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KANSAS FARMER.

Established in 1863.

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Display advertising, 15 cents per line, agate (fourteen lines to the inch). Continuous orders, run of the paper, \$1.54 per inch per week.
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116 West Sixth Ave., Topeka, Kans.

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BLOCKS OF TWO.

The regular subscription price for the KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, every old subscriber is authorized to send his own renewal for one year and one new subscription for one year with one dollar to pay for both. In like manner two new subscribers will be entered, both for one year, for one dollar. Address, Kansas Farmer Company, Topeka, Kans.

Mr. Geo. B. Harrison, of Topeka, has been appointed to a position in the division of live stock at the World's Fair by Chief Coburn of that division. Mr. Harrison will attend to sending to the agricultural press of the country such matters as will interest stockmen. He is eminently qualified for this work.

Persons sometimes wonder and take offense at the non-appearance of the articles they send to the paper. On the other hand the editor wonders why so many persons send unsigned articles for him to consider. These thoughts are just now brought up for the 'steenth time on consigning to the wastebasket a communication which contained nowhere any intimation of the identity of the writer. If your production does not appear in print it may be because the editor does not consider it worth printing. But in an experience of many years the editor of the KANSAS FARMER has consigned to the wastebasket many more articles on account of lack of signature than on account of lack of merit. Let your real name be written plainly upon every writing you send to the editor. If you prefer that your name be not printed, say so in a note to the editor, and your wishes will be respected.

A FEW WORDS PERSONAL.

The date of publication of the KANSAS FARMER is Thursday, but a good many of our friends send us items so as to reach us on that day. These would be interesting to farmers if we could print them as soon as received. But the KANSAS FARMER circulation now requires such a large edition that it takes our two, big, fast presses two days to print the last sixteen pages of the paper. Our desire is to have the last paper mailed by Thursday evening.

It is, therefore, necessary to close the forms on Tuesday afternoon so that the presses may start on the last run on Wednesday morning. The last matter that goes into the paper is given to the printer before noon on Tuesday. Thus we pay the penalty for the liberal patronage of our friends. We would not have it otherwise except on one condition. If our subscription list shall continue to increase at the present rate, it will soon be necessary to install a perfecting press, one that will take paper through at lightning speed, printing both sides and pasting, trimming, and folding without touch from the hand of man. The FARMER is enjoying its present patronage and has its plans laid for taking care of more in the future.

While on this subject we acknowledge our gratification at the warm words of commendation from subscribers. Some have wondered how we could improve the paper so greatly. Friends, the credit is due to you. Your greatly increased patronage has so enlarged the income of the paper that the publishers are able to improve the service. Improvements will continue with further increase of subscribers.

BROMUS INERMIS.

EDITOR KANSAS FARMER:—Will you please tell me if Bromus inermis will succeed sown in the fall. I want to seed about ten acres and would like to seed in fall with wheat or by itself. When farming in Iowa I found the best time to sow timothy was in the fall on stubble. If fall seeding is not best, can it be sown in spring with oats? My land is all on Big Caney, and is all bottom land, very rich, and very weedy, been rented for many years. Fall seeding would give grass a start of weeds. I am a "tenderfoot" from Iowa, here for health and rest. Have tue health, but have failed on rest, and need light on farming in Kansas. M. L. THOMSON. Chautauqua County.

Following is a description of Bromus inermis published by the U. S. Department of Agriculture in 1896

"Bromus inermis, Hungarian Bromegrass; Couch-Brome; Awnless Bromegrass; Austrian Bromegrass; Smooth Bromegrass.

"An erect perennial, two to five feet high, with strong creeping rootstocks, and a loose open panicle, four to six inches long. A native of Europe introduced into this country by the Agricultural Experiment Station of California about 1880, and gives considerable promise of value for both hay and pasturage. It is strongly stoloniferous, and quickly makes a thick, firm turf. It appears to have grown with equal vigor in Canada and Tennessee, remaining green throughout the winter in the latter State. The strong perennial character of this Bromegrass and its unusual drouth-resisting powers are qualities which recommend it for general cultivation, particularly in the semi-arid regions of the West and Northwest. It thrives well on dry, loose soil, but of course the better the soil the greater the yield. Its nutritive value is comparatively low, and before undertaking its cultivation, the fact that it is somewhat difficult to eradicate when once established, although by no means so difficult as Couch-grass or Johnson-grass, should be remembered. In Europe it is classed among the best forage plants. The seeds are quoted in New York catalogues at from \$20 to \$22 per 100 pounds. A bushel weighs about fourteen pounds. Sow three bushels to the acre if sown alone. In this country the yield of seed per acre has been 600 pounds,

which at prices named would make it a very profitable crop."

In general, persons who have tried Bromus inermis have reported favorably. Last May Mr. John Galer, of Osborne County, Kansas, wrote to the KANSAS FARMER as follows:

"I have been a reeler of the 'Old Reliable' for twenty-two years and have in it found many valuable hints and suggestions, but your paper of May 1 is fully abreast of any number since I have been a reader.

"Under the heading, 'Alfalfa in Dickinson County,' the writer, Mr. John H. Wertz, regards Bromus inermis as 'an utter fraud and an unmitigated fake.' Now, I have a small piece of Bromus inermis on my place, sown two years ago last April, and it furnishes more fall, winter, and spring pasture than rye, and stands more pasturing, trampling, and drouth than alfalfa. When I sowed it there was a good stand, nearly as strong and vigorous as oats, and it was all up in a week.

"About three-fourths of the piece sown was very foul with fox-tail, which, together with the dry weather, killed it nearly all out, but the remainder (about one-eighth of an acre), came through with a fair stand. It was heavily pastured from early fall till late in the spring both years since sown, and the stand is better and the growth more vigorous than the first year. The soil is thin upland, underlaid with white magnesia stone and gravel, at a depth of from one to two feet from the surface. I believe it is the coming grass with which to renew our worn-out pastures."

The question of fall-sowing is mentioned by few. A bulletin of the Kentucky Experiment Station states that fall-sowing with wheat succeeds better than spring-sowing.

The KANSAS FARMER will be pleased to hear from any of its readers who have had any kind of experience with this grass.

SHORTHORN AND DURHAM—CHICKS DIE IN THE SHELL.

EDITOR KANSAS FARMER:—Please let me know through the columns of your paper (1) if Shorthorn and Durham is the same breed. (2) What is the reason chicks do not hatch in the incubator when hatching time is at hand, but lie dead in the shell? The incubator has had proper attention but about 36 out of 150 do not hatch at all. Please let me know the cause. A. G. PETERSON. Osage County.

1. Shorthorn, Shorthorn-Durham, and Durham are names applied to the one breed of cattle. The name Shorthorn is supplanting the others in both official and general use.

2. It is impossible from the brief account of the fatality among chicks to determine the cause. Our correspondent will do well to write a full and minute account of his experience to the manufacturers of his incubator. They will take great care to put him in the way of success, and may know more than anybody else about his peculiar difficulties.

PENCILARIA.

EDITOR KANSAS FARMER:—Please explain the new feed mentioned in your paper as Pencilaria. Is it adapted to this Kansas climate and what is its value for feed? Is it as sure a crop as Kafir-corn and as heavy a crop? Is there as much strength in it? We have 500 acres and raise nothing but feed and would like to try the new feed if it is adapted to this country.

Please state if oats sown around an alfalfa patch will get the ground in

good condition for sowing alfalfa this fall, and if not, recommend some early crop for same. NYCE & CAVANAUGH.
Pratt County.

Pencilaria is a new crop. Those who have tried it report that it does well in Kansas. It withstands dry weather admirably and yields a heavy crop. Its value for feed has not been accurately tested. Animals eat it well. It probably ranks with or above Kafir-corn in yield and possibly in feeding value. It belongs to the same family of plants. Pencilaria is surely worthy of a trial. On a 500-acre farm a trial field of 10 or 20 acres should not be regarded as an unwarranted risk.

Oats on land intended for alfalfa in the fall will leave the soil in good condition for that plant. If Canada field-peas can be mixed with the oats, the soil will be left in the best possible condition for alfalfa. The peas leave a liberal supply of available nitrogen in the soil and this is just what the young alfalfa plants need.

OATS WITH ALFALFA.

EDITOR KANSAS FARMER:—I wish to ask for information concerning sowing oats with alfalfa, wishing to sow some alfalfa this spring. I do not know whether it would be advisable or not. Would it do to sow on cane ground, or ground on which cane was raised last year? GEORGE REYNOLDS.
Ottawa County.

Alfalfa growers almost uniformly find it better to sow alfalfa alone. If any other crop is to be sown with it that crop should be oats. Some have thought a light sowing of oats—say three pecks to a bushel, to the acre—advisable. They claim that it helps to keep the weeds down and is cut and taken away in time to give the alfalfa the room when it needs it. Put, the young alfalfa plant is very delicate. It needs all the fertility it can get and is injured by almost any kind of neighbors.

One of the approved methods in central and eastern Kansas is to have the ground in good condition in the spring, raise a crop of oats, take off the oats, disk the soil thoroughly and harrow it after every rain until the middle of August, and then sow the alfalfa. Better still is it to mix Canada field-peas with the oats. These enrich the soil.

Unless the land on which the cane grew last season is too dry and open, it will be found suitable for alfalfa. But the alfalfa seed is very small so that the young plant has to depend largely upon the elements of growth it can get from the soil. It is, therefore, necessary that the seed-bed be made nearly perfect. A good stand of alfalfa produces the most profitable crop on the farm. A poor stand is an aggravation and is hard to mend. Extra labor expended on fertilizing and preparing the soil is not labor lost.

These observations go beyond our correspondent's inquiries, but all who are sowing alfalfa for the first time will do well to attend well to the details of preparation.

HESSIAN FLY.

EDITOR KANSAS FARMER:—Enclosed find specimen of insect eggs that I found in my wheat. Will you please tell me through your paper what kind of eggs they are and what damage they are liable to do the live wheat after hatching. As they killed about one-third of my wheat last fall, I am anxious to know what the outcome will be. J. B. JACKSON.
McPherson County.

The insects enclosed are Hessian flies in the "flax-seed" stage of their development. They will soon transform into active flies which will lay eggs in the wheat and these eggs will hatch into a spring brood of worms which will do damage according to their numbers, and later transform into flax-seeds and, anon, into flies. The Hessian fly is just now the most formidable enemy the wheat-grower has to fear. There is little that can be done at this season to check its ravages on the growing crop. Some roll the wheat; some pasture it heavily. Whether much is accomplished by these means is still a disputed point.

There is a parasite which preys upon the Hessian fly. The parasites are thought to check and overcome the flies about the time the farmers think they will have to give up growing wheat. The great reduction of the wheat area in the region as well as the decrease in the Hessian flies on account of the parasites reduces the opportunity for the propagation of the

parasites and they in turn become nearly extinct. Cautiously the sowing of wheat is resumed and the Hessian flies, almost freed from their deadly parasites, increase until again checked by their enemies.

There is in McPherson one of the foremost entomologists of the West, Mr. Warren Knaus. Our correspondent will confer a benefit on the wheat-growers of his vicinity if he will induce Mr. Knaus to go to his wheat-fields and examine for the parasite. The KANSAS FARMER will gladly publish Mr. Knaus's report.

There are methods by which the farmers of any neighborhood may by concerted action wage a successful warfare against the Hessian fly. The season for this is in the latter part of summer. The KANSAS FARMER will discuss these methods in their season.

SOME ROAD-LAW QUESTIONS.

EDITOR KANSAS FARMER:—I would like to have a few questions on road law answered. I am unable to obtain trustworthy information from our road bosses, so I turn to the "Old Reliable."

1. Who owns the land on either side of the wagon track on a public highway?
2. To whom does the grass on either side of the wagon track belong?
3. Have I a right to sow a strip just outside my fence to some kind of tame grass or other forage crop?
4. Has any one a right to pasture a public highway?
5. If a horse in a pasture gets wired, because of playing over the fence with horses that another party is pasturing in the road, is not the party owning the horses out in the road liable for damages? GEO. R. STURN.
Rice County.

1. There is one fact that should always be kept in mind in considering road questions, namely, that the public has a right to the free, full, and unobstructed use of the road for all purposes of a highway. This is primarily for passing from place to place on foot, on horseback, in or with any kind of conveyance, and for the transportation of any kind of movable property or goods. It may include the right to stop by the way, to go into camp, to confer, possibly to hold a meeting. The public has a right to improve the road by grading, by filling, by bridging streams, by paving, or in any way to make the highway more serviceable or more pleasant for the purposes of a highway.

The public does not acquire the right to the land taken for a road for any other purposes than those of a highway. If at any time the public abandon the use of the land as a highway it reverts to and becomes a part of the adjacent lands. In condemning and taking a given strip of land for a highway it is presumed that the public considered that entire strip needful for the purposes of the highway. Even though there should be a considerable portion of this land not immediately used for travel or for any other purpose by the public, still the part generally unused is needed sometimes, as when a loaded wagon or other conveyance must turn around, when a large number of cattle or other animals shall be driven along the road, etc.

2. The grass which grows along the road may be taken and used by the owner of the adjacent land.

3. You have a right to sow grass between your fence and the part of the road used by the public. If the planting of large forage, or, indeed, of any kind of grass, would in any manner detract from the convenience, comfort, or pleasure of using the road as a highway, you have no right to plant it. A special act of the Kansas Legislature makes it unlawful to plow in the road for the purpose of scouring plows, etc., except by direction of the road-master. There may be a question whether this forbids preparation of the roadside for the reception of grass-seed.

4. You may pasture the roadside adjacent to your land. You may drive your animals as slowly as you like over any public highway so that you do not unnecessarily obstruct others from using and enjoying the road.

5. The party who has the horses in the road is not responsible for what horses in the field do. If he has a right to have his horses in the road he can not be held for damages to other horses that play with them over a barbed-wire fence.

FERTILIZER, COW-PEAS, FIELD-PEAS.

EDITOR KANSAS FARMER:—I have been wishing to find out from those who have tried commercial fertilizer for corn, whether it pays to use it or not. What is the best mode of distributing, with a corn-planter with attachment, or a wheat-drill with attach-

ment? My idea would be in favor of the wheat-drill.

Can you tell me which is the best for fertilizer, cow-peas or Canada field-peas? The Canada peas are much cheaper than cow-peas. I wish to sow them after cutting my oats and plow down in the fall. I planted cow-peas on June 15, 1902, using a corn-planter, drilling the seed about three inches apart in the row and cultivating the same as corn, using about one-half bushel to five acres. They made a good growth but it was so wet last fall I did not harvest them. Will plant the same way this spring with cow-peas and plow down when in bloom and sow alfalfa in September.

Allen County. SAMUEL Q. ADAMS.

Commercial fertilizers have been so little used in Kansas that there is a dearth of experience as to the best methods of applying them. When the writer saw commercial fertilizers applied in another State it was considered desirable to get them as close to the seed sown as possible. If any reader can answer our correspondent's inquiry the KANSAS FARMER will be glad to place the answer before the farmers of Kansas. If, however, our correspondent continues his interest in cow-peas, Canada field-peas, and alfalfa he will probably lose his interest in commercial fertilizers.

The editor knows of no reports of tests of the relative fertilizing value of cow-peas and Canada field-peas. Both are good. The soil on which these plants grow receives great benefit even if all that grows above the ground be removed. Few farmers in Kansas would feel like plowing under so much good feed.

PERENNIAL SMARTWEED.

EDITOR KANSAS FARMER:—I have one kind of weed on my farm that I can not get rid of; it grows something like smartweed only the leaves are larger, the blossoms are the same, and the roots are black and slightly dark-red inside, with many fine fibers. It will grow on any ground but best on low, wet places, and will spread very fast wherever it gets started. If a piece four or five inches long gets broken off and dragged along with a plow or harrow, wherever it drops it will start to grow. We call it black-root but do not know if that is the proper name. If you have heard of or seen this weed and know how to get rid of it, I would be glad of information. VICTOR JOHNSON.
Sumner County.

The weed described by our correspondent is undoubtedly perennial smartweed. Common names for it are water smartweed, waterweed, hearts-ease, blackheart, and devil's-shoe-string. The botanical name is Polygonum muhlenbergii. It is a troublesome perennial, although by some thought to do less harm to crops than is generally supposed. The usual methods of cultivation tend to spread it, for every piece of the root left in the soil produces a new plant. It can probably be killed in one season by hoeing. Like most other plants, it must produce leaves or perish. Very close cultivation, however, will be needed if it is to be eradicated in this way. The Kansas Experiment Station recommends smothering it with some strong-growing crop such as alfalfa. An old farmer near Topeka says that he has met but few weeds that he could not smother with millet. The alfalfa treatment is probably the best unless the ground is too wet. Alfalfa is a medicine that is profitable to administer and is generally effective especially if encouraged by the addition of barn-yard manure.

STOCK MELONS.

EDITOR KANSAS FARMER:—I would be pleased to know the value of the pie melon and citron or stock melon as a stock feed. What is the best way to prepare them, and what kind of stock eats them? They seem to do well in this county and I am sowing a good many seed but would like to learn more about them before I plant too many. All the information you could give me would be thankfully received by me and perhaps many others. C. W. PHILLIPS.
Kiowa County.

The names, pie melon, citron, and stock melon are sometimes used indiscriminately to designate the same thing. They may be applied also to designate varieties of the same class of melons. The writer has not at hand any statement of results of analyses of these melons, but on account of their very large content of water their feeding value is low compared with their weight. They make up for a good deal

(Continued on page 332)



ELECTRIC Handy Farm Wagons

make the work easier for both the man and team. The tires being wide they do not cut into the ground; the labor of loading is reduced many times, because of the short lift. They are equipped with our famous Electric Steel Wheels, either straight or stagger spokes. Wheels any height from 34 to 60 inches. White hickory axles, steel bounds. Guaranteed to carry 4000 lbs. Why not get started right by putting in one of these wagons. We make our steel wheels to fit any wagon. Write for the catalog. It is free. ELECTRIC WHEEL CO., BOX 46, QUINCY, ILL.

Agricultural Matters.

Cow-peas.

EDITOR KANSAS FARMER:—I want to try some cow-peas this season and would be pleased to hear from some one who has had some experience with them. Which is the best variety to plant? Will they do well on sandy soil? Any other information relative to their care from time they are planted until they are ready for feed will be acceptable. C. W. PARISH.
Reno County.

Picnic for the Coyote.

Wolves of to-day seem to be more cunning than in earlier years when game was more plenty in Kansas; and when they learn the way into your barn-yard or chicken-yard they are as persistent as any Kansas lawyer, and as longheaded as a politician; and they are so keen of smell that they rarely ever pass a bird nesting on the ground. As nearly all the birds of Kansas nest on the ground and are bug-eating birds, we should try to protect them from harm by killing the coyotes. How to do that a Philadelphia lawyer has not been able to find out.

I believe if the farmers of every neighborhood or township would unite in plotting against these wolves, they could do more to rid the country of the pests than any Legislature can do.

There is no better place than the farmers' institute to plan this work. I have tried various plans to interest Mr. Cobyote, but nothing would do but the best of my flock. Finally I noticed that the wolves had certain lines in the country that they would travel every few days, and one of these lines was across my farm. I was sure to suffer every time they came along.

I had a very large Plymouth cockerel that was clubfooted so he was of no use. One evening I took this chicken and lariat him with binding twine, near the line where the wolves traveled.

I then opened the skin with my pen-knife half way down from the center of the breast to the leg, and ran my finger in between the skin and the white meat of the breast, nearly to the breast-bone. I then dropped in what strychnine I could lift on the point of my knife, and the other side the same way. In the morning I went out and Mr. Rooster was there all right, ready for his breakfast. I gave him an ear of corn and left him there.

The next morning at daybreak I saw three wolves passing that way. They chased the rooster to the end of his rope and choked him off, then broke the twine and carried away my cockerel. They did not come back for another thoroughbred chicken.

There being no blood in that part of the chicken's body, you can't kill them with strychnine. I kept one hen on the lariat for a week and it did not hurt her one bit; but it is a sure trap for a wolf for you can use a big old rooster and they are the pick for the coyote, while hawks and small birds will not meddle with them. K. J. H.

Mammoth Structure for the Department of Agriculture at the World's Fair.

The contract for the completion of the Agricultural Building at the St. Louis World's Fair was let on Saturday, February 28, for \$529,940. This building is 15 per cent larger than any other building at the exposition and is the largest structure erected for the reception of a single department.

It is 500 by 1,600 feet, thus containing a floor space of almost twenty acres. This building and that to be built for horticulture will probably be the only ones in the exposition bearing color on the outer walls. The Agricultural Building will have used upon it green with points of brighter color. Garlands, wreaths, and festoons of

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Name _____ Write very plain.
Express Office _____ Post Office _____
County _____ State _____

fruits and flowers are to figure in the color scheme. The architectural members, such as cornices, and the piers between the mouldings, are to be left white. The plans for this building have been prepared under the immediate supervision of Mr. Isaac S. Taylor, Director of Works of the Exposition, by Mr. E. L. Masqueray, Chief of Design.

The building is probably the best lighted on the grounds. Its fronts are practically successive series of windows each seventy-five feet long and twenty-seven feet high. These windows are placed fourteen feet from the floor so as to allow the use of the wall space inside for exhibits. Triangular monitor windows supply sky light, while they cut off the direct sunlight, which would quickly spoil many of the exhibits this building will contain.

The grand nave, 106 feet wide, which runs through the 1,600-foot length of the building, rises to a height of sixty feet and supplies the grandest vista of installation space of any building ever designed for exposition uses.

The entrances to the building are distributed to serve the visitors. A gradual rising approach will lead up from the northeast where is located the main picture of the fair. The beautiful slopes of the hill around the building have been assigned to the Departments of Agriculture and Horticulture, and here during the fair there will be maintained a fine display of flowering shrubbery and of indigenous and exotic plants. Hydrants to supply water to these exhibits at all times have been planned.

On its south side it will have a gallery 500 feet long and 25 feet wide. Here will be the offices for Chief F. W. Taylor and his staff; reading rooms where the leading agricultural publications will be kept on file; jury rooms and a large committee room. There will also be on this gallery an assembly hall for the meeting of agriculture and other societies. This hall will be 106 by 50 feet and will have a seating capacity of nearly 1,000.

It is worth noting that the pleasant relation of the Division of Exhibits and the Division of Works has resulted, in this case, in a building which is better adapted for the purpose for which it is constructed than is sometimes true of exposition palaces.

The Director of Works sought the advice and suggestions of the Chief of the Departments and as a result many modifications were made in the first plans suggested, all of which were with the thought of making the building as perfectly suitable for exhibits as possible. Only those who have had experience as exhibitors can appreciate how much this means as compared with a building which is worked out and completed by an architect, who may not have had special exposition experience, or knowledge of the details which may be included without marring the architectural and artistic features. Such slight changes will often modify the building so that instead of being very badly adapted to exhibits it contains all the requisites for permitting successful installation. It is doubtful whether in the working out of any exhibit building so much thought was ever given to the comfort and convenience of exhibitors. The contract

calls for the completion of the building by September 1, thus leaving ample time for the most elaborate installation.

Profits of Irrigation in the Eastern Part of the United States.

The rise in prices of agricultural lands in the last few years has made it necessary that farmers should get the largest possible return from their lands, and has created a general interest in whatever will help to that end. One of the aids now being considered is irrigation. In the East it is not, as in the West, absolutely necessary for the raising of any crops, but, like fertilizing or thorough cultivation, it is a means of increasing the returns from land. The whole question is whether it will pay. The report of the irrigation investigations of the Department of Agriculture for the year 1901, carried on under the direction of Elwood Mead, gives some valuable data on this question. The report covers experiments in Missouri, Wisconsin, and New Jersey. A series of experiments extending over several years at the Wisconsin Experiment Station at Madison show a marked increase in yields of farm crops. The average increase in the yield of clover hay on irrigated land over that from unirrigated land has been 2.5 tons per acre; the average increase in yield of corn has been 26.95 bushels per acre; and potatoes show a gain of 83.9 bushels per acre. The annual cost of irrigation at Madison has been \$6.68 per acre, not including any interest on the investment, but including all extra labor. At current prices this leaves a net profit from irrigation of about \$20 per acre on hay, \$11 per acre on corn, and \$73 per acre on potatoes. The conditions of soil and climate at Madison do not differ from those of the Middle West generally, and the results given above show that where water can be obtained without too large an outlay irrigation as a part of intensive farming is very profitable.

Another series of experiments was begun for testing the effect of irrigation and fertilization on sandy soils, such as are common in large sections in Michigan, Wisconsin, and Minnesota. These lands are poor in plant food, and retail so little moisture that all attempts to farm them have failed. The experiments included the supplying of both manure and water. Manure alone was of little use, as there was not water enough to make the plant food available. Water alone produced good results, but the application of both gave the best results. The cost of irrigation was \$6.70 per acre, and the net gain from irrigation was as follows: Potatoes, \$30 per acre; corn, \$1 per acre; watermelons, \$58 per acre; muskmelons, \$45 per acre. From these experiments it seems that with special crops irrigation of the sandy lands is profitable, but the increase in yield of corn is not enough to justify the expense of securing a water supply.

In New Jersey water has been used on small fruits and vegetables, and the added returns due to irrigation vary a great deal with the seasons. Some years no irrigation is needed, in others all crops need it, but in most years some crops are helped by it. Professor Voorhees, who has charge of this work, reports that in his opinion, irri-

gation where tried has paid well. Pumping from streams or wells is the most common way of getting water for fruit and garden irrigation. Small plants furnishing water enough for from five to ten acres, including pump and engine, cost from \$200 to \$500.

The fourth part of the report dealing with the experiments in the humid parts of the United States has been printed as a separate article and can be had by applying to the Director of the Office of Experiment Stations, U. S. Department of Agriculture, Washington, D. C.

The Binder.

EDITOR KANSAS FARMER:—The binder is one of the most necessary instruments of agriculture and is used wherever civilization is found. By its use small grain may be easily and quickly harvested with small expense compared to the old method. It has revolutionized grain-growing. There are many different kinds used by the farmer, but they are all built upon certain principles necessary for their successful operation.

There are four principles which all manufacturers have to understand and apply correctly or their machines are an utter failure. All makers are trying to obtain first, a sure, simple bundle-tying apparatus which will produce a uniform, square-butted bundle; second, an elevator which will deliver all kinds of grain to the packers without choking; third, light draft and durability. All of these points have been improved upon until we have machines working very well under many differing conditions.

The farmer demands first, durability; second, light draft; third, good elevating qualities; fourth, well-formed, well-tied bundles; fifth, simplicity of construction; and sixth, easy access to oil bearings. Some may object to the above classification but a little thought will dismiss the objection. Of course all binder-users realize the vital relation all these component parts bear to each other, and unless all parts operate as a harmonious whole the usefulness of the machine is impaired. I believe the majority of farmers register the most kicks in regard to oiling. All machines are built, or seem to be, without any thought on this question, and the operator must crawl under the machine and to both sides, and in front, and behind, and execute all sorts of acrobatic performances in order to oil his machine. This consumes several minutes and the oil runs off the first bearing by the time the last is oiled. They are constructed so all dust may gather in them, forming a paste which is unequalled as a shaft-polisher and makes it a serious question whether to oil or not. What is the use of buying an otherwise good binder when boxings and bearings are exposed so the dirt may accumulate and cut them out in short order? Why do not manufacturers fit their machines with hard-oil screw-cap oil-cups, thus insuring a steady application all the time and exclude the dust? This may not be practicable on all bearings but will apply to the majority and something better may be found for the rest which will improve them. About one-fifth of the bearings contain oil-cups and the balance have small holes through the casting for oiling purposes. When these are placed

so they are unhandy many operators neglect them, then, after cutting, they will not hold oil at all. Binders are made very good otherwise, and if the lubricating system could be changed the farmer would be well pleased. As it is, with the closest attention, the farmer sees his valuable machine going to ruin because of a faulty construction of oil bