for the farm, ranch or range, or in steers for pasture and feed lot." Read their advertisement elsewhere in this issue for particulars concerning their coming sale. Send for catalogue.

Leather

gets hard and old fast enough; to keep it new and soft, use

Vacuum Leather Oil.

It saves half the money spent for leather. It's food and life to leather.

25c. worth is a fair trial—and 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.

CONSUMPTION SURELY CURED.

TO THE EDITOR—Please inform your readers that I have a positive remedy for the above named disease. By its timely use thousands of hopeless cases have been permanently cured. I shall be glad to send two bottles of my remedy free to any of your readers who have consumption if they will send me their express and post office address. Respectfully, T. A. Slocum, M.C., No. 183 Pearl Street, New York.

THE STRAY LIST.

FOR WEEK ENDING MARCH 14, 1894.

Greenwood county—J. F. Hoffman, clerk. STEER—Taken up by Wm. Barnhart, in Janesville tp., one light red steer, 1 year old, branded M on left hip.

Woodson county—H. H. McCormick, clerk. STEER—Taken up by Charley M. Smith, in Perry tp., P. O. Center Ridge, on February 17, 1894, one white steer, dehorned, nearly 3 years old; valued at \$18.

Wichita county—W. S. Place, clerk. PONY—Taken up by Wm. Watterson, in Sinn tp., P. O. Selkirk, March 3, 1894, one bay horse pony, 8 years old, marked UT on left shoulder; valued at \$10.

PONY—By same, one light bay mare pony, 8 years old, marked BX on left hip; valued at \$5. PONY—By same, one roan mare pony, 8 years old, marked BX on left hip; valued at \$25. PONY—By same, one bay mare pony, 9 years old, no marks visible; valued at \$20.

PONY—By same, one bay mare pony, 8 years old, no marks visible; valued at \$20. Johnson county—Jno. L. Lyons, clerk. 2 MULES—Taken up by Frank Geolbert, in Mission tp., P. O. Red Clover, January 27, 1894, two dark bay mare mules, 1 1/2 and 1 1/4 hands high; valued at \$25.

FOR WEEK ENDING MARCH 21, 1894.

Pawnee county—James F. Whitney, clerk. MARE—Taken up by A. P. Latas, in Grant tp., January 29, 1894, one black mare, white spot in face, fifteen hands high, 7 years old; valued at \$15. COLT—By same, one gray mare colt, 2 years old, thirteen hands high; valued at \$8. COLT—By same, one bay mare colt, 2 years old, thirteen hands high, long white spot in face; valued at \$10.

Hodgeman county—John L. Wyatt, clerk. PONY—Taken up by W. A. McAnulty, in Marensa tp., P. O. Burdette, March 3, 1894, one sorrel mare pony, four feet high, branded AA on left shoulder and bar on left hip; valued at \$15.

Get up a club for KANSAS FARMER.

CUT OUT THIS WORLD'S FAIR

Those of our readers who improved the opportunity of attending the WORLD'S FAIR will always remember it as one of the grandest privileges of their lives.

SAVE THIS COUPON.

It contains some things you ought to know. You ought to know that the World's Fair Management asked all manufacturers of Binders and Mowers to take their machines into the grain and grass fields, and by their work prove their claims. You ought to know that the manufacturers of McCormick Binders and Mowers promptly notified the World's Fair Committee that they would comply with this reasonable request. You ought to know that various other manufacturers of Binders and Mowers sent representatives to examine the grain and grass fields specified, and that these representatives reported to their respective companies that the condition of the crops to be cut was such that ordinary machines could not handle them. You ought to know that none of those manufacturers allowed their machines to go into these tests where they knew the McCormick Binders and Mowers would be at work. You ought to know that the World's Fair Judges said of McCormick Binders that they were simple and easily operated, and that their performance was in all respects thoroughly satisfactory. You ought to know that they said of McCormick Mowers that their draft is at least 20 lbs. lighter than the draft of ordinary mowers. You ought to know these things because you don't want to make a mistake when it comes to buying so important a farm implement as a Binder or a Mower. You want the best.

The Peristyle. The Court of Honor. The Golden Statue of the Republic. Administration's Beauteous Temple. The Colossal Manufactures Building. Transportation's Golden Doorway. "Midway's" Wealth of Orientalism.

WHO CAN EVER FORGET THEM?

Or who can ever forget the proud distinction achieved by McCormick Binders and Mowers? Who can ever forget that the McCormick received the highest awards given for any make of Binders and Mowers, and that in the regular field trials they earned the only honorable mention for grain and grass cutting machinery?

Write to the MCCORMICK HARVESTING MACHINE CO., CHICAGO; or, better yet, call on your nearest McCormick Agent.

The Zephaniah Breed Weeder and Cultivator.

We to-day present to our readers an illustration of one style of "The Zephaniah Breed Weeder and Cultivator," which is creating so much interest in the minds of the farming world. They are the result of eight years' of experiments by Mr. Breed, who is a well-known farmer among the hills of New Hampshire, and it seems as near perfect in its work as a machine can be. We are assured not only by the manufacturers of these tools, but by those who used them last year (which was their first upon the market) that by using them according to directions the owner has no need to hand-hoe his crops at all, but that the crops are finer than those grown in any other way, and the fields are kept entirely free from weeds, or so nearly so that a single handful cannot be found on an acre late in the season. One reliable gentleman informs us that with one of these he took the entire care of two acres of corn planted on sod land in just eight hours' time between planting and cutting time. And he adds that he had a fine crop and scarcely a weed could be found the last of the season.

That they are a perfect success is shown by the fact that they met with a large sale last year in every State east of the Mississippi river and north of Mason and Dixon's line, also in eight other States and in Canada. They were warranted in every case to give perfect satisfaction or the purchase money would be refunded, but as yet the company has not been asked to refund one cent for any reason whatever. They are adapted for the cultivation of all farm hoed crops, including all the vegetables. This statement may sound strange,



but the circular gives ample proof of its correctness.

We believe that in the use of this tool every farmer will find that which he has so long wished but hardly hoped for, entire relief from the drudgery and hard work consequent upon growing hoed crops. The manufacturers, the Z. Breed W. & C. Co., No. 26 Merchants Row, Boston, Mass., issue a copiously illustrated and very interesting circular, which they will be pleased to send to all those who will send them their names. In it are found strong testimonials from gentlemen with a reputation in their own States if not throughout the nation. All speak of this implement in the highest terms of praise. One New York farmer says it saved him its price in one day. A Massachusetts farmer says he would not do without one if he had to pay \$500 for it.

In conclusion we feel like urging upon our readers to avail themselves of the use of this implement and thus rid themselves of such a vast amount of hard work as has heretofore been expended upon hoed crops and which is now rendered entirely unnecessary. These tools are made in a variety of sulky, walking and hand machines, and the prices are very reasonable when compared with the great good they accomplish.

Refitted and R. G. Kessler, Managers.

Armourdale Hotel,

Kansas City, Kansas. \$1 and \$1.25 per day. Five minutes ride on electric cars from Union Stock Yards.

Every One!

A GRAND PREMIUM FREE TO YOU.

Any subscriber who will send us one new subscriber for the KANSAS FARMER for one year and one dollar, can have his choice of selection FREE of any one of the following, or as many selections as equals the number of subscriptions sent:

- NO. 1. The Home Magazine contains the news of the Capital, the Reminiscences of its editor, Mrs. John A. Logan, and various departments devoted to the interests of every house-keeper. The illustrations and reading matter are of the highest order. The circulation of this well-known magazine is 360,000 copies monthly. NO. 2. "Dairying for Profit, or the Poor Man's Cow." Indorsed by all dairy people as a practical little book needed by every one interested to any extent in dairying. NO. 3. The F. A. & I. U. and Helping Hand, a monthly journal devoted to all Alliance matters. NO. 4. The Western Poultry Breeder, published at Topeka. Price 50 cents a year. NO. 5. The Fanciers' Review, an Eastern poultry journal (monthly). Price 35c. a year.

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We are manufacturers and sell direct to Corporations and Property Owners, in bulk, thus saving cost of package, also saving agents' commissions. We give references from those who have used our Paints for years, including corporations and property owners in every section of the U. S. They are used extensively by railroads, and elevated railroads in New York, Brooklyn and Chicago. Also by U. S. Government, and corporations in general, for the painting of their plants. They are the Recognized Standard for Quality. Satisfaction guaranteed. They are specified by Architects and Engineers. Sold in any quantity, from 1 gal. upward. Write for samples and prices. NATIONAL PAINT WORKS, Williamsport, Pa.



HORSEMEN!

Try Dr. Orr's Veterinary Remedies.

Tonic Cough Powder, for cough, distemper, loss of appetite, etc. Pounded, by mail, 60 cents. Tonic Worm Powder, for expelling worms and toning up the system. Pounded, by mail, 60 cents. Ready Blister, for curb, splint, sweeney and all parts where a blister is indicated. By mail, 50 cents. Magic Healing Powder, for sore necks, collar galls, etc. By mail, 25 cents. Remit by postal note to S. C. ORR, V. S., Manhattan, Kas.

Get up a Club for 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.

Indian Corn.

The stormy winter had not fled
 That saw New England born,
 When white men ate the red men's bread
 And called it "Indian Corn."
 It came, a blessing in distress,
 To that poor pilgrim band,
 Like manna in the wilderness
 Sent down by God's own hand.

They sowed its yellow kernels on
 Their hills and valleys new,
 And harvests green as Lebanon
 And rich as Egypt grew.
 Its gardens were Hope's dwelling place,
 Its stock was Plenty's tree,
 It fed the millions of a race
 That spread from sea to sea.

And now where Freedom builds her nest
 And rears her eagle brood
 The heart-beats of each patriot's breast
 Bespeak that stalwart food.
 No dainty feast for pampered kings,
 No sweet for glutton's spoil,
 Its strength a nation's sinew strings
 To deeds of glorious toil.

Bring cakes of Scotland's oatmeal gray,
 And German barley brown,
 By all the rye of Russia, lay
 The wheat of Egypt down,
 And pour the rice of East and South
 From Almathe's horn—
 Their savor will not tempt the mouth
 That knows good Indian Corn.

No seed where labor is not free
 Can yield such life as yonder
 The golden grain of Liberty
 That crowns Columbia's fields.
 We love the bread that saved our sires
 When hungry and forlorn,
 And every autumn feast inspires
 Our praise of Indian Corn.

Though men of monarch-ridden lands
 On thinner fares may thrive,
 They miss the fruit of sun and sands
 That keeps great hearts alive;
 And, foe to tyrants, kin and kith,
 A Samson stands unshorn
 In Saxon power and Yankee pith
 That grow with Indian Corn.

Its mark is on Invention's Age,
 The force of high empire
 To brawny smith and brainy sage
 Its wealth alike supplies
 Its nurture alien souls indebted
 And cures disloyal scorn,
 And anarchy its rage forgets
 When fed on Indian Corn.

Mondamin! Ceres of the West!
 Along the winds of fame
 That whisper from that queenly crest
 Thy sweet barbarian name
 Come voices of Arcadian peace,
 And from historic morn
 Sing all the shaggy fields of Greece
 A song of Indian Corn.

Thou emblem grain, our civic plant!
 In zone of sun or snow
 Where prairies roll or mountains slant
 In rustling beauty grow.
 Thy plume our nation's flower shall stand,
 And on her bosom worn,
 Shall shine, the standard of the land,
 Our golden Indian Corn.
 —Theron Brown, in Youth's Companion.

WOMEN IN FARMERS' INSTITUTES.

We hear much about the very great good which results from the gathering of farmers in various meetings, especially in farmers' institutes. We know how the interchange of ideas—the experiences either for success or for failure, the method used for raising some particular crop on upland or bottom—not only helps that man who tells his story, by making him exact in his statements, but helps his neighbors by giving them definite knowledge as to his work, while they, knowing by observation just the amount of success he has achieved, know how much faith to put in his story and whether to follow his advice or not.

A farmers' institute is supposed to be for the farmer's whole family; and to no one in the house should it come with more help and cheer than to the farmer's wife and daughters. One of the reasons why women grow old and die before their time on the farm; one of the reasons why women from the country, in spite of the fresh air and wholesome food, fill the larger part of our insane asylums, is because they stay at home too much. They do not get out enough to have thoughts outside their immediate tasks. Some one has said "When one's thoughts become narrow enough, we call him crazy and shut him up." Bounded by the four walls of a Kansas kitchen, what wonder we find many women from Kansas farm homes in our "hopeless wards!"

The farmers' institute is a place to help the farm women into wider thought. It is the place where the women should learn to tell their own experiences and listen to their neighbor's experiences. It is the place where every woman should hear something that will make her home brighter and better. One reason why the young people of the farm look with longing eyes toward the town is because the farm home is not what it should be; and all the helps the women can get out of the institute will go toward the betterment of the home.

The women of the farm usually know most about the butter, the chickens, the vegetable garden, if there be one, and the

experiences each one can give will help every one of her neighbors; for two heads are always better than one.

Nearly every woman in a neighborhood has some specialty. One makes better bread than any one else, another raises the finest turkeys, a third grows the most thrifty house-plants, and still another dresses her children in the prettiest manner. Now if each woman will write out her method of doing this work which she does better than any one else in her community, read it to the assembled women, and be ready to answer any questions that may be asked, she will help the whole institute; and every woman can do something to help in this matter.

There was a time when the woman who learned to do good work in any line gained her knowledge by the hardest kind of personal experience. That day has gone by. We have helps in every kind of work for all classes of workers, and one of the duties laid upon each member of a community is to be as helpful as possible in every direction. "No one liveth to himself alone," and whoever can do the best piece of work owes it to her neighbors to tell them how she does it that they may improve upon their own methods.

The better every task is performed in any community, the better people will there be, and the higher will be the standard of citizenship. There is always plenty of room for good work in the world.

The cheery woman who is ready to tell her neighbor all she can about her best piece of work, who can learn from every neighbor she has some helpful lesson, is the woman who not only makes an institute full of life and pleasure, but who carries away something to put into her home that will help it to be more attractive to every one who comes through its door. After all, that is what women want more than anything else—help and guidance to make their homes what they should be—and the institute is one of the best of places for women to get that very help from each other. Institutes without the voices of women are like homes made by men alone. They can be, perhaps, but we don't any of us want that kind! When the farmers' institute is recognized by the farmer's wife as belonging to her in as great a degree as it belongs to any one else, then will it accomplish its full purpose; for it will not only reach out to help on the farms, but it will have an influence upon the homes which will make them grow better year by year. The women of Kansas are needed in the institutes; and as they come in and help in this work they will find themselves strengthened, brightened and cheered. Farmers' institutes are for the whole of the farmers' family.—Mrs. Nellie S. Kedzie, in Industrialist.

"Home Rule."

St. Patrick's day is not responsible for my theme. Visions of Emmet, O'Connell or Parnell do not come before me as I write; but a small, rebellious type of Young America—maybe an imaginary one, and maybe not, has made me write to express a few thoughts upon "Home Rule."

"When I get big I'll do just as I please." Will you, my boy? And now that you have grown large and tall and of age, are you still of the same mind? If so, your wisdom has not grown with your years—you have not "put away childish things"—unless you always please to do right. But if to "do as you please" means to do as you wish, without regard for the rights or wishes of those who must live with you, your case is a trying one to those whose duty it is to maintain home rule.

When a man is elected to office, or when he is given command of "many things," he has "grown big" and can "do just as he pleases"—or can he? Well, if he does do just as he pleases, without reference to law, in these days he is impeached—turned out, as it were. In olden days he was called a tyrant and was endured with hatred by the oppressed ones. So now, a man who is permitted to abide in his high place must be law-abiding and wise in the degree that he looks after the well-being of all—not himself alone.

But you are the necessary oldest son or oldest daughter in the family, and can't be turned out, and because you are yourself and not one of the younger brothers you must have the privilege of becoming a petty tyrant, and no one must dispute you. Perhaps no one does, for fear of "civil war," but perhaps some one does, and an equally unpleasant state exists.

Now, if you could only realize that your importance diminished in the same ratio in which your self-importance increased, and that the necessity for your presence in the home was also lessened, you would stop to learn the Golden rule and apply it as you seem never to have done. That younger brother of yours, with his quiet, unobtrusive ways and humble self-opinion, is filling a larger and larger space every day in the household. Don't let him play Jacob to your Esau. But he doesn't want to do so; neither is the mother of the family acting the part of Rebekah, though it rests her to have "Jacob" come near her with his

easily-satisfied wishes, after she has been worrying over the fact that "Esau's potage" never pleased him.

Some day when "Esau" goes away to become lord and master of some new home, she will involuntarily sigh the relief she feels, though she will be sorry the next minute that it must needs be such a relief to have him go.

Is there no remedy for such a growing evil?—for a habit of mind will grow without some counter-balancing power. Some one has said that it is a good thing for a young man to go out into the world to be knocked about in order to get rid of some of his self-importance or conceit. The fond parents shrink from such a heroic remedy, fondly hoping that time and greater wisdom will work the cure so earnestly coveted; but "sparing the rod" works adversely, and the time will come when the regret will be that a wiser, though firmer, course had not been followed. A home where necessity gives only dinners of herbs and all things else to match is a happier one than the one where more sumptuous things are provided at the cost of peace and quietness—the peace and quietness which comes from a Golden home rule. PHEBE PARMELEE.

More About Coal Oil Stoves.

Some one has asked to have reports about coal oil stoves. Some years ago I had the use of a coal oil stove with two burners. It baked to entire satisfaction, and we could prepare anything on it that could be cooked or heated on two holes of any cook stove. Didn't use it long enough to compare cost with other fuel. The one and two burners for boiling, frying and ironing are far in advance, both for convenience and economy, of heating up a common cook stove for the same work in summer or winter. "But it costs so much," some one may say. Costs what? Why, money. My friend, is there nothing of value in your family but money? There are very few farms where the mistress does not have more work under her care than she can possibly perform? And if the labor and time of preparing the family food can be lessened one-fourth, and the time and vitality formerly expended in that way devoted to other departments, there may not be any money loss, but comfort and happiness in seeing every part of the household machinery come up on time and in order. There are few if any women, who, being over-fatigued and over-heated getting three meals each day, to say nothing of extra days when they have to be in the kitchen half or all the day, can meet their families with the pleasant face and happy smiles the children delight to see. By using gasoline or coal oil stoves, we do away with at least one-fourth of the labor and all of the disagreeable feelings occasioned by the heat of coal-heated cook stoves. Your old aunt can go into her kitchen and prepare a dinner on her gasoline stove, of vegetables, meat, coffee, etc., in one-half the time she can make the fire and accomplish the same with the coal stove. Can do the baking in one-third of the time, and when the work is done turn the flame off and the heat and expense stop. In the stove, we have it hot and full of live coals that will keep the room warm for hours.

If there is any reader of the KANSAS FARMER who has not got a gasoline or coal oil stove, he will never regret getting one immediately, if he has to use his old plow one year longer. It may take a time to get so you can use it to the best advantage, but anything that will save the strength and health of the mothers of this nation will meet with the approval of your AUNT POLLY.

Didn't Like the Job.

In a Yorkshire village there lived three brothers, bachelors; the only other inmate of their household was a housekeeper. The brothers, returning home to dinner one day, found the housekeeper missing. On making inquiries they discovered that she had that morning married a farmer who lived near. It was evident there was no chance of getting back their runaway housekeeper, and equally so that they must have some one to manage their domestic affairs.

The elder brother said that the best thing would be for one of them to marry, but, he added, "I shall not be that one; I am too old to marry."

"Nor I," said the second one, who considered himself something of an invalid; "I shall never think of marrying."
 "Ah!" said the younger brother, "I see what you are driving at. It is just what I expected—if ever there is a nasty job to do, it is always left for me."

There is nothing so good for burns and frost bites as Salvation Oil. It effects a speedy and permanent cure. 25 cents.

Pond's Business College,

601 Topeka avenue, Topeka, Kansas, has turned out the best business writers, the best book-keepers, the most successful business men. On these three points their past record stands 25 per cent. above any other business college now running in Kansas. Any farmer's son can get a full business course here for only \$30, or three months \$15.

IVORY



FOR CLOTHES

THE PROCTER & GAMBLE CO., CINCINNATI, O.

Dr. Thornton & Minor,

Bunker building, Kansas City, Mo., the well-known specialists in the treatment of all rectal troubles, have established a principle in connection with their ever-increasing clientele that is well calculated to inspire confidence in their integrity and ability to perform to the last degree that which they promise when assuming to cure their patients, and that is, they decline to accept a fee until they have clearly demonstrated that a cure has been accomplished. Thousands testify to the efficiency of their treatment. Another specialty of theirs is diseases of women, and of the skin. Beware of quacks. Ask for their circulars, giving testimonials of leading business men and high officials—they contain special information for the afflicted. Address, DR. THORNTON & MINOR, Bunker Building, Kansas City, Mo.

If Grown in Texas, It's Good.

The Texas coast country vies with California in raising pears, grapes and strawberries. The 1898 record of H. M. Stringfellow, Hitchcock, Tex., who raised nearly \$8,000 worth of pears from thirteen acres, can be duplicated by you. G. T. Nicholson G. P. A., Santa Fe route, Topeka, Kas will be glad to furnish without charge an illustrated pamphlet telling about Texas.

A GOOD BROTH IS HALF A DINNER

EVERY ONE can afford to use Clam Bouillon for Lunch, Dinner and Tea at 20 cents a quart. Enough for a whole family. Prepared in five minutes from a bottle of

BURNHAM'S CLAM BOUILLON

Quality improved, price reduced, larger bottles. All Grocers sell it.

E. S. BURNHAM CO., 120 Gansevoort St., N. Y.

Sample bottle, 10 cents; makes a pint.

"When millions affirm that

Beecham's Pills

(Tasteless)

are the great remedy for Bilious and Nervous Disorders, it becomes almost a duty to give them a trial.

25 cents a box.

The Young Folks.

A Mother Song.

O mither, sing a sang to the bairns,
 When the nicht-fa' gath'rs them in;
 Wee Jamie oot at his elbows an' knees,
 An' Rab half-wat to the skin;
 Tam skelpin' about wi' his buits fling aff,
 An' loupin' wi' a' his nicht—
 O mither, sing a sang to the bairns
 Ere they cuddle doon for the nicht.

O croon them a lilt as they hunker roun'
 The fire fu' o' daffin' and glee—
 While Jennie wi' her doll in her lap
 Lays her heid against your knee.
 She will lilt the same to her ain bit weans
 When your heid is aneath the eaward,
 An' you sleep fu' soun' wi' your kith and kin
 Where they lie in the old kirk-yard.

An' Rab an' Jamie, an' steerin' Tam,
 When they a' grow up to be men,
 They will wan'r to a' the arts o' the win'
 To fecht for their bread an' to fen',
 An' aye in their heart, though the faucht be sair,
 An' the warl' is no lookin' richt,
 They will hear the lilt that you sang lang syne
 Ere they cuddled doon for the nicht.

They are a' roun' your knee, an' their mirth an'
 glee
 Is unco sweet to hear,
 An' your heart fills up wi' a mither's pride
 As you turn to hide the tear.

There are rough ways yet for their feet to gang,
 But, noo, let a' be bright;
 Then sing them a lilt o' the sangs they like
 Ere they cuddle doon for the nicht.

—Alex. Anderson, in *Scottish-American*.

FLOWERS, SHRUBS, ETC.

SUPPORTS FOR POT PLANTS.

Rods of thin metal are now made in Germany to be used as substitutes for sticks in supporting plants grown in pots. They branch out below into several slender feet, so that they are easily fixed in an erect position, and as they are hollow throughout it is said that water may more advantageously be applied by pouring it into their tops than by applying it directly to the surface of the soil.

ENRICHING ROSE BEDS.

Mr. J. N. May writes to the *American Florist* that as the days are growing longer and the roses are making active growth and show the need of more food, a thin mulch of ground bone spread thinly over the surface of the soil at the rate of twenty-five or thirty pounds to a house 100 feet long and twenty feet wide, will be found more satisfactory than liquid manure. Half an inch of well-decayed manure should be placed over the bone, and every time the plants are watered a limited amount of food material will be carried to the roots, and they can assimilate it more readily than if they received it in stronger solutions at rarer intervals.

FERTILIZATION OF PLANTS.

In a recent communication to the Academy of Natural Sciences, Philadelphia, Dr. Benjamin Sharp described the Hawaiian custom of artificial fertilization of plants practiced until recently. It seems when the American missionaries settled in Honolulu they brought pumpkin seed with them and planted it. It was observed that it never came to perfection, as the insects which would naturally fertilize the plant were not acclimated to Hawaii or had not learned their business. It was, therefore, made a regular part of the school duties at Honolulu for the children to be provided with a stamen of the pumpkin flower and go about the vegetable garden attached to the school and touch with it the pistils of the flowers. The Chief Justice of the islands and other inhabitants corroborated the statement. Since the insects are now educated up to their work the school children's custom has been discontinued. Dr. Sharp also called attention to a similar custom which obtains in the Island of Reunion, where a heavy crop of vanilla is raised. The vanilla plants are set close together to facilitate artificial fertilization. It is said that one native can fertilize 1,000 plants a day in this manner.

CANDYTUFT.

This is an old, popular, hardy annual that any one at all conversant with flowers is acquainted with. It is the same flower now that it was 200 years ago, the improvement in its general character being very slight. Although the candytuft grows so freely that it is not considered necessary to give it any particular care, yet it appreciates a little extra culture, as those who take a plant or two for extra good treatment will be fully aware after the trial. A little manure water occasionally, with a thorough softening of the soil around the plant and a thinning out of the too numerous clusters of buds, will produce heads of flowers three to four inches across. The candytuft is a perfect treasure for cutting purposes, either to make up in bouquets or to fill vases, especially the white varieties, because the white is so pure and because by sowing a little patch at different times flowers may be had for a lengthened period. Within a few years some varieties with new colors have been produced, so that now, besides the old standard white and purple, we have shades of lilac, such as rosy lilac and bluish lilac and very good crimson and carmine. Seed should be sown where the plants are to bloom as early in the spring as possible.

—*Cleveland Plain Dealer*.

FLOWERS LATELY INTRODUCED.

The Queen Charlotte canna is claimed to

be the finest of the improved cannas. It is of German origin, grows about three feet high and the foliage is of a bluish green tint. "The enormous flower spikes towering grandly above the foliage bear beautiful bouquets of large flowers of perfect form, with petals of a velvety grenade blood-red, broadly banded with the brightest canary yellow." It took the first prize wherever offered in Europe last year.

One of the finest plants of late introduction is the Blue Solanum. It is robust and will soon cover a porch with beautiful foliage. In mild localities it is covered during the late summer months with hundreds of clusters of large, lavender-blue, wistaria-like flowers, brightly set off with golden stamens, each cluster measuring fifteen inches in circumference and often attaining a length of twelve inches. The flowers are succeeded by bright scarlet berries, remaining perfect for a long time.

