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SWINE.

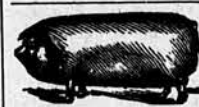
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CENTRAL KANSAS STOCK FARM.—F. W. ROSS, Alden, Rice Co., Kas., breeds pure-bred Short-horns, Poland-Chinas and Barred Plymouth Rocks. Stock for sale.

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Bulls in service: Kodax of Rockland 40731, who has won more first premiums at leading State fairs in past six years than any other bull in Kansas; Java 64045. Thirty-five yearling heifers and seven bulls 3 to 7 years old for sale.

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Percheron and Roadster Horses and Shetland Ponies; also one Denmark Saddle Stallion; also Shorthorn Cattle. Stock of each class for sale.

Also a car-load of young Shorthorn bulls for sale. Pedigrees guaranteed. Address

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Composed of breeders of Galloways in all parts of the United States and Canada. Stephen M. Winslow, President, Oskaloosa, Mo. Frank B. Hearne, Sec'y-Treas., Independence, Mo. For any information relating to the breed, write to the Secretary.

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FOOD AND ECONOMY.

presented lead to the ons: (1) Food is that to the body, builds tis- energy; (2) the most that which is best fitted he user; (3) the cheap- t which furnishes the of nutriment at the least oest food is that which is ithful and cheapest. then, to consider the kinds ants of nutrients in different ood materials, their digestibility, and the kinds and amounts needed for nour- ishment by people doing different kinds of work.

NUTRITIVE VALUES OF DIFFERENT FOOD MATERIALS.

The nutritive value of foods depends mainly upon the amounts and propor- tions of actually nutritive materials which they contain. Of course the diges- tibility and the ways in which they "agree and disagree" with different peo- ple are important factors of the nutritive value. We will consider first the chem- ical composition.

COMPOSITION OF FOOD MATERIALS.

It must be remembered that many of our food materials as they are bought in the market include, along with the edible portion, more or less of what is called refuse, like the bone of meat, the shells of eggs, and skin of potatoes. Materials like milk, flour, and bread have no re- fuse.

Another important consideration is the amount of water in the edible portion of the food. In general, animal foods contain the most water and vegetable foods the most nutrients, though po- tatoes and turnips are exceptions, the former being three-fourths and the latter nine-tenths water. Butter, on the other hand, though one of the ani- mal foods, generally has ten or more per cent of water. The milk from which it is made is not far from seven-eighths water. Meats have more water in pro- portion as they have less fats, and vice versa, the fatter the meat the less the amount of water in it. Thus, very lean beef (the muscle of a lean animal from which the fat has been trimmed off) may have 78 per cent of water and only 22 per cent of nutrients. The rather fat sirloin may have two-fifths, and very fat pork one-tenth or less of water. The flesh of fish is in general more watery than ordi- nary meats, that of salmon being five- eighths water, codfish over four-fifths, and flounder over six-sevenths. Flour and meal have but little water, and su- gar when well dried has almost none.

In examining the proportions of indi- vidual nutrients, protein, fats, and car- bohydrates, the most striking fact is the difference between the meats and fish on the one hand and the vegetable foods on the other. The vegetable foods are rich in carbohydrates, like starch and sugar, while the meats have not enough to be worth mentioning. On the other hand, the meats abound in protein and fats, of which the vegetable foods usu- ally have but little. Beans and oatmeal, however, are rich in protein, while fat pork has very little.

In the first glance at a table of nutri- tive constituents people sometimes ob- tain a wrong impression. For instance, rice consists of about seven-eighths and potatoes only one-fourth nutritive ma- terials. The first inference is that rice is more than three times as nutritious as potatoes. In one sense this is true; that is to say, a pound of rice contains more than three times as much nutri- ents as a pound of potatoes. But if we take enough of potatoes to furnish as much nutritive material as the pound of rice, the composition and nutritive value of the two will be just about the same. In cooking the rice we mix water with it, and may thus make a material not very different in composition from potatoes. By drying the potatoes they could be made very similar in composition and food value to rice. Taken as we find them, a pound of rice and three and one- half pounds of potatoes would contain

ergy. Hence the materials which have the most fat and the least water have the highest fuel value. Butter and fat pork consist almost exclusively of fat. They lead the other food materials in fuel value. Lard, suet, and olive oil have even less water, and hence exceed the butter in this respect. Oleomarga- rine has about the same composition, fuel value and food value, as butter.

The different kinds of meat differ even more in proportions of fat than one would suppose from their appearance. The figures given in tables represent the averages of analyses thus far made of American meats. Comparatively few samples have been analyzed, however, and probably future investigations will change these figures more or less. In- deed, meats are so variable in composi- tion that it is very difficult to say just what are the average figures. Generally speaking, veal is the leanest and pork the fattest of ordinary meats. Mutton is apt to be a little fatter than beef. Of the different cuts of beef the loin, rump, and shoulder are among the leanest, while the ribs and flank are the fattest. Mutton and lamb furnish about the same amount of protein and have the same fuel value as the fatter cuts of beef. The loin is the fatter part of beef and mutton. This is especially the case with mutton, because the leaf fat is usually included with the loin as it is sold in the markets, while in the case of beef the tallow and suet, and in the case of swine the leaf lard, are cut out. Pork is so much fatter than the flesh of beef and mutton that even the strictly "lean cuts," as the lean after the removal of the leaf is called, contain relatively as much fat as the fattest cuts of other meats. The case is similar with smoked ham, though the large proportion of fat is due in part to the loss of water in preparation. Among the prepared meats, canned corn beef, which is ordinarily cooked before can- ning, is worthy of especial notice. It has a large amount of both protein and fats. Like most other kinds of canned meats, the corned beef is free from bone. It fur- nishes more protein, pound per pound, than most kinds of fresh beef, and stands very high in fuel value.

Chicken and turkey have less fat than the fatter meats. In spite of their large amount of refuse, bone, etc., they furnish quite large quantities of protein.

Fish have in general so much refuse and the flesh contains so much water that the proportions of nutrients are smaller than in ordinary meats. The white-fleshed fish, as cod and haddock, have very little fat. Fish with darker meats, such as shad and mackerel, are rich in fats. Salmon has considerable fat and approaches beef in composition. The difference in composition between dry salt cod and fresh cod is due chiefly to the loss of water in the drying and salting. Many persons are surprised to learn that oysters have about the same proportions of nutrients as milk. In- deed, there is very little difference in the nutritive values of the two when esti- mated by the quantities of nutrients and energy. Milk is, however, more nearly a "perfect" or "normal" food, if it is right to call any single food perfect or normal. Oysters are so richly prized because of their flavor. Cheese made of whole milk contains nearly all of the nutrients of the milk except the milk su- gar, and hence comes very nearly being a concentrated form of milk. Cheese made of skim-milk has less fat, and hence relatively more protein.

Among the vegetable foods the chief differences to notice are the proportions of water and of protein. The quantities of water range from 90 per cent. or more in beets and turnips to as low as 10 per cent. in some kinds of flour. In general, dry seeds, like wheat, corn, and beans, and the different kinds of flour and meal prepared from them, contain not far from one-eighth water and seven-eighths nu- trients. Beans and peas contain the largest proportions of protein, and corn meal, potatoes, rice, turnips, and beets the least. Among the cereals wheat is the richest in protein. Doubtless this is one chief reason why it is so largely used for food. Oatmeal has rather more pro- tein than wheat flour.

The comparison of wheat bread with wheat flour is interesting. The chief dif- ference in the composition of flour and bread is the proportion of water, which makes about one-eighth the weight of flour and one-third that of the bread. The average composition of wheat flour

read made from it is

ions of flour and bread.

	Water, per cent.	NUTRIENTS.					Fuel value of bread, cal.
		Total, per cent.	Protein, per cent.	Fats, per cent.	Carbohy- drates, per cent.	Minerals, per cent.	
Wheat flour	12	88	12	1	74	1	1,640
Bakers' bread	32	68	9	2	56	1	1,300

In making the bread, a little butter or lard, salt, and yeast, and considerable water, either by itself or in milk, are added to the flour. The yeast causes carbohydrates (sugar, etc.) to ferment, yielding alcohol and carbonic acid in the form of gas, which makes the dough porous. In the baking, the alcohol is changed to vapor and the carbonic acid is expanded, making bread still more porous, and both are mostly driven off. Part of the water escapes with them. The amount of sugar and other carbo- hydrates lost by the fermentation is not very large, generally from 1½ to 2 per cent of the weight of the flour used. With increase in the proportion of water in the bread as compared with the flour the proportion of nutrients is dimin- ished, but the addition of shortening and salts brings up the fat and minerals in the bread, so that the proportions are larger than in the flour. In practice 100 pounds of flour will make from 133 to 137 pounds of bread, an average being about 136 pounds.

Flour, such as is used by bakers, is now purchased in the Eastern States at not over \$4 per barrel. This would make the cost of the flour in a pound of bread about 1½ cents. Allowing one-half cent for the shortening and salt, which is certainly very liberal, the materials for a pound of bread would cost not more than 2 cents. Of course there should be added to this the cost of labor, rent, in- terest on investment, expense of selling, etc., to make the actual cost to the baker.

Very few accurate weighings and an- alyses of bakers' bread have been made in this country, so far as I am aware, but the above statements represent the facts as nearly as I have been able to obtain them.

The average weight of a number of specimens of 10-cent loaves purchased in Middletown, Conn., was one and one- quarter pounds. This makes the price to the consumer 8 cents per pound. The price of bread and the size of the loaf are practically the same now as when flour cost twice as much.

The cost of bakers' bread is a compar- atively small matter to the person who only buys a loaf now and then, but in the Eastern States and in the larger towns throughout the country many peo- ple, and especially those with moderate incomes and the poor, buy their bread of the baker. Six cents a pound, or even half that amount, for the manufacture and distribution seems a very large amount.

In the large cities competition has made bread much cheaper, but even there the difference between the cost of bread to the well-to-do family who bake it themselves and to the family of the poor man who buys it of the baker is un- fortunately large.

(To be continued.)

Needs of Our Agricultural College.

The Students' Herald, an able paper published by the students of Kanas State Agricultural College, has the following to say about the needs of the college:

The object of the Agricultural College is to fit students for actual life in the lines of agriculture, horticulture, me- chanical arts, architecture and the work of creating and maintaining the home; and also to furnish them with a general education. The students believe the col- lege is honestly seeking to accomplish this object; therefore they believe in it. They recognize that it is growing in at- tendance and effectiveness, hence they are proud of it. They want it to con- tinue to improve; but they realize that it can no more grow without means than a steer can fatten without feed. Most of the income upon which the college lives comes from the Federal government, rather than from the State. Following are the figures for the current year:

COLLEGE INCOME.	
From the federal government:	
Income fund, interest on bonds de- rived from sales of lands donated by federal government, variable.....	\$25,000 to \$29,000
Morrill fund, fixed.....	24,000
Hatch fund, for use in experiment station exclusively, fixed.....	15,000
From the college itself, on account of sales, etc., variable.....	7,000 to 10,000
From the State of Kansas.....	6,050
Totals.....	\$77,050 to \$84,050

During the last twelve years appropria-

tions made by the State have averaged about \$18,000 per annum, or 5 cents for each farmer paying taxes on \$1,000 and worth, therefore, about \$3,000.

Is it too much to ask that the State materially increase its appropriations?

COLLEGE NEEDS.

Note: next some of the needs that should be met if the institution is to do its best work for the people of Kansas. Buildings and Improvements.—Dairy buildings; dairy barn and improve- ments; boiler house; class rooms, added to library building; addition to college chapel, or new chapel; college dormi- tory; engineering laboratory; chemistry and physics building; president's resi- dence (burned April 5, 1895).

Appliances and Equipments.—Dairy school equipment—cows and buildings; steers for experimental feeding; horti- cultural department—additional equip- ment; shop equipment replenished; en- gines, boilers, dynamos, etc., to heat and light additional buildings; sewing ma- chines; steel floors, stairways and racks in library, for upper alcoves; library books and magazines; graphic instru- ments; microscopes for veterinary de- partment.

Teaching Force.—Assistant veterina- rian (on account of work assigned to college veterinarian by State Live Stock Sanitary Commission); two additional professors.

Sewer.—From college to Kansas or Blue river.

Figures for the above can be furnished.

COLLEGE REQUESTS.

The college realizes that all these wants cannot be met immediately and therefore asks for the three things most needed.

1. It asks, first, for a mill tax such as many States have allowed their higher educational institutions. Such a tax, too light to be felt by the taxpayer, would go far toward putting the institution on its feet. It is one of the fairest forms of taxation, for its proceeds increase or di- minish with the prosperity or adversity of the State. The Regents ask for one- sixth of a mill upon the assessed valua- tion. The yield from this would be, at present, about \$53,000 per annum, and would cost each farmer in the State about 16 cents per year. With this in- come the Regents could plan for the growth of the institution; could meet its needs as they arise, and avoid spending time and money lobbying for college ap- propriations at each session of the Legis- lature.

2. The State needs a high-grade dairy school. Kansas is badly behind her sis- ter States in this respect. The dairymen and creamerymen want it; the patrons want it; the students want it; and, we believe, the State should grant it im- mediately. It is estimated that the work of the Minnesota dairy school has increased the price of all Minnesota butter 1 to 2 cents per pound. The Kansas dairy school can do as well for Kansas. The sum asked for on this account is \$40,000. This will mean less than 13 cents for each farmer in the State, or 1½ cents for each tub of butter made by Kansas creameries, or \$5 for each country school district, provided nothing were paid by the cities. With this appropriation it is proposed to erect and equip a dairy build- ing and purchase a dairy herd.

3. The college endowment fund of about one-half million dollars was re- ceived from the federal government by the State on the condition that the State should maintain the fund intact, and guarantee to the college, annually, a re- venue of 5 per cent, i. e., about \$25,000. The State has left the investment of this fund to the college loan commissioner elected by the Board of Regents. If he makes a bad investment the State is bound by its contract with the federal government to make it good. The col- lege is now deriving over \$28,000 a year from this fund. We believe it would be wiser and more economical for the State to invest the endowment fund with the State school fund and guarantee the col- lege a lump sum in return. The amount asked for is \$30,000, i. e., about 6 per cent.

Of the above three wants the mill tax is most important, for, without it or an equivalent, the institution would be brought practically to a standstill. This want includes the pay of the Regents, the repair fund, and other indispensable items. Next in importance is the dairy building and equipment, and last of all is the request for a fixed annuity in ex- change for the endowment, a change that will cost the State little; will give it di- rect control of a fund for which it is now responsible; and will remove the specu- lative element from college financing.

When writing advertisers please mention Kansas Farmer.

The Stock Interest.

Work of Bureau of Animal Industry During the Fiscal Year Ended June 30, 1898.

Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, in his report to the Secretary of Agriculture for the fiscal year ended June 30, 1898, states that there was a great increase of work in connection with meat inspection, and a large number of employes were appointed during the year.

During the year meat inspection was in operation at 135 abattoirs, as against 128 for the previous year, and in 35 cities, as against 33 in 1897.

The number of animals inspected before slaughter, either in the stock yards or at the abattoirs, numbered 51,335,398. Of this number 9,228,237 were cattle; 10,028,287, sheep; 468,199, calves; and 31,610,675, hogs, showing a gain over 1897 of 1,178,212 cattle, 1,983,932 sheep, 19,216 calves, and 6,043,931 hogs—a total gain of 9,025,291 animals.

At the time of slaughter 31,116,833 animals were inspected and 63,662 were rejected; 91,508 carcasses and 48,180 parts of carcasses were condemned.

The meat inspection tag or brand was placed on 14,815,753 quarters and 968,014 pieces of beef, 5,448,477 carcasses of sheep, 217,010 carcasses of calves, 680,876 carcasses of hogs, and 394,563 sacks of pork.

The meat inspection stamp was affixed to 14,583,780 packages of mutton, and beef and pork products, of which 374,131 contained microscopically examined pork. The certificates issued for meat products which had received the ordinary inspection numbered 35,267. These covered exports amounting to 339,650,091 pounds of beef, 324,996 pounds of mutton, and 244,956,482 pounds of pork. Eighteen thousand six hundred and thirty-one cars were sealed containing inspected meat for shipment to packing-houses and other places.

The cost of this work was \$409,138.09, an average of 0.8 cent for each of the ante-mortem inspections, besides covering all the subsequent work of post-mortem inspection, tagging, etc. The samples of pork examined microscopically numbered 2,802,846, and 20,158 certificates were issued covering shipments aggregating 373,366 packages, weighing 120,271,659 pounds. The amount expended for this work was \$171,040.94, an average of 0.142 cent for each pound exported. The cost in 1897 was 0.256 cent.

During the year 859,346 American and 19,397 Canadian cattle, 297,719 American and 29,497 Canadian sheep were inspected for export.

The inspectors of the bureau stationed in Great Britain inspected at the time of landing 398,584 cattle and 179,775 sheep, an increase of 20,898 cattle and a decrease of 9,408 sheep as compared with the previous year. The number of cattle lost in transit was 907, and sheep 1,618. In 1897, 2,323 head of cattle and 2,676 sheep were lost.

During the quarantine season of 1897, 35,317 cars containing 972,224 Southern cattle were received and yarded in the quarantine divisions of the various stock yards; 35,280 cars were cleaned and disinfected.

In the non-infected area in Texas 225,096 cattle were inspected for the identification of brands prior to removal to other States for grazing.

The animals imported from Mexico and inspected at the port of entry along the boundary line comprised 177,772 cattle, 64,207 sheep, 104 swine, and 3,053 goats.

There were imported from Canada and not subject to quarantine detention 79,907 cattle, 184,352 sheep, 374 swine, 2,998 horses, and 17 other animals, and 1,495 animals were quarantined at the different quarantine stations.

To prevent the dissemination of sheep scab, it was required that sheep intended for feeding or breeding purposes should be dipped in a solution to kill the parasites which cause the disease before being permitted to leave the stock yards, if they were affected with the disease or had been exposed to contagion. Accordingly, 535,501 were dipped under the supervision of the inspectors of the bureau.

In accordance with the provision of the appropriation bill for the coming fiscal year, in relation to the inspection of horses, regulations are being formulated to govern the work of inspection of horses at abattoirs and of export horses.

The preparation of tuberculin and mallein by the biochemic division continues steadily. During the winter and spring, tuberculin sufficient to inject about 5,000 animals is sent out each month. A

smaller quantity is used during the summer.

The experiments upon hog cholera and swine plague have been so gratifying that they will be continued.

In connection with the examination of imports from Germany, it was found that German toys and colored goods were poisonous, and all highly painted German toys may be regarded as very dangerous to children, who may suck off the paint or swallow pieces that may be chipped off.

The study of tuberculosis, with reference to both men and animals, has been continued and reports received indicate that in incipient stages of the disease the serum is of considerable value. The results also indicate that further experiments should be made, as there is a prospect of still more satisfactory results. This division contemplates beginning investigations relative to Texas fever, anthrax, and other diseases.

The Division of Pathology has continued the experiments of dipping cattle with a view to destroying the ticks which spread the infection of Texas fever, and a substance has been found in which the cattle may be immersed without suffering any serious injury, and which will destroy all the ticks on an animal in a single dipping. Preparations are now being made to adopt the dipping method generally, by means of which the cattle from the infected districts may be shipped north of the quarantine line during the entire year, while they are at present restricted by quarantine during ten months of the year.

The preparation and distribution of blackleg vaccine have been continued during the year. The demand for it has greatly increased. More than 355,000 doses have been distributed, and the losses from blackleg have been reduced from an average of from 10 to 20 per cent to less than 1 per cent.

In the Dairy Division the general survey of the condition of the dairy industry of the country at large has been continued, together with inquiries as to special branches, such as the milk supply of cities and large towns. This division proposes to investigate the prospects of trade in the dairy products of the United States in the islands of the Pacific, Japan, and China, and also in the West Indies and South America.

In making recommendations for the fiscal year ending June 30, 1900, Dr. Salmon asks that a sufficient appropriation for extending and developing foreign markets for dairy products of the United States be made, and that legislation be sought by which the existing system of government inspection and certification of meats and meat products for export from the United States may be extended (with suitable modifications) to include butter, cheese, and condensed milk.

Make Speed Slowly.

Editor Kansas Farmer:—A horse is just like a piece of machinery. A machine will run perfectly true and smooth up to a certain speed well within itself. When speeded higher and higher the machine will begin to labor—still higher, and joints will shake loose and bearings cut and grind—still higher and something breaks—still higher and the machine flies to pieces, a helpless wreck.

The speed of a horse can be developed by gradual stages up to the point where some structural weakness shows itself. Very rarely it is heart or lungs; but usually it is some muscle, tendon or joint. Now, a skillful trainer "makes speed"—that is, gradually gets the horse to go faster each day than the day before—so slowly and watches so closely that he can note a weakness beginning to show, before any harm is done. He slows up the speed a little, and by massage treatment—rubbing, pinching, and kneading—or by stimulating liniments, or by bandages or other supports, he strengthens and hardens the weak point, until it is able to stand the strain of present speed, and finally of increased speed. Progress is then made until the next weak point shows; and this in turn is carefully strengthened, and the speed increased until the limit of endurance is reached or some weakness refuses to yield to treatment, or some other cause develops. A rest of several weeks, or months, or a year or two, may then allow of still further speed development.

Finally the limit is reached, and the great race horse becomes a back number; for few horsemen realize the terrific strain endured by a horse at fast speed, for there is a limit to the wearing quality of machinery composed of blood and flesh and muscle and bone. Few people realize the hardening process which results from training, for the flesh

of the old campaigner is as hard as marble under his sleek, shining coat; his muscles are hard as iron, and his bones are spring steel.

Keeping the above in view, it is very easy to see how a green, growing colt, whose muscles and joints are not yet hardened by moderate use, can be easily injured. The safer way to develop speed is to drive a sixteenth of a mile by starting up the colt, going faster and faster and then slowing down gradually to a walk. Increase the dose each day, until the colt is going at top of his speed for the sixteenth of a mile. Then go eighths and quarters, and all the time teach him to go faster and faster.

Never go heats of over half a mile for a horse not regularly trained or raced. A mile at top speed is too much for any horse not carefully prepared, by gradual development, to stand it. Any fool can take out a valuable fast horse and "bust" him up. And, unfortunately, that is the usual end of three out of four fast horses put into the hands of cheap trainers. The owner himself can get better results than the cheap trainer, and still have a sound horse remaining. If you wish to ride at the head of the procession, be patient and plodding and make speed slowly. GEO. W. MAFFET. Lawrence, Kas.

Actinomyces (Lump-Jaw, Big-Jaw).

Press Bulletin Kansas Experiment Station.

This is one of the common cattle diseases of Kansas. Although occurring in pigs and in rare instances observed in horses and man, this disease attacks chiefly cattle, and is one concerning which the Veterinary department of the Experiment Station receives many inquiries.

The disease is characterized by the gradual appearance of irregularly-shaped tumors, which, after a certain development, become soft in the interior, break at one or more points, and discharge a stringy mass of pus containing minute yellow granules, which can be recognized, by careful examination, with the unaided eye.

These small granules, when viewed under the microscope, are seen to be composed of groups of radially arranged club-shaped bodies, known as Actinomyces bovis, which constitute the cause of the disease (Bollinger, 1877).

The tumors of actinomyces appear most frequently on the lower jaw bone, or in and under the skin of that region. The parotid gland, lying below the ear, between the lower jaw and the neck, is also a favorite point of attack. Sometimes the muscular portion of the tongue is fairly riddled with minute tumors of the same character, causing that organ to become stiff and hard (woody tongue) and interfering seriously with mastication. Often the teeth are affected, get loose and drop out, and in many instances the tumors on the jaws originate in the sockets of the teeth. Internal organs, the throat, lungs and first and second stomachs may be the seat of the disease. When the lungs are affected the symptoms are similar to those of tuberculosis, but the characteristic yellow granules indicate the actinomycotic nature of the disease.

The external tumors (lumps) when first appearing on the jaw bones are often mistaken for results of accidental blows, and are then described as such. They can, however, readily be distinguished by the fact that the former are usually cold and free from acute pain, while swellings resulting from bruises and blows are usually warm to the touch (inflamed) and painful, and these symptoms soon disappear upon applications of cold water, the pain increasing and the swelling disappearing. In case of true actinomyces, cold water applications have no effect, but, on the contrary, the tumors continue to increase in size, finally breaking in various places, producing ugly raw sores, and discharging their characteristic pus. The abscess cavities thus formed often heal, only to break out, soon after, in an adjacent region.

As already stated, the cause of this disease is a fungus known as Actinomyces bovis. This fungus grows on various kinds of grasses, but especially on the awns and glumes of barley and related grasses, and when these have grown on swampy or flooded fields, bottom lands in particular.

When these are fed in their dry state (winter and early spring) the awns and other sharp points of the grasses produce, and find access into, small wounds of the cheeks, gums and other places, carrying the fungus with them and thus inoculating the animal with the fungus. The possibility also exists that these

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fungi be inhaled and thus infect the lungs. Hence, we see, that the disease is of a distinctly infectious nature, but, as far as observation goes, the disease is not contagious, i. e., affected animals do not tend to spread the disease, but all affected animals become infected from the same source. Stacks of barley straw used by cattle as food and shelter often seem to be the cause of this disease. The writer observed a herd of twenty yearling heifers and steers every individual of which was affected with actinomyces in various parts of the head and neck, and the only assignable cause was a barley straw stack which served as shelter and in part as food for these animals. All animals should, of course, be kept away from such suspicious places when cases of lump-jaw exist on the farm.

The treatment of this disease, up to a few years ago, was almost entirely a surgical one, consisting of extirpation of the affected parts when they were small and circumscribed enough and not too near vital organs or large blood vessels, and of the application of strong and dangerous caustics.

For the past few years great success has been had with the internal use of iodide of potash administered in ten-gram doses per day for animals of one thousand pounds weight. For heavier or lighter animals the dose can be adjusted in proportion to the difference in weight. Each dose of iodide of potash is dissolved in a pint of water and given as a drench, the dose being repeated daily for ten days to two weeks or until recovery sets in. Sometimes symptoms of iodine poisoning develop as a result of continuous dosing with potassium iodide. These consist of discharges from the nose, watering of the eyes and peeling off of thin layers of skin. These symptoms disappear soon after the drug is withheld, and are not serious. Local applications of tincture of iodine on the tumors are also advisable. The animals in the herd of twenty yearlings above referred to were thus treated, and, although some were quite seriously affected, all recovered completely.

This is not an infallible specific, but as a rule very excellent results are obtained from its use. Advanced cases of long standing are, of course, always less likely to result in recovery than cases treated in the first stages.

The flesh of animals affected with strictly localized actinomycotic tumors, if otherwise in good health, cannot at present be considered as unfit for human consumption. The affected parts themselves, of course, must be discarded.

PAUL FISCHER.

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with LOCAL APPLICATIONS, as they cannot reach the seat of the disease. Catarrh is a blood or constitutional disease, and in order to cure it you must take internal remedies. Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces. Hall's Catarrh Cure is not a quack medicine. It was prescribed by one of the best physicians in this country for years, and is a regular prescription. It is composed of the best tonics known, combined with the best blood purifiers, acting directly on the mucous surfaces. The perfect combination of the two ingredients is what produces such wonderful results in curing Catarrh. Send for testimonials, free. F. J. CHENEY & CO., Props., Toledo, O.

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Sunny Slope Sale a Success.

The public sale of Sunny Slope Hereford cattle, on last Wednesday, at Kansas City, was a grand success in every particular, and it is very gratifying to the friends of the late C. S. Cross to know that his last projected enterprise resulted in so favorable an outcome, especially in view of the fact that never before in one season has so many Herefords, in excess of all beef breeds, been offered for sale, both public and private, as during the present season. Another innovation introduced by Mr. Cross in the public sale business was the including of twenty-four calves, both sexes, nearly one-fourth the entire offering, which was done for the special benefit of Southern cattlemen. The detailed results of the sale show that all these sold well, and 104 Herefords sold at an average of \$333.17. The success achieved by this sale will benefit every breeder of Herefords in America.

The attendance of representative breeders and visitors was the largest ever seen at a cattle sale in Kansas City, and the offering was distributed over several States. The cattle went mainly to buyers from Kansas, Missouri, Texas, Nebraska, Tennessee, South Dakota, Indian Territory and Illinois. The Kansas City Journal, in commenting on this sale, states that it was the most notable cattle sale ever held in the sale pavilion at the Kansas City stock yards. One hundred and four head of the famous Cross herd of Herefords, including the show herd of Sunny Slope farm, were sold at auction. The sale was notable in the total receipts, the cattle selling for a total of \$34,650. It was notable in that a cow was sold for the highest price ever realized for a Hereford in this country or for a cow of any other breed since the high prices shortly following the Civil war. It was notable in that it broke the record at the Kansas City sale pavilion for prices either for cows or bulls. In opening the sale Colonel Woods, the auctioneer, spoke feelingly of the late Banker Cross, who was so popular with Hereford breeders.

Mrs. Cross was present through the sale and showed great familiarity with each individual animal brought out. A novel feature of the sale was that the clerk was a woman, the first instance of the kind at a sale in Kansas City. Miss Grace McGrew, Mr. Cross' stenographer, acted as clerk. She was as familiar with the breeding of the cattle as was Mr. Cross himself. Mrs. Cross displayed remarkable knowledge of the cattle and their pedigrees. Once when a heifer was brought in and was about to be sold she called to the auctioneer to stop.

"That is not Aleria," she said. "There must be some mistake."

It was found that the number on the heifer was upside down and should have read 89 instead of 68. The registered number tattooed in the animal's ear showed that Mrs. Cross was right. There is not one person in a thousand that would have detected the error, but Mrs. Cross knows every animal in the herd and has their pedigrees at her tongue's end.

The sensational event of the day was the purchase by K. B. Armour, of Kansas City, of Beau Real's Maid for \$2,250, the highest price ever paid for a Hereford cow. Beau Real's Maid has taken prizes over all cows of beef breeds many times, and is undoubtedly the finest individual beef cow in the world to-day. The bidding started at \$300 and went up in jumps of \$50 to \$100, until \$1,800 was reached. Here it hung for a time and then suddenly soared again to \$2,250, at which price the beautiful creature was knocked down to Mr. Armour. Thos. Clark, of Beecher, Ill., was a strong bidder for the animal, and after she had been sold at the highest price ever known, both Mr. Armour and Mr. Clark were warmly cheered by the crowd. Besides this, several other animals brought very high prices, and the 104 head sold averaged \$333.17 each. This is a higher average than has been attained at any sale at the pavilion for some time. The highest price at which an individual ever sold at the pavilion before was \$1,400, which was brought by Hesiod 50th, a Hereford bull, at the Funkhouser sale a few weeks ago. The purchaser was J. M. Curtice, of Kansas City. The highest price ever realized for a cow at a pavilion sale heretofore was \$1,025, which an imported cow, Queen's Heifer, sold at K. B. Armour's sale. She was bought by Scott & Whitman, of Ruble, Kas.

Several years ago, in the fat stock show days of 1884, Gudgeon & Simpson sold twenty bulls at an average of \$476.25. The same year James A. Funkhouser sold eleven bulls at an average of \$453.63 and twenty-nine cows at an average of \$490.65. But no individual sold as high as some of yesterday.

At Mr. Cross' sale, at Emporia, last March, twenty-six imported bulls brought an average of \$756.53, and twenty-six home-bred bulls an average of \$408.46. One bull brought the phenomenal price of \$3,000.

FULL LIST OF SALES.

The following is a full list of the sales:

BULLS SOLD.

Admiral Dewey 80955, calf; J. R. Lewis, Sweetwater, Texas, \$200.
Admiral Sampson 80956, calf; J. R. Lewis, \$240.
Achibald Anxiety 710100, yearling; A. A. Larkin, Ellsworth, Kas., \$300.
Achibald 7th 75969, yearling; Capital Syndicate, Channing, Texas.
Achibald 8th 75970, yearling; C. M. Donehey, Wheaton, Kas., \$205.
Achibald 9th 75971, yearling; K. B. Armour, Kansas City, Mo., \$300.
Achibald 10th 80957, calf; J. R. Lewis, \$190.

Archibald 11th 80958, calf; J. D. Eades, Warrensburg, Mo., \$165.
Archibald 12th 80959, calf; W. N. Kilburn, Sterling, Kas., \$200.
Archibald 14th 80960, calf; D. C. Hall, Farmington, Kas., \$130.
Archibald 15th 80961, calf; J. R. Lewis, \$225.
Achibald Wilton 75973, yearling; John Stabon, Minneapolis, Kas., \$310.
Aptaxerxes 75974, yearling; Stanton Breeding farm, Madison, Neb., \$280.
Ben Lomond 75983, yearling; J. R. Lewis, \$225.
Beau Climax 75976, yearling; R. G. McAnish, Manhattan, Kas., \$280.
Beau Lomond 75977, yearling; George Tugle, Kansas City, Mo., \$205.
Beau Real's Prince 5978, yearling; B. S. Culbert, Aberdeen, S. D., \$245.
Brickmason 76946, yearling; Stanton Breeding farm, \$460.
Caesar (Vol. 19), calf; R. L. Faulkner, Jamesport, Mo., \$215.
Cecil 76401, yearling; R. L. Faulkner, \$200.
Cedric (Vol. 19), yearling; Wood & Bancroft, Madison, Neb., \$210.
Charming Sir Bartle 80963, calf; J. R. Lewis, \$155.
Climax 60942, 4 years old; Stanton Breeding farm, \$300.
Climax 4th 71031, 2 years old; K. B. Armour, \$1,025.
Don Pedro 75994, yearling; R. L. Faulkner, \$215.
Duke Alexis 80967, calf; Stanton Breeding farm, \$200.
Duke of Geneva 71055, yearling; J. R. Lewis, \$200.
Duke of Hereford 75997, imported, yearling; R. L. Faulkner, \$320.
Elvira's Archibald 75998, yearling; F. Rockefeller, Cleveland, O., \$555.
Felix 76004, yearling; Ellemac stock farm, Memphis, Tenn., \$205.
Hesiod 32d 66307, 3 years old; W. R. Slaughter, Salisbury, Mo., \$400.
His Lordship 80971, calf; Stanton Breeding farm, \$150.
Judge Vincent 2d 66925, 3 years old; A. Schmitz, Alma, Kas., \$260.
Laudable 78847, 2 years old; Capital Syndicate, \$310.
Lieutenant Hobson 80972, calf; J. R. Lewis, \$230.
Louis XIV. 70025, yearling; Oliver Chandler, Terre Haute, Ind., \$280.
Louis XV 80975, calf; Stanton Breeding farm, \$180.
Lundy Lane 76028, yearling; George Tugle, \$225.
Montmorency 80980, calf; K. B. Armour, \$240.
Nobleman 71095, yearling; J. R. Lewis, \$810.
Oberon 76042, yearling; A. B. Johnson, Minco, I. T., \$215.
Orestes 76044, yearling; R. L. Faulkner, \$350.
Patroches 80984, calf; J. R. Lewis, \$505.
Pembroke 76046, imported, yearling; S. P. Allen, Kansas City, Mo., \$500.
Prince Archibald 80986, calf; J. R. Lewis, \$140.
Prince Royal 76049, yearling; Donald Choateau, Lenepah, I. T., \$255.
Prince Tom 70050, yearling; W. R. Slaughter, \$515.
Pythagoras 80987, calf; Stanton Breeding farm, \$205.
Real Lomond 76054, yearling; J. R. Norman, Craig, Mo., \$225.
Rodney 76057, yearling; J. E. Logan, Kansas City, Mo., \$200.
Sir Bartle Beau Real 61009, 3 years old; J. R. Lewis, \$300.
Sir Benjamin 71120, yearling; Jones Bros., Comiskey, Kas., \$335.
Sylvan 76067, yearling; R. A. Faulkner, \$265.
Vernon (Vol. 19), yearling; H. W. Heffner, Hardin, Mo., \$200.
Wilton Rudolph 76074, yearling; Miller & Ulric, Wamego, Kas., \$230.
Woodlands 58214, 6 years old; Capital Syndicate, \$300.
Young Archibald 76076, yearling; Capital Syndicate, \$325.

FEMALES SOLD.

Beau Real's Bertha 75978, yearling; R. W. Hussey, Glasco, Kas., \$230.
Beau Real's Lily 60926, 4 years old; Stanton Breeding farm, \$560.
Beau Real's Maid 60927, 4 years old; K. B. Armour, \$2,250.
Beau Real's Waverly 71014, yearling; J. R. Lewis, \$235.
Bessie 2d 56082, 5 years old; E. E. Wall, Leeton, Mo., \$265.
Birthday Cochrane 75984, yearling; Stanton Breeding farm, \$300.
Blossom 75985, yearling; R. M. Dobson, Jefferson, Kas., \$180.
Charming Beau Real 60938, 4 years old; Thomas Clark, Beecher, Ill., \$420.
Cherry Grove Maid 75989, yearling; J. M. Karnahan, Riverton, Neb., \$225.
Christine 71028, yearling; K. B. Armour, \$400.
Daisy 71042, yearling; K. B. Armour, \$230.
Daughter of Wild Mary 71047, yearling; J. R. Lewis, \$330.
Dellah 80965, calf; C. A. Stannard, Hope, Kas., \$250.
Diana 71049, 2 years old; J. M. Curtice, Kansas City, Mo., \$725.
Dimple 61353, 3 years old; J. R. Lewis, \$375.
Duchess Beau Real 75996, yearling; J. R. Lewis, \$280.
Gentle Mary XVIII. 60958, 4 years old; J. S. Lancaster & Sons, Chandler, Mo., \$350.
Gem of Lorraine 80970, calf; George W. Hussey, \$160.
Genista 63805, 4 years old; J. R. Lewis, \$300.
Genevieve 51137, 7 years old; J. R. Lewis, \$350.
Lady Benjamin II. 60965, 4 years old; J. R. Lewis, \$350.
Lady Hesiod 76017, yearling; J. R. Lewis, \$275.
Lady Matchless IV. 71081, yearling; J. R. Lewis, \$315.
Lilac Beau Real 76022, yearling; W. L. Woods, Strong City, Kas., \$215.
Lily Beau Real 60969, 4 years old; K. B. Armour, \$460.
Lily Cochrane VII. 76023, yearling; J. R. Lewis, \$180.
Louisa Real IV. 66856, 2 years old; Stanton Breeding farm, \$215.
Mamsell III. 76034, yearling; J. R. Lewis, \$200.
Mary Broadgauge III. 76037, yearling; J. R. Lewis, \$200.
Mercedes 76039, yearling; W. L. Wood & Son, Strong City, Kas., \$225.

Miss Grove II. 76040, yearling; J. R. Lewis, \$410.
Miss Wellington V. 60983, 4 years old, with calf; Stanton Breeding farm, \$550.
Misty of the Meadow 67322, 3 years old; J. E. Logan, \$325.
Nutbrown X. 60988, 4 years old; C. A. Stannard, \$295.
Nutbrown XII. 80981, calf; R. M. Dobson, \$200.
Olivia 80982, calf; C. A. Stannard, \$235.
Parlee II. 60989, 3 years old; Thomas Clark, \$305.
Pretty Maid 65910, 3 years old; Thomas Clark, \$1,055.
Princess Sylvia II. 47118, 7 years old; J. R. Smith, Dunavant, Kas., \$310.
Robertha II. 71110, 2 years old; J. R. Lewis, \$350.
Robertha III. 76056, yearling; C. A. Stannard, \$235.
Rosa IV. 60988, 4 years old; Stanton Breeding farm, \$205.
Sally Archibald 76060, yearling; J. R. Lewis, \$155.
Idalia III. 60963, 4 years old; K. B. Armour, \$290.
Sylvia IV. 71118, 2 years old; M. H. Woolston, Sugar Lake, Mo., \$350.
Victoria Regina 71131, yearling; J. R. Lewis, \$210.
Belle Monde 75981, yearling (owned personally by Mrs. Cross); J. R. Lewis, \$515.

SUMMARY.

57 bulls brought \$17,505, average \$307.10.
47 females brought \$17,145, average \$364.78.
104 Herefords brought \$34,650, average \$333.17.

Gossip About Stock.

Mr. S. J. Moss, of Quenemo, Kas., has laid a good foundation for a Hereford herd, and is using a bull of Van Natta's breeding. We will have more to say of this herd later.

Don't overlook the public sale of Poland-Chinas to be held at Ft. Scott, Kas., December 17, by the Poland-China Association, composed of Messrs. Hornaday, Adamson, Young and Turley. Their sales always include the very best of stock.

The Wiley Bros., of Quenemo, Kas., have a small herd of Short-horns, headed by the Scotch-bred bull, Monarch Morn. He is a son of Scottish King and out of Duchess of Gloster 3d. Their cows are a good strong lot and well bred. These gentlemen have also a few choice Poland-Chinas.

On Tuesday, December 20, at Newkirk, Okla., there will be held a combination sale of pure-bred Short-horn cattle by E. H. Littlefield and Poland-Chinas by Frank B. Hutchinson. Both of these men have been liberal patrons of the best Kansas breeders and Kansas men should not fail to be present to extend every encouragement possible and get acquainted with the breeders of Oklahoma, who are now the most extensive purchasers of improved stock in the West.

A family of veterinary surgeons. We refer to the firm of Moore Bros., Albany, N. Y., whose advertisement appears in this issue. Dr. Henry Moore, the father of the firm, practiced in England and in America for fifty-five years. Dr. Edward Moore is member of the Royal College of Veterinary Surgeons, London, Eng. They conduct one of the largest veterinary hospitals in America. They have made many discoveries in veterinary medicines during their extended practice.

The attention of farmers and the Poland-China breeding fraternity is called to the new change of advertisement of Bricker & Johnston, of Westphalia, Kas., who report a lively home trade. They recently added a new herd from R. A. Kerr, South Nassau, Ohio, sired by Frazier's U. S. and out of Black Beauty. They will now sell their herd of King Perfection 4th 18744 and Lambing's Ideal 14050. Both have been quite satisfactory breeders. They also have a few choice April boars for sale. Don't fail to write them for further details. Mention Kansas Farmer.

A notable offering of Poland-Chinas takes place on December 22, per advertisement in this issue, at Enid, Okla., by C. S. Williams & Sons. This firm has a most excellent reputation among the swine raisers of the West, and this sale includes as desirable animals as any sale held this season. They offer ten yearling sows bred to Chief Wilkes 10968, Van Dee 4191 or Tecumseh Black Jr., also a number of pigs, as well as boars of serviceable age, the breeding of which should attract a large number of the best breeders. It is to be hoped that the results of the sale may be satisfactory, as the offering is exceptionally good.

Miles Bros.' closing-out sale of Poland-Chinas, at Peabody, December 8, was greeted with a bitter winter day that worked a disadvantage to the visitor. The offering was all that was claimed for it, and every buyer present got a bargain. Col. Sawyer, the auctioneer, readily disposed of thirty-eight head at an average of over \$15.50. The highest price of the sale was \$43, for Corwin I Know, who went to Elkhorn farm, Alva, Neb. Their young herd boar, Lambing's Best, topped the prices for males, at \$28, and was secured by O. P. Updegraff, of Topeka. M. C. Hemenway, of Hope, Kas., purchased more of the choice plums of the sale among the females than any outside buyer. The following comprise the complete list of purchasers: M. C. Hemenway, Hope; O. P. Updegraff, Topeka; Elkhorn farm, Alva, Neb.; H. H. Davidson & Son, Waverly; Wm. Maguire, Haven; W. H. Wren, Marion; J. A. Longacker, Elbon; C. S. Kelley, Paxico; Wm. Trego, Sedgwick; M. H. Johnson, Potwin; Chas. Elliott, Olney; Chas. Palmer, Creswell; J. D. Marshall, Walton; J. M. Stutesman, Elbon; M. Ginty, Elbon, and C. E. Westbrook, Jno. Riggle, H. Windsor, H. D. Lackey, C. Hart, L. Reid, all of Peabody, Kas.

Use Dr. Bull's Cough Syrup for stubborn colds. This wonderful remedy positively cures all lung affections in a remarkably short time. Try it and be convinced. Price 25 cents.

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



When a young man asks a father for his daughter's hand in marriage, if the father is a wise one, he thinks of one thing equally as important as the young man's morals, social and business standing and intelligence. A young man who suffers from ill-health has no right to marry until his health is restored. To do so is to commit a crime against the human race. While all diseases may not be directly inherited, the constitutional tendency to acquire them is inherited. If a man is a consumptive, the chances are that his children will have weak, undersized lungs, and a predisposition to acquire the same disease.

The young man who suffers from bronchitis, weak lungs, spitting of blood or any disease of the air-passages which, if neglected leads up to consumption, may take Dr. Pierce's Golden Medical Discovery with almost absolute assurance of recovery. It cures 98 per cent. of all cases when taken in time. It soothes and heals the delicate and sensitive tissues of the air-passages and lungs, checks the cough, facilitates expectoration, drives out all impurities and disease germs from the tainted blood and builds new and healthy tissues.

Mr. John G. Born, of 4020 Liberty Ave., Pittsburgh, Pa., writes: "Some thirty months ago I said to my wife, 'I don't want to keep anything from you, I must tell you I am in the last stage of consumption.' In December 1896 I commenced taking Dr. Pierce's Golden Medical Discovery. I could then only speak in whispers. I have taken thirteen bottles, and can say with truth I am greatly benefited. People are surprised to hear me speak. I can halloo, and my voice has not been as good in eight years. My stomach was never in better condition. Formerly I could not eat without suffering very much immediately after, but now I can eat anything."

B. & B.

Your Advantage Comes First Here.

May seem strangely new to have a Dry Goods store place your interest before its own—but it's so here—and because it's done that way we've developed on merit one of the largest mail order businesses in America—sell probably more Silks and Dress Goods, from Maine to California, than any other Dry Goods concern—do so by making it pay people to send here.

Profits are not reckoned by the most money—highest price—we can get out of one sale. But choice goods at the least prices equal kinds are sold for anywhere—and by that method we sell to more people—more people save—and we make just as much. We'd rather make 5 cents a yard from two sales than 10 cents a yard from one.

With such immense outlet for choice styles, and such buying opportunities as are ours, large assortments of choice goods are not only a feature, but a necessity.

We send samples free—all we ask is an idea of what your preference is.

Get samples of Dress Goods, 25c, 35c, 50c, 75c and \$1.

Rich silks—superb quality—50c, 65c, 75c to \$1.50.

Let goods and prices prove this advertisement.

Our 250-page illustrated catalogue free, postpaid.

BOGGS & BUHL,

Department G. G.

Allegheny, Pa.

Climate Cure

For Weak Lungs, Weak Throats, Weak Bodies.

The Health Resorts of New Mexico and Arizona

are unrivaled. Pure, dry air; an equable temperature, the right altitude, constant sunshine.

Send for descriptive pamphlets issued by Santa Fe Route Passenger Department.

General Passenger Office, The Atchison, Topeka & Santa Fe Railway, TOPEKA, KAS.

A Commission Firm's View of the Position of Corn.

Editor-Kansas Farmer:—The Government Agricultural Department has made its last guess as to the outcome of the corn crop of 1898, and while it can find very few who will agree with its conclusions, especially among those whose business it is to investigate crop conditions, it has at least removed one disturbing factor from the market, and the trade will now be more apt to give proper value to those influences of supply and demand which ultimately make all prices.

The Government on November 1, before a bushel of corn had been gathered, thought it could figure out a total yield of about 1,900,000,000 bushels. The best posted private authorities, the trade journals, the crop experts, the larger and best posted grain firms throughout the country, now that the farmers have been gathering corn a month, believe that the Government estimate is from 100,000,000 to 200,000,000 too high, and that a conservative estimate of the crop would not be over 1,700,000,000 to 1,750,000,000 bushels.

The husking has also demonstrated that the crop in large portions of the surplus corn States is the poorest in quality and condition of any during the last ten years, that much of it will be fit only for hog feed and that the balance will be late in coming into condition to market.

The reserves of old corn have been reduced to a minimum. The low money rates have so stimulated the feeding of cattle that more cattle are being fed to-day in the surplus corn States than has ever before been known. The receipts of fattened hogs, the largest ever known at this time of the year, indicate where a large portion of the old corn has gone, and the favorable season and absence of disease insures equally large consumption during the coming year. Every corn-consuming industry is busy, the interior eastern demand for corn, which is always in exact proportion to the business activity of that section, with more prosperous conditions is growing steadily, and promises to continue at high-water mark throughout the year.

The continued shortage of feeding stuffs on the Continent and in the United Kingdom during the last three years has stimulated the demand for corn, both for human and animal food, and opened up innumerable new uses and new markets. Last year saw the largest export of corn from this country. This year will more than equal it. Already since July 1 to date, we have exported over 1,000,000 bushels more than for the same time last year, and the demand seems to increase from week to week, stimulated in a measure by the partial failure of the Danubian corn crop, which leaves Europe almost entirely dependent on us for its corn supply.

Eighty per cent of our corn crop is consumed on the farm; and there the feeding, and consequent consumption, is larger than ever before known. The balance is consumed in the Eastern States, where increased business prosperity means increased demand, or is exported to the United Kingdom and the Continent, where the demand has never been equalled.

Allowing that the very highest estimate of our crop is correct and that we have raised 1,925,000,000 bushels, as stated by the Government, the situation would be about as follows:

Amount of corn in farmers' hands March 1, 1897, as shown by the Government report of March 10, 1897.....	1,164,000,000
Amount of corn raised in 1897, according to Government report.....	1,903,000,000

Total amount available for consumption for the twelve months from March 1, 1897, to March 1, 1898.....	3,067,000,000
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Amount of corn in farmers' hands March 1, 1898, as shown by Government report of March 10, 1898.....	783,000,000
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Amount of corn consumed and exported during the twelve months from March 1, 1897, to March 1, 1898, as shown above.....	2,284,000,000
Average monthly consumption.....	190,000,000

Amount of corn in farmers' hands November 1, 1898, as shown by Government report of November 10, 1898.....	138,000,000
Amount of corn raised in 1898, according to Government report.....	1,925,000,000

Total amount available for consumption for the twelve months from November 1, 1898, to November 1, 1899.....	2,063,000,000
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Consumption for the twelve months of 1899, on the basis of consumption during 1897 and 1898 at rate of 190,000,000 bushels per month.....	2,280,000,000
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Showing shortage of corn supplies for 1899, as compared with established consumption of 1898, 217,000,000 bushels, leaving us without a bushel in our reserves November 1, 1899. In other words, unless there is a decrease instead of the expected increase in our home consumption, together with a most improbable decrease in our export demand, on the basis of our monthly consumption for the past twelve months, there will be an actual shortage in our corn supply of 217,000,000 bushels, which will have to be met by the substitution of some other feeding stuff for corn, a substitution that can only be brought about by an advance in corn values that will force such a substitution.

If, however, the generally accepted estimate of the corn crop, as ascertained by

DEAR EDITOR:—Do you know of boys or girls that want watches or cameras? We have quite a number to give away to bright boys or girls who will do an hour's work for us in their own locality. No experience necessary and no capital required. If you will make mention of this in your paper those who write us will receive full particulars by return mail.

Yours truly,

THE GENTLEMAN PUB. CO.,
German Herold Bldg., New York City, N. Y.

the husking, is correct, there is in addition to the shortage of 217,000,000 bushels, as shown by the Government figures, an additional shortage of 100,000,000 to 200,000,000 bushels to be taken care of; a total shortage so large as to force extreme prices for corn before another crop is on the market.

But these figures do not tell the whole story. A year ago the visible supply of corn was 42,000,000 bushels, against 22,000,000 bushels to-day, showing a shortage in our immediate available supplies of 20,000,000 bushels. A year ago every point not included in the visible supply statement was loaded with corn. The lake ports of Collingwood, Midland, Prescott, Kingston, Ogdensburg and Erie contained at least 4,000,000 bushels more corn than at the present time, and not one bushel of it appeared in the visible supply. A year ago every private elevator here and elsewhere was full to overflowing with corn. To-day they are practically empty, these stocks being at least 8,000,000 to 10,000,000 bushels less than last year.

A year ago every corn crib at every railroad station in the surplus corn States was filled. To-day a large majority of the corn cribs are empty, and a very conservative estimate of the shortage in this crib supply (and it must be remembered that the government figures do not include corn that has left farmers' hands) would be somewhere from 30,000,000 to 40,000,000 bushels, so that it is safe to say that we enter the present crop year with a stock of corn in all positions at least 400,000,000 bushels less than we actually used during the twelve months from March 1, 1897, to March 1, 1898. In other words, consumption has overtaken the supply, and as compared with our actual needs the corn crop of 1898 is the smallest the country has ever raised. On these facts it would be safe at any time to predict a broadening market, and a higher range of values; but at present, when money is seeking investment in every direction, when the country is entering an era of unprecedented expansion and prosperity, there is but one logical outcome to the situation. Our actual needs will carry corn prices higher, and speculation will carry them still higher.

BARTLETT, FRAZIER & CO.
Chicago, Ill., Dec. 9, 1898.

Book for a Soldier Son.

Dear Family Doctor:—I want you to help me select a Christmas present for my boy in the army. I want it to be a book—one that shall make him a better soldier if possible. You have given us many fine "book talks" in the Farmer, and I have bought a number of books on your judgment of their good qualities and never was disappointed. Please give me advice through the paper. It may help others as well as myself.

A FARMER.

Osage City, Kas.

There are many good books, and more poor ones, relating to army life and war experiences. Some are light and humorous, even to frivolity, and some are serious and sober, even to stupidity. Of course, I have not read all of them, but, of the goodly number that I have read, the one that comes closest to filling the want you express, and the one I have already selected for my own son, who is, like yours, in the service of "Greater America," is that quaint and inimitable story of army life, "Si Klegg and His Pard," by Wilbur F. Hinman, himself an old soldier. The book tells the story of a raw recruit who answered Lincoln's call for "300,000 more." The tale is very delightful reading, at least to an old soldier, who comes across something on every page that recalls to him some phase of army life that he himself witnessed during the three or four years in the army. The thousand ludicrous incidents that crept into the lives of all soldiers, and the thousand other serious things that kept them company, are all there, and so freshly and entertainingly told that there is no room for the wish that it might be better told. The story, like life itself, is full of a changeable succession of levity and pathos, light and shadow, the gay and grave, and so blended that it never tires the reader and never puts him to sleep with that droning paucity of thought and stupid ponderosity of diction we find in too many books. It is free from vulgarity on the one hand and assiduity on the other. Would you know the light and levity of soldiering, that saved thousands of the boys from dying with homesickness, it is found here; and if you would know the patriotic impulses and the incitements to heroism and valor that saved the country and upheld the flag, they also are here, well balanced and orderly. So, I say, send your boy "Si Klegg and His Pard." You will, if you read it first yourself.

HENRY W. ROBY.

TO CURE A COLD IN ONE DAY
Take Laxative Bromo Quinine Tablets
All druggists refund the money if it fails to cure. 25c. The genuine has L. B. Q. on each tablet.

Dairy School, State Agricultural College, Manhattan, Kansas,

JANUARY 3 TO MARCH 25, 1899,

For creamery patrons and Private dairymen, offering thorough instruction in the selection, feeding, breeding and care of the dairy cow, and best methods of handling her products.

Tuition Free. Board and Books at Cost. For full particulars address PRES. THOS. E. WILL.

Farmers' Institute.

Editor Kansas Farmer:—The annual farmers' institute will be held at Oak Grange hall, Mission Center, Shawnee county, Kansas, December 21 and 22, 1898, commencing at 7:30 in the evening of the 21st and continuing until the evening of the 23d. A very interesting and instructive program on farm and home topics will be rendered. Dinner and supper will be served as usual. All are invited to come and have a good time. These institutes at Oak Grange hall have a State reputation and we expect that it will be better this year than ever before.

FRANK LOGAN,

IRWIN BROBST,
Secretary.

Thought and Thrift.

The Kansas Farmer Company has on hands several copies of the book "Thought and Thrift." It contains about 350 pages and is well bound in cloth. The author and publisher is Joshua Hill, of Cincinnati, Ohio. The reader need not expect to agree with Mr. Hill in everything. He may not agree with him in anything. To some it may seem peculiar that Mr. Hill should dedicate his book to his mother-in-law, but here is the way he did it:

"To my mother-in-law, Mrs. Levi

strategy was required in a war undertaken primarily to relieve Cuba of Spanish misrule than would have been required had the war been one for the direct satisfaction of grievances of our own against Spain; and it takes up and considers, under this new aspect, each of the earlier movements of the war.

Cheap Rates for the Holidays, 1898-99.

The Missouri Pacific will sell tickets on December 24, 25, 26 and 31, 1898, and January 1 and 2, 1899, limited for return January 4, 1899, at rate of one fare for the round trip, between points within 200 miles distance. Minimum rate 50 cents.

Christmas is Coming

and the Union Pacific will sell tickets on its lines at greatly reduced rates. For dates of sale, limits and points to which tickets will be sold apply to F. A. Lewis, City Ticket Agent, or J. C. Fulton, Depot Agent, Topeka.

Reduced Rates for Christmas and New-year Holidays.

The Nickel Plate road will sell tickets December 23, 24, 25, 30, and 31, 1898, and January 1, at rate of a fare and a third for the round trip, to any point on their line, good returning to and including January 3, 1899. Address J. Y. Calahan, General Agent, 111 Adams St. 78

Mrs. Lawnville—Which would you rather do to-day, go to school or help me

Blocks of Three!

Two new subscriptions for one year for \$2, and, in addition, a renewal for one year FREE, to any old subscriber who sends two new subscriptions and \$2 in one order.

Kansas Farmer Co., Topeka, Kas.

Prewitt, this book is inscribed. She is a representative of those who are true mothers to the motherless, and who are as genial and at home in the sewing-room or kitchen as in the drawing-room or parlor. They are the salt and true beauty of the earth."

The book is of the size and make-up that usually sells at \$1. While the stock lasts, we will mail it to any subscriber for 15 cents to pay for postage and wrapping.

Publishers' Paragraphs.

The Omaha Hay Press Company has an advertisement in this issue that will interest those needing hay presses, feed steamers, boilers, and engines.

A large number of subscriptions to the Kansas Farmer expire with the year. All such should avail themselves of the advantages offered by our "Blocks of Three" offer.

The Kansas Farmer will regard it as a special favor at this time if our readers will at once send us a list of their neighbors who are not now receiving the Farmer, so that we may send them sample copies.

It is unnecessary to remind our readers that this paper carries a line of the best advertisers in the country, who are worthy patronage. However, we especially request all readers to be sure to mention Kansas Farmer when writing an advertiser.

Three notable serials begin in the December number of McClure's Magazine. "Stalky," the first of Rudyard Kipling's series of stories of English schoolboy life, is as hearty and wholesome a tale of schoolboy ingenuity and adventure as one could wish to read, and, while complete in itself, leaves the appetite keen for more of the same sort. The first of Miss Tarbell's articles on the "Later Life of Lincoln" is an even more distinguished beginning than the first of Mr. Kipling's stories. Lincoln appears in the full sanity and tenderness of his superb character in her account of his perplexing period between his first election and his first inauguration as President. Finally, we have the first of a series of papers by Captain Mahan on "The War on the Sea and Its Lessons"—a contribution to the literature of the recent war that, coming from a member of the Strategy Board and the highest authority on the science of naval warfare, cannot fail to be read with eagerness in all parts of the civilized world. This first paper is devoted especially to showing how a quite different

in the garden? Little Boy—I'd rather go to school. "Would you? Why?" "Cause teacher's sick and there ain't agoin' to be any."

CURED OF CANCER OF TWENTY-FOUR YEARS STANDING.

INDIANAPOLIS, IND., Sept. 2 th, 1898.
DR. E. RINEHART, Indianapolis, Ind.:
DEAR DOCTOR—It is with pleasure that I can bear testimony in behalf of your wonderful success in the treatment of cancers. I was for twenty-four years a sufferer from a cancer, the size of a quarter of a dollar, on the temple, and if possible, I was more a sufferer in mind, from the dread of consequences, than in body. I heard of your treating cancer, and called upon you, and during a very pleasant talk you advised me to take your treatment, and am rejoiced to bear witness that under your care and treatment the disease was eradicated and permanently cured, and there remains but slight evidence, even by scar, that a cancer ever existed there. I can most heartily recommend your treatment and skill to all afflicted with cancer or skin diseases, and will be pleased to answer all letters of inquiry, if a stamped envelope is enclosed.
Yours very respectfully,
BENJAMIN CARBET,
225 Douglas St., Indianapolis, Ind.

Persons afflicted or desiring full information in regard to treatment, should send for a Free Book to DR. E. RINEHART, Lock Box 221, Indianapolis, Ind.

SEND US ONE DOLLAR

AND THIS AD. and we will send you this BIG ACME QUEEN RESERVOIR STOVE by freight C. O. D., subject to examination. Examine it at your freight depot, and if found perfectly satisfactory, and the GREATEST STOVE BARGAIN you ever saw or heard of, pay the freight and our Special Price \$11.50, less the \$1 sent with order, or \$10.50 and freight charges.

This stove is size 36x18; oven is 18x17x11; top, 24x14; height, 28 1/2. Made from best pig iron, large flues, cut tops, heavy cut corners, heavy corners, heavy linings, with very heavy sectionally cured, and large balled ash pan, slide hearth-plate and side oven-shelf, pouch feed, oven door kicker, heavy tin-lined oven door, handsome nickel trimmings on doors, front, sides, etc. Extra large, deep, porcelain-lined reservoir. Best Coal Burner made, and we furnish an extra wood grate, making it a perfect wood burner.

WE ISSUE A BURNING GUARANTEE with every stove. Your local dealer would ask at least \$30.00 for such a stove; order this and you will save at least \$8.00. The freight is only about \$1.00 for each 500 miles.

Shows the most complete line of 1899 stoves, ranges and heaters at \$1.95 and up. THIS NEW BIG 500-POUND ACME QUEEN RESERVOIR COAL STOVE at \$11.50, one dollar with order, is a wonder of value. Order at once before our stock is sold. Address, SEARS, ROEBUCK & CO., Cheapest Store, 112 N. La Salle St., Chicago, Ill. Despatches and Western Bldg., CHICAGO, ILL. (Sears, Roebuck & Co. are thoroughly reliable.—Editor.)

The Home Circle.

THE HANDS OF THE WORLD.

The hands of the world—can you see them to-day?
The useless white hands, kept so shapely and fair;
The hands of God's worker, one lifted to pray,
And one reaching down for the burdens of care;
The hardened, brown hands, so deformed and unsightly,
Yet beautiful still with the pathos of toil;
The great hands of power, used wrongly or rightly;
The hands, stained with sinning from which you recoil;
The cultured, deft hands, that are busy adorning
The unfinished temples of learning and art;
The hands in dark places that grope for the morning,
And the poor, stricken hands that appeal to the heart;
All these, if they'd clasp one another to-day,
Could reach 'round the world in a wonderful way.

No one would be lonely, no lot wholly dreary,
The thrill of our love would magnetically give
A strength to the faint and a joy to the weary,
A lightness of being and courage to live.
Then come, clasp these hands—oh, how selfish to tarry
When all the world needs you this moment so much!
Rise strong with the will and the purpose to carry
The help of your presence, the warmth of your touch.
They want yours, the hands that drop low in their weakness,
Those heavy with burdens and empty with loss;
They pray you to point with the spirit of meekness
To Love's Burden-Bearer who died on the cross.
We all so much need one another to-day
To girdle the globe with our hands in this way.
—Julia H. Thayer, in Union Signal.

Hicoques of Central America.

The history of the various Indian tribes of Central America has never been and probably never will be written. Before the march of the armor-clad Spaniard the native tribes faded away as the mist before the sun. Only those who retreated to the inaccessible swamps or the fastnesses of the pine-clad mountains escaped the torture and slavery which followed submission to Spanish power. That slavery and torture, where it failed to exterminate the conquered peoples, left them with but few, if any, of the characteristics which distinguished them before the Spaniard came. To-day in parts of Central America little visited by civilized man remnants of once powerful tribes, now feeble and almost extinct, are occasionally discovered. Gradually but surely these races have been assimilated, until nearly all are now united to form that most homogeneous of beings, the Central American native, in whose veins doubtless flows the blood of the Chichimecs, the Calhuas, Nahuas, Tlascalans, Olmecs, Toltecs, Aztecs and of Spain.

Occasionally, but rarely, tribes have been discovered of such types as to lead to the belief that in their case no such amalgamation has taken place, and the preservation of a strange tongue, of habits and traits wholly foreign to other tribes near them, renders this entirely probable. A singular tribe now inhabiting the interior of Honduras, near the north coast, known to native Hondurans as Hicoques, inhabits a few small villages, widely separated, the largest of which is not far from Villa Nueva, on the Astor-Honduras railway. From this place the trail is up the mountain to El Venado, about 2,500 feet above the sea. The Indian village is built upon the point of the highest peak in the mountain chain, and consists of less than a dozen miserable huts. There are no streets, the huts being perched along the mountain top without any semblance of regularity or order.

A glance shows that these are not the homes of the common Honduran. The latter builds his hut of mud and thatches his roof with palm leaves, while these huts are without sides, consisting of four posts and a roof of thatch made with the long grass which grows among the pines. The interiors of the huts are free from tables or chairs, the only furniture being a number of hammocks made from a species of the pita plant. Behind the huts are little stoves and ovens of dobe, and hanging on posts near by are the guacales or gourds in which everything is cooked. The Hicoques use no earthen vessel for any purpose whatever.

It is the custom with the Hicoques upon the approach of strangers for the entire village to stampede to the woods. This excessive timidity makes it a matter of great difficulty to obtain any accurate information regarding their social customs or their home life. It is known that they

differ in almost every way from the other people of the country. The Hicoques are small and squat, with high cheek bones, broad thin lips and large mouths with prominent teeth. They have straight black hair, worn long and braided. The men wear no clothes, save a small breech clout, generally woven from some native plant. The Hicoques' food consists generally of wild game and roots, though they occasionally have a few pigs and sometimes cultivate a small patch of corn. The latter only happens when they have lived unmolested for a long time in one place. The men are quite skillful with bows and arrows, and with these weapons obtain most of the meat eaten by the family.

The marriage ceremony is unknown among them. The selection of the bride having been made, the woman walks over and takes possession of her new home and the man gets out a trifle earlier in order to procure food for two. Polygamy is not practiced, but the intermarrying is carried to a dangerously close point, and inbreeding has doubtless had much to do with the Indians' imperfect development. The same cause has retarded their growth in intelligence and their increase in numbers.

It is not believed that these Indians have any particular form of religious worship, but they are full of superstition, which leads them into doing many peculiar things. For instance, when sickness overtakes one of them, the invalid is provided with food sufficient for three or four days, and is then left to fight it out alone as best he can, the balance of the family retiring to some other house. Their knowledge of medicine seems confined to the use of not more than four herbal decoctions of the simplest forms.

Another singular trait is their superstition in regard to expectation within their houses. Should a stranger enter one of their houses and so far forget himself as to spit upon the floor, no Hicoque would ever enter it again.

It is extremely difficult to learn much about their language, owing to their reticence and shyness. In many respects their tongue sounds like that of our Western Indians, except that it is softer and more quickly blended. They seem to have quite a complete vocabulary, and when among themselves their conversation is animated and lively. Music seems to be unknown, and no musical instruments have ever been found among them. The mothers seem devoted to their children, and, in this respect, the Hicoques are perhaps better than many of the other Indians of this country. Like the squaw of North America, the Hicoque mother straps her child upon her back and goes on her journey. This is quite unlike the manner of the native women of Central America, who carry the children straddled across the hip, the mother's arm being placed across the small of the infant's back.

The complete avoidance of all other races and the extreme timidity and shyness which are the distinguishing characteristics of the Hicoques are inexplicable. Their complete isolation in a thickly settled and remarkably rich and fertile country renders their tribe a very interesting study for the student in ethnology. —New York Sun.

The Origin of "Yankee."

Maj. W. A. Guthrie, of Durham, in addition to being an able lawyer, an astute politician and an admirable gentleman otherwise, is fond of literature of the best class. He likes to search through rare books and papers. Some years ago at the sale of the effects of some aged citizen he bought two rusty-looking volumes for a mere trifle, along with other books. On examining the books he found them to be "Travels Through the Interior Parts of America, in a Series of Lectures by an Officer of the British Army." They are the letters of Lieut. Thomas Aubrey. He was taken a prisoner at the battle of Saratoga during the Revolutionary war. From there he was sent as a prisoner to Boston, and later was marched, with many other prisoners of the British army, who had been captured at various places, to Charlottesville, Va. Mr. Jones, a large planter of Virginia, and a member of the Continental Congress, had tendered his plantation and negro quarters to the Congress for a prison camp. From this plantation Aubrey wrote many of his letters. All the prisoners were paroled. This officer spent his time in riding about the country around Charlottesville. The letters were to a friend of his in England. Later the letters were published in two volumes and were dedicated to the Earl of Harrington, Viscount Retersham, and Colonel of the Twenty-ninth Regiment of



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Foot. They begin August 8, 1776, and run to October 30, 1781.

The letters are full of interesting and instructive reading. In volume II, page 46, written from Cambridge, New England, November 25, 1777, is a history of the word Yankee.

Before the Revolutionary war the Virginians called the New Englanders Yankees; from then to the Civil war everybody that was not of the New England States called the New Englanders Yankees, and during the Civil war everybody north of the Mason and Dixon line was called Yankee.

As to the word, Lieutenant Aubrey wrote in 1777: "The lower class of these Yankees—apropos, it may not be amiss here just to observe to you the etymology of this term is derived from a Cherokee word, Eankke, which signifies coward and slave. This epithet of Yankee was bestowed upon the inhabitants of New England by the Virginians for not assisting them in a war with the Cherokees, and they have always been in derision by it. But the name has been more prevalent since the beginning of hostilities; the soldiers at Boston used it as a term of reproach, but after the affair at Bunker Hill the Americans gloried in it. 'Yankee Doodle' is now their paean, a favorite of favorites, played in their army, esteemed as warlike as 'The Grenadiers' March.' It is the loon's spell, the nurse's lullaby.

"After our rapid successes we held the Yankees in great contempt; but it was not a little mortifying to hear them play this tune when their army marched down to our surrender."

Such is the history of the etymology of the word "Yankee."—Charlotte Observer.

Colonel Waring's death from yellow fever was almost instantly recognized as a great public calamity. Having suffered from every form of contumely during the early years of his administration as Street-cleaning Commissioner in New York, he lived to be universally regarded as one of the greatest benefactors of his time.



COL. GEORGE E. WARING, JR.

After an Engraving in HARPER'S WEEKLY. Copyright, 1898, by Harper & Brothers

He was born at Poundridge, N. Y., in 1833, and was educated in Poughkeepsie, where he studied engineering, agriculture and agricultural chemistry. When the Civil war broke out he went to it as Major of the Garibaldi Hussars. Later he helped to raise the Fourth Missouri cavalry, and was made its Colonel.

He began his work as Street-cleaning Commissioner in 1895, and, after three years of splendid achievement was turned out of office as a consequence of Croker's victory last year. On October 2 he was appointed head of the commission to

select camp sites in Cuba, and to arrange for sanitary improvements there. He paid special attention to the problem of cleaning Havana, and there is some comfort in the news that his report in that important matter was practically finished, and that the conclusions which he reached are available for government use.

"Colonel Waring," writes E. S. Martin, in Harper's Weekly, was a delightful companion and a very agreeable writer. Long ago he published some Civil war stories under the title of 'Whip and Spur,' as well as other sketches, but of late years his writing, as well as his work, has been in the line of his profession. His work, though of immense value to his fellow countrymen, had not enriched him. He died in the service of his country, at the height of his reputation, but without having accumulated even such a fortune as would avail for the modest support of his widow. The proposal that comes from ex-Mayor Strong, of New York, that a fund should be raised in his memory for Mrs. Waring's benefit is timely and suitable, and is likely to find prompt and cordial support from thousands of citizens who feel themselves to be Colonel Waring's debtors."

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ELY BROS., 56 Warren St., N. Y. City. Ely's Cream Balm has completely cured me of catarrh when everything else failed.—Alfred W. Stevens, Caldwell, O.

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HOME-MADE CHRISTMAS GIFTS.

Book of Instructions for Art and Fancy Work Sent Free.

It is remarkable how much can be done in the way of home-made Christmas presents at a small expense, with the aid of Diamond Dyes. In "Fancy Work and Art Decorations," by Mrs. Daggett, editor of The Home, there are some fifty illustrations of dolls, table covers, scarfs, pin cushions, etc., that have been made by using Diamond Dyes. Complete instructions are given in this book for making these various articles. It will be of great value to any one in preparing Christmas presents, and is sent free to any reader of the Kansas Farmer who sends a 2-cent stamp for postage, to Wells, Richardson & Co., Burlington, Vt.

This liberal offer is made to advertise the reliable Diamond Dyes, and to get their book upon home dyeing into the hands of women who want to dress as well as their neighbor, at small expense, and make their old clothing look like new. There is hardly a home where Diamond Dyes cannot be used to advantage. They color faded ribbons and feathers so that they look like new; they dye the heaviest garments as well, and make fast and beautiful colors that do not fade or crock; coats and suits can be readily colored with these simple home dyes and shabby clothing changed to look like new. Send to-day for the free book on fancy work. With this will be sent, without charge, colored cloth samples showing the colors made by Diamond Dyes, also their instruction book for home dyeing.

The Young Folks.

GRANDFATHER'S FARM.

Visions often haunt the mind,
And bring back days that seem
Like stories that we love to find,
Or some fond, tender dream;
But of the visions that appear
None has a greater charm,
None is to me so sweet and clear
As my grandfather's farm.

'Twas there the sheep-nose apples grew,
'Twas there I always found
The peppermint I loved to chew,
And minnows did abound
Within the brook which there did pass,
So gently and so clear,
That flowers had a looking-glass
Through nearly all the year.

The flocks upon the rugged hills
I always loved to see,
I loved to hear the robin's trills,
The bluebird's melody,
For there all nature seemed content,
Protected from all harm;
'Twas there a day was quickly spent,
Upon grandfather's farm.

The barns with mows of well-cured hay
There bade me to explore,
Like Stanley in far Africa,
Their jungles o'er and o'er;
The corn-crib with its yellow ears,
The straw-stack and the sheds;
These were enough for boy careers,
And eager feet and heads.

Grandmother's doughnuts were the best,
And best her pies did seem;
But, since grandmother is at rest,
These, too, are but a dream;
The smiling kiss she always gave,
And the entwining arm,
The "good-bye"—they are in the grave,
Near by grandfather's farm.

No more shall those sweet days pass,
For one sad day was made
Another grave beneath the grass
Where grandfather was laid;
And now as I go here and there,
I find no place to charm,
And often after evening prayer
Think of grandfather's farm.

Let others eat the apples now,
Let others watch the sheep,
To time and fate they, too, shall bow,
And, like grandfather, sleep;
But I shall still sweet visions have—
I'm sure it does no harm—
And while I on the earth do live,
I'll dream of that old farm.
—Cleveland Leader.

Written for Kansas Farmer.

YOUNG FOLKS IN THE OLD COUNTRY.

BY ANNA MARIE NELLIS.

NUMBER 51.

FREDERICKSBORG.

The village of Hillerod is twenty miles northwest of Copenhagen, and that place was the next on our program for inspection. Before leaving our hotel, I endeavored to learn a little of the Danish language, sufficient to be able to ask for tickets at the station for the place we wished to visit. I thought I had the sentence firmly in mind, and repeated it seven or more times on the way to the depot. When I approached the ticket agent's window I found my memory was confused and all I could say was: "Zwei single billets til Hillerod," no two words, except the last two, being of the same language. However, the ticket seller understood that we wanted tickets to Hillerod and supplied us accordingly.

The railway train was made up of the ordinary cars, and, besides, had one two-story or double-deck car and one open or observation car. The upper story of the one was reached by an outside stairway. The day being very pleasant, we found seats in the open car where we could have an unobstructed view of the country.

So far as our experience informed us, there is no dust in Denmark, and our ride for an hour was enjoyed without the appearance of this annoyance, which travelers in America usually have to endure. But the railway travel in Denmark is done at so slow a rate that there is no occasion for the dust to be disturbed. Few countries are swift enough to raise the clouds of dust that America easily produces.

Pretty little villages, with neat houses and neat-appearing people, are liberally scattered along the line of railway at intervals of two or three miles, but the train stopped at very few of them. When the train did stop at any station it could not proceed again until an official with a very red coat had rung the huge bell on the platform, which was due notice to everybody to "look out for the cars when the bell rings."

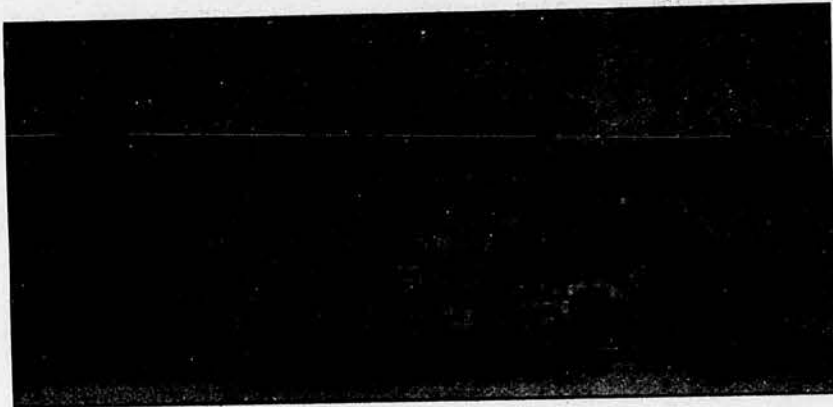
Arriving at Hillerod, we found that we had just two hours for sight-seeing before the next train should arrive, by which we wished to go northward. At the station there was no appearance of a village or city, and the only real life about the place, after the train left, was a carriage, team and driver, which were there to convey any chance passenger to the town and castle. The driver addressed us in German and asked the privilege to convey us. His petition was

immediately granted and soon we were wheeling over a smooth road between two high hedges which had hid the view of the castle.

A half-mile ride brought us to the entrance to the grounds of Fredericksborg Castle, and after passing several large and ancient-looking gates, and over two moats, we were in the outer courtyard in front of the large gate in which the castellan lives, who is the official to admit or refuse admission into the palace yard.

The massive edifice known as Fredericksborg Palace was built in 1602 by Christian IV., and is located on the site of an older castle erected by Frederick I., a hundred or more years earlier. This location has been the favorite royal home for the Oldenburg line of Denmark's Kings, which began to rule with Christian I., in 1488, and continued on the throne till the death of Frederick VII. in 1863, when the present King (Christian IX.), of the Schleswig-Holstein-Gluecksborg ducal family, was chosen. Christian IV. was the only one of the Oldenburg Kings who was able to accomplish much for Denmark, and under his rule the country was one of the most powerful in Europe, while at the death of Frederick VII., it had been reduced to the weakest.

In my opinion, Christian IV. had an eye for beauty, as this palace is a very handsome piece of architecture. It has four stories, with many gables and pretty towers. It is built on the three sides of a square, the left wing being the "Chapel of the Kings," the tower of which is shown on the left of the picture herewith, and we had entered the gate near the front of the chapel. As the old castellan admitted us to the inner court-yard, and we were looking with great admiration at the beautifully-decorated exterior, the chimes in the chapel tower announced the hour of 11. This huge and handsome



FREDERICKSBORG.

castle, which has been the home of many Kings and Queens, is now used as a national museum of antiquities. We purchased our tickets of admission (25 ore each, about 6 cents) and started on our way through the building. No guides are furnished, but guards are stationed on every floor and at nearly every door. We were perfectly satisfied not to have a guide, as nearly everything exhibited is plainly marked in several languages for the benefit of visitors from any country.

It would require several columns of space to tell of the many curiosities and beautiful objects displayed in this royal museum.

Of the many palaces and ruined castles I have seen I think Fredericksborg is the handsomest and most nearly like what my imagination had pictured for a royal home. I had thought the same of the castle at Meissen (near Dresden), but that is not situated in such a beautiful park as this, and it was almost entirely unfurnished and empty. In Fredericksborg no two rooms are alike. In one we saw numerous suits of armor, some over 400 years old; in the next half dozen rooms we saw the mementoes of several different Kings, each room devoted to one particular King, and showing his swords, medals and other articles identifying this or that Christian or Frederick. In the rooms of Christian IV. we saw the bed upon which that monarch died, and many treasures and mementoes of his reign. More prominence is given to his memory in this castle than is accorded to any other King.

But what makes the palace so beautiful is the exquisite mural paintings and the different finely-polished woods in which the various rooms are finished, and the lovely views to be had on all sides of the palace. A small lake almost surrounds the castle, and the two extremities of the lake are connected by the two moats over which we had crossed.

From one of the towers we had a fine view over the beautiful park and for

miles on either side. To the right we saw the unpretentious summer home of the present royal family. It is called "Fredensborg," and we had been told that there was little of importance to be seen in it. We could not have gained admittance even if the greatest curiosity in the world had been contained therein, for the royal family were then occupying it.

It is at Fredensborg where the aged Queen Louise for many years had gathered her large family of Kings, Emperors and Princes around her to enjoy the beautiful summer months. A few years ago the Princess of Wales with her daughter, the dowager Empress of Russia with her son, the Czar and his Czarina, the King and Queen of Greece, with many lesser Princes and Princesses, all were with their mother and grandmother at Fredensborg for two months in summer time. The palace is so simple that they have nothing but ordinary lamps and tallow candles for lighting, and not even one bath-room in the whole palace. That would not suit a Kansas Congressman, even, but the Kings of England, Russia, Denmark and Greece don't seem to find any fault. The Czar and his wife are said to be frequent visitors at Fredensborg, and there spend their happiest days, away from bombs and other court formalities of Russia.

But to continue my description of Fredericksborg, I would say that the prettiest and handsomest of the rooms are the Knights' hall and banquet-room, the same as similar rooms are in all castles and palaces affording such luxuries. In the Knights' hall the walls are trimmed in gold colors and between every two windows are very good and almost "life-size" paintings of the various Kings of Denmark—Christian and otherwise. The dining-room is finished in dark oak, and the fire-place is large enough to accommodate a Kan-

sas prize ox desiring the barbecue ceremony. The chairs are ponderous, heavy affairs that would require two strong men, apparently, to move them.

We wandered through the different apartments devoted to the memory of various Queens, each fitted out most sumptuously and in differently-colored silks and satins. Certain of the royal jewels are on exhibition and we saw them. We paid a visit to the beautiful chapel, which I consider the finest I have ever seen. In this chapel the Kings of Denmark of the Oldenburg line (since the reign of Christian IV.) were crowned, and it is gorgeously decorated and almost entirely overlaid with gilding. The pulpit is of ebony and embossed silver, and the "Crucifixion" over the King's oratory is also of embossed silver.

The "King's oratory" is where royalty was supposed to pray at regular intervals. It evidently has never been used much, for it was in excellent repair. It is a kind of gallery room, containing much fine carvings in wood and ivory and has several very fine paintings representing the "Passion of our Savior."

We would like to have lingered several hours longer, but the chimes in the tower announced 12 o'clock, and we knew we had but a few minutes left in which to reach our train.

HELSINGOR.

Although using only two hours between trains, we felt we had industriously employed every minute to our entire satisfaction, and we reached the station with time enough to spare to walk across the platform and take our seats as the train started. Our route now was northeast toward the sea coast. An hour's ride brought us to the beach, along which we enjoyed a fine view of the sound separating Denmark from Sweden.

At Helsingor is the narrowest part of the sound which connects the Cattegat with the Baltic sea. From Helsingor, in Denmark, to Helsingborg, in Sweden,

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the distance is but three and one-half miles. Both countries are civilized, and Christian in their religion, yet I am not certain that the naming of their cities and towns would indicate it. The depot at which our train stopped is also the steamer landing. We learned that the next steamer for Sweden would not leave until 6 p. m., so we had fully five hours to spend with the memory of Hamlet, who used to live at this place, and afterward became quite famous by reason of the "write-up" which Shakespeare gave him.

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Address all orders—
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Notwithstanding enormous receipts of wheat at primary markets the visible supply lags far below that of recent years. December 3, 1898, it was 24,115,000 bushels. At the corresponding date in 1897 it was 34,845,000 bushels; in 1896, 56,312,000; in 1895, 63,786,000; in 1894, 85,159,000; in 1893, 78,091,000.

Hon. James Wilson, Secretary of the United States Department of Agriculture, and also Dr. D. E. Salmon, Chief of the United States Bureau of Animal Industry, have each promised Secretary Cushman that if exigencies of the public service will at all permit of their being away from Washington at that time, they will be present and make addresses at the forthcoming meeting (January 11-13) of the Kansas State Board of Agriculture. Dr. Salmon's address will be upon the subject of "The serum treatment for hog cholera."

General Garcia, of the Cuban army, died in Washington, D. C., last Monday. The old General had fought for Cuban independence during a large portion of his life. He was in Washington, informally, representing Cuban interests. His death removes a prominent figure in an epoch just closing. His counsel and influence were valuable to his people, and were appreciated by the United States. His remains will be returned to the land for which he had sacrificed a lifetime, in a war ship of the United States. The honor is fitting to the memory of the man and to the occasion.

The events of the present year have given a great impetus to the project of joining the Atlantic and the Pacific oceans by a ship canal across some part of the narrow neck of land joining the two Americas. The importance of the canal, in a military and naval sense, is greatly increased by the changed relations brought about by the Spanish war. That such canal is greatly to be desired, by the producers of the central valley of North America, is undoubted. Though the farmer should never contribute a bushel of grain to go through the canal, still the impetus to commerce through Gulf ports would so develop transportation to and from this, our nearest seaboard, that we should be several per cents nearer market than now.

The Treasury report for the first ten months of 1898 shows exports amounting to \$970,613,257, and imports amounting to \$527,734,608, leaving a balance of \$442,879,649 in favor of the United States. The balance of exports and imports of silver for the same months is \$20,293,659 in favor of this country, making the total balance, when silver is treated as a commodity, \$463,173,308. Against this the excess of imports over exports of gold amounted to \$129,409,320. Subtracting this from the above total leaves \$333,763,988 to be accounted for in expenses of Americans abroad, the payment of indebtedness abroad and in whatever balance may be still due to this country. It is thought in financial circles that large amounts of securities have been returned to this country during the ten months. Of the exports, 67.38 per cent, a little over two-thirds, is estimated to have been of agricultural products.

BEATEN PATHS.

Every person, who explores other than the beaten paths of thought, makes of himself a target for criticism, and for attack in various ways, from those who know only to follow, who have not the instinct, or the power, to look for truth, except as it is laid down in the books of accepted authorities. Time was when people were burned at the stake for thinking that their new Christian religion was an improvement on the accepted teaching of the time. Later, Galileo was compelled to drink poison because he had discovered that the earth moves, while all accepted teaching was that it stands still. In modern and more humane times, we spare a man's life even though he be a heretic in religion, in science, or even in economics. But the orthodox in any realm of thought do their best to annihilate the innovator. In the present century, Michael Faraday was compelled to vigorously defend his assertion that an electric current can be produced by moving a closed wire circuit in a magnetic field. The fact which Faraday had to defend during the infancy of electrical knowledge, is the basis of the wonderful electrical development which came 75 years later.

The treatment of statistics, especially statistics of cultivated areas, crops and food consumption, has long been fragmentary treatment. This sufficed fairly well while there were many independent markets. But improved transportation facilities and the broadening of commerce have recently made the world one market. The world's producing areas, the acres yet to be brought into cultivation, the world's average yields, the average requirements of the people of the entire world, the increase of population, have assumed importance not realized a generation ago. It is not strange that the statistician who has the temerity to consider the world's relations as they are to-day, rather than as they were yesterday, to consider the questions of production and consumption broadly—it is not strange that such statistician should draw the fire of persons who have not comprehended the world's changed and changing relations.

The modern and scientific treatment of crop and population statistics, by Mr. C. Wood Davis, of Kansas, has, as was to be expected, drawn much criticism. This has led an English scientist of world-wide fame to inquire of Mr. Davis as to substitutions for wheat. Through the courtesy of Mr. Davis we are enabled to place his reply before the readers of the Kansas Farmer:

SUBSTITUTIONS FOR WHEAT IMPRACTICABLE BECAUSE OF ADDED COST.

Peotone, Kansas, December 8, 1898.
My Dear Sir:—I am in receipt of your letter of November 25, and, as you suggest, reply to the criticisms of your friend, which you are kind enough to copy for me.

I unhesitatingly admit that there is no necessary average minimum consumption of wheat among any people, and this I have clearly shown in table No. 8 of the Miller article, and on page 178 of the October (1897) Forum, nor have I ever stated, supposed or claimed there was such a necessary minimum. In the tables named I have made it clear that as supplies of other foods diminish—bread-grains especially—consumption of wheat increases, and that the converse would, impliedly, be true should supplies of wheat, relatively to population, diminish. I had supposed it would be comprehended that was the inevitable implication from the data in the tables now referred to.

If, however, unit consumption, or the available unit supply of wheat, as dealt with in my articles, is but a "mere abstraction," as your friend so emphatically states, then those who have directed the armies and navies of England for more than 100 years have been the worst mistaken, if not deluded, of men, as they have continuously and persistently acted upon the supposition when 1,000 men were put in the field, given proportions of bread, meats, tea, coffee, sugar and other foods must be provided for each unit in the force. When the admiralty placed 800 men on a ship, say the Royal George, they knew that in addition to given supplies of food, proportioned to the crew and the length of the proposed voyage, there must be provided a quantum of rum for each unit of the crew to be doled out daily. The bread, the meat, the rice, and the anti-scorbutics may have been, and were according to the critic, but "mere abstractions" or figments of the brain, but in case a double ration of rum, as was not then

infrequently the case, was served to some sailor with a super-sensitive nervous organization the spirit speedily appeared to be an entire "entity," and was only reduced to a "mere abstraction" by being placed in irons and subjected to some hours of rigid discipline.

PRACTICAL ESTIMATES OF UNIT REQUIREMENTS.

The dairymen who supply London with milk proceed, unconsciously probably, upon the fact that given numbers of the population require a regular ration of milk, although it may average less than a fluid ounce daily per unit. The consumption may, and does vary with the season of the year, but for any series of years, and for each year, the quantity consumed per average unit is a remarkably constant one. As increases London's population so must increase the number of cows in the United Kingdom, Holland, Belgium and elsewhere which serve that population. In other words, the number of animals engaged in converting grass, grains and brewers' refuse into dairy products is directly and exactly proportioned to the number of people to be supplied, although in long terms of years the average unit requirement for milk may and probably does change—just as it changes for wheat and other foods. None recognize this tendency to change in unit and national dietaries more clearly than I do, although I also recognize the slowness with which such changes proceed. They are, especially changes in national dietaries, comparable in this respect with changes in the earth's surface due to geologic forces.

RELATIONS BETWEEN WHEAT AND OTHER FOODS.

Your friend says that I pay no attention whatever to a class of conditions, mainly "economic relations between wheat and other foods," but absolutely ignore them. He must have read the articles in the Forum and Northwestern Miller when in a singular state of mind to reach such a conclusion, and especially the Forum article, as pages 174 to 177 inclusive are almost wholly devoted to changes in unit and national dietaries, and the relation of wheat to other foods, in such dietaries. I appear to be the only person who has, as yet, pointed out with any degree of exactness the changing relations of wheat consumption and other foods. I have particularly emphasized reductions in unit supplies of buckwheat, spelt, maslin, rye and potatoes, and directed attention to consequent increases of the unit supply of wheat in various countries, and show an increase of 4 per cent in 6 years in unit consumption of wheat in the United Kingdom and a related reduction in unit consumption of potatoes. Possibly your friend, like so many others, takes exception to my methods—he fails to point out better, or even equally as good—because they show the baseless character of beliefs long held—and cherished because so held—and that is, that wheat consumption is and ought to be decreasing (instead of increasing) because of the abundance and cheapness of other foods.

In the Forum article and elsewhere I have pointed out clearly that recent changes in the economic condition of the mass of the population, notably in Austria-Hungary and Scandinavia, had resulted in great changes in the relative amount of wheat and other foods entering into national dietaries, just as I was probably the first to direct attention to an enormous change in the opposite direction in Russia—a change which resulted in giving western Europe overabundant supplies of the bread-making grains through most of the last 16 years.

I have not only pointed out the fact that given proportions of food staples other than wheat must be provided and that, in consequence, all the land could not be converted into wheat fields, but have been roundly denounced for suggesting that conversions of other crop areas to wheat-growing could, at most, be but temporary, as such conversions would bring scarcity in other directions, and result in so enhancing prices for other products that the diverted land would shortly revert to its former employment.

ACRE PRODUCTION—UNIT REQUIREMENTS.

Not only have I pointed out the close relations existing between wheat and other foods, and the imperative necessity for symmetrical agricultural development, but have demonstrated that given proportions of land must be devoted to pasturage, and have very recently pointed out the fact that 2.65 acres of the exceptionally productive grass lands of Britain must be set apart

for each unit added to Britain's stock of horses or cattle, and that these animals were as indispensable in civilized life as wheat. Yet here comes a critic, with the Forum and Northwestern Miller article before him, and says that I ignore these factors, and then comes at me with an: "I confess I do not like his (Mr. Davis's) sweeping use of average acre production (yield). Used in complete disregard of economic conditions (?) it seems certain to land him wholly in erroneous conclusions." Definite information of what was meant by "complete disregard of economic conditions" would enable the criticised to know of what offense he was guilty, and make a suitable defense, but in the absence of the desired definition one can but ask how the gentleman would, without resort to "average acre yields," measure the productive power of given areas? Your Major Craigie, of the Board of Agriculture, your Sir John Bennett Laws, and the late Sir James Caird have all resorted to quite as "sweeping a use" of "average acre production" (yield) as myself, the only difference being that they have usually confined its use to a single country, while I have tried to apply it to each of the countries growing the bread-making grains, and then to the "bread-eating world" as a whole. Only in its wider application does my use of "average acre yields" differ from its constant use by the great agricultural lights of Britain. Having used this, the only possible measure of productive power, I am deemed worthy of reprobation. This is the usual reward of the innovator, and for 10 years I have been made a "cock-shy" of by the scholastics who would never venture from a beaten track.

WHEAT AN ECONOMICAL FOOD.

Far from giving wheat undue prominence, or ignoring its economic or other relations to other foods, I have constantly held, and frequently stated, that it required as much, and in most cases much more, land to furnish given nutritive values in other forms, with the possible exception of maize in districts of exceptionally large yield, as was required to furnish it in the form of wheat. To see that this is absolutely the fact we have only to compare the acre or land cost of wheat and oats in the fields of Great Britain, where an average acre will yield 1,740 pounds of wheat and but 1,520 pounds of oats, while there is vastly more waste in converting the 1,520 pounds of oats into human food than in converting the 1,740 pounds of wheat to the same use. Taking no account of this excessive and costly waste in converting the smaller product, it appears that the average acre when in wheat produces 220 pounds, or 14 per cent, more of food than does the same acre when employed in the growth of oats! Is it permissible to ask the critic what is the effect of this "economic relation of wheat to oats," and how much would be gained (or lost) by substituting oats for wheat in the national dietary? Would it not require at least 14 per cent more land to supply the oatmeal substituted for wheaten bread? It is true, that in a very large northern section of Britain summer heats suffice to ripen oats but not wheat, and that here long since obtained that national custom of living largely upon "haggis and porridge," although this diet slowly gives way to wheat as economic conditions, as affecting the great mass of the population, improve.

On November 14 wheat and oats were selling in London at exactly the same price per 100 pounds, and, in the raw condition, the "economic relation" of the two grains, or foods, was, as measured by the money cost per pound, that of parity. However, if the "economic relation" was determined by the power of land to produce nutritive elements the ratio was as 6 is to 8. In this case at least "economic relations" were not such as to promote the substitution of oats for wheat, or to prompt people to expend money in securing 6 pounds of oatmeal that would buy 8 pounds of the best wheaten flour!

Has the critic, so swift to attribute to others the complete ignoring of the "economic relations," here indicated between an acre of wheat and an acre of oats, ever attempted in this way, by the use of sweeping average acre yields, to ascertain the relative money cost as well as the acre cost of given nutritive equivalents, and thus to determine the "sociological" as well as "economic" relations between wheat and other foods? Possibly he would be far better equipped to criticize the work of others in this direction after going through some such educational process.

Turning to the barley fields of Britain, we find average acre yield again useful,

even if "sweepingly used," as it shows the average acre growing but 1,700 pounds of barley as against 1,740 pounds of wheat. Still, we find that on November 14 English malting barley was selling in Mark Lane at prices ranging from 26 to 38 shillings per 400 pounds, or an average of 32 shillings as against an average of 31 shillings for 480 pounds of English wheat. That is, while the average acre produced 40 pounds more of wheat than of barley the barley brought about 264 shillings as against some 227 shillings for the product of the average acre employed in wheat production! On the other hand, the consumer of barley cakes would, aside from the greater waste in grinding, pay 21 per cent more for given weights than would the consumer of the material from which wheaten bread was made! Obviously "the economic relations of wheat and barley" preclude, at least at the present time, the substitution of the grain from which Alfred's cakes were made for the wheat now so much used. And yet, there are critics who say that I have paid no attention whatever to these most interesting and potent facts! It was with the idea of dealing with this question from a chemical standpoint as well as an economic one, and showing the futility of efforts at substitution, and that it would require more land under other grains to support a given population that I applied to you for data in relation to nutritive equivalents, in the shape of such other grains, for wheat.

Going to France, where maize is grown somewhat largely, we find the average acre growing 17.6 imperial bushels of maize or 17.4 bushels of wheat, and as the relative weights are as 56 to 60, it follows that the acre produces 70 pounds more of wheat than it does of maize. Is it probable that under such "economic relations" France will, as a nation, substitute maize for wheat—or wheat for a dearer food in the sense that to supply given nutritive values requires more land?

Going next to the rye fields of Germany, it is found that the average acre yields 880 pounds of rye as against 1,190 pounds of wheat, the difference being 310 pounds, or 35 per cent! And still, the Germans grow 14,800,000 acres of rye and but 4,800,000 acres of wheat! Since the days of Tacitus the German nation has consumed comparatively little bread other than that made from rye. So firmly grounded is this feature of the national dietary that the German emigrant, after forty years in America, buys and eats his rye bread at a cost materially higher, in many instances, than that of wheat, and in the year of the Russian famine rye sold in Germany much higher than wheat, "economic relations between wheat and other foods" being less effective than custom; custom being conformed to at great money cost, while "economic relations" were ignored by the great mass of the people.

In Germany the difference in acre yields of wheat and rye are doubtless measurably due to the inferior soils devoted in some parts to rye culture; but this is not the case in Holland, nor is it to any great degree the cause of lower yields of rye than of wheat in Denmark, the potent factor being apparently better climatic adaptation to wheat production. Notwithstanding the greater price usually borne by wheat, we find the people of Holland growing 530,000 acres of rye, giving yields averaging but 21 bushels an acre, as against the employment of 155,000 acres in growing crops of wheat that average 25 bushels an acre. In Denmark wheat employs but 85,000 acres, although the yield averages over forty bushels an acre, while rye is grown upon 715,000 acres despite the fact that it yields but 60 per cent as many bushels per acre, and the price is materially less. Here, too, as in Germany and Holland, Teutonic custom and usages, probably older than the civilized condition, is far more potent than "economic relations between wheat and other foods," or even the love of money.

In Holland the average unit bread ration comprises about equal proportions of wheat and rye, or 4 bushels of each, while in Denmark wheat and rye, in the average unit ration, are in the ratio of 3 to 10, although the proportion of wheat is now 128 per cent greater than twenty-five years ago. In Holland the average unit appears to consume 28 per cent more wheat than in the eighth decade.

Not only have I taken note of the "economic relation existing between wheat and other foods," but I have taken cognizance, as well, of usages older than national history, and which still seem more powerful with great numbers than

even the love of money, or the requirements of theories that would work as expected if sentiment and ancient customs were not stronger than economic laws of which the mass of mankind have little knowledge, and to which they render no sort of conscious fealty or obedience. Yours very truly,

C. WOOD DAVIS.

KANSAS AT THE OMAHA EXPOSITION.

Complete list of medals and diplomas awarded exhibitors from the State of Kansas at the Trans-Mississippi and International Exposition, Omaha, Neb.:

AGRICULTURAL EXHIBIT.

A. E. Case & Son, Marion, grains, bronze medal.
E. D. King, Burlington, wool, bronze medal.
J. N. Grau, Asherville, wool, bronze medal.
Wm. Matthewson, Wichita, corn in ear, bronze medal.
Citizens of Sedgwick county, ear corn, oats in straw, wheat, etc., bronze medal.
Horner & Ross, Burr Oak, corn, bronze medal.
Kansas State Commission, silk cocoons, field and garden seeds, bronze medal.
H. Hanson, Lindsborg, broomcorn, bronze medal.
F. H. Glick, Atchison, pop corn, bronze medal.
G. W. Glick, Atchison, wheat, bronze medal.
Greenleaf & Baker, Atchison, wheat, bronze medal.
Sampson Foster, Washington, corn, bronze medal.
Chas. B. Lambe, Wellington, wheat and grasses, bronze medal.
P. H. Albright, Winfield, corn and wheat, bronze medal.
Hugh L. Miller, Beloit, wheat, bronze medal.
Vincent & Soffeld, Washington, corn, diploma.
M. C. Neff, Washington, corn on stalk, diploma.
Sam'l Detwiler, Hiawatha, wheat, diploma.
I. L. Diesem, Garden City, alfalfa, diploma.
O. C. Dalsey, Wichita, wheat, diploma.
Citizens of Sumner county, corn, diploma.
Atchison county, corn, diploma.
W. A. Renn, Wellington, corn, diploma.
State of Kansas, State exhibit agricultural products, silver medal.

HORTICULTURAL EXHIBIT.

S. S. Matthews, Kansas City, collection of grapes, bronze medal.
Otto Kuehne Preserving Works, Topeka, fruits, jellies and pickles, bronze medal.
B. F. Smith, Lawrence, collection of pears, bronze medal.
S. S. Dickinson, Larned, collection of apples, bronze medal.
State of Kansas, State exhibit fruits, silver medal.
Wm. Cutter & Son, Junction City, collection of fruits, silver medal.
Kansas State Agricultural College, Manhattan, Kansas, collection of grapes, silver medal.
Doniphan Vineyards Wine Co., Atchison, Kansas, wines and brandies, various kinds, silver medal.

EXHIBIT OF HONEY.

I. L. Diesem, Garden City, alfalfa comb honey, bronze medal.
Fred H. Glick, Atchison, alfalfa extracted honey, bronze medal.
Bennett & Diesem, Garden City, alfalfa comb and extracted honey, bronze medal.
A. G. Forney, Belle Plaine, alfalfa extracted honey, diploma.

MINES AND MINING EXHIBIT.

Atchison Paving Brick Co., Atchison, paving brick, bronze medal.
Kansas State Penitentiary, Lansing, limestone, bronze medal.
The Wear Coal Co., Pittsburg, bituminous coal, bronze medal.
M. Carmel Coal Co., Frontenac, bituminous coal, bronze medal.
The Home Riverside Coal and Mining Company, Leavenworth, bituminous coal, bronze medal.
Kansas and Texas Coal Co., Pittsburg, bituminous coal, bronze medal.
Western Coal and Mining Co., Pittsburg, bituminous coal, bronze medal.
The Capital City Vitrified Brick and Paving Co., Topeka, paving brick, bronze medal.
Forrest Oil Co., Neodesha, crude and refined petroleum, bronze medal.
Kansas State Commission, minerals, stone, brick, coal, etc., silver medal.
Cherokee-Lanyon Spelter Co., Pittsburg, metallic zinc, silver medal.
J. P. McCann, Galena, large specimen lead ore, silver medal.
The Pittsburg Vitrified Paving Brick Co., building and paving brick, silver medal.
Lyons Rock Salt Co., Lyons, rock salt, silver medal.
J. U. Carney, Galena, specimen chrysolized galena, silver medal.
Galena Commercial Club, Galena, commercial exhibit of lead and zinc ores, gold medal.
Hance White, Pittsburg, sandstone, diploma.

SCHOOL EXHIBIT.

Normal School, Marysville, educational exhibit, bronze medal.
Public schools, Leavenworth, maps and drawings, diploma.
Clay Center public schools, educational work, maps, drawings, etc., silver medal.
Public Schools of Seneca, maps, drawings, etc., silver medal.
State of Kansas, educational work, maps, etc., silver medal.
Newton public schools, educational work, maps, etc., gold medal.
Atchison public schools, educational work, gold medal.
Pittsburg public schools, educational work, relief maps, etc., gold medal.

CREAMERY EXHIBIT.

Bronze medals were awarded to each of the following named creameries for butter scoring above 95 points:
F. H. Teeter, Wellsville.
M. O. Awe, Eureka.
O. A. Praeger, Clafin.

The Meriden Creamery Co., Boyle.
The Meriden Creamery Co., Ozawie.
Kansas Creamery Co., Wichita.
L. N. Moore, Fulton.
The Tonganoxie Creamery Association, Tonganoxie.
Paola Creamery Co., Paola.
Geo. W. La Rosh, Spring Hill.
A. W. McKillup, Manchester.
W. C. Wolcott, Tonganoxie.
H. C. Hoffman, Talmage.
State of Kansas, general dairy exhibit, silver medal.

The Meriden Creamery Co., Meriden, Kas., second highest average score of butter, 5 exhibits, silver medal.
The Meriden Creamery Co., Valley Falls, butter scoring above 97 points, silver medal.
The Meriden Creamery Co., Meriden, Kas., butter scoring above 97 points, silver medal.

The Meriden Creamery Co., McLouth, Kas., butter scoring above 97 points, silver medal.
The foregoing include everything won except the gold medal to the Kansas Salt Company and the premiums, diplomas and medals won by the Kansas breeders of live stock, which have already been published in detail in the Farmer but are here briefly summarized as follows:

For Poland-China male under 6 months, first premium to H. G. Sims, Smith Center.
For Poland-China sow under 1 year, second premium to R. S. Cook, Wichita.
For aged Poland-China herd, diploma to Elm Beach farm, Wichita.
For Poland-China male and three females, diploma to R. S. Cook, Wichita.
For sweepstakes Poland-China male, diploma to H. G. Sims.
For Delaine Merino sheep, three head shown, J. N. Grau, Asherville won first premium on 2-year-old ram; third on yearling ewe, diploma for ewe under 1 year, and second sweepstakes for ram, any age.
E. D. King, Burlington, had the great Merino sheep exhibit of the Exposition, with entries in every section in the Merino (A) and Merino (B) classes and one entry in the Delaine Merino class. His winnings were phenomenal—in all, forty-seven prizes, consisting of nineteen first, fifteen second, five third, and eight sweepstakes prizes, aggregating \$497 in cash.

Sunny Slope Herefords, owned by C. S. Cross, Emporia, constituted the only cattle exhibit from Kansas except the non-registered special exhibit of Polled Kansas cattle by Hon. W. W. Guthrie, Atchison. The Hereford cattle show was the largest and best ever made in America. Every ring was hotly contested, and yet Mr. Cross successfully secured the following prizes: Bull, 1 year and under 2, third premium; cow, 3 years or over, second premium; heifer, 2 years and under 3, fourth premium and diploma; heifer, 1 year and under 2, first premium; heifer under 1 year, second premium; aged herd, third premium; young herd, second premium; four animals, get of sire, third premium; sweepstakes cow, any age, third premium; grand sweepstakes aged cow, second premium; grand sweepstakes yearling cow, first premium; grand sweepstakes heifer calf, third premium; grand sweepstakes aged herd, second premium, silver medal and \$50; grand sweepstakes young herd, second premium, silver medal and \$50. From the American Hereford Association he won special premiums of \$460, which, with the duplication of class prizes by the Kansas Commission, makes Mr. Cross's Kansas Herefords win the neat sum of nearly \$1,000.

Government Crop Reporting.

Mr. John Hyde, the Statistician of the Department of Agriculture, in reporting to the Secretary of Agriculture the work done by the Division of Statistics during the fiscal year of 1898 states that he has devoted special attention to the improvement of crop reports and organizing a system less cumbersome and more efficient. Crop reporting is one of the most important duties devolving upon the division. The number of State agents has been increased from twenty to forty-one, and the reports received from voluntary reporters, both county and township, have greatly increased. For the purpose of still further improving the service the Statistician earnestly recommends the appointment of five traveling inspectors, whose duties shall include the periodic visitation of State and county agents, and who shall visit the principal agricultural regions after seed time and during critical periods of the growing season, and finally, after harvest, and report the results of their observations to the Statistician.

For many years charges have been made that statements concerning the crop reports, alleged to have been obtained from official sources, were in the hands of certain operators on the different produce exchanges several hours in advance of publication. In many cases the figures quoted by the exchanges closely correspond with the figures subsequently announced by the department. Steps were consequently taken to make such allegations impossible, and without reflecting upon any one employed in the division, methods were adopted in the handling of returns which make it absolutely impossible for any person to anticipate the final official figures. Mr. Hyde says that the fact that since these changes were made the discrepancy between the figures claimed to have been prematurely obtained and those actually published by the department has been marked is a matter of congratulation and should confirm the falsity of any such allegations in the future.

Although the collection and publication of information in relation to the condition, acreage and production of the principal products of the soil, and the number, value and condition of farm animals is the principal work of this division, a number of other subjects have been investigated by the experts of the division. Among these subjects are the consumption of fertilizers, the changes in the rate of charge for railway and other transportation services, the

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cost of raising a bale of cotton, the production of sugar in the United States, the world's production and consumption of wool, and the application of the principle of cooperation to farming or for the farmers' benefit. The two first-mentioned investigations have been completed and the results have been published. The others are in progress. With a view of obtaining absolutely reliable information as to the annual per capita consumption of wheat and the amount produced from year to year, it is proposed to extend the work of the division and establish a record of movement and supply which the Statistician says would prove a valuable check upon the statistics of production and pave the way for an investigation of the consumption of wheat in certain typical communities that would be of the highest statistical and economic value.

Mr. Hyde calls attention to the importance and necessity of making adequate provision for the establishment of an efficient system of crop investigation and reporting in the islands recently acquired by the United States.

At the forthcoming meeting of the State Board of Agriculture, President Geo. E. Morrow, of the Oklahoma Agricultural College, will deliver an address upon "Modifying the characteristics of farm animals," which will be finely illustrated with stereopticon views. President Morrow, before going to Oklahoma, was for many years at the head of the agricultural college department of the Illinois University, and, besides being a leader in his line of work, is an entertaining speaker.

For the week ending December 1, there was exported from the United States wheat and wheat flour, equivalent to 7,484,000 bushels. The appetites of foreigners for American breadstuffs is in no wise slackening.

The amount of corn at present in public warehouses and elevators—known as the visible supply of corn—is about half as great as at this time last year.

What Kind of Oats?

Editor Kansas Farmer:—I wish to know what kind of oats is considered best for sowing in northeastern Kansas, and where seed can be had. We used to raise from fifty to seventy-five bushels per acre of oats here, and now we don't expect more than from ten to twenty-five. We tried the Texas rust-proof oats. The first two years this variety did fairly well and then failed. We tried the White Russian oats; but they are late, and the hot and dry weather caught them. Earlier oats would have been better this year. Oats seem to be the best crop with which to change the land, and wheat does best on oat stubble.

W. D. RIPPEY.

Severance, Doniphan Co., Kas.

The annual institute at Indian Creek school house, Shawnee county, will be held December 19 and 20. An excellent program has been provided, including dinner.

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

Horticulture.

OBSERVATIONS ON AMERICAN HORTICULTURE.

THE WASTED FORESTS.

An English horticulturist, Peter Barr, V. M. H., of London, who, while making a tour around the world, was recently interviewed by the horticulturists of Cornell University, at Ithaca, N. Y. The following excerpts from the interview present some of Mr. Barr's observations:

"The one and most pressing question in America, at the present hour, and the sooner it is taken up the better, is reforesting where trees have been destroyed, and foresting and planting new forests where forests never before existed, such as on the prairies. In Kansas, for example, where the crops were entirely destroyed this year by the winds that swept across them I am of the opinion that forest belts of fifty or 100 miles apart and several miles in depth would temper the atmosphere, save your crops and maintain your water supply. If the foresting and reforesting question is not taken up comparatively soon, your western countries will be a howling wilderness, and as it is said of Spain, 'A land of rivers without water.'

"In Germany foresting is done by the government for profit, and it takes seventy years before a forest in Germany is profitable. But the dire necessity of foresting is of less importance in Europe than it is in America. Spain as a country is a lamentable instance of deforesting. With its tropical climate, and its absence of trees, vast districts are sterile and can never be otherwise because there is no rainfall for vegetation. Formerly Madrid was surrounded with forests. Now these forests have almost disappeared and it is said in Madrid that the winds from the Guadarrama are so gentle and subtle that 'they will kill a man yet will not blow out a candle.'

"But I repeat, foresting in America is the most pressing question of the day if this grand country is to continue its unparalleled prosperity. I am aware that there is an awakening of interest but the people are only rubbing their eyes. They have not yet got to the point of seeing the evil that is bearing down upon them and during the whole of my travels from Salt Lake City east, I have been preaching the gospel of salvation for the country by renewing the trees and that of planting trees where they never existed, with a view to profit. In Boston when I discovered that the destruction of trees was abnormal and I drew attention to it, the answer that I invariably got was that on Arbor day all planted trees. I thought that splendid, but I heard this Arbor day so often repeated that I inquired, and found one man who actually had planted two poplars in front of his house for the purpose of shade. After that I was told (when I found that the men did not plant trees) that the school children did it, but the trees all died that were planted by the children. I therefore came to the conclusion that there was no reality in Arbor day and that it was maintained by people who wished to deceive themselves. No one was likely to buy trees, and fewer, if possible, were disposed to prepare the ground for a tree. Arbor day is one of the prevailing humbugs; it is a sentimental idea and nothing more, and will remain so until the authorities of each State take the thing in hand and work it out. At the present time every dollar that is spent in tree planting will save \$100 in ten years and a \$1,000 in twenty years, after that period the losses will probably be irreparable. At Salt Lake City at the present time you cannot buy a load of lumber except that which has been brought from a great distance, and the same conditions prevail more or less all over the United States. The destruction of trees during the last fifty years has been something that no one can credit unless he go from point to point and ask people of fifty years of age what was the state of the country as far back as can be remembered; he will be told that hundreds of miles that were covered with trees are now deforested.

BIRDS AND CROPS.

"You have more diseases comparatively speaking in America than elsewhere, except in the southern part of Europe, owing, I have no doubt, to the fact that you have destroyed the balance of nature. The balance of nature is not to be trifled with. You are shooting your birds in a most reckless manner; birds are being destroyed in immense quantities. In some parts of the western districts the ground squirrel is eating up everything that comes before it and why? Because you have destroyed your

eagles and your owls—your birds of prey are rapidly disappearing and your ground vermin and insects are as rapidly increasing, and what you are suffering now is nothing to what you will suffer twenty years hence.

"What the birds are eating is a mere bagatelle to what is destroyed by blights and by insects; all birds are partly insect eaters. If by any means the sparrow could be swept out of your land, you would, in the next six months pray God to send you a shower of sparrows. First of all, he gives life, active life to your cities because he is the only bird who will stay in the city. He has a cheering influence, he is always with you, and according to Prof. Lloyd, of Cincinnati, he is death to the larvae or the grub that destroys many of your trees. I am aware that it is said that he is of no use except for eating corn, but if that is simply a fact he is worth preserving for the cheerfulness that he imparts to the cities. But Prof. Lloyd asserts he is so valuable that on one occasion when some one proposed to import one of the German bird destroyers into this country so as to devour the sparrows, he wrote to Washington begging that they would hold their hands, as a savage would not content himself with killing sparrows, but would take all the other small birds as well. The result was that this savage was not imported to this country. Now if it is true that the sparrow drives away other birds, he has acquired this bad habit since he arrived in America because he does not harass and drive away other birds in Great Britain.

THE HORTICULTURISTS' CONDITION.

"The horticulturists are a prosperous set of men and I should say that they are doing good work as far as they go; but like all men in business they are endeavoring to get bread and cheese because luxuries are not in sufficient demand to be worth attending to and those of them who grow a collection of plants because they love plants, you may say are hanging on by the skin of their teeth, while those who are catering to the masses in the way of palms, growing roses, carnations, chrysanthemums for cut flowers are all doing well. I spoke to one man in Philadelphia and said 'how is it that you have only 30,000 feet of glass and your neighbor whom you brought out some years later has 90,000 feet of glass and is a rich man; and how do you stand?' His reply was suggestive, 'Oh, very well; I do love my plants, but do not make so much money as the bread and cheese men.'

"As to the horticultural press of America, it is too much under the control of the trader. It has not been free and independent and a horticultural press that is likely to be a success to the reader must disassociate itself from trade influences absolutely; and the trade should be known only in the advertising columns. The letter press should never crack up any man's goods. Be free and independent and give the readers good stuff and never too much of it."

Speaking of the country, Mr. Barr said: "America is a very great country—great in its extent and in its natural beauties and a land to be desired. I should say more of a 'land flowing with milk and honey' than that paradise that the Jews entered into. The people are as great as their country. They are hospitable; they are pursuing a course of development by which within fifty years they will stand before the world as representing the one country of the world; assuming that in the meantime they are true to themselves. Their universities are nurseries of development, intellectually and physically, and nursing all the inventive powers that can be brought out from a race which for the last 200 years have felt the necessity of self-reliance. The farmer has had to be able to do everything that was necessary in connection with his farm, and this same necessity had led up to the great development and ingenuity in the way of inventions, so that when your universities took up the teaching of mechanics they found in the people that they were about to teach, an heredity which greatly assisted them.

"I have found no cause whatever to modify my opinion of the country and its people from what I expressed months ago; rather am I more strongly set. The more I see of them, the more I see the country, the more I am convinced that when they can kill that monster, the political man, they will stand very high in the family of nations.

INDUSTRIAL AGRICULTURE.

"The time has not yet come when economic farming is a necessity, otherwise the alternate husbandry of wheat, beans, etc., would perfect the rotation. The staple of the land is exhausted by continually taking off the same crop; hence



Save Half Your Feed

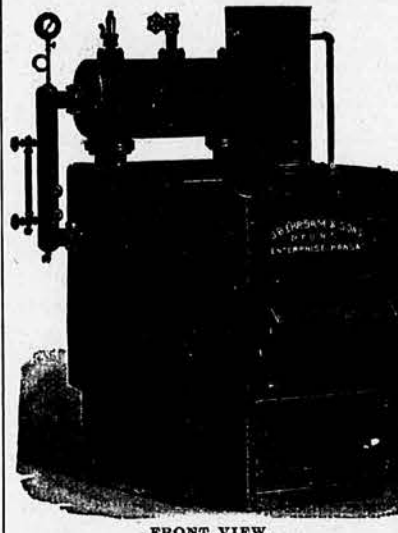
by cooking the other half. Experienced feeders know that this problem works out to a surety. This is not the only gain in cooking feed however. All cooked feed is digested by the animal economy, and none of it passes through whole. Young things grow more rapidly and mature stock fatten more quickly on cooked feed.

The ELECTRIC FEED COOKERS

are undoubtedly the best for preparing the feed. Made from the best gray iron castings, lined with steel plates, with special galvanized steel boilers. Three styles, five sizes, 25 to 100 gals. capacity. We publish a **FREE BOOK ON FEED COOKING** which tells all about these and deals extensively with the subject of stock feeding. Send for it.

ELECTRIC WHEEL CO., BOX 46, QUINCY, ILLINOIS.

THE EHRSAM "ECONOMIC" WATER-TUBE BOILER



FRONT VIEW.

**ECONOMY IN FUEL.
ECONOMY IN TIME.
ECONOMY IN SPACE.
ECONOMY IN REPAIRS.**

20 to 30 per cent. saving in fuel. No walling or mason work required. Economy in space. Will last a lifetime. Easily cleaned and inspected.

Built in sizes of 6, 8, 10, 12, 15 horse-power.

Shipped to responsible parties on 30 days' trial.

The Boiler for Creameries, Cheese Factories, Elevators, Pumping Plants, Hoisting Plants, Etc.

Write for prices and particulars to

J. B. Ehsam & Sons, Mfrs., Enterprise, Kansas.

the wheat area keeps going west to virgin soils. The crying evil now is, your trees. At the present time it is not a question of how you can get the largest number of bushels off the smallest piece of ground. For instance, States that used to be wheat-growing States grow wheat no longer. Dairying has followed, and that in its turn is followed by fruit."

Editor Kansas Farmer:—I would like to know, through the Farmer, what would be the best varieties of apples best adapted to a loose, red, sandy or black-jack soil. It is my opinion we need coarse-rooted varieties for a sandy soil. I would like to know if there are such varieties, or do the roots grow and shape themselves to suit the soil they are growing in? I would like to hear from some of your good fruit men, for I know you have plenty of them. Peaches, grapes and blackberries are entirely at home here.

I. W. POLING.

Oklahoma City, Okla.

For many years the cedar trees of the Agricultural College grounds have been attacked by the well-known brown fungus, the so-called cedar apple. Some four years ago the department of horticulture began hand-picking the fungous growth on certain groups of trees to determine whether or not by this means the attacks could be reduced and injury prevented. From that time till the present these trees have been carefully gone over several times each year and the fungus removed from them. It has not, with very few exceptions, been allowed to reach the spore-bearing stage. There has, however, been no diminution in the attack. The disease appears as vigorous at the present time as at any time in the past. The trees are more thrifty than they would have been had the fungus been allowed to grow undisturbed, but they are no freer from the disease than others that have had no attention. Cedars cannot be freed from this disease by hand picking, at least if there are other trees of the same species in the neighborhood that are untreated.

Want d.

A system of creameries, and skimming stations in the best field in Kansas; a territory that is as yet unoccupied. A splendid chance for the right person or company. For further information call on or write C. V. Kinney, Oakley, Kas.

SAVE YOUR ORCHARD BY USING Jessup Tree Protectors.

Absolute protection from rabbits; keeps off borers and bark-lice and prevents sun-scalds; is indestructible and cheap. Write for circulars and prices.

J. D. BACON CO.,

Agents wanted.

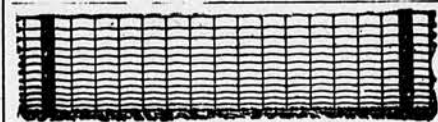
Mound City, Kas.

We PAY CASH each week if you sell Stark **STARK** Louisiana, Mo. **TREES.** Outfit absolutely free. **Rockport, Mo. Danville, N.Y.**



CARMAN.

Earlier than Elberta; skin tough a good shipper. Consult our bullet list of Peach Trees (over 1,000,000) 40 varieties: Asparagus, Strawberry Plants, Plums and Apple Trees. Send for catalogue. **HARRISON'S NURSERY, Berlin, Md.**



The "Open Door Policy"

in politics we may not fully understand, but in the fence business we "turn in" wherever there's a "gap." How is your neighborhood? **PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.**

SEND ONE DOLLAR

Out this ad. out and send to us, state number inches across top of your buggy seat in front, from outside to outside, and we will send you this Buggy Top by freight C. O. D. subject to examination. You can examine it at your freight depot, and if found perfectly satisfactory, the greatest bargain you ever saw, and equal to tops that retail at \$15.00, pay the freight agent our special price, \$6.80, less the \$1.00, or \$5.80 and freight charges. The freight charges will average about 30c. for 500 miles. **THESE TOPS ARE BUILT TO FIT ANY BUGGY OR ROAD WAGON.** You can fit them on in 20 minutes. Made from 3/4 oz. best rubber drill, head and back stays lined with No. 14X cloth, side curtains unlined, 3 or 4 black japanned steel bows, japanned prop nuts, wrought iron shifting rail, patent buttons, which makes it adjustable; full length back curtain with glass window, valance front and rear. **2,500 WILL BE SOLD AT \$6.80.** Order to-day. **WRITE FOR FREE BUGGY CATALOGUE.** Address: **SEARS, ROEBUCK & CO. (INC.) CHICAGO, ILL.** (Sears, Roebuck & Co. are thoroughly reliable.—Editor.)

CALIFORNIA GREAT ROCK ISLAND ROUTE

LOW RATES ON OUR PERSONALLY CONDUCTED TOURIST EXCURSIONS.

Leave Kansas City every Friday via Colorado Springs and Scenic Route. Southern Route leaves Kansas City every Wednesday via Ft. Worth and El Paso to Los Angeles.

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

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

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

In the Dairy.

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

INCREASING THE PROFITS.

The Meriden Creamery Company, of Meriden, Kas., find that their patrons who know how to feed get from \$40 to \$55 income per year from each cow, while the patrons who do not know how to feed get from \$18 to \$25 per cow per year; and that the net profits received from each cow by their best patrons are eleven times those received per cow by their poorest.

They also find that some of their patrons get no profit whatever from the skim-milk, while others who know how to feed it get from 25 cents to 50 cents from each hundred pounds of skim-milk fed. As there are 5,000 pounds of skim-milk from each good cow yearly, the way it is handled makes a great difference in the profits from dairying.

The Meriden Company believe that if their employees are thoroughly instructed in these lines of feeding they can help the farmers who sell milk to the creamery to largely increase the farmers' profits, and at the same time increase the profits of the creamery. For this reason the stockholders of the Meriden Company have decided to send all their employees to the Kansas Dairy School at Manhattan, and require them while there to make a special study of feeding dairy cows and of feeding skim-milk to calves and hogs.

H. M. COTTRELL.

HOW WE BREED, FEED AND HANDLE OUR COWS—RESULTS.

Paper read before the Kansas State Dairy Association, November 17, 1898, by T. A. Borman, Navarre, Kas.

In March of 1892, my father sold his first milk to a creamery. His herd was composed of such cows as he could buy through the country, and I think were below the average milkers of that day. The best cows of the lot were an old red cow (but bearing the marks of a most excellent producer) and a three-fourths Holstein cow, also an excellent milker. Later two Holstein heifers, one three-fourths and the other a five-eighths, came into the herd and were fresh a year later. A few months at patronizing a creamery—milk then sold at \$1 to \$1.15 per 100 pounds in the winter—favorably impressed him with the idea of selling milk, so he sought to improve his herd by the purchase of a pure-bred Holstein bull. The animal was not high-priced and his pedigree was not one that would place him in the list of bred milk or butter bulls. From him all the heifer calves were kept.

At about this time creameries began buying milk by test, and while father's was an average one, public opinion had it that Holstein milk was extremely thin and that the steer calves would not sell. So father's attempt at breeding Holsteins was ridiculed to such an extent that he sold the bull and replaced him by a Short-horn of so-called "milking strain." Those were days when every breeder had milking Short-horns. After a season the animal became crippled and was killed. This bull was succeeded by a Polled Durham, whose sire and dam came from the celebrated Elgin district of Illinois, he also of "milking strain." At the end of a year his calves gave so little promise that he, too, was disposed of.

At this point the firm became G. W. Borman & Son, and concluding that we could produce butter fat at a greater profit than beef, and would give it first place on the farm, we set about to rear a dairy herd, and bought Violante's Gold Dust, a pure-bred bull from a cow said to have produced twenty-two pounds of butter in seven days, and we have chosen eight heifer calves from two lots and we know they will be as good milkers as their mothers, and we are reasonably sure that they will be better. Four of these are yearlings and are showing up remarkably. Those were reared on skim-milk with bran feed from early fall to late spring. They were given roughness in abundance to develop stomach capacity and not allow to fatten. It is with great anxiety we await their coming fresh a year from this time. This herd of eight heifers, all better than three-fourths and two pure-bred, will be headed by a wonderful calf we bought last spring. Our little knowledge of improved blood created a desire for still more, so we purchased at three weeks old, May Overton's Mechthilda Sir Henry, the best bull calf we could buy and with few equals in America. I would impress upon dairy farmers the absolute necessity of the selection of well-bred males. The stronger the milk and butter breeding the greater certainty

the barn or lot. In other words, they eat and look like cows built for business—whose very occupation is the production of butter fat every minute of the twenty-four hours of almost every day in the year, and anything which tends to detract attention from the work is sure to decrease the yield.

As producers these cows are not wonders, yet each is profitable and I believe above the average. They are persistent milkers and in several instances refuse to be dried. Last year the herd—not a selected lot, mind you, but the heifers from this first Holstein cross—produced an average of 309 pounds of fat, or 355.6 pounds of butter, and this year the yield will be increased. The average test of the individual cows is 3.9; the highest 4.9 and lowest 3.4. The average test of milk produced is 3.75 per cent fat. The largest producer of this breeding is a seven-eighths cow, from the original three-fourths cow, last year giving 12,000 pounds of 3.4 per cent milk, or 408 pounds of fat or 476 pounds of butter. The next highest yield is from a three-fourths cow which, with 4.5 per cent milk, produces as much fat as the other for the first six months of the milking period, but is not such a persistent milker. These are records made on the usual feed and care given the entire herd. In the hands of competent feeders and by forcing they doubtless could be made to exceed these figures. In the case of each cow we note that the nearer she approaches pure breeding the heavier producer and more persistent milker, indicating that the more highly improved the blood the better the cow, if care is taken in the selection of males and the proper treatment is given the calves. Our pure-bred cows have not exceeded these records but their performance indicates that they will equal the figures given. Not all of these cows have calved at a time of year when the greatest yield would be possible, but barring accident they will next year. The pure-bred heifer aborted a month before being due to calf and for a time her yield was forty pounds per day, even under these unfavorable circumstances.

As stated, the first Holstein bull was succeeded by a Short-horn, and from the latter's calves three of the most promising heifers were selected for future usefulness in the dairy. The heifers came fresh and the result was gratifying, from a beef man's standpoint. Indeed, they were beefy and, on our feed, took on fat like hogs, and, to be sure, gave very little milk. In no case was the milk season longer than five months, and after the first month in milk they failed to pay for the grain consumed. But we had hopes and gave them a second trial, but soon after the second calving they went to the butcher. God might have made a cow which could convert the same food into both milk and beef but he never did. In the case of one of these heifers, I can make a comparison indicating the value of breeding for what you want. The original old red cow dropped two heifer calves in succession, one a half-bred Holstein, the other from the Short-horn bull. The Holstein heifer with third calf produced an average of fifty-two pounds of 3.8 per cent milk per day for seven days, and for the same time the red heifer with second calf gave twenty-seven pounds of 4 per cent milk per day for the same time. The cows were half sisters, one producing 2.3 pounds of butter per day, the other 1.2, the first milking eleven months of the year, the second dry at five months. This instance only serves to demonstrate the value of a sire bred for milk and butter when the farmer is rearing a dairy herd.

In the fall of 1895 we bought Violante Gold Dust, a pure-bred bull from a cow said to have produced twenty-two pounds of butter in seven days, and we have chosen eight heifer calves from two lots and we know they will be as good milkers as their mothers, and we are reasonably sure that they will be better. Four of these are yearlings and are showing up remarkably. Those were reared on skim-milk with bran feed from early fall to late spring. They were given roughness in abundance to develop stomach capacity and not allow to fatten. It is with great anxiety we await their coming fresh a year from this time.

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I would impress upon dairy farmers the absolute necessity of the selection of well-bred males. The stronger the milk and butter breeding the greater certainty

there is of securing profitable additions to the dairy herd. Eliminate all possibility of a poor heifer calf—it can be done. Again, do not buy an inferior bull. An animal costing \$100, if properly bred along milk and butter lines, is cheaper than one as a gift if of no especial breeding. A milk and butter bull capable of producing heifers worth \$10 a head more as cows will, in a herd of fifteen cows, pay for himself in one season's use, and put hundreds of dollars in your pocket if you continue in the milk business.

Heifers producing five or six, or even four pounds, of average milk per day more than their dams should be regarded as a flattering improvement in a herd of common cows for the first milk cross. I am not an advocate of the theory of persistent grading up from common cows and common bulls. Life is too short to undertake it. Any farmer can better afford to buy a good bull of some favorite milk breed and get into the dairy business properly in from two to four years.

The rough feeds consumed by our cows are such as can be grown upon any upland farm in central Kansas, and the list includes all the principal drought-resisting plants. It is necessary that the dairy farmer grow such crops as are reasonably sure to produce a fair yield and so diversify his list that a complete failure is almost an impossibility. That this can be done has been demonstrated on our farm during a period covering the last six years, which included several droughts, threatening destruction to every growing thing. A failure to grow an abundance of rough feed has not occurred. Aside from growing a variety of crops to assure bountiful food supply, we grow variety for variety's sake, and this, too, is necessary for the best results.

Sorghum and Kafir sown thickly and cut before the seed matures make valuable and, to the Kansas farmer, almost indispensable fodder. Prairie hay, early cut, oats in the sheaf, millet and alfalfa hay conclude the list, which, for the western Kansas dairyman, will afford a liberal milk flow if fed in the proper combinations with the grains to concentrate rich in protein. This winter we are using our first alfalfa hay fed to milch cows, and while we are not receiving the best results, on account of our failure to cure it properly, each day of its use emphasizes its value. As a pasture, alfalfa affords an extremely early spring feed and in the fall a more abundant pasture than rye. Again, fed either green or as hay it is unequaled as a supplement to short or dry prairie pasture, wonderfully sustaining, and even increasing the milk flow during the critical times of drought, which occur with considerable regularity in Kansas. Indeed it is the dairy farmer's friend. It is an almost perfect milk food, combining, as does no other plant we grow, the food nutrients in the proper proportions for successful milk production. On the farm it will soon become the principal hay for cows.

The feeds above enumerated are fed alternately, in such quantities as the cows will clean up nicely, in fine weather in an open lot and on stormy days and always at night in the barn. In feeding, we always consider the palatability of the food. Be it hay, fodder or grain, bright and clean and served in mangers cleanly swept. We endeavor to make feed extremely tempting, insisting always upon the greatest possible consumption by the cow. She must eat heartily and abundantly, and if the proper digestion and assimilation follow, the milk yield will be satisfactory. Milk and butter only come from the food consumed, and if that be not large the profits must be correspondingly small.

In the preparation of a grain ration, we have experimented considerably during the past three years, and have concluded, first, that the grain ration depends, first, entirely upon the roughness fed; that a ration which is successful one year is not necessarily so the

CREAM - SEPARATORS

De Laval "Alpha" and "Baby" Separators.
First—Best—Cheapest. All Styles—Sizes.
PRICES \$50 TO \$300.
Save \$10 per cow per year. Send for Catalogue
THE DE LAVAL SEPARATOR CO.
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next, for the reason that cows seldom, if ever, go onto the winter's feed in the same condition consecutive years; and last, that a ration which will cause one cow to do her best at the pail will not produce such flattering results in the case of a second or third cow. The one great lesson learned is, that the dairyman must deal with the individual stomach, the individual appetite and not the herd.

(To be continued.)

Relative Profit from Feeding Dairy Cows.

Some dairy farmers feed their cows on the supposition that the less feed consumed the greater the profit. It is interesting in this connection to note the difference in quantity and quality of the feed given to the poorest five herds and contrast it with that given to the best five herds out of eighty-two herds of Meriden creamery patrons investigated by the Kansas Experiment Station during the summer of 1898. One herd out of the poorest five received no grain during the year, three received ear corn as their sole grain ration, and the fifth herd received a little oats and rye in connection with corn meal. For roughness only one herd out of the five received any clover, the rest being fed on millet, prairie hay or corn fodder. With one exception the best five herds received oats, bran or shorts in connection with the corn fed, and in most cases the roughness of corn fodder or millet was balanced with alfalfa or clover. The composition of the feeds given to the five poorest herds show that they contain entirely too much carbohydrates and fat in proportion to the amount of protein, the element in feed that is absolutely necessary in the manufacture of milk. The feed given to the best five herds approached more nearly to a "balanced ration," for the reason that bran, oats, shorts, alfalfa and clover contain a larger percentage of protein.

Now let us look at results. Not all the difference between the income of these herds is to be attributed to the feed, but a larger part of it can. Suppose we estimate the cost of keeping a cow at \$15 per annum for the poorest five herds, which sum is doubtless below actual cost, and one-third more, or \$20 per cow, for the best five herds. There would then be \$3.04 annual profit per cow from the poorest herd and \$34.38 annual from the best herd, a difference of \$31.34 per cow. This means that one cow from the best herds brings as much clear cash to a man as eleven cows from the poorest herd. If we take the average of the poorest five herds, there is a profit of \$8.59 per cow, while from the best five herds the profit amounts to \$25.13, a difference of \$16.54. In other words, one cow from the best herds will bring a man as much clear profit as three cows from the poorest herds.

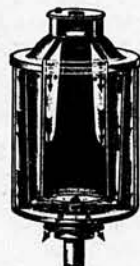
It should ever be borne in mind that it requires a certain amount of feed to keep up the animal machine, just as it requires a certain amount of feed to run an empty locomotive, and that the profit comes from the feed eaten over and above that necessary for animal sustenance, just as the efficiency of a locomotive comes from the fuel consumed over and above that necessary to move its own weight. Economy along the line of withholding feed from a good dairy cow is false economy. It is simply extravagance.

D. H. O.

Dr. Bull's Cough Syrup has cured whooping cough when no other treatment would give relief. For croup th's remarkable remedy has no equal. It conquers croup at once.

WHAT IS THE BEST SEPARATOR?

THE IMPROVED UNITED STATES.



Why—Because it has the Triple Current Bowl which recovers all the cream in the milk.

Skims Perfectly Clean; Is Very Easy to Operate.

Williamsburg, Iowa, July 28, 1898.
The Improved U. S. Separator is giving splendid satisfaction. It skims perfectly clean and is very easy to operate. We would not think of handling any milk without the Improved U. S., which I consider the best separator on the market.

J. W. THOMAS, Steward Iowa Co. Poor Farm.

Write for catalogues and further information to
VERMONT FARM MACHINE CO., - Bellows Falls, Vt.

The Apiary.

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

Bees as Pollen Distributors.

The value of honey bees as pollen distributors is becoming better known as more thorough investigations and experiments are made. Fruit-growers are becoming familiar with this fact and are fostering the culture of honey bees in the near vicinity of their fruit farms. Many experiments have been made in the raising of fruit where many bees were in reach of the same, and also where there were no bees in the vicinity. In almost every case where the bees were in ready reach of the orchards the fruit was not only more in quantity, but also better in quality.

This is not only so with fruit, but nearly all seed-bearing plants, both wild and domesticated. One would be somewhat surprised to see the different well-known cereals enumerated that bees work on and carry pollen from. There is not one of the well-known cereals that furnishes pollen that they do not work on and distribute the pollen. They work extensively on the bloom of corn, wheat and oats and all the different sorghums and all the different clovers. It is true that they do not work extensively on the common red clover, but to some degree they do, and on all other vegetable blossoms. I do not now think of one they do not work on in the vegetable line.

Some other insects, of course, are pollen distributors, but not nearly as general as the honey bees. These insects have more of a specialty as to certain flowers, and you will scarcely see them on more than one variety of blossoms, so that the honey bee is the only general distributor of pollen, and her field is so much larger. The honey bees take in a wonderfully wide territory. They will do a thorough work over a territory six miles in diameter.

The honey bee is the fruit-grower's best friend and one of nature's great gifts to men; so that all owe them a debt of gratitude, and should treat them accordingly. There is not a neighborhood occupied by man but should be stocked with honey bees. The honey they gather is all clear gain, and while they are gathering it they are, in addition, carrying pollen from flower to flower, thus doubly doing good.

Purity of Honey.

All consumers of honey should take the pains to thoroughly post themselves on the purity of honey, so that they may not be deceived into paying high prices for glucose and cheap sirups. There is nothing, perhaps, that enters into the adulteration of honey so largely as glucose, and nothing in the cheap sirup line so cheap and so unhealthy. That adulteration is largely practiced there is no doubt, and it becomes consumers to learn what constitutes pure honey.

It may be said, with considerable degree of positiveness, that adulteration of honey does not occur in first hands, and that the bee-keepers or producers are not guilty. The middleman or the large city speculator is usually at the bottom of the mischief. Extracted honey is the article that suffers most in this particular, as it is easily adulterated, comb honey being more difficult to counterfeit. Mixtures of these sirups that imitate honey are put on the market for pure honey, but do not contain, perhaps, one drop of the genuine article. There are other mixtures that contain a small percent of the genuine, but are principally of something else. I have seen packages of what was claimed to be broken comb honey, but which was nothing but a small piece of dry honey comb dropped into a can of glucose sirup. Glass packages, of course, are used for this special high-grade honey.

Pure honey will not remain long in liquid form after being once removed from the combs. Honey taken from the hives during summer will granulate in autumn when the weather turns cool. The exceptions are so few that we may say that no pure extracted honey remains in liquid form after this time of year, so that, from this time on, all liquid honey found on the market may be looked upon with suspicion. These cheap sirups and glucoses will not thus granulate, but remain in liquid form, so that the common rule to guide us, and the common test of purity in extracted honey, is granulation of the same. We may liquefy it by heating, but it will soon go back to granulation.

Horse Owners! Use GONCAULT'S Caustic Balsam

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

Blackleg Vaccination.

Science, backed by private enterprise, so fertile in this progressive age, has not neglected the cattle industry. Knotty problems are, it is true, still unsolved, but American cattlemen have been quick in grasping the benefits derivable from the practical application of scientifically established facts. An important fact of interest to Western stock growers is the prevention of blackleg by vaccination. During a long and busy life devoted to scientific research culminating in the discovery of the cure for hydrophobia and diphtheria, Pasteur found time to study some of the most important and fatal diseases of live stock, among them anthrax and its closely allied complaint, blackleg. Perhaps our scientific friends will sooner or later discover a cure for these diseases, but until that moment arrives there is only one way of contending with them, namely, prevention by vaccination. The principle of vaccination dates from last century in its application to smallpox in the human being, but we are indebted to Pasteur for the vaccination of live stock against anthrax and blackleg. First used in France, the country of their birth, these cattle vaccines or preventive remedies for anthrax and blackleg were gradually introduced into every country of Europe, and during the last fourteen years something like 15,000,000 head of live stock have been successfully "vaccinated" and the previous heavy percentage of loss from the diseases in question has been reduced to a nominal figure. Australia adopted vaccination in 1890; and although the subject had been casually mentioned by a few American writers, yet it was not until private capitalists, in the person of the Pasteur Vaccine Co., took the matter in hand, that live stock vaccination was introduced into America in the spring of 1895. True anthrax is, fortunately, of very rare occurrence in the West, but symptomatic anthrax, or blackleg, as it is commonly called, is the bane of stock raisers in all the great cattle States west of the Mississippi.

It was not to be supposed that vaccination, although largely and extensively practiced abroad for no less than ten years, would be generally adopted in this country without preliminary experiments or confirmatory tests. These tests were made during 1895 by quite a number of enterprising stockmen, located notably in Missouri, Iowa, Colorado and Texas, and the result showed that vaccination for blackleg was effective, practical and economical. With the proofs thus afforded, vaccination rapidly extended. The work was assisted by official tests made, particularly in Texas, by the Department of Agriculture (Washington, D. C.), and which induced the department, in the fall of 1897, to endorse and recommend preventive vaccination for blackleg. Corresponding tests were officially made in several States and which resulted in corresponding endorsements; but, after all, the best endorsements come from the thousands of American cattlemen who have used the vaccine on a large scale and testify that it is an effective preventive remedy, and at the same time practical and economical—in a word, a success. So far as progress is concerned, this is summed up by stating that, at this time, it would be difficult to find a county in any State in which the vaccine is needed to stop severe losses from blackleg where it is not used, and the stock owners reap the corresponding benefits.

Big Drop in Dress Goods.

Every one can now buy Dress Goods of every description and from one yard upwards, for just as little money as the largest merchants can buy in quantities. You will receive free by mail postpaid, a book of 60 cloth samples of latest things in all kinds of Dress Goods, at 12¢ to \$1.25 per yard, also full instructions how to order, etc. If you will cut this notice out and mail to the big reliable house of SEARS, ROEBUCK & CO. (Inc.), Chicago.

Blackleg Vaccine

Write for particulars, official indorsements and testimonials of thousands of American stockmen who have during the last three and a half years "vaccinated" their cattle and stopped their losses from Blackleg.

PASTEUR VACCINE CO., 52 Fifth Ave., CHICAGO.

N. B.—Each packet of our original and genuine Vaccine bears our trade-mark. Beware of imitations.

Students Returning Home

for holiday vacations can, upon presentation of proper credentials, obtain tickets via Nickel Plate road at a rate of a fare and one-third for the round trip. Tickets will be sold on date school closes and day following, with return limit to and including day school reconvenes. Full information cheerfully given at No. 111 Adams St., Chicago. Telephone Main 3389. 79

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descriptive of the agricultural and mineral resources of Western Canada will be sent to all applicants free.

The Experience of Settlers and Reports of Delegates

will prove most interesting reading, and if you are seeking a new home surrounded by the conditions making life for yourself and family agreeable, with a certain prospect of competence for yourself and an assurance for your children's prosperity, you will take up 160 acres of Western Canada's great wheat land, adapted also to dairying and mixed farming. These lands are given free to every bona fide settler. For further information apply to the Department of the Interior, Ottawa, Canada, or to

J. S. CRAWFORD,
214 West Ninth St., Kansas City, Mo.,
Government Agent.

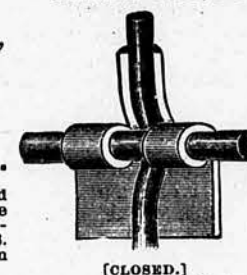
The Tie That Binds

THE GOLD MEDAL FENCE.

MADE BY THE Anchor Fence Co.,
1820 Grand Ave.,
KANSAS CITY, MO.

Makers of
"The Anchor Clamp"
The Tie That Binds.
Also dealers in
Wire Fence Material.

Gold medal awarded to Anchor Fence at the Trans-Mississippi Exposition, Omaha, 1898. The best wire fence on the market.



Mention Kansas Farmer and write for full particulars.

Administrators' Sale of Real Estate.

Pursuant to the will of the late David R. Youngs, I offer at private sale all the real estate belonging to his estate, as follows:

1. The "Home Place," w. hf. of nw. qr. sec. 26, and e. hf. of ne. qr. sec. 27, t. 12, r. 15, 160 acres. Contains good house, barn and sheds, outhouses, corrals, wells and cisterns, wagon scales, three orchards, and all appurtenances constituting a first-class farm. About 130 acres plow land, 12 acres clover, 5 acres alfalfa, remainder pasture land, timber land and creek. All well and conveniently fenced. Price, \$3,000. Terms, one-third cash, one-third in two years and balance on long time. Interest on deferred payments 7 per cent. per annum, secured by mortgage.
2. Also the e. hf. of nw. qr. of said sec. 26, 40 acres. About 40 acres first-class plow land and about 40 acres hay land. Well and separately fenced. Price, \$3,200. Terms same as above.
3. Also about 101 acres of pasture land in one body, well fenced and well watered, being nw. qr. of ne. qr. frl. and sw. qr. of ne. qr. frl. of said sec. 27, and about 34 acres off the east side of the nw. qr. frl. of said sec. 27. Price, \$20 per acre. Terms same as above.
4. Also about 101 acres of good prairie hay land, being w. hf. of nw. qr. frl. of said sec. 27, and about 34 acres off the west side of the e. hf. of nw. qr. frl. of said sec. 27. Price, \$25 per acre. Terms same as above.
5. All of the above described land lying contiguous and constituting one large and complete farm and situated about seven miles southwest of Topeka near the Burlington road, will be sold together for \$15,000, on the same terms already stated.
6. Also 42 acres in se. qr. of sec. 9, t. 12, r. 15, near Six Mile creek. Mostly first-class plow land; well fenced. Small house and some other improvements. Price, \$1,250. Terms same as above.

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



CEDAR HILL FARM.

Golden Knight 108086 by Craven Knight, out of Norton's Gold Drop, and Baron Ury 2d by Godoy, out of Myle 50th, head the herd, which is composed of the leading families. Young bulls of fine quality for sale; also offer a choice lot of grade bull and heifer Shorthorn spring calves.

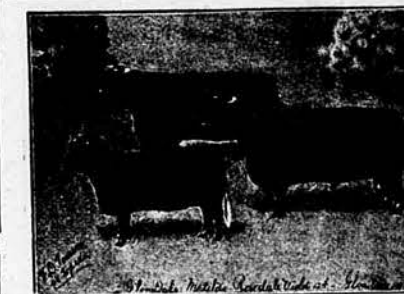
C. W. TAYLOR, Pearl, Dickinson Co., Kas.



SPRING VALLEY HEREFORDS.

Lincoln 47095 by Beau Real, and Klondyke 42001, at the head of the herd. Young stock of fine quality and extra breeding for sale. Personal inspection invited.

ALBERT DILLON, Hope, Kas.



GLENDAL SHORT-HORNS, Ottawa, Kas.

Leading Scotch and Scotch-topped American families compose the herd, headed by the Cruikshank bulls, Glendon 119370, by Ambassador, dam Galan thus, and Scotland's Charm 137264, by Imp. Lavender Lad, dam by Imp. Baron Cruikshank. Young bulls for sale.

C. F. WOLF & SON, Proprietors.

ELDER LAWN HERD SHORT-HORNS.



THE Harris bred bull, GALLANT KNIGHT 124466, a son of Gallahad, out of 8th Lincoln Golden Drop, heads herd. Females by the Cruikshank bulls, Imp. Thistle Top 8876, Earl of Gloster 74523, etc. Size, color, constitution and feeding qualities the standard. A few good cows for sale now bred to Gallant Knight.

Address T. K. TOMSON & SONS, DOVER, KANSAS.



SHORT-HORN CATTLE.

I have combined with my herd the Chambers Short horns and have the very best blood lines of the Bates and Cruikshank families. Herd headed by Baron Flower 114853 and Kirklevington Duke of Shannon Hill 126104. The Cruikshank Ambassador 110811 lately in service.

Best of shipping facilities on the A. T. & S. F. and two branches of Mo. Pac. Rys. Parties met by appointment.

B. W. GOWDY, Garnett, Kas.

MARKET REPORTS.

Kansas City Live Stock.
Kansas City, Dec. 12.—Cattle—Receipts since Saturday, 4,416; calves, 163; shipped Saturday, 1,146 cattle, no calves. The market opened steady to strong. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS.			
No.	Ave. Price	No.	Ave. Price
17.....	1.394 45.00	20.....	1.383 4.85
9.....	1.166 4.40	18.....	1.347 4.30
10.....	93 4.25	7.....	1.231 4.25
22.....	1.076 4.10	1.....	1.540 4.00

WESTERN STEERS.			
No.	Ave. Price	No.	Ave. Price
92.....	1.289 4.65	61.....	1.220 4.30
24.....	1.380 4.15	20.....	1.148 4.25
75.....	940 3.70	96 atk.....	688 3.55
27.....	845 3.25	25 Tex.....	693 2.90

NATIVE HEIFERS.			
No.	Ave. Price	No.	Ave. Price
1.....	700 3.50	4.....	860 3.50
5.....	700 3.50	4.....	987 3.40
62.....	847 3.35	3.....	863 3.00

NATIVE COWS.			
No.	Ave. Price	No.	Ave. Price
1.....	940 3.75	26.....	1.102 3.35
10.....	1.074 3.25	20.....	980 2.85
2.....	950 2.40	1.....	1.010 2.25
1.....	900 2.03	1.....	783 1.75

NATIVE FEEDERS.			
No.	Ave. Price	No.	Ave. Price
95.....	993 3.75	1.....	963 3.60
5.....	9 4 3.61		

NATIVE STOCKERS.			
No.	Ave. Price	No.	Ave. Price
1.....	490 4.15	28.....	621 3.95
33.....	881 3.05	6.....	863 3.50
1.....	700 3.10	8.....	947 3.01
1.....	590 2.75	1.....	630 2.50

Hogs—Receipts since Saturday, 10,379; shipped Saturday, 754. The market was strong to 5c higher. The following are representative sales:

60...382 \$3.42 1/2	68...298 \$3.40	24...278 \$3.40
60...300 3.40	72...290 3.40	72...233 3.40
87...242 3.40	69...274 3.40	71...274 3.40
62...310 3.40	63...305 3.40	70...321 3.40
71...284 3.37 1/2	132...235 3.37 1/2	66...286 3.37 1/2
64...273 3.37 1/2	73...270 3.37 1/2	12...311 3.37 1/2
57...256 3.35	83...303 3.35	84...223 3.35
69...265 3.35	81...231 3.35	78...231 3.35
51...335 3.35	87...213 3.32 1/2	84...211 3.32 1/2
75...234 3.32 1/2	65...210 3.32 1/2	72...281 3.32 1/2
87...238 3.32 1/2	92...189 3.32 1/2	54...2 6 3.32 1/2
20...184 3.30	80...202 3.30	78...234 3.30
14...159 3.27 1/2	64...223 3.27 1/2	89...202 3.27 1/2
36...171 3.25	60...158 3.25	96...225 3.25
107...139 3.20	56...171 3.15	14...199 3.15
18...132 3.15	14...108 3.10	10...103 3.01
1...33 3.10	24...102 3.00	60...103 2.91
157...113 2.85	10...200 2.85	124...112 2.80

Sheep—Receipts since Saturday, 82; shipped Saturday, none. The market was steady. The following are representative sales:

19 nat. lbs...	93 4.85	73 nat. lbs...	77 4.75
189 W. yrl...	70 4.35	2 nat. sh...	150 4.10
248 fdrs...	76 3.35	212 Kan. ew...	95 3.15
119 T. fdrs...	96 2.75	252 T. ewes...	68 1.80

Chicago Live Stock.

Chicago, Dec. 12.—Cattle—Receipts, 15,000; market steady; native shipping steers, \$4.25 to \$4.40; light and dressed beef and butcher steers, \$3.00 to \$3.30; stockers and feeders, \$2.80 to \$4.10.

Hogs—Receipts, 50,000; market fairly active, firm to 5c higher; light, \$3.25 to \$3.45; mixed, \$3.30 to \$3.45; heavy, \$3.30 to \$3.50; rough, \$3.30 to \$3.35.

Sheep—Receipts, 20,000; best steady, others 5 to 10c lower; natives, \$2.50 to \$4.35; westerns, \$3.00 to \$4.25; lambs, \$3.75 to \$5.30.

St. Louis Live Stock.

St. Louis, Dec. 12.—Cattle—Receipts, 3,000; market steady; native shipping steers, \$4.25 to \$4.40; light and dressed beef and butcher steers, \$3.00 to \$3.30; stockers and feeders, \$2.80 to \$4.40; cows and heifers, \$2.00 to \$4.50; Texas and Indian steers, \$2.75 to \$4.25; cows and heifers, \$2.20 to \$3.30.

Hogs—Receipts, 9,500; market slow; yorkers, \$3.10 to \$3.25; packers, \$3.20 to \$3.35; butchers, \$3.35 to \$3.45.

Sheep—Receipts, 800; market firm.

Chicago Grain and Provisions.

Dec. 12	Opened	High'st	Low'st	Closing
Wh't—Dec....	64 1/2	64 1/2	63 1/2	63 1/2
May.....	65 1/2	65 1/2	65	64 1/2
July.....	64 1/2	64 1/2	64	64
Corn—Dec....	32 1/2	32 1/2	32 1/2	33
May.....	34	34 1/2	33 1/2	34 1/2
July.....	34 1/2	34 1/2	34 1/2	34 1/2
Oats—Dec....	26	26 1/2	26	26 1/2
May.....	26	26 1/2	26	26 1/2
Pork—Dec....	8 15	8 17 1/2	8 15	8 15
Jan.....	9 37 1/2	9 47 1/2	9 37 1/2	9 47 1/2
May.....	9 67 1/2	9 70	9 62 1/2	9 70
Lard—Dec....	5 17 1/2	5 17 1/2	5 17 1/2	5 17 1/2
Jan.....	5 20	5 25	5 20	5 25
May.....	5 37 1/2	5 47 1/2	5 37 1/2	5 45
Ribs—Dec....	4 55	4 55	4 55	4 55
Jan.....	4 67 1/2	4 70	4 67 1/2	4 70
May.....	4 82 1/2	4 85	4 82 1/2	4 80

Kansas City Grain.

Kansas City, Dec. 12.—Wheat—Receipts here to-day were 287 cars; a week ago, 316 cars; a year ago, 243 cars. Sales by sample on track: Hard, No. 1, nominally 61 1/2c; No. 2 hard, 60 1/2c; No. 3 hard, 58 1/2c; No. 4 hard, 56 1/2c; Soft, No. 2, nominally 67c; No. 3 red, 62c; No. 4 red, 59c; rejected red, 52c. Spring, No. 2, nominally 60 1/2c; No. 3 spring, 55 1/2c; No. 4 spring, 52 1/2c.

Corn—Receipts here to-day were 42 cars; a week ago, 31 cars; a year ago, 179 cars. Sales by sample on track: Mixed, No. 2, 30 1/2c to 30 3/4c; No. 3 mixed, nominally 30c; No. 4 mixed, nominally 29 1/2c; no grade, nominally 29c. White, No. 2, 30 1/2c to 31c; No. 3 white, nominally 30c; No. 4 white, nominally 29 1/2c.

Oats—Receipts here to-day were 8 cars; a week ago, 11 cars; a year ago, 36 cars. Sales by sample on track: Mixed, No. 2, 26 1/2c to 26 3/4c; No. 3 mixed, 26 1/2c; No. 4 mixed, nominally 25c. White, No. 2, 27 1/2c to 28 1/2c.

Rye—No. 2, 48 1/2c; No. 3, nominally 47c; No. 4, nominally 45 1/2c.

Hay—Receipts here to-day were 36 cars; a week ago, 64 cars; a year ago, 75 cars. Quotations are: Choice prairie, 6.50 to 7.00; No. 1, 6.00 to 6.50; Timothy, choice, 6.70; Clover, 6.00 to 7.00; Alfalfa, 6.70 to 7.50.

Kansas City Produce.

Kansas City, Dec. 12.—Eggs—Strictly fresh, 21c per doz.

Butter—Extra fancy separator, 19c; firsts, 17c; seconds, 15c; dairy, fancy, 18c; country roll, 12 to 13c; store packed, 11c; packing stock, 9 1/2c.

Poultry—Hens, 5 1/2c; springs, 6c; old roosters, 15c each; young roosters, 20c; ducks, 5 1/2c; geese, 5 1/2c; young turkeys, 7 1/2c; old turkeys, 6 1/2c; pigeons, 50c per doz.

Vegetables—Navy beans, \$1.35 per bu. Lima beans, 4 1/2c per lb. Onions, red globe, 45 to 50c per bu.; white globe, \$1.00 per bu. Cabbage, home grown, 40 to 50c per doz. Celery, 40 to 50c per doz. Pumpkins, \$1.00 per doz. Squash, 75c per doz. Turnips, home grown, 15 to 25c per bu.

Potatoes—Home grown, 30c per bu.

THE STRAY LIST.

FOR WEEK ENDING DECEMBER 1, 1898

Morris County—M. J. Kimmel, Clerk.

HEIFER—Taken up by Frank Fyfe, three-quarters mile northwest of Comiskey, November 1, 1898, one pale red heifer, 3 years old, "P. S." on left side, R. on left hip, right horn off; valued at \$15.

Labette County—E. H. Hughes, Clerk.

MARE—Taken up by A. B. Whiteside, in Canada tp. (P. O. Angola), November 1, 1898, one bay mare, 15 hands high, star in forehead, left hind foot white, 12 years old, shod in front.

HORSE—By same, one brown horse, 15 hands high, star in forehead, shod in front, and about 7 years old; valued at \$40.

Wallace County—Olaf N. Thorene, Clerk.

MARE—Taken up by Herry Fogelstrom, in Sharon Springs tp. (P. O. Sharon Springs), September 24, 1898, five bay and one gray mares, fair sized, all branded with diamond with perpendicular bar through center.

COLT—By same, one yearling horse colt, branded same as mares; appraised value of mares and colt \$50.

FOR WEEK ENDING DECEMBER 8, 1898.

Wilson County—C. W. Isham, Clerk.

MULE—Taken up by A. J. Reynolds, in Cedar tp. (P. O. Dunn), November 8, 1898, one light bay horse mule, about 4 years old, no marks or brands.

Chase County—M. C. Newton, Clerk.

HORSE—Taken up by A. E. Coote, in Falls tp. (P. O. Strong City), November 12, 1898, one brown horse, about four feet four inches high, spot in forehead, 3 years old; valued at \$20.

Osage County—Wm. H. Thomas, Clerk.

COW—Taken up by Wm. Carr, in Olive tp. (P. O. Olive), November 13, 1898, one red cow, 3 years old, inverted T on left hip, 1 on right hip; valued at \$25.

Neosho County—B. W. Garvin, Clerk.

PONIES—Taken up by H. L. Reeves, in Tioga tp. (P. O. Chanute), October 23, 1898, one bay horse pony, 6 years old; and one black mare pony, 6 years old, with fresh harness marks when taken up; both valued at \$30.

Smith County—John A. Crabb, Clerk.

CALVES—Taken up by Perry Frazier, in Lane tp. (P. O. Athol), October 27, 1898, two heifer and one steer calves, about 6 months old, heifers red with white spots, steer red, all have round holes in right ears, no other marks or brands; valued at \$36.

Crawford County—F. Cunningham, Clerk.

STEER—Taken up by D. S. Williams, in Sherman tp., one light red steer, under- and upperbit in right ear, upperbit in left ear, indistinct sign of brand on left hip, has bad lump on left jaw, 2 years old; valued at \$10.

Leavenworth County—J. W. Niehaus, Clerk.

STEER—Taken up by E. B. Kezler, in Tonganoxie tp. (P. O. Tonganoxie), one red yearling steer, has some white on end of tail, lump on back part of throat and lump on back part of jaw.

Coffey County—Dan K. Swearingen, Clerk.

STEER—Taken up by P. H. Smith, in Key West tp. (P. O. Hall's Summit), November 15, 1898, one red-roan two-year-old steer, dehorned, white spot in forehead, small white spots under belly, two hog rings in left ear, no brands visible; valued at \$36.

STEER—Taken up by H. O. Gawthrop, in Ottumwa tp. (P. O. Burlington), November 15, 1898, one red steer, 1 year old, line-backed white face and belly, branded with letter L on right hip; valued at \$15.

FOR WEEK ENDING DECEMBER 15, '98.

Lyon County—H. E. Peach, Clerk.

COW—Taken up by J. H. Whitte, two miles southeast of Emporia, November 3, 1898, one red cow, 5 years old, dehorned, star in forehead, white tail.

STEER—By same, one one-year-old steer, part Jersey, branded H on right hip.

HEIFER—By same, one one-year-old Jersey heifer, black face.

Hodgeman County—S. S. Kiehl, Clerk.

HORSE—Taken up by Fred Sweet, in Center tp., November 18, 1898, one bay horse, about 7 years old, white hind feet, no marks or brands.

MALE—By same, one bay mare, about 7 years old, white hind feet, indistinguishable b- and on left shoulder.

HORSE—By same, one gray horse, about 4 years old, branded 28 on left shoulder.

MALE—By same, one bay mare, about 10 years old, indistinguishable brand on left hip.

COLT—By same, one black mare suckling colt.

Pottawatomie County—A. P. Scritchfield, Clerk.

STEER—Taken up by Frank Krouse, in Vienna tp., November 1, 1898, one yellow one-year-old steer, small crescent cut out of each ear; valued at \$20.

Wabaunsee County—B. Buchli, Clerk.

MULE—Taken up by Ulysses Frank, in Farmer tp. (P. O. Alma), one bay horse mule, 1 1/2 hands high, about 14 years old, scar on right front fetlock, mane short, tail trimmed; valued at \$20.

Montgomery County—D. S. James, Clerk.

PONY—Taken up by C. W. Peck, in Parker tp., October 31, 1898, one sorrel mare pony, 4 years old, no marks or brands.

MULE—By same, one three-year-old mule, no marks or brands.

MULE—By same, one bay mule, 4 years old, no marks or brands; the three animals valued at \$45.

Woodson County—W. O. Eades, Clerk.

STEER—Taken up by Geo. Englebrecht, in Owl Creek tp. (P. O. Yates Center), November 12, 1898, one red one-year-old steer, no marks or brands; valued at \$15.

"FEEDS AND FEEDING."

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

Address KANSAS FARMER CO., Topeka, Kas.

CHOICE POLAND-CHINA GILTS FOR SALE.

Poland-China gilts sired by Wren 17172, Eberley's Model 2854, and Duke of Weston 18974. 1898 farrow. If you want a choice young animal, send for one of these—\$8 to \$10. I guarantee satisfaction on this kind.

J. W. HIGGINS, JR., HOPE, KANSAS.

PURE-BRED HEREFORDS

FOR SALE. THIRTY-FIVE HEAD OF BULLS AND HEIFERS.

They are extra good ones. Prices as low as any responsible breeder. Farm adjoins the city. Address H. L. LEIBFRIED, Emporia, Kas.

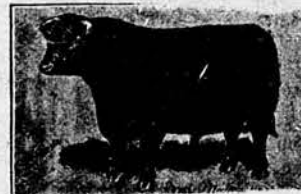
VALLEY GROVE SHORT-HORNS.

THE SCOTCH BRED BULLS

Lord Mayor 112727 and

Laird of Linwood 127149

HEAD OF THE HERD.



LORD MAYOR was by the Baron Victor bull Baron Lavender 2d, out of Imp. Lady of the Meadow and is one of the greatest breeding bulls of the age. Laird of Linwood was by Gallahad out of 11th Linwood Golden Drop. Lord Mayor heifers bred to Laird of Linwood for sale. Also bred Shetland ponies. Inspection invited. Correspondence solicited. A few young bulls sired by Lord Mayor for sale.

Address T. P. BABST, PROP., DOVER, SHAWNEE CO., KAS.

POLAND-CHINAS.

BERKSHIRES.

In order to sell out my surplus, I will sell boars, bred or open sows and fall pigs—either breed, registered or eligible—at prices that will make buyers

BIG MONEY.

Write before buying to

O. P. UPDEGRAFF, TOPEKA, KS.
ELI ZIMMERMAN,

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

FAIRVIEW, KANSAS.

THE KANSAS CITY STOCK YARDS

—ARE THE—
FINEST EQUIPPED, MOST MODERN IN CONSTRUCTION AND AFFORD THE BEST FACILITIES

For the handling of Live Stock of any in the World.

THE KANSAS CITY MARKET

Owing to its Central Location, its Immense Railroad System and its Financial Resources, offers greater advantages than any other in the Trans-Mississippi Territory. It is the Largest Stocker and Feeder Market in the World, while its great packing house and export trade make it a reliable cash market for the sale of Cattle, Hogs, and Sheep, where shippers are sure to receive the highest returns for their consignments.

	Cattle and Calves.	Hogs.	Sheep.
Official Receipts for 1897	1,921,962	3,350,796	1,134,236
Sold in Kansas City 1897	1,847,673	3,348,556	1,048,233

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

It's a match for the most breechy Bull.

BULL-STRONG
The ordinary fence is not good enough. It takes something more than ordinary. Our Duplex Automatic Machine makes 100 varieties of fence at the rate of 60 rods per day. That brings the cost of a first class farm fence to only 15c. per rod, 15c. for poultry fence; 15c. for a rabbit-proof fence—excellent for nurseries and orchards, and 12c. for good hog fence. We sell you plain, coiled spring and barbed wire direct at wholesale prices. Don't buy wire or fencing until you get our free catalogue. We will save you money on all orders. KITSUMAN BROS., Box 64, Ridgeville, Ind.

The Poultry Yard

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

KANSAS STATE POULTRY ASSOCIATION.

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

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

SOME HINTS ABOUT MATING.

As the time is near at hand when the flocks will be, or should be, mated up for the coming season, the question of proper mating is of importance. To the fancier, at least, this is quite an important subject, for upon his ability to properly mate his birds hinges his ultimate success as a breeder of poultry that will please his fastidious customers. Even to the amateur it is a question of no small importance.

To begin, the male should be as fine and vigorous a specimen of his kind as it is possible to procure. A fine specimen is not to be understood as meaning the largest obtainable male, for "size in the sire is of little importance if he be fully up to the medium weight of his race." An overgrown male often makes a worthless breeder. This applies to the large breeds. With the small breeds it is different, for, as I. K. Felch says, "It is a singular fact that in the largest specimens of the Asiatics and the smallest specimens of the smaller breeds will be found the most faulty birds." This point in regard to size of male cannot be too strongly emphasized, for nine persons out of ten—regular breeders excepted—will give first place to the overgrown male.

In times past the size of a fowl largely influenced judges, and even at this day, where an unqualified judge is engaged to pass upon fowls, the very largest sized bird is pretty sure of the premium, regardless of superiority in color or symmetry.

Since it is claimed by good authority that the sire is half of the breeding pen, it becomes at once apparent that he should be as perfect in symmetry, color, markings, etc., as possible. With this sire should be mated females of good average size and dark in color, to counteract the loss of color in breeding, since all fowls have a tendency to grow lighter in color. Pure-blooded fowls of any variety if left to themselves, or even carelessly bred, tend to grow lighter colored. Light Brahmas will lose their fine dark hackles, and grow almost completely white; Buff Cochins grow paler; Plymouth Rocks, very light; Partridge Cochins lose their fine black breasts and dark mahogany markings; Langshan and other black fowls multiply white feathers, etc.

The habit of mating extremes in color, i. e., very light Plymouth Rock males with extremely dark females, does not obtain among first-class breeders, but rather a medium-colored male is mated with females not too dark in color. With Light Brahmas the male should have a rich, black striped hackle, dark beak, black wing flights and tail, bluish white undercolor, with deep bay eyes. Hens may be very much like the above but with white undercolor. There are other rules to be followed for mating for different results, but for all practical purposes of the amateur the above will serve as a guide, while the fancier will of course seek a more extended explanation elsewhere.

One great error that seems to have a firm foothold within the minds of those who have not given a great deal of attention to the subject of poultry-raising, is that they must change the blood of their fowls every time they make a purchase of eggs or fowls. So many times we receive letters from our customers asking if we can send them something in no manner related to something formerly purchased from us. We can usually do this if it is insisted on, but it is neither wise nor necessary. Some even carry the idea so far as to think they must purchase from a different breeder every time. It is needless to say that no particular type or strain can be perfected in such a haphazard manner of breeding.

The best breeders are very careful how they infuse new blood, of which they know nothing, into their carefully-bred flocks. It is perfectly safe to assert that if the stock sent out by any reliable breeder has pleased purchasers at one time, it can be relied on to do it again,

and it is bred so carefully and intelligently that there need be no fear of its becoming too much inbred. Judicious inbreeding is what has procured for our foremost fanciers the birds of fine symmetry and faultless plumage which command and obtain the so-called fancy prices, and carry off the much-desired premiums at the poultry shows.

Another item to be taken into consideration, however, in this connection, is the fact that poorly-kept and poorly-fed birds will not make good ones or fine specimens, though we care not of what strain or breed. Good food and care make good birds and fine feathers. Young, growing birds will stand a large amount of forcing. They can scarcely be overfed. Once let them become stunted through lack of feed or through the ravages of vermin, and they remain inferior specimens for ever and aye.

Early Broilers With Hens.

The more hens that begin to sit from now until March, the greater number of broilers secured and the higher the prices, as from March 1 to May 15 is the period when the broilers are in demand. Unfortunately, the hen cannot be compelled to do duty as a mother until she is so inclined, and no time can be relied on, so far as she is concerned. But as some hens will begin to sit early, and some of our readers will try to have them hatch and raise broods, it is not too soon to give a few hints as to the best mode of caring for the chicks. It must be kept in view that winter is an unnatural period for raising chicks, and the farmer must be willing to give some of his time to the hen and brood or she will hatch them only to lose them one by one.

Do not put eggs under a hen until you have endeavored to select such as you believe are the best for the purpose. True, no one can judge of the fertility of an egg until the chick within has developed for four or five days, but something will be gained by discarding all imperfect eggs. The very large eggs, small eggs or blemished eggs, should not be used. Select eggs of normal size, uniform in appearance and as free from defects as possible. Make the nest in a warm place, give the hen only room sufficient to permit her to eat, drink and dust herself, and do not disturb her more than possible. Feed her on a variety, but keep corn and wheat where she can help herself. When the chicks hatch, take them to the house until the hen has finished her work, and then place her in a clean, new, warm nest, and give her the chicks after dark.

Do not feed the chicks for twenty-four hours after they are hatched, as they only need rest, but give the hen all the corn she wishes. Keep the hen and chicks in some covered place, as dampness is fatal to chicks, and do not allow her to carry them about. A small space, if dry and warm, is sufficient. The first feed of the chicks should be rolled oats, five times a day, with one feed of stale bread dipped in milk and squeezed dry. After the first week give them anything they will eat, and omit the rolled oats, substituting screenings and cracked corn. Water must be given in a manner to prevent only of their bills reaching it, or they will become wet, chilled, and die. Do not suppose that, because the chicks are large and ready to wean, they are safe. Such a plan will do for summer, but in winter the chicks must be kept warm, well fed and carefully guarded until they go to market, which will be when they weigh one and one-half pounds each. Make the hen stay with them as long as possible, and let the main object be, both day and night, to keep them warm and dry.

Purchasing Good Fowls.

This is the time of year to purchase fowls for next year's laying. It is the time of year when on every farm more or less stock will be sold off. It is true that on many farms the stock to be sold will be that least adapted to future operations, but there are always many exceptions. Here and there are farms where the surplus must be sold off, whether that surplus be good or bad in quality. Among the marketable product will be found many very good birds that may be bought at a very reasonable price. Agree to pay so much per bird, and if need be add a little to the price for the privilege of going through the flock and picking out the best birds. Very often excellent specimens may be obtained in that way. Pick out birds with good combs, bright eyes, clear mouths, and smooth legs. Be sure that no contagious disease prevails in the flock. This fall purchasing is economical and a help to both buyer and seller. If a man really needs a bird to put with his laying flock, the money he pays for a healthy bird this fall will be a good investment. It never pays to wait for a bird to hatch and mature if we have use for her and



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the money with which to buy, for the reason that a fowl that is good for anything will have paid for herself before a half year has passed.—Farmer's Review.

Splinters.

Early maturity for market means a great deal in making up the profits. Too much corn for the chickens will bring on indigestion and liver troubles. Cayenne pepper is a drastic thing to give poultry. If you don't believe it take a little yourself.

Keep your best layers when culling the flock and remember that there is profit in rigid culling.

If you have nothing but dunghills on the farm kill off the roosters and grade up the flock with thoroughbreds.

Do not crowd those young pullets that you are expecting to keep for layers, but aim to keep them growing steadily.

As chicks grow they should be given more room in the brooders. Crowding fifty chicks in a space fit only for twenty-five will stunt the whole lot.

Boiled oats is an excellent food for laying hens. When oats are fed the fowls will need lots of sharp grit. See that they are provided with same.

In warm weather, if the coops are allowed to remain in the same place, the ground soon becomes foul with the excrement and the wasted food.

POULTRY SUPPLIES.

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

KANSAS ECONOMY INCUBATOR.

This incubator is a home product and has been in successful operation for ten years. It is still made and sold in No. 1, or 300 egg size, by the inventor and manufacturer, Jacob Yost, Arkansas City, Kas. Send for circular.



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



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represent about equal value. This book contains everything that it is necessary to know to succeed in the poultry business. All about incubators and brooders, the best kind and the best way to handle them; thoroughbred poultry, with illustrations of each breed and a complete line of poultry supplies. We send it to all inquirers on receipt of 10 cents in stamps.

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SEND US \$1.00 and we will send you this Feed Cutter by freight, C. O. D., subject to examination. You can examine it at your freight depot, and if found perfectly satisfactory and the greatest value you ever saw or heard of, pay the freight agent the balance, \$6.45 and freight charges.

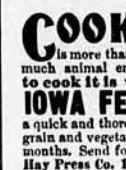
This is the Celebrated Salem Cutter for cutting hay, straw or fodder; frame heavy solid seasoned hardwood, well finished, 11 1/2 inch genuine Enger silver steel knife, made with improved adjustments to cut 3/4, 1, 1 1/4 or 2 inches, malleable hopper, extra heavy balance wheel, perfect adjustment, lightest running, largest capacity and most durable 165-pound cutter ever made. Write for Free Agricultural Implement Catalogue. Address: **SEARS, ROEBUCK & CO. (Inc.), Chicago, Ill.** (Sears, Roebuck & Co. are thoroughly reliable.—Editor.)

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with or without lower cable barbed. All horizontal lines are cables, not effected by heat and cold. Steel Picket Lawn and M.M.S. Poultry Fence, Steel Gates, Posts, etc. **UNION FENCE CO., DeKalb, Ill.**

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

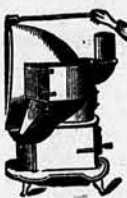
Coming Poultry Shows.

Kansas State Poultry Association.—J. W. F. Hughes, Secretary. At Topeka, January 9 to 14, 1898. C. H. Rhodes, Judge. Garden City Poultry and Pet Stock Association.—A. S. Parson, Secretary. Garden City, Kas. Show December 27-30, 1898. John C. Snyder, Judge. Abilene Poultry and Pet Stock Association.—Roy O. Shadinger, Secretary. Abilene, Kas. Second annual exhibit, at Abilene, January 25-28, 1898. Theo. Sternberg, Judge. Topeka Fanciers' Association.—L. V. Marks, Secretary. Topeka. Exhibit January 9-14, 1898, in connection with State show. Garfield County Poultry Association.—A. F. Rusmiser, Enid, Okla. Secretary. Enid, Okla., December 24-25, 1898. C. H. Rhodes, Judge. Chase County Poultry Association.—C. M. Rose, Cottonwood Falls, Kas., Secretary. Cottonwood Falls, December 27, 1898, to January 1, 1899. C. H. Rhodes, Judge. Rooks County Poultry Association.—N. N. Neher, Stockton, Kas., Secretary. Stockton, Kas., January 2-5, 1899. C. H. Rhodes, Judge. Glasco Poultry Association.—M. E. Potts, Glasco, Kas., Secretary. Glasco, Kas., January 5-7, 1899. C. H. Rhodes, Judge. Central Oklahoma Poultry Association.—H. F. Stephenson, Kingfisher, Okla., Secretary. Kingfisher, Okla., January 16-21, 1899. C. H. Rhodes, Judge.



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



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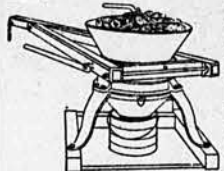
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We make Steel Windmills, Steel Towers and Feed Grinders and are selling them cheaper than the cheapest. Our productions are standards; are first-class in every respect and are sold on trial. Send us a usual and we will tell you all about them. **CURRIE WINDMILL CO.,** Manhattan, Kas. AGENTS WANTED.



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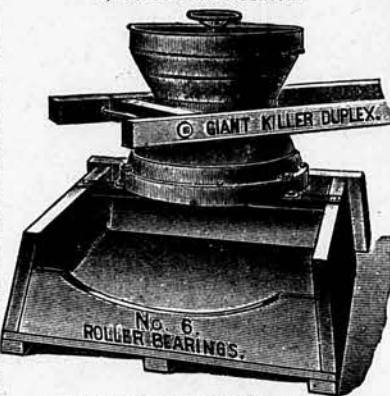


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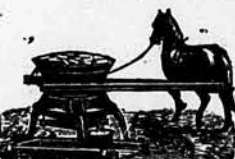
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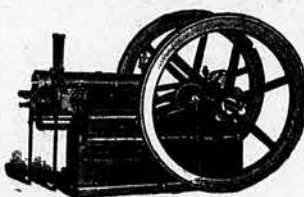
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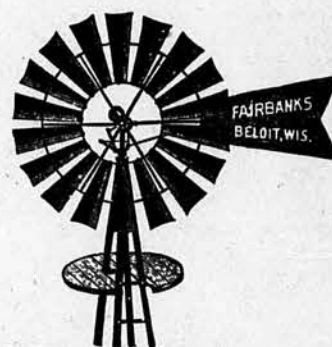
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"Wanted," "For Sale," "For Exchange," and small or special advertisements for short time, will be inserted in this column, without display, for 10 cents per line, of seven words or less, per week. Initials or a number counted as one word. Cash with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

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BLACK LANGSHANS EXCLUSIVELY.—Parent stock score high and well mated. Young stock for sale. Cockerels \$1.00 each, trios \$2.50. **Mrs. T. E. Whitlow**, Morantown, Kas.

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I will sell any or all of the following properties, or trade for single farm nearer my home and business:
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COMBINATION SALE OF PURE-BRED SHORT-HORN CATTLE AND POLAND-CHINA HOGS

At the farm of **E. H. Littlefield**, two miles south of Newkirk, Okla.,
TUESDAY, DECEMBER 20, 1898.

The stock consists of eighteen head of pure-bred Short-horn cattle, three Jersey cows, one Clydesdale stallion, twelve horses and colts, harness, wagons and farming tools, the property of **E. H. Littlefield**, of Newkirk, Okla. Terms of sale—Cash.

Fifty head of pure-bred Poland-China hogs—twenty-five boars old enough for service; twenty-five sows and gilts. Part of the sows are bred to King U. S. 3d 18128. And 100 graded calves, the property of **F. B. Hutchinson**, of Newkirk, Okla. Terms of sale on the hogs—Sums of \$15 or less, cash; over \$15, six months' time with approved security.

Sale to commence at 10 a. m. Conveyance will be furnished from the station at Newkirk. Lunch will be served at noon. Send for catalogue.

Col. S. A. Sawyer, Auctioneers. **E. H. LITTLEFIELD.**
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PUBLIC SALE OF POLAND-CHINAS
On December 22, 1898, at Enid, Oklahoma.

C. S. Williams & Sons, proprietors of the Spring Valley herd, will offer **FORTY HEAD** of fashionably-bred swine, consisting of ten yearling sows, safe in pig by Chief Wilkes 10063, Van Dee 41911 or Tecumseh Black Jr.; ten spring and summer pigs sired by Chief Wilkes 10063, Midway Chief 13624, Mambrino Chief 38432 and Chief Tecumseh 3d 35291 (these pigs are out of dam rich in U. S., Corwin and Hidestretcher blood); five yearling boars by Hoosier Boy 19210, General Hidestretcher 19211 and Prince Greenwood, Vol. 12 S.; ten spring and summer males, large enough for service, by Chief Wilkes 10063 and Van Dee 41911, out of prize-winning sows.

Several of this offering have won premiums at the fairs this fall, and the herd from which selected won 63 per cent of the awards this year, including the State fair. We propose to offer good individuals and on very liberal terms. Come to the sale, or send bids to **Col. S. A. Sawyer**, auctioneer, or **Bruce Sanders**, clerk, Enid, Okla., in our care.

Sale will be held in a large, well-heated tent, and every comfort for buyers from a distance will be looked after. Trusting that we may have the friendly support of the breeding fraternity in this, our first effort, we invite all such to be present. Address

C. S. WILLIAMS & SONS, NORTH ENID, OKLA.