The Alpine aster is a new, hardy and beautiful perennial, which blooms the last of May and first of June. It is a dwarf grower, from seven to nine inches high, and sends up numerous stems, bearing daisy-like flowers about two inches in diameter with violet or sky-blue rays or petals and a yellowish disk, colors which are a pleasing combination. The flowers are graceful in form, excellent to cut for vases or for personal adornment. The plant appears to advantage when grouped in a mass or set as an edging or planted in rock work.

Among the carnations the Edna Craig is a novelty, in a lovely shade of soft light pink, on large and stiff stems. It is a vigorous grower and a free and continuous bloomer.

The California poppy grows about a foot high, with leaves of a grayish green color, finely cut and divided. The large, handsome flowers, two inches or more in diameter, are yellow, orange and white, and are produced in great profusion all summer. Plants of easy culture. Seeds can be sown where the plants are to bloom. It is an annual.—*Pittsburg Times*.

The Social Life of a Farmer's Daughter.

There seems to be a queer idea prevalent among our city sisters concerning the life of a farmer's daughter. To some, she is simply an unintelligent, uncultured and unsocial being, created merely to be somebody's work girl. To others, she appears as a coarse, brown-faced maiden, and not fit to move in "high society," even though she be intelligent and cultured.

Perhaps in some cases these are correct impressions, but a farmer's daughter, even though she be a maiden with a nut-brown skin, should have every advantage that will bring forth any hidden talent; that will develop within her all that pertains to a noble and perfect womanhood. She cannot properly develop mind or body unless she have social intercourse with her fellow-beings in



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some way, and which is the best way to obtain this, she must decide upon. She may have many ways or one way. She may invite to her home companions who will influence her to strive to lead a useful and unselfish life, and to seek a knowledge of those things that will make life beautiful to her. Her friends should love poetry, though they may never compose a rhyme. If she cannot have such friends, she should find other companionship in books and music.

Her books should be chosen as her friends are chosen. Those books should be read that will broaden and deepen her intellect, make her acquainted with the outside world, and indirectly bring her in contact with people whose ideas may be of great help to her.

She should certainly have her music, for what is home without music? It is to the home almost what sunshine and rain are to the drooping plant.

There she can have her pets, and she surely has her choice from the orphan calf down to the little black dog with yellow spots over his eyes, or the canary bird which fills the house with melody. But the farmer's

daughter need never lower her womanly nature by cruelly imprisoning the wild birds, thereby robbing nature of an important member of her orchestra.

The calf, however, is as close to the barnyard creation as a farmer's daughter wishes to come. Don't make her milk, but rather let her vent her energy in the flower or vegetable garden, where she is brought in closer union with nature, and what can better fill one with a deeper love for the good and beautiful than association with the pure children of nature? The life of a farmer's daughter should not be all work, but a combination of work and pleasure, and such of each as will make her understand there is something noble to live for. Then the whole world will surely be to her a world of sunshine.—*Grace A. Sequest, in Industrialist*.

There is no reason why one should have a cough any length of time. All that is needed to allay soreness of the throat or to free the bronchial tubes from irritating mucus is Ayer's Cherry Pectoral. It is a wonderful cough cure, and should be in every medicine chest.

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There are intimations that the outlook for Russia's next wheat crop is unsatisfactory.

The Australian estimate is that from that country's recent harvest nearly 18,000,000 bushels of wheat will be for export.

The visible supply of wheat in the United States is now decreasing rapidly—about a million and a quarter bushels a week.

It is reported that some of the farmers of Minnesota are putting in only one-third as much wheat as last year on account of the very low prices.

Our subscribers are requested to examine labels on their papers and if they show subscription to be due, please remit us \$1 and tell us to send you a copy of "World's Fair Views" or "Holy Land Photographed."

The world's visible supply of wheat, as tabulated by Beerbohm, and quoted by the Cincinnati *Price Current*, shows the following totals, for three years, representing bushels:

	1894.	1893.	1892.
January 1.....	198,872,000	195,672,000	175,200,000
February 1.....	199,544,000	190,544,000	168,400,000
March 1.....	197,176,000	189,304,000	161,536,000

The KANSAS FARMER learns that some of those who accepted the invitation of one Henry B. Clifford; of New York, to send for free sugar beet seed, have received no reply to their requests. If any have results to give, the editor will be pleased to hear from them.

Our offer is still open to send free to any subscriber one number of the series of World's Fair Views" or one number of the series of "Holy Land Photographed," who will send \$1 to this office for a subscription for the sender or any one else named. In sending, however, name the one you wish to have sent.

The late cold snap is reported to have done great damage to fruit from the Missouri river eastward to the Alleghany mountains. Opinion is divided as to the probable damage in Kansas and Oklahoma, but it is thought that apples are yet safe and prominent orchardists in the peach belt affirm that there will be plenty of later blossoms to make a crop.

The *Mark Lane Express*, London, says: "The value of wheat is less than ever. On the 25th of March last, the average price of British wheat was 24s. 8d. per quarter, which was the lowest figure recorded this century. Last week the average was only 24s. 5d. Where is the bottom? And when will it be reached? Unless a change takes place growing wheat will be abandoned in this country."

THE FOOD-PRODUCER'S ADVANTAGE.

The reports of the commercial agencies still have a doleful sound. There are, however, undoubted indications of some revival in the West. But the headquarters of the agencies are in the East, and to them depression in the East is synonymous with depression in the entire country. Among the favorable indications in the West may be noted the fact reported by loan companies that interest was never more promptly paid than now. The further fact that many mortgages are being paid off is a subject of comment by Eastern holders.

The disadvantages arising because of low prices for farm products are remarkably offset by the corresponding low prices of what the farmer has to buy, so that the farmer who is out of debt finds a shrinkage in the nominal sum of his transactions the most notable feature of the situation. The superior position of the producer of food supplies has seldom been more distinctly manifest than now. Many people are doubtless eating less than in prosperous times and the total amount consumed is thereby considerably decreased, but people must and do eat and their supplies must and do come from the farms, so that there is a demand for food supplies. Prices are low but a demand exists. The demand for every other commodity may be, has been and is greatly curtailed—partially suspended until more prosperous times arrive.

The superiority of the food-producer's position in having in the productions of his own labor the first essentials of continued existence and in having for sale commodities which all others must obtain from him, even in the dullest times, is receiving recognition in the East and is having its effect in turning the attention of people of the East to the desirability of homes and occupations on the food-producing lands of the West. As has been the case on occasions of former depressions the reaction is likely to be felt here first.

MEN IDLE AND FARM HANDS SCARCE.

A successful Shawnee county farmer stated, a few days ago, that he did not believe that the time had yet come, in this country, when a man who is anxious to work and willing to work for such wages as the present low prices of household supplies render living wages, cannot get plenty of work to do. In his view of the case, the attempt of laborers to hold up wages regardless of the returns which employers can realize from them is the cause of much of the present disturbance of industry.

It is proper to observe, in this connection, that this man came to Kansas, some years ago with a pair of willing hands, a stout heart and a brave wife. These constituted about all the wealth possessed. He now owns several hundred acres of farming land, abundance of stock and has several stout and willing hands to help, both in the field and in the kitchen. But his farms require in their tillage still more labor than the family can do, and the question of how to farm the land turns on the point of hiring help at such wages as present prices will warrant, or seeding down to grass and thus reducing the work to be done to such an extent that the father and sons can do it without hiring.

Another case was brought to the attention of the writer last fall when the seriousness of an oncoming winter and widespread lack of employment were engaging the attention of philanthropists. This was the case of a farmer who had a large amount of corn to gather, fences to repair and general preparation to make for his stock during the winter. So great difficulty had this farmer in securing help that it seemed likely that some loss would ensue for lack of it. A son had launched forth into the great world and was and is making for himself a reputation as a writer, and it is without hesitation that the KANSAS FARMER here predicts for him an enviable name and place in the world of letters. This son laid aside his writing for a few weeks and helped his father with the fall work.

But in discussing this case, the ques-

tion arose as to how much various tradesmen would have been worth to that farmer. At that time nearly half of the printers in Topeka were out of work. Could one of them—unless, perchance, he had been raised on a farm—have been worth his board in the corn field, at repairing fences, at building sheds or at caring for the stock? The case would have been scarcely better with the many shopmen who were then out of a job.

The mistaken idea has prevailed that little knowledge and no skill are necessary to successful work on the farm, whereas there is scarcely an avocation in which intelligence in general and skill in various operations are more essential than the work of the farm. It is, therefore, nearly impossible for the average man out of work to secure employment or to give satisfaction on the farm.

In discussing the wages of the farm hand, the Shawnee county farmer herein mentioned suggested that in view of his constant employment, his board, etc., he is enabled to make more clear money in a year almost than any other laborer.

But it is readily seen from the consideration of the facts of the case that it is quite possible that the farmer finds difficulty in securing efficient help and that at the same time there be many honest men out of work and unable to obtain it, as has undoubtedly been the case during the winter of 1893-4.

BUSINESS SITUATION.

The important facts of the situation as gleaned from the reports of Dun and Bradstreet are given below:

"Business grows larger in volume and at the same time not more profitable. Uncertainty does not diminish, but has rather increased, in the judgment of many commercial bodies. Prices of commodities do not rise, but are on the whole about 1.5 per cent. lower than last week, though then the lowest ever known in this country, and are 12.9 per cent. lower than a year ago.

"More mills are at work, though the proportion of productive force employed is still from a fifth to a third in different branches of industry, and many mills are stopping because their orders have run out, even while a larger number are starting with orders enough for a time. The starting of four furnaces by the Illinois Steel Company and one other at Pittsburg, increasing the output of iron, and some large sales have been made at the lowest prices yet reported with indications of continued demand for structural work and especially at the West. On the other hand, the demand for wire in various forms, which led the way to improvement, seems to slacken, and nails are said to be selling lower than ever, below 1 cent. A reduction of 60 cents in freights from Pittsburg to tide water is noted.

"The demand for cotton goods is fairly large, but with reduction in prices of some grades, and the accumulation of print cloths continues. A large auction sale of silks brought fairly satisfactory prices. Sales of wool for three weeks have exceeded last year's 23.9 per cent., though transactions this month last year were about 40 per cent. below the average. There is more demand for such wool as is needed in the manufacture of underwear, dress goods and worsted suitings, but fine fleeces are almost unsalable, Ohio XX being quoted at 22 cents and carpet manufacturers buy sparingly, though about half their machinery is active.

"Wheat, cotton and pork have declined a little, wheat making another record a shade below present 60 cents at New York. Western receipts are 1,578,379 bushels against 1,295,894 last year.

"Corn was a cent stronger with Western receipts 2,874,698 bushels against 1,953,322 last year. Cotton receipts from plantations are again larger than last year. The termination of the rebellion in Brazil opens a new crop of coffee, which is reported very large, but prices are as yet steady.

"Cattle are low abroad almost beyond precedent. The exports are retarded. "The continued shrinkage in the

total number of business failures each week is another feature of the situation; the total for the past week (one day short) numbering 197; against 231 last week, 202 in the week a year ago, 291 two years ago and 200 the third week of March, 1891.

FOREIGN VIEW OF THE WHEAT MARKET.

In its review of the wheat market the *Miller's Gazette and Corn Trade Journal*, of London, England, under date March 14, says:

"It is satisfactory to note that the signs of greater steadiness and confidence which we referred to in our last week's Review have still been manifest in the past week, during which, although there has been no general activity, there has at least been more disposition to buy, and an inclination to look upon the future of wheat at 20s. to 25s. per quarter with more of optimism than of pessimism. This is as much the case in America as in this country, since the offers of American wheat continue by no means pressing, and the prices asked are still relatively high. In the face of the unprecedented decrease in our stocks since November 1, to which we have drawn attention for several weeks past, it was certainly to be expected that holders would be more successful in their resistance to any further depreciation in values; and now that our stocks, in first hands, are within easy distance of what may be called a normal total of 2,000,000 quarters (having been 4,000,000 quarters four months ago), buyers may also be expected to act with greater freedom and confidence, although they have been so sorely tried during the past two years, that they may be well excused for continuing to err on the side of caution. The actual imports into the United Kingdom during the first half of the season (September 1 to March 1) have indeed been so small as to offer a striking tribute to the caution exercised by buyers during this period. The figures for the past six years we here give, by way of comparison; they are in quarters with 000 omitted:

	Imports.		Home-grown	Total.
	Wheat.	Flour.	Supply.	
1893-94.....	6,810	3,154	3,000	12,964
1892-93.....	7,317	3,527	3,600	14,444
1891-92.....	8,853	3,075	4,100	15,928
1890-91.....	6,727	2,545	4,800	14,072
1889-90.....	6,403	2,766	4,800	13,969
1888-89.....	7,317	2,416	4,100	13,833

"Here we find that the total supply in these six months has been about 1,500,000 quarters less than the average of the previous five years. One would have indeed to go back to the season of 1886-87 to find equally small supplies as in the present year; in that season the first half-year's total supply was 12,514,000 quarters.

"This abstention from purchasing forward has therefore improved the situation, in so far that it has removed the pressure of big home stocks. The stocks in America, Russia, and in the Argentine may be large, but there is all the difference in the world between stocks in sellers' hands and stocks in buyers' hands. The latter's necessity is the former's opportunity. But, apart from this, it is also a fact that the American visible supply is beginning to decrease rather rapidly, *Bradstreet's* returns for two weeks showing a diminution of no less than 3,700,000 bushels, while Russian shippers may be expected to be the less desirous to sell in presence of the unsatisfactory outlook for the next crop."

A correspondent in Meade county writes:

Will you please tell me, through your paper, how I can make a lawn the quickest way, around my house? I don't like this old dry grass for a house yard, and would like, if possible, to have a regular Eastern lawn. Will be able to water it from a well, if need be.

With plenty of water available, there should be little difficulty, even on the plains, in securing a fine lawn of blue grass or of mixed grasses. Let the yard be put into good condition by plowing or spading and harrowing and raking, leaving it in such shape that it can be readily flooded with water at a uniform depth of two or three inches. The seed should be covered thoroughly, and if the ground is very dry it should be watered. As soon as the surface dries a little after the watering, it should be raked fine or harrowed and

raked to prevent the formation of a hard crust and the theft of the moisture from the under soil. The surface may be kept from baking by copious and frequent sprinkling. After the grass is up it is only necessary to prevent the ground from drying and the lawn will prosper. The watering may be done either by flooding or sprinkling, but it should be thorough, so as to wet the soil to considerable depth. A dressing of well-rotted manure applied just after seeding or late in the fall or during the winter following will have a good effect. The writer succeeded well, some years ago, in Rice county, in making a lawn of Kentucky blue grass and white clover by using the methods here suggested.

"AGRICULTURAL DEPRESSION; CAUSES AND REMEDIES."

No official report of recent years has attracted so much attention or created so great a demand for itself as has that on Agricultural Depression by the sub-committee of the Senate Committee on Agriculture and Forestry, from which brief quotations were made in these columns last week. Almost immediately after the usual edition had been printed the great value of the work, its thoroughness, comprehensiveness and accuracy were recognized and the call for copies from Senators and Congressmen, as well as the demand from students of economic questions in all parts of the country and in every avenue of life, made necessary another and larger edition.

It will not be forgotten that when Senator Peffer proposed the appointment of this sub-committee, the usual gibes at everything with relation to agriculture were indulged in by many of the "smart" writers of the press. The other members of the sub-committee backed out and left the work almost exclusively to Chairman Peffer. Nothing daunted, the chairman pursued the work and made a perfectly non-partisan report of 156 printed pages, containing in concise and readable form such an amount of information as is rarely found in such space. The editorial writers for the entire country, without distinction of party, have joined in commendation of the work and are using the information presented for the benefit of their readers.

The report is a valuable one for every farmer to possess as a guide to the correction of his methods as well as a source of information as to causes of and remedies for the depression. We are not advised as to how many copies are obtainable, but think it well worth while for any farmer to write to Senator Peffer, at Washington, asking for a copy.

EXPERIMENTS WITH OATS.

Bulletin No. 42, Kansas Experiment Station, just published, describes the experiments of Prof. Georgeson with oats. It is a valuable bulletin and can be obtained by Kansas farmers free on request of I. D. Graham, Secretary, Manhattan, Kas. To briefly summarize a few of the results it may be stated that they favor:

As to preparation of land, spring plowing.

As to time of seeding, early. March 8, the first sowings, gave better results than those of any subsequent date.

As to hot water treatment for smut, favorable, averaging three bushels per acre better yield than without treatment.

As to grading seed for sowing, best average results obtained from heaviest seed.

As to method of seeding, best results followed use of shoe drill with press wheels.

As to amount of seed per acre, best results were from heavy seeding—four bushels per acre giving every year larger crops than any smaller amount, but two bushels and two and a half gave good yields.

In the test of varieties, "Pedigree Rust Proof" gave the best yield. This was followed by "Board of Trade," "Belgian," "Brown Winter," "Welsh," "Golden Sheaf" and "Whiteside," each of which averaged for three years above forty bushels per acre. Twenty-seven other varieties ranged from 39.99 down to 31.52 bushels per acre average for the three years.

GREAT ORCHARDING.

So far as known, the most extensive orchardist in the world is Judge Fred Wellhouse, of Topeka. He has about 1,700 acres in orchards in this State. Last week he planted 270 acres to apple trees in Leavenworth county. The stock for this planting was grown in his own nurseries and consisted of 25,000 two-year-old trees of only three varieties. These were proportioned as follows: Twenty-five acres in Jonathan, seventy-five in Ben Davis and 170 acres in Gano.

The planting was made in rows thirty-two feet apart and sixteen feet apart in the rows. The entire 25,000 trees were taken from the nursery and set in the orchard in three days by thirty men and the time from the lifting of a tree in the nursery until it was planted in the orchard was only ten to twenty minutes. The orchard ground was marked out by deep furrows both ways, the trees were planted in place by hand and enough soil placed around them to hold them in position and protect the roots and the remainder of the filling was done with the plow.

FRANCE NOT DEPRESSED.

The Boston Herald notes the fact that the French are the only people in the civilized world who have escaped the effects of the present otherwise world-wide depression. The Herald also recalls the fact that the mercuric Frenchmen also escaped the disaster of 1873, notwithstanding the fact of the immense war indemnity which had so recently been paid to Germany. Strangely and inconsistently enough the Boston paper attributes the prosperity of France in 1873 to the impoverishment of her people by this great payment, and likewise credits her present immunity from distress to the recent failure of the Panama canal scheme in which the French had invested heavily. The absurdity of these assumptions is immense.

The steady maintenance in circulation of about the equivalent of \$50 per capita of legal tender money has enabled France to successfully weather the monetary and industrial storms which have well nigh overwhelmed the financially less wise nations of the earth and to prosper in spite of rather than in consequence of heavy losses.

Climatic Changes--Rainfall.

EDITOR KANSAS FARMER:—The statement often appears in public print that our climate is changing; that the winters are growing much milder or much more severe; that our summers are hotter or cooler, and the question as to whether our annual rainfall is increasing or decreasing is discussed on both sides by men of ability. The latter question probably excites the greatest interest, for, with advancing civilization, the growth of wind-breaks in prairie countries and the building of better houses for man and beast, the matter of temperature is of lessening importance.

The question of rainfall must, so far as science can now inform us, remain a vital one to agriculture. Irrigation offers at best but local and limited relief from drought. Local, because of the topography of the country, and limited also by the water supply. The Arkansas river, for example, from which so much has been expected in the way of the redemption of western Kansas, has at some seasons about all it can do to irrigate its own channel. It means well enough, doubtless, but like many a would-be philanthropist, is short of funds.

The artificial rain-makers must be classed with others of our race who vain would get something from nothing. They cannot bring down moisture from a dry sky, and this is the sky that, unfortunately, covers Kansas at many critical periods.

The only practical solution of the problem of moisture for regions deficient in precipitation is to make the most of what we have. The building of artificial reservoirs has already provided for stock water where other means were not available, and gradually, as the tilled soil has encroached upon the prairie, there has been less loss by evaporation from the surface. When the soil is broken up so the water

may freely sink there is at once provided a future supply from which plants may draw sustenance during dry seasons. As the acreage of plowed land increases the tendency to floods is proportionately decreased.

This is not intended to be an enumeration, but merely a suggestion as to the methods to be pursued. The writer believes that for the greater portions of the "arid region" other drought cures are not practicable. As to the methods of cultivation best calculated to check evaporation, better farmers will be better authority.

But climatic changes? If they are promised for the better do not wait for them; if for the worse, do not fear them. Records cover too short a time to prove anything, or rather with a little ingenious juggling will prove anything to suit the juggler.

Kansas City, Mo. J. B. BROWN.

Publishers' Paragraphs.

A POINTER FOR ADVERTISERS.—Wm. Plasket & Son, proprietors of the Douglas County Nurseries, write as follows: "We have advertised in a number of papers, and the old KANSAS FARMER brings us more customers by far than any other."

Every one having any fencing to do and wanting a modern and economical and effective fence should write for a copy of "The Coiled Spring Hustler," which can be secured free by mentioning this paper and addressing Page Woven Wire Fence Co., Adrian, Mich.

Whether the House of Lords shall be abolished or continued as an elected upper chamber of Parliament is openly discussed in England. Mr. George W. Smalley, the New York Tribune's London correspondent, will contribute to the April Harper's his impressions of the Lords as a working legislative body representing public opinion in Great Britain.

Geo. B. Finch, of Boydton, Va., sent us an advertisement of "Wonderful Peas," but his copy made the last word look like "pear," and our types so spelled it. He now writes that he is deluged with letters from Kansas asking about the Wonderful Pear. He says, "Not pear but peas. I can supply a most wonderful variety." Please everybody note his advertisement and write him about peas.

One of the most timely publications is entitled "Injurious Insects," published by W. Atlee Burpee & Co., of Philadelphia. It contains formulas for all insecticides and directions for using them. The book contains over 200 pages and describes all insects injurious to plants, animals or people. Price 50 cents. If ordered from KANSAS FARMER office a discount of 10 per cent. will be allowed subscribers.

"A Fortune in Two Acres, and How to Find It," is the title of a little volume just issued by the Rural Publishing Co., New York. It was written by a man, who, with his family, found on this small area a good home, health, comfort and independence. The book is likely to interest the workingman who is out of a job more than the farmer in Kansas, who, as a rule, has more land than he can cultivate.

The special feature of the April number of the Chicago magazine of *Current Topics* is the thirty-five-page article of H. W. Taylor on the race question in the United States, under the very pertinent title "The Case of the Cracker." This stirring article reveals what has been only half suspected, that the result of the civil war and emancipation of the negro has by no means settled the negro question in the United States. This article should be read by every thinking American citizen, white or black. Single copy, 15 cents; \$1.50 a year.

The amount of money that our periodicals are willing to devote to "special features" is a constant surprise to us all. They spare neither time nor care in getting up attractive extras and holiday editions. One of the most attractive of these features of recent date was a prize offered by *Harper's Young People* to the boy or girl under 18 who should name the forty American heroes that would receive the greatest number of votes in a contest as to who were the forty immortal Americans. This created a great deal of comment at the time, and the same energetic juvenile weekly is now issuing, under date of March 31, a complete illustrated story, separately bound, as an Easter present to its subscribers. The story is called "Across the Range," and is written by the well-known author of "Toby Tyler," Mr. James Otis.

The *Literary Digest* for March 29 will be a notable number. Among "Topics of the Day" there will be papers on the "Nationalization of Railways;" "The Canadian Premier and the President of the United States;" "A German View of Socialism in America;" "The Elmira Reformatory;" "Sound Economics in Congress," etc. Under "Letters and Art" there will be several striking articles: "A Frenchman's Opinion of Female Education in the United States;" "Electricity in Art;" "Russian View of the American Press," etc. Those specially interested in "Science" will find papers of special value: "Ocean Vegetation;" "Electric Cultivation of Plants;" "Scientific Problems of the Future," etc. The "Religious Department" is full of interest, and many will be thankful for such papers as: "Egypt in the Time of Moses;" "Ancient Churchmen and Politics;" "The Fatherhood of God," etc. "From Foreign Lands," a large amount of valuable material: From

IMPURE BLOOD.

How to Select a Spring Medicine.

It is a matter of common belief and experience that spring time is a season that brings certain derangements of body dependent upon blood impurities. This belief is an old one, and a true one.

The fact is that there are three distinct causes of blood contamination, and each demands a different remedy. They are: atmospheric changes, which require a tonic; digestive disturbances, which require a laxative, and blood humors, which require an alterative. It will thus be seen that the blood disorders of spring have distinct origins, and the numerous failures to get relief from the use of blood medicines are many times due to the general disregard of these facts. It requires but the slightest attention to one's own symptoms to decide whether it is a tonic or a laxative that is most needed in any case.

Pe-ru-na.

If the symptoms are a general feeling of lassitude, restless, disturbed sleep, with fantastic dreams, confusion of mind, craving appetite, with sometimes loss of appetite heavy, tired feelings, indigestion, skin pimples, etc., Pe-ru-na is adapted to the case, and never fails to cure every case.

Man-a-lin.

If, however, the symptoms are dizziness, furred tongue, thick blood, bitter taste in the mouth, bloated feeling after eating, constipation, sick headache, deep, heavy sleep, with a constant desire to sleep, it is Man-a-lin that is needed, and a few weeks' use of it will rejuvenate and cleanse the whole system.

La-cu-pla

Should the symptoms be pains about the joints, dropsy, boils, itching, persistent headache, enlarged glands, formation or discharge of matter, chronic ulcers, abscesses, blood poisons of any kind, and pains or soreness increased at night, La-cu-pla is a specific.

The Family Physician No. 3, a treatise on spring medicines and diseases, is sent free to any address by the Pe-ru-na Drug Manufacturing Co., of Columbus, O.

England, France, Germany, Holland, Italy, Spain, South America, Japan, India, Denmark, New Zealand, Hawaii. The number will be profusely illustrated. Funk & Wagnalls Company, 18-20 Astor Place, New York.

SURFACE OR DEEP CULTURE?—"The best method of culture is the one which will give to nature the greatest aid in producing growth, in imparting vigor and life to the plant, and in destroying weeds and grasses which impair a healthy growth and rob the plant of the means of existence. The health, the growth and the life of all plants depend upon their roots; these roots are the means by which the plants derive their sustenance, and extract moisture from the earth on which to live; hence it is necessary to preserve this root-growth and to destroy weeds and grasses which are continually using the feeding elements of these roots. Deep culture, after planting, must result in destroying a great deal of the root growth, and in that way it cuts off the source of life and retards the growth of the plants. Surface culture breaks up the crust on top of the earth, loosens the soil around the roots, stops evaporation and destroys the weeds and grasses; it gives air and moisture to the roots, imparts strength and life to the plants, and saves for the plants the natural food in the soil. The most progressive farmers all over the country agree that surface cultivation is the method to be pursued to insure the largest and best crops; and the testimony of practical farmers from all sections is that the best implement for successful, rapid and clean surface cultivation is the Universal Weeder and Cultivator." The above is a sample page of book "Modern Methods," issued by the Universal Weeder Co., Boston, Mass., which is sent free on application. Write for it.

Hang Your Door!

Perhaps our readers have noticed this exclamation in our advertising columns. It means that you should hang your barn doors with the Stanley Corrugated Hinges, which do not cost any more than the old-fashioned ones.

If you want to know more about these hinges, and at the same time be pleasantly entertained, send your address to the Stanley Works, New Britain, Conn., and they will send free the "Biography of a Yankee Hinge."

Is New York More Civilized Than Kansas?

There is an article in the April number of the *Forum* by Mr. J. W. Gleed, of Topeka, on "Is New York more Civilized than Kansas?" Mr. Gleed draws a most interesting and instructive comparison between Kansas and New York city, much to the credit of Kansas. The article is one of the most suggestive comparisons of country and city civilization as it exists in the United States to-day that has ever been made, for Mr. Gleed has taken the trouble to go over all the essential elements of civilization, having a very thorough knowledge both of Kansas and of New York city. Of course what he writes of Kansas is true, in the main, also of every other Western State which has no large cities. As a social study this article is in several ways extraordinary.

Horticulture.

Spraying Formulae and How to Use Them.

BY E. A. POPENOE, STATE AGRICULTURAL COLLEGE.

To prevent the attacks of the apple worm or larva of the codlin moth, spray the apple trees with Paris green in water in the proportion of one ounce of the powder to fifteen gallons of water. Mix the powder first with a little of the water, adding a tablespoonful of flour. Work all lumps out, strain into the rest of the water, keep it stirred, and apply by the spray pump at once. If allowed to stand, the arsenic in the Paris green is dissolved and is then likely to injure the foliage of the trees by scalding.

Make three applications of this preparation, the first just after the petals fall from the flowers, the second and third at intervals of ten days thereafter. The same applications will destroy upon bearing trees all the canker worms, tent-caterpillars and apple leaf crumplers that may be reached by the spray.

The apple scab may be largely prevented by the use of the Bordeaux mixture. Prepare this by dissolving six pounds bluestone (copper sulphate) in sixteen gallons water and four pounds quicklime in six gallons water, the solutions to be made in separate vessels, the lime water allowed to cool and then added to the bluestone solution, pouring slowly and stirring constantly. It should stand a day or two before using and should be strained again and well stirred before applying. The bluestone dissolves easily if suspended over night in a gunnysack in the water near the surface. When allowed to lie on the bottom of the tub it dissolves much less rapidly. To prevent the apple scab, make the first application by spraying the trees before the buds burst. After the petals have fallen repeat at intervals of ten days. Three applications will do great good. To save labor, the ounce of Paris green may be added to the twenty-two gallons of Bordeaux mixture in the second and following applications and the two processes carried on at the same time.

The black rot and the downy mildew of the grape may be kept completely under control by the repeated applications of the Bordeaux mixture, the first to be made before the buds open, the second after the leaves have reached the size of a half dollar, the third and following at intervals of ten days or two weeks thereafter, the former preferable except in very dry weather. The last application should be made before the grapes begin to color, else the powder remaining upon the fruit will cause its rejection by critical customers. However, all traces of the mixture may be removed from the ripe grapes by dipping the clusters once or twice in water with a little strong cider vinegar added, the fruit being allowed to dry in a gauze basket or laid upon a drainer.

Spray Your Orchard.

Conservatism is often a saving quality, but there is a point where it sometimes passes into old fogyism. This seems to be the case in the slow approval by the fruit-growers of our State of the methods, insisted upon for now several years by those experienced, of adding to the per cent. of fair fruit from orchard and vineyard. Recent visits to some of the most progressive farming communities have shown but few growers familiar with the advantages of the possession and use of the spraying machine. They are all aware of the loss they suffer through the low grade of fruit they offer to the visiting buyer, and have read about others' successful treatment of the orchard for apple worm and apple scab, but somehow they have lacked the proper confidence or push to undertake the novel practice on their own account. To such it must be repeated that the practice is no longer an experiment. It has passed that stage. There is no longer any doubt that it is entirely possible, by the proper treatment, to so reduce the effects of apple pests that the usual proportions of fair to third-

rate fruit are exactly reversed. Those who do not spray continue in average years to gather the one-fourth of marketable and three-fourths of unmarketable apples, while their neighbor, who puts in practice the advice of the experiment station, saves at least 75 per cent. of his fruit as first grade, and finds his orchard one of his profitable investments.

Do not be deterred by the question of expense from the consideration of the proposition to buy and use a sprayer this spring. The expense compared with the result is practically nothing. Twelve dollars will buy an equipment complete, of the best pattern, suitable for the average orchard. This means a barrel for a tank, a first-class double-action force pump of suitable capacity, the hose and the nozzle. Beyond this all needed is an eye to the condition of the orchard, the will to improve it, and the application at the proper time of the proper material. Paris green, a quarter of a pound to the fifty-gallon barrel of water, applied to the apple tree just after blooming and twice at intervals of a week thereafter, will do the work for the apple worm.

If, as is more than likely, your orchard is infested with apple scab, the disease, which not only injures fruit, but also strikes at the health and vigor of the tree through its leaves, spray a fortnight before the blooms open with a solution of blue vitriol in water—two pounds to fifty gallons. After the flowers have fallen, spray with Bordeaux mixture, to which may be added two or two and one-half ounces of Paris green. Two more applications of the latter combination will ordinarily do for both apple worm and apple scab, though it may be advisable, where the scab is especially troublesome, to make a final application of Bordeaux mixture two weeks after the last spraying with the Paris green in combination.

To extend the profitable use of the spraying machine, it is desirable to treat the vineyard as a preventive measure against black rot, which without warning may destroy a promising crop just before the season of ripening. For this purpose the Bordeaux mixture is the material used. For the best results it should be applied once before the leaves expand, again when they have grown to the size of a half-dollar, and every two weeks thereafter until the grapes begin to change color. The unusual and somewhat startling hue of the whitewashed vines need not deter the owner from eating the grapes grown thereon. They are not poisoned, but on the contrary are likely to prove specimens of their kind much more perfect than grown on vines not so treated.

Nor need the work of the machine end here. The same spray, if applied in time, will go far toward keeping the potato field free from the deadly blight. It will help the raspberry bushes to outgrow the troublesome anthracnose, a kind of scab or rot of stem and leaf becoming wide-spread and abundant in our State. Indeed, the spraying machine is already shown to be an implement of such value and importance to the fruit-grower that the surprise is that any should still be without it.—Prof. E. A. Popenoe, in *Industrialist*.

Notes from the Agricultural College Gardens.

The college orchards are being sprayed with a solution of copper sulphate, one pound to twenty-five gallons of water. This is the first step in the war which it is proposed to wage this summer against the apple-leaf scab, so prevalent last season. A Myer's spray pump is used, with a barrel for a reservoir mounted on runners. A "vermoral" nozzle completes the outfit, which is handy, durable, and of a moderate cost. For small trees, the nozzle is attached directly to the hose, but for larger ones a lance is used consisting of a six-foot brass pipe.

The radishes and lettuce growing in the benches of the propagating houses look as though spring had actually come. A sample of each was furnished for the faculty dinner last Monday, and what remains only looks the better for the thinning. Denver Market, Iceberg, and Black Seeded Simpson let-

tuce were sown, and French Breakfast, Scarlet Olive Shaped, and Burpee's Glass radish. The Burpee's Glass has made a remarkably strong growth, but, being a long radish, of course does not mature as soon as the other two.

The first planting of potatoes is being made to-day. It consists of ten pounds each of first-crop and second-crop seed from the ten leading varieties grown here at the college. Besides this, two 500-foot rows of Omaha Market are planted in recognition of the good results heretofore obtained with that variety.

Several of the *Loniceras* (*Tartarica*, *Sempervirens*, *Halliana* and *Varonish*) are almost in full leaf, while the swelling buds of the plum and cherry trees admonish us that only a few days of the present warm weather are necessary to bring them out in blossom. In fact, a little cold weather just now would be exceedingly disastrous to many things.

The hot-beds were made the first of the week, and only await a little lowering of the temperature, which at present stands at 144° Fahrenheit, to be sown with onion, cabbage and tomato seed.—F. C. Sears, in *Industrialist*.

Entomology.

Scars on Apple Twigs.—The Buffalo Tree Hopper Responsible.

BY E. A. POPENOE, STATE AGRICULTURAL COLLEGE.

The two letters following have been received within a few days.

Under date of March 14, M. B., Jr., of Troy, Kas., writes:

"I to-day send you several small limbs cut from an orchard in Doniphan county, and would like you to let me know what there is that affects them in this manner. The party says he has discovered a small red-looking bug or louse on the limbs in the summer. The trees have been set out for three years and they don't seem to do any good. If you have any remedy please let me know."

March 19, J. W. W., Maple Hill, writes as follows:

"I send you by to-day's mail some branches of a Winesap apple. The branch seems to be stung by some insect, although I have been unable to find anything. The first I noticed of it was last year, and it is increasing. It is a young orchard, not bearing yet. The trees have never seemed very healthy. It stands by the side of an old orchard, and I would like to know if the disease will affect that. I would like to know what it is, and the remedy, if any. An answer as soon as convenient will be thankfully received. If there is no remedy and it will spread to the bearing orchard, I want to cut down the trees affected. Would a wash of soft soap be of any benefit?"

The work complained of in both of the above cases is that made by the buffalo tree hopper (*Ceresa bubalus*) in depositing its eggs. This insect be-



WORK OF BUFFALO TREE HOPPER.—D. c., insect at work; the scars shown on the branch below, those on the central twig (c.) a little too large proportionally. A., a portion of the bark detached, showing the underlying double egg-clusters, one of which is shown, much magnified, at b.

longs to the order *Hemiptera*, or true bugs. It lives by sucking the sap from various plants by means of a beak which it thrusts into the bark or shoots. It is not particularly fond of the sap of the apple, but is found much more commonly upon various weeds growing in or about orchards. The female has a rigid, sharp-pointed instrument at the tip of the abdomen,



A Bright Lad,

Ten years of age, but who declines to give his name to the public, makes this authorized, confidential statement to us:

"When I was one year old, my mamma died of consumption. The doctor said that I, too, would soon die, and all our neighbors thought that even if I did not die, I would never be able to walk, because I was so weak and puny. A gathering formed and broke under my arm. I hurt my finger and it gathered and threw out pieces of bone. If I hurt myself so as to break the skin, it was sure to become a running sore. I had to take lots of medicine, but nothing has done me so much good as Ayer's Sarsaparilla. It has made me well and strong."—T. D. M., Norcatur, Kans.

AYER'S Sarsaparilla

Prepared by Dr. J. C. Ayer & Co., Lowell, Mass.

Cures others, will cure you

called ovipositor, or egg-placer, which in the act of egg-laying she thrusts into the bark obliquely, and working it backwards cuts a slightly curved slit. Beginning at the posterior end of the slit, the insect now thrusts the ovipositor its full length into the cambium between the bark and wood, and an egg is placed. The ovipositor is now drawn forward, a second egg is laid, and so on, until the anterior end of the slit is reached. A second slit is now made a little to one side, its concave side facing that of the slit first made, and a second row of eggs is laid. The number of eggs is usually from seven to twelve in each slit, and the entire operation requires about half an hour for its completion. In the completed wound it may be seen that the eggs in either row were introduced from the slit on the opposite side; a narrow line of bark is thus cut entirely loose from the wood beneath it, and soon dies, leaving on the growing twig an irregularly circular dead spot, appearing as the scar which attracted the notice of our correspondents. When the hoppers are abundant, the eggs are laid very numerously, and the resulting scars do seriously mar the smooth growth and injure the young trees usually selected for the egg-laying. The young leave the eggs early in the season and, as in other true bugs, are active from the first, resembling in a general way the adult, and like it, living by sucking the sap from various plants. The "red bug or louse" noticed by our correspondent is another insect, and has no connection with the eggs.

Answering the special questions of the second letter, I should say, that further than increasing the general health of the tree, it is not likely that the wash of soft soap would be of avail in destroying the insects now in the egg. Further, there is no danger of the trouble spreading to the bearing orchard. Cutting down the trees, therefore, would be entirely uncalled for. The plan to pursue is to give the attacked orchard the best possible chance for vigorous growth. Keep it well cultivated; avoid severe pruning. Keep down weeds upon which the insects prefer to feed, and trust to the new growth of bark to cover up the now unsightly wounds and make the trees smooth again. The injury is not likely to be as serious two years in succession. Our orchards on the college farm were once seriously attacked, but the following year showed no continuance of it. Similar egg slits are found on a variety of other trees. On account of the very general distribution of the insects, their shyness and their great activity, no satisfactory method of destruction has been found. For the information of our correspondents, and others who may detect the scars left by the insect, we present herewith a cut of the insect and its work, borrowed from the Kansas Experiment Station at Manhattan.

In the Dairy.

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

Estimated Number of Milch Cows.

We copy below, from the report of the Statistician of the United States Department of Agriculture for January-February, 1894, so much of one of the tables as shows for January 1, 1894, the estimated number of milch cows in the several States and Territories, the average local price per head and total value, arranged in the order of the number reported in each:

Order	Number	Average Price	Value
New York.....	1,572,449	\$25.78	\$40,587,581
Iowa.....	1,278,231	23.97	30,127,905
Illinois.....	1,089,121	25.19	27,102,720
Pennsylvania.....	858,387	25.55	21,925,660
Texas.....	798,515	13.84	11,189,848
Missouri.....	784,841	17.67	13,868,140
Wisconsin.....	787,380	24.34	19,165,078
Ohio.....	707,735	25.94	18,159,046
Kansas.....	668,914	15.15	10,140,789
Indiana.....	656,987	24.18	15,878,695
Minnesota.....	577,196	19.42	11,209,146
Nebraska.....	535,586	19.51	10,501,871
Michigan.....	488,711	23.27	11,360,460
Tennessee.....	351,499	16.45	5,782,159
Kentucky.....	329,552	20.39	6,719,585
California.....	329,275	25.82	8,498,937
Arkansas.....	328,697	10.78	3,538,790
Georgia.....	317,742	16.44	5,214,478
Alabama.....	311,748	12.45	3,881,300
Mississippi.....	302,959	12.91	3,911,301
South Dakota.....	290,550	19.12	5,555,316
Virginia.....	276,617	18.08	5,001,285
North Carolina.....	274,794	14.99	4,119,162
Vermont.....	246,029	25.25	6,212,056
New Jersey.....	190,734	35.20	6,713,537
West Virginia.....	182,265	19.15	3,490,375
Massachusetts.....	178,185	32.50	5,789,388
Maine.....	177,602	21.37	3,795,855
Louisiana.....	175,784	16.50	2,900,436
Maryland.....	147,520	23.63	3,488,039
North Dakota.....	140,700	19.79	2,784,453
Connecticut.....	137,582	28.94	3,981,623
South Carolina.....	125,619	20.47	2,571,421
Florida.....	114,332	13.68	1,564,002
New Hampshire.....	112,585	21.81	2,455,479
Oregon.....	110,368	21.85	2,412,997
Washington.....	108,535	28.72	3,117,25
Colorado.....	76,124	23.06	1,755,49
Utah.....	56,143	18.00	1,010,574
Montana.....	38,419	24.67	948,457
Delaware.....	33,836	24.50	828,932
Idaho.....	30,419	3.67	659,180
Rhode Island.....	24,765	26.80	663,749
Oklahoma.....	20,275	18.00	364,950
New Mexico.....	18,400	20.00	368,000
Nevada.....	18,196	29.30	533,148
Wyoming.....	17,815	24.00	428,249
Arizona.....	11,878	17.50	208,365
Total.....	16,487,400	\$21.77	\$358,908,661

The above table reveals that the highest price per head placed on milch cows is in the State of New Jersey, viz., \$35.20, Massachusetts being second, with a valuation of \$32.50 per head. The great dairy States in the North average nearly \$26 per head, while Southern States return only \$15 each. A remarkable showing is made by the extreme Western States and Territories, wherein their cows are placed at nearly \$23. Kansas milkers are rated at \$18.15. The lowest on the list is Arkansas, where something resembling a cow is tabulated at \$10.76. Missouri, Kansas and Nebraska run nearly even.

Dairy Notes.

No one cares to abolish oleo; simply let it be sold on its own merits. If it is better than creamery butter, why try to imitate what the manufacturers of oleo claim is an inferior article.

A London dairyman was prosecuted recently for having too much water in his milk. His excuse was "that it was a very wet morning that day." He was fined \$20 for not knowing enough to get in out of the wet when it rained.

When adding a fresh skimming of cream to that already in the can, it can be better mixed by pouring out into another can slowly, and then turning slowly back again, than it can by stirring, and the aeration thus given will remove some of the objectionable flavor in it.

"Does oleo hurt dairying?" is a conundrum propounded by an exchange. Well, now, why did not our esteemed contemporary, while it had its pen in hand, ask, "Is there any species of fraud that inflicts injury on legitimate business?" or "Would the world be benefited if legitimate industries based upon honest goods and square dealing were swept aside by cheap but aggressive imitations and substitutes sold as genuine?"

There are times in churning when a long time is required and the trouble cannot be traced to the churn or anything connected with the method of raising the cream; but still if one has

a new dairy article in use, he or she is very likely to lay the trouble to the new article in use, without first inquiring if there may not be other causes for the trouble. A little common sense and reflection will convince any one that the method of raising the cream cannot have anything to do with the time required in churning.

The average cow and the average farmer are being driven from their fields—to better ones. Inherited notions are giving way to the logic of fact. An old farmer says: "Feed makes the cow." Prof. Henry, at the experiment station, says nothing, and feeds a common cow, a grade Jersey and a thoroughbred Jersey a 17-cent ration, each the same, in the same barn, with the same care, for a week, and from the common cow he gets one pound of butter, from the grade one pound and five ounces, and from the thoroughbred one pound and fifteen ounces.

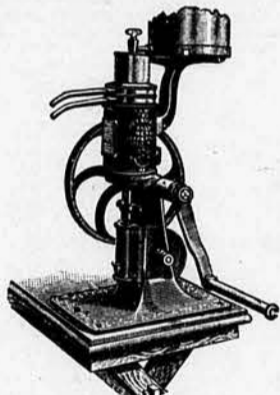
Although many writers have demonstrated by statistics that soiling is the most profitable way of feeding cattle, the practice does not meet with the favor among practical farmers that it ought to command, if the farmers believed what the writers say. Nevertheless, a great many of the best farmers of the United States are practicing a partial system of soiling. That is, they rely upon pastures and use them, but they sow special crops that are to be used as green food, to reinforce the pastures during the heat of the summer, when the grasses begin to dry up. This is the proper function of soiling crops.

Cream Separators.

We take pleasure in calling the attention of such of our readers as may have any interest in that connection to the new 1894 advertisement of the De Laval Cream Separators, which appears in another column.

If any dairy authority were asked to name the one thing which has contributed most to the development and improvement of our dairying interests in the last few years, the answer would unquestionably be—the Cream Separator. And when one speaks of the Cream Separator the name De Laval seems almost synonymous therewith.

Separators come and go, but the De Laval appears to maintain an even prestige at all times. It was practically the first to make itself known in dairying, and much of our

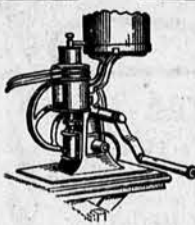


progress in this great interest is doubtless due to it. For several years after the power separators were introduced in our creameries, nothing was known but the De Laval, except the cumbersome machine styled the "Danish-Weston," which has now gone out of use. Then for several years, when dairy separators were first introduced, they were solely of De Laval make. These were not altogether practical for general purposes, and were followed by the present styles of De Laval hand machines termed the "Baby." The success of these latter has been such as to naturally bring about attempted competition from other concerns, but the field is so large a one and so constantly developing, that there is ample room for all.

While at Poughkeepsie, N. Y., recently, one of our correspondents visited the American Works of the De Laval Company, which are located at that place. These shops are considered by engineers among the finest in the country, and the mechanical arrangement, the adaptation and utilization of special machinery, and the general system is certainly most interesting, even to a layman. Some idea of the magnitude the industry has assumed in this country may be had from the fact that the investment in this one plant is said to exceed \$225,000.

The Cream Separator is of especial interest to our farmers and dairymen this year. The past year has shown dairying to have been practically the only profitable branch of general agriculture. The dairy farmer has made money from this part of

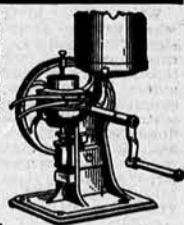
HAVE YOU FIVE OR MORE COWS?



If so a "Baby" Cream Separator will earn its cost for you every year. Why continue an inferior system another year at so great a loss? Dairying is now the only profitable feature of Agriculture. Properly conducted it always pays well, and must pay you. You need a Separator, and you need the BEST—the "Baby." All styles and capacities. Prices, \$85 upward. Send for new 1894 Catalogue.

THE DE LAVAL SEPARATOR CO.,

Branch Offices: ELGIN, ILL. General Offices: 74 CORTLANDT ST., NEW YORK.



his business at least. And moreover, the returns from the dairy are nearly always cash, which has been no small consideration of itself in the close money season we have just experienced. Thousands, no doubt, are giving greater attention to dairying now than in recent years, and there seems no good reason why any one having use for a separator should longer do without it. All the users seem satisfied, and many go so far as to say that they would discontinue dairying if they had to go back to their old system. Nearly all agree that their savings from the separator are so great as to earn the cost of the machine every year, and that it is the best investment they could make in connection with their dairy. Some say, for example, that with ten to fifteen cows the separator makes as much difference as would the addition of two or three cows, while it costs much less to keep.

The criticism is made by some, that the prices of separators are too high. This is no doubt true, and we suppose they will come down in the future. Many think they ought to wait on this, but the separator people say that even though prices may come down in time, those who put in machines now will have saved their cost several times over meanwhile, and if users are really saving what they say they are, and the machines are accomplishing what our authorities all agree upon, this seems to be so.

Thin or gray hair and bald heads, so displeasing to many people as marks of age, may be averted for a long time by using Hall's Hair Renewer.

The Poultry Yard.

Black Langshans.

The following descriptions of these princely fowls will be read with interest. The first is by the poultry editor of the Iowa *Homestead*, the second by A. A. Halladay:

(1) The original Langshans were imported into England, and thence into the United States, and were black, and that variety is the most widely known at this time. The standard weight of Langshans is: Cock, nine and one-half pounds; cockerel, eight pounds; hen, seven pounds; pullet, six pounds. In appearance they somewhat resemble the Cochins, the difference to the inexperienced eye being a somewhat slimmer build, and generally a more active manner. One account says they are active, agile and impetuous; are very prolific, grow quickly, mature early and lay well. Although not over given to broodiness, they are good sitters and mothers. Their flesh is white, and they have a very thin, white skin; as a table fowl they are equal to small turkeys, and not inferior to them in delicacy of flavor. Their plumage is of a uniform glossy black, and full of lustre; comb single and a bright red color. The beak is dark, with flesh-colored variations along the line of the mouth. Eyes dark, with but little difference in shade of pupil and iris. Neck long, full and profusely feathered; back short and fairly broad; rump high; tail full and very flowing, carried rather high and forward and furnished with good-sized sickles; legs and toes dark, with a vivid pink color showing between the scales; shanks scantily feathered to the end of the toes (there should be no feathers on the middle toes), bottoms of the feet are pink. Their eggs are of a fair size and are beautiful in color, varying from the palest salmon to the darkest

chestnut brown; on some there is a bloom like that on freshly gathered fruit, while others are spotted, often literally splashed all over with dark spots, and the very same hen will tint her eggs differently one day from what she does on another.

(2) Langshans lay a large, dark-colored egg, as a rule, still the color will vary some. Some of them are quite dark, others light. The pullets commence to lay when quite young, usually from five to six months old. I have had pullets lay at four months, but this is an exception. As table fowls the pure Langshan is equalled only by the Dorking and some varieties of Games. Their skin is white and very tender, and their meat is fine-grained, rich and juicy. The bones of the Langshans are very small; the breast is long and deep, giving an abundance of the white breast meat. The Langshan is hardy; a temperature of ten or twelve degrees below zero does not freeze them up; they seem to like it, and will shell out the eggs just the same. They will bear confinement as well as any fowl I ever saw; or, if given free range they are great foragers, but will not roam all over the neighborhood. They are very domestic and enjoy being handled and petted. My birds are as tame as so many kittens, and I have birds which if I do not pet whenever I go into the pen will follow me around, and one cockerel will take hold of my pants and pull until I stop and pet him.

The base of Ayer's Hair Vigor is a refined and delicate fluid, which does not soil or become rancid by exposure to the air, and which is as perfect a substitute for the oil supplied by nature in youth and health as modern chemistry can produce.

BARRED PLYMOUTH ROCKS EX-clusively—Pekin cockerels mated to Kegley hens. All high-scoring birds. Have bred Plymouth Rocks for twelve years. Eggs, \$1.50 per 15; \$2 per 25. Satisfaction guaranteed. A few very choice cockerels for sale at \$2 each. Mention KANSAS FARMER. D. B. Cherry, Knoxville, Iowa.

New 64 page Catalogue for 1894 Is now ready. The most complete book ever published on Fancy Poultry and Standard seeds. Send 4 cts. in stamps. John Bauscher Jr., Freeport, Ill.

WORLD'S PRIZE WINNERS Buff Leghorns, Buff Wyandottes, Buff Barred and White Plymouth Rocks, Black Langshans and S. C. White Leghorns. Send for Circular. **DAVIS BROS., WASHINGTON, N. J.**

SHIP Your Butter, Eggs, Poultry, Veal, Beans, Potatoes, Hides, Pelts, Wool, Hay, Grain, Green and Dried Fruits, or ANYTHING YOU MAY HAVE to us. Quick sales at the highest market price and prompt returns made. Write for prices or any information you may want. **SUMMERS, MORRISON & CO.,** Merchants, 174 South Water St., Chicago, Ill. REFERENCE—Metropolitan National Bank, Chicago

Cheesemaker's AND Dairymen's GENERAL SUPPLIES and APPARATUS. COLORS Butter TUBS WORKERS CHURNS, HAND SEPARATORS, Dog Powers and Small Boilers and Engines. ILLUSTRATED CATALOGUE, 4c. CREAMERY PACKAGE M'FG CO., Box 40 M, KANSAS CITY, MO.

Sure Cure for Sprain, Bruise or Hurt!
Use **ST. JACOBS OIL**
You'll Use it Always for a Like Mishap.

The Veterinarian.

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

LAME HOCK.—I have a mare, 12 years old, that swelled in the hock joint last spring. In November I pulled several heavy loads with her and she went lame. The joint is swelled on both sides.

Answer.—What you call a swelling is probably a bog spavin and thoroughpin. Bathe the leg twice a day with cold water till all inflammation is gone, then have the joint fired by a competent veterinarian.

LAME MARE.—I have an old mare that has been getting lame in her front feet for several years. She goes all right in wet and muddy weather, but goes lame again when the roads get dry and hard.

Answer.—Blister around the coronet at the top of the hoof with cantharidine ointment, and keep the mare on wet ground as much as possible to hasten the new growth of hoof.

ROPE-BURN.—I have a horse that got a rope-burn six months ago, and when it was nearly healed he got a water-founder which swelled the leg very badly, and in about eight days it broke at the hock and at several places below it.

Answer.—The leg swelled from some other cause; founder does not affect one hind leg and no others. Inject the sore, twice a day, with a wash made of chloride of zinc, 2 drachms, and water, 1 pint.

Horse Owners! Try



GOMBAULT'S Caustic Balsam

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Elements from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.

76 Kentucky and Imported

JACKS and JENNETS. All black, white points, fine style, extra bone, from 14 to 16 hands high, 3 to 6 years old.

IRVINE JACK FARM.

SECOND largest Jack Importing and breeding establishment in the world. I now have on hand a fine lot of Spanish Catalonian Jacks (arrived July 1st), selected from the best Jack farms in Spain.

Deer Park Stock Farm

HUME, MO. J. M. OLIVE, Proprietor. Importer and breeder of CATALONIAN JACKS. Imported March 7, 1891, fourteen Black Catalonian Jacks, white points, 2 to 5 years old, fourteen to fifteen hands high, fine style and good performers.

PERFECT IMPREGNATOR



Barren Mares

made to breed regularly by its use. SURE, SAFE, HARMLESS. Hundreds of Testimonials from all States. Guaranteed, and sent with full directions on receipt of price, \$5.00.

MARKET REPORTS.

LIVE STOCK MARKETS.

Kansas City.

March 26, 1894. CATTLE—Receipts, 3,789 cattle; 19 calves. Top prices for dressed beef steers, \$3.90, against \$4.00 one week ago.

Chicago.

March 26, 1894. CATTLE—Receipts, 14,000. Market active. Beef steers, \$2.75@4.35; stockers and feeders, \$2.35@3.50; bulls, \$1.65@3.25; cows, \$1.50@3.00.

St. Louis.

March 26, 1894. CATTLE—Receipts, 1,300. Some fed Texans at \$3.25. Native steers, common to best, \$3.00@3.50.

GRAIN AND PRODUCE MARKETS.

Kansas City.

March 26, 1894. In store: Wheat, 430,716 bushels; corn, 46,559 bushels; oats, 2,932 bushels, and rye, 4,567 bushels.

WHEAT—Receipts for forty-eight hours, 48,000 bushels; last year, 45,000 bushels. The cold weather and fear of damage to the growing crop caused a more bullish feeling to the market.

OATS—Receipts for forty-eight hours, 75,600 bushels; last year, 57,000 bushels. More on a le than for some time and mixed slow sale and weak, but white firm and in demand.

RYE—Receipts for forty-eight hours, 1,800 bushels; last year, 1,200 bushels. Steady and firm in sympathy with wheat. By sample on track, on the basis of the Mississippi river: No. 2, 50@51c; No. 3, 47@49c.

BUTTER—Not much good sweet table goods coming in and all acceptable offerings are in demand and firm, but packing stock is still dull.

CHEESE—Market steady and firm. Fresh, 8 1/2c. 13c per pound; Crawford county, Pa., cheddars, 13c; Sheboygan, Wis., twins, 13c; Young America, 13c; Mission and Kansas full cream, 10c.

LIVE POULTRY Very few coming in and dressers soon clean them up at strong prices. A few sales making at better than quotations for hens and springs, but turkeys showed no change in price with good demand.

WOOL+WOOL+WOOL+WOOL+WOOL+WOOL+WOOL COMMISSION Wool SILBERMAN BROS. FOR 28 YEARS we have successfully conducted a Wool BUSINESS and have maintained confidence and successful relations with wool growers and the trade.

THE PRODUCT OF THE FARM!

WE WILL SELL YOUR Grain, Hay, Dressed Hogs, Lambs, Veal, Wool, Butter, Eggs, Poultry, Fruit, Vegetables, Hides, Pelts, Furs and all kinds of Produce on the Chicago market for you on commission, to best advantage.

RED ROPE ROOFING! \$1.50 per 100 Sq. Ft. All complete. Ready to apply. INCLUDING RED OR BLACK PAINT.

RED AND BLACK CREOSOTE PAINT. For Wood and Shingle Roofs, Barns, Out-houses, etc. Guaranteed to outlast any cheap paint made.

W. E. CAMPE ROOFING & MFG. CO., Kansas City, Missouri.

Agents Vegetable Meerscham Pipe sell my new Great seller, absorbs nicotine, gives a cool smoke, all want it. Sample 15c. B. F. KIRTLAND, So. Evanston, Ill.

BARRED PLYMOUTH ROCKS If you desire to purchase fowls or eggs of this breed from the choicest stock in America, send for large illustrated catalogue and price list, which will be sent free.

EVERY FARMER should see a copy of the NATIONAL STOCKMAN and FARMER. It gives Chicago's live stock and produce markets in detail and is printed and mailed Tuesday evening—you get it Wednesday.

Table with 4 columns: Commodity, High est., Low est., Closed Mar. 19, Closed Mar. 26. Rows include WHEAT, CORN, OATS, LARD, S. RIBS.

THE STEVENS BUCCIES AND PHAETONS also harness; all styles, best made, best wearing, sold direct to the consumer.

WHEAT—Cash—No. 2 red, 57 1/2c; No. 3 red, 52@55c; No. 2 hard, 54c; No. 3 hard, 52@53c.

WHEAT—Receipts, 14,000 bushels; shipments, 11,000 bushels. Wheat opened 1/4c higher on a cold weather. Let down 1/4c, but rallied again and closed 1 1/2@1 3/4c above Saturday's final prices.

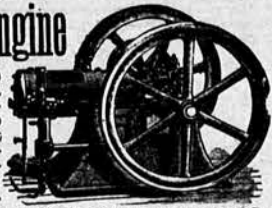
WHEAT—Receipts, 14,000 bushels; shipments, 11,000 bushels. The market was dull, being lost sight of in the wheat rush, closing 1/4c higher. No. 2 mixed, cash and March, 34 1/2c; May, 34 1/2c; June, 34 1/2c; July, 35 1/2c.

OATS—Receipts, 78,000 bushels; shipments, 22,000 bushels. No. 2, cash, 31 1/2c; March, 31 1/2c; May, 31 1/2c; July, 25 1/2c.

CAMPBELL, HUNT & ADAMS Live Stock Salesmen---Stock Yards---Kansas City, Mo. ROOMS 31 and 32--Basement of East Wing.

Gasoline Engine

The best because the most simple; few minutes attention a day will keep it running. Most economical; guaranteed cost of running is one cent per h. p. per hour.



WEBER GAS & GASOLINE ENGINE CO., For Catalog. ad. Box F-10, Kansas City, Mo.

FERTILIZERS ARE UNPROFITABLE.

Unless they contain sufficient Potash. Complete fertilizers should contain at least 6 per cent. of Potash. Fertilizers for Potatoes, Tobacco, Fruits and Vegetables should contain from 10 to 15 per cent. of Potash. Farmers should use fertilizers containing enough Potash or apply Potash salts, such as Muriate of Potash, Sulphate of Potash and Kainit. For information and pamphlets, address German Kali Works, 93 Nassau St. New York City.



TOWER'S FISH BRAND WATERPROOF COAT

This Trade Mark is on the best in the World! Illustrated Catalogue Free. A. J. TOWER, BOSTON, MASS.

7 CARS STRAWBERRIES

shipped in one day. Four hours from Philadelphia. Climate lovely. The poor man's paradise. No place for lazy people. Plenty oysters and fish. We have three small farms for sale. Address MANOKIN FLOUR MILLS, Princess Anne, Md.

Farms, Cheap!

I have some of the greatest bargains in farms to be found anywhere in the United States and in the best wheat and stock country in the world. One first-class stock and grain farm of 1,440 acres, highly and extensively improved, in Rooks county, Kansas, with stock and implements, and 8,480 acres in Lincoln county, Nebraska, unimproved, which would make a good ranch. These farms are going to be sold at a price that will allow purchaser to make a fortune on them. Would take some other good property as first payment. I have a large number of small farms of 100 acres, bought some time ago at a very low price, and they will be sold, way down and on most satisfactory terms.

If you want to buy a farm, don't fail to investigate and send for a catalogue. Write to B. J. KENDALL, Room 507 Brown Block, Omaha, Neb.

A Farm for Sale!

This farm has located on it the townsite of Halsey, in Thomas county, Nebraska, with all the railroad improvements, including depot, etc. Whoever purchases this farm can lay out a city on his farm and sell lots enough in a short time to pay for it several times over and then have enough left for a good-sized farm, which will surround the town. If you want to be the father of a good town, now is your chance. If you want to make a fortune, now is your best opportunity.

A Townsite for Sale.

This farm must be sold, and some one will get a great bargain. It has been held at \$5,000, but a large discount will be made for all cash. Look this up before it is too late. This is clear. I might arrange to take another clear farm for first payment and take my share back for the balance, with privilege of releasing lots when sold. Write just what you can do and what you would like to do in your first letter and save time.

I have several fine lots near the Methodist college at University Place, Lincoln, Neb., for sale cheap, or will exchange them for farm lands.

Farms for Sale.

I have several farms in central Nebraska for sale cheap, and some I might exchange for property near Omaha. Write what you want.

8480 Acres--A Great Bargain

If you are looking for a large body of land at about HALF ITS VALUE write to me. I have it in Lincoln county, Nebraska. Don't fail to investigate this, for it is sure to increase rapidly in value.

Farms for Sale.

If you are thinking of buying a farm don't fail to write for my catalogue I have improved farms with about half now in growing wheat in Rooks county, Kansas, the best grain and stock country to be found anywhere. Am selling very low. If you want one don't lose any time in selecting it, as they will go just at \$5 to \$10 an acre. I sell some for only one-tenth down and a tenth yearly, but prefer a larger payment down. I give long time and easy terms. Write just what you want and how much you can pay down, in your first letter, so as to save time. The whole country has been thoroughly soaked with moisture and a big crop is assured. There never was a better time. Don't pay rent any longer but own your own farm. Send for Catalogue.

B. J. KENDALL, 507 Brown Block, OMAHA, NEB.

THE "WESTERN SETTLER" IS A NEW PAPER.

TELLS ALL ABOUT THE WEST. Will be sent free to you and your friends. Address JOHN SEBASTIAN, Gen. Ticket and Passenger Agent, Chicago, South Island and Pacific Railroad, Chicago, Ill.



Beautiful Gladiolus

No flower so adorns the garden or lawn as does the Gladiolus, or is so fine for cutting for decorating rooms, churches, dining-tables, halls, stores, offices, etc. It is truly the king of summer flowers, and is as easily grown in any soil or situation as a potato. Plant in rows or in masses at any time from April to July; they bloom during July, August, and September. The great flaming spikes of bloom three to four feet in height and of the most fascinating colors of every shade and combination imaginable make a show which no other summer flower can equal. We grow Gladiolus by the million—the largest stock in the world, covering 150 acres thickly planted—and offer the very choicest varieties at the following extremely low prices to induce people to try our superior bulbs. They are so fine and so cheap that every lover of flowers should plant them by the hundred or thousand. Bulbs sent by mail, postpaid. Order at once; this offer will not appear again.

Mixed colors, all sorts, extra fine, 30 cents per doz., \$2.00 per 100. Mixed colors, all sorts, second size, but all fine flowering bulbs, 15 cents per doz., \$1.00 per 100, \$8.00 per 1000. Mixed colors, all sorts, third size, but blooming size, 60 cents per 100, \$5.00 per 1000. Lemoinei Hybrids (Orchid Gladiolus), mixed colors, grandly beautiful, 25 cents per doz., \$1.50 per 100. 5 Named Gladiolus, 5 fine colors, white, scarlet, yellow, pink, and blotched, the 5 for 10 cents. 15 Named Gladiolus, the 15 finest named varieties, grand for \$1.00. SPECIAL OFFER.—For only \$2.00 we will send by mail, postpaid, or extra large bulbs by express (not prepaid), all of the following: the 15 grand named varieties, 25 Lemoinei Hybrids, and 100 finest mixed sorts, making in all a grand collection.

OUR NEW CATALOGUE

Is an elegant book of 200 pages, composed of three distinct Catalogues bound together—one each of Seeds, Bulbs and Plants, Nursery Stock.

A work of unexcelled beauty and merit, rewritten and reconstructed in every particular. Every cut new, every line fresh. Printed on fine paper and in lovely bronze violet and brown colors. Many charming colored plates. Nothing like it ever before seen. We offer new and special strains of Flower and Vegetable seeds, all the standard new and rare Plants and Bulbs of every kind. Millions of Gladiolus, choicest Shrubs, Trees, Vines; also new and rare Fruits. The greatest collection of rare things for the garden ever presented, and all at moderate prices. Do not fail to see this wonderful book catalogue. Sent, postpaid, for 25 cents, or sent FREE if any of the above Bulbs are ordered.

JOHN LEWIS CHILDS, Floral Park, New York.

Small Fruits.

999,999 Strawberry plants, over sixty varieties. Large stock of Kansas, Palmer and Older Raspberry tips. All other kinds of plants at lowest prices. Write for catalogue. F. W. DIXON, (Successor to Dixon & Son), NETAWAKA, KANSAS.

All Live Stock Eat JERUSALEM ARTICHOKE

Six hundred bushels per acre in Dry Seasons. F. M. CURYEA, LINCOLN, NEBRASKA.

Only Half Price

For first-class Fruit Trees and all other Nursery stock at the SENECA NURSERY. Send postal for prices. S. J. BALDWIN, Seneca, Kansas.

SEED CORN!

Write J. R. Rutekin, Shenandoah, Page Co., Iowa, and send 2-cent stamp for samples of three best varieties of seed corn in the world. Catalogue free. Seed \$1 per bushel.

OUR CATALOGUE IS DIFFERENT

from others. It is intended to aid the BERRY GROWER in selecting the soil; tells how to prepare it; how to plant; how to cultivate; with observations about variety, hints about markets and other information. B. F. SMITH, Highland Small Fruit Farm, Box 6, Lawrence, Kansas.

Kansas Trees for Kansas Planters!

Grape Vines, Roses, Evergreens.

A general line of Nursery stock. For Descriptive List and prices, address J. F. CECIL, Nurseryman, North Topeka, Kas.

MISCELLANEOUS.

F. M. WOODS, Live Stock Auctioneer, Lincoln, Neb. Refer to the best breeders in the West, for whom I do business. Prices reasonable and correspondence solicited.

DR. S. C. ORR, VETERINARY SURGEON AND DENTIST.—Graduate Ontario Veterinary College, Canada. Veterinary Editor KANSAS FARMER. All diseases of domestic animals treated. Ridgling castration and cattle spaying done by best approved methods. Will attend calls to any distance. Office, Manhattan, Kas.

S. A. SAWYER, FINE STOCK AUCTIONEER—S. 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. Have sold for nearly every importer and noted breeder of cattle in America. Auction sales of fine horses a specialty. Large acquaintance in California, New Mexico, Texas and Wyoming Territory, where I have made numerous public sales.

BEES!

If you keep BEES subscribe for the Progressive Bee Keeper, a journal devoted to Bees and Honey. 50 cents per year. Sample copy free. Also Illustrated Catalogue of Bee Keepers' Supplies. Address LEAHY & CO., Higginville, Mo. Mention FARMER.

THE "ST. JOE" HIVE

LATEST! CHEAPEST! BEST! We keep all kinds of bee supplies. Send for free circular. Satisfaction guaranteed. ST. JOSEPH APIARY CO., 212 Edmond St., St. Joe, Mo. E. T. ABBOTT, Manager.

INCUBATORS

We manufacture the Improved Hot Water Incubator in four sizes. No. 1, 320 eggs, \$25; No. 2, 250 eggs, \$20; No. 3, 100 eggs, \$15. Also for fanciers and children, No. 4, 50 eggs, \$7. BROODERS.—We also manufacture an Outdoor Brooder in two sizes. 200 chick, \$20; 75, \$15. COMBINATION COOK TABLE—A useful piece of furniture. The cook's delight. Price \$10 freight prepaid. DAISY IRONING-BOARD—Very handy and durable. It is made of Poplar. Price \$2. JACOB YOST, Box 196, Arkansas City, Kansas. References: Farmers' Nat'l Bank, Elkins Lumber Co.

NORTH STAR CURRANT.

THE JEWELL NURSERY CO., Nursery Ave. No. 17, Lake City, Minnesota.

PERFECTLY HARDY in any climate. Berries do not shrivel or DROP OFF. Fruit large, most DELICIOUS FLAVOR. Very sweet, uses only half the sugar. FINE 2-year plants, 50 cts. each, \$5 doz.

DISSTON'S



It will pay you to buy a Saw with "DISSTON" on it. It will hold the set longer, and do more work without filing than other saws, thereby saving in labor and cost of files. They are made of the best quality crucible cast steel, and are FULLY WARRANTED. For Sale by all Dealers.

Send for Pamphlet, "The Saw," mailed free. HENRY DISSTON & SONS, Philadelphia, Pa.

GOING TO BUILD A HOUSE?

DIAMOND CEMENT PLASTER.

It can be used equally well in winter or summer; makes a wall as hard as marble and costs no more than inferior plaster. It can be used for a thousand purposes. Talk with your dealer about the Blue Rapids Diamond Cement, and write us for our book filled with valuable information for those who intend building, FREE.

BLUE RAPIDS PLASTER CO., Blue Rapids, Kas.

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	1,437,763	372,385		
Sold to feeders.....	249,017	10,125	71,284		
Sold to shippers.....	541,019	500,485	15,200		
Total sold in Kansas City.....	1,566,828	1,948,357	458,869	22,523	

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

Money, Money! BETTER THAN A GOLD MINE.

Five Dollars will secure a \$175 lot in Chicago. For full information address at once PATTERSON, SHEPPARD & CO., 79 Dearborn St., Chicago, Ill.

IF YOU WANT ANYTHING

IN THE LINE OF PRINTING, BINDING, STATIONERY, BLANKS, Township, School District or City Supplies, KANSAS LAW BOOKS, ETC., WRITE TO

CRANE & Co.

812 Kansas Ave., Topeka, Kas.

Send for Catalogue if interested.

NOTICE TO CONTRACTORS.

SEALED PROPOSALS will be received at the office of the Board of Public Works of the State of Kansas at Topeka, Kansas, until 2 o'clock P. M., April 16, 1894, and opened immediately thereafter, for all labor and material required in the construction of a Physics and Electrical Engineering building at the State University, Lawrence, Kansas, under the provisions of House Bill No. 281, approved March 11, 1893 in accordance with the drawings and specifications prepared therefor by Seymour Davis, State Architect, copies of which may be seen at the office of the Board, State Capitol grounds, on and after Monday, April 2, 1894.

Each bid must be accompanied by a certified check of not less than 3 per cent. of the amount of the proposal, made payable to S. M. Scott, President of the Board of Public Works, State of Kansas, and to be forfeited to the State of Kansas as liquidated and ascertained damages by the successful bidder if they fail to enter into contract and give the required bond on or before April 23, 1894. The right is reserved by the Board to reject any or all bids if it be deemed in the interest of the State so to do.

No proposal will be received after the time above mentioned. Each proposal will be enclosed in an envelope, sealed, and marked "Proposals for work and material required in the erection and completion of a Physics and Electrical Engineering building, at Lawrence, Kansas," and addressed to Wm. Wykes, Secretary of the Board of Public Works, Topeka, Kansas.

Companies or firms bidding will give their individual names as well as the firm name with their addresses. The attention of all bidders is called to chapter 114 of the session laws of 1891, which they are expected to comply with in all State contracts. All bidders are invited to be present at the opening of bids, either in person or by attorney. S. M. SCOTT, President. WM. WYKES, Secretary.

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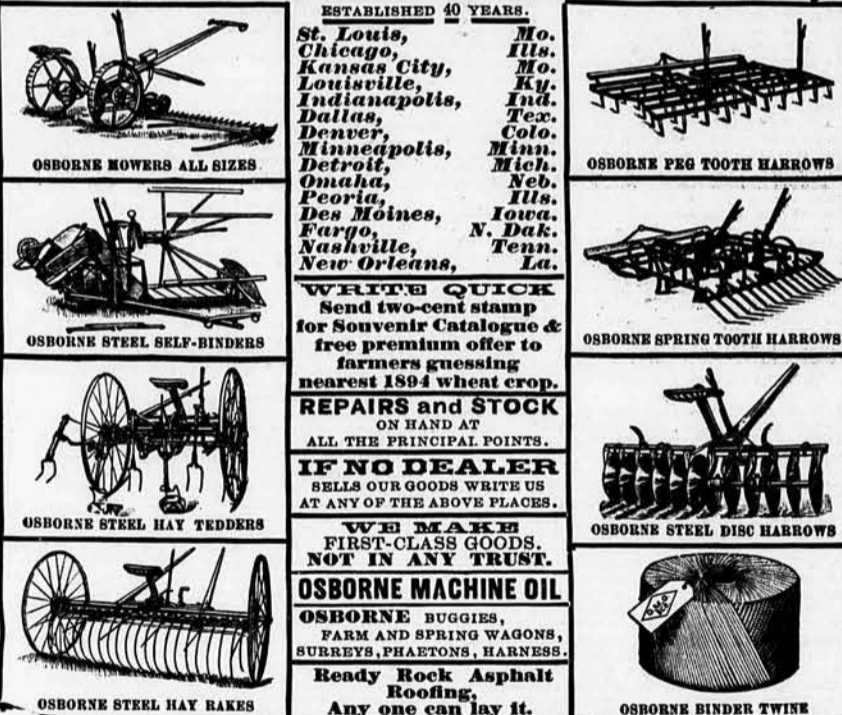


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CHOICE BARRED PLYMOUTH COCKERELS—At \$1.50 apiece. Also White Holland turkeys. Young toms \$3 each, \$5 a pair. Mrs. E. P. Mason, Belle Plaine, Kas.

GALLOWAY BULLS FOR SALE—I have some fine young Galloway Bulls for sale cheap; also Scotch Collie Pups. Come and see them or address, F. R. Hantoon, Snokomo, Wabunsee Co., Kas.

SURPLUS NURSERY STOCK—Send for price list. It embraces everything you want and cheaper than ever. Try me. Send at once. Frank Hol- singer, Rosedale, Kas.

WANTED—Ten thousand bushels German millet; 10,000 bushels sorghum seed. Send samples. Kansas City Grain & Seed Co., Kansas City, Mo.

DOUGLAS COUNTY NURSERY—Offers for the spring trade a full line of nursery stock—fruit trees, small fruits, shrubbery, bulbs and roses; grape vines in large quantities; 800,000 hedge and forest tree seedlings. Prices to suit the times. Send for catalogue, free. Wm. Plasket & Son, Lawrence, Kas.

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RASPBERRY AND BLACKBERRY PLANTS—For sale. J. C. Banta, Lawrence, Kas.

TWO REGISTERED HOLSTEIN BULLS—For sale cheap. Will exchange one if desired. Cor- respondence solicited. G. J. Coleman, Mound Val- ley, Kas.

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HOLSTEIN BULL FOR SALE.—Son of Empress Josephine. Address W. J. Rickenbacher, Box 882, Topeka, Kas.

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TREES, PLANTS, BULBS AND SHRUBS—Spe- cial. The following nursery stock is strictly first-class. Having a surplus, we offer at extremely low rates. Apple, \$7 per 100—three to four feet, \$3.50 per 100; cherry, plum and pear, 18 cents each, \$15 per 100; peach, \$8 per 100; Russian apricot, 10 cents, \$8 per 100; Concord grape, \$1.50 per 100, \$12 per 1,000; evergreen, red cedar, arbor vitae and Scotch pine, two to five feet, each 25 cents, per 100, \$15; Norway spruce, eighteen inches, \$10 per 100; aspar- agus, two year, \$4 per 1,000; rhubarb, \$4 per 100; hardy hybrid perpetual roses, 15 cents each, per 100, \$12; climbing and moss roses, 15 cents, per 100 \$12; hardy shrubs, six for \$1; bulbs, cannas, fall kinds, \$5 per 100; for \$1 we will furnish ten cannas; ten hars will show breeding of above horses. Jack, Monte.—Black, foaled in 1887; 15 1/2 hands high; weight 1,040 pounds; sired by Black Prince, he by Black Sattin, he by Bond's Phillip, etc.; first dam by Rein's Mammoth, second dam by Mogul, etc. Monte's reputation is A. 1 as a breeder, and sold upon con- dition that jennets are disposed of free. Jennets—Are a selected lot that cost up an average of \$400 each for the original stock. Galloway Bulls and Cows—Are of the best strains of the Galloway breed. Contemplating a change in my business, will dispose of above animals at very low prices. Address Chas. E. Musick, Hughesville, Mo.

FOR SALE OR EXCHANGE—Shire stallions, Jack, Jennets, Galloway bulls and cows. Commodore—Dapple gray, foaled in 1887, never has been beaten for sweepstake prize. Stated Tom—Dark brown, foaled in 1887, weighs 1,930 pounds; sired by Gilbey's Spark, winner of first prize at Royal show, England; colts here will show breeding of above horses. Jack, Monte.—Black, foaled in 1887; 15 1/2 hands high; weight 1,040 pounds; sired by Black Prince, he by Black Sattin, he by Bond's Phillip, etc.; first dam by Rein's Mammoth, second dam by Mogul, etc. Monte's reputation is A. 1 as a breeder, and sold upon con- dition that jennets are disposed of free. Jennets—Are a selected lot that cost up an average of \$400 each for the original stock. Galloway Bulls and Cows—Are of the best strains of the Galloway breed. Contemplating a change in my business, will dispose of above animals at very low prices. Address Chas. E. Musick, Hughesville, Mo.

THE HYDRO SAFETY LAMP—For incubators and brooders. Perfectly safe and reliable. I am also agent for the Webster & Hannum green bone-cutter, and handle all kinds of poultry supplies, such as oyster shells, ground bone, dried blood, sunflower seed, etc. In poultry, I only breed the S. S. Hamburgs, the best egg-pro- ducer raised. Send for circular of what you want. J. P. Lucas, Topeka, Kas.

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AGENTS, OWNERS, READ! I have Topeka property paying annual rental, in cash, from \$600 to \$900, free of incumbrance and light taxes, that I will exchange for a farm. Want one quick, this spring. Write at once, answering these questions: Loca- tion, number of acres, cash value, incumbrance, improvements, etc. Address "Farmer," care of Elk Club, Topeka, Kas.

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I WILL SHOW SEED CORN—With any man in the United States, best five bushels, \$25. One dol- lar per bushel, sacks free; ten or more bushels, 90 cents. Four first-class Poland-China sows and an extra bunch of fall pigs for sale. John D. Ziller, Hiawatha, Kas.

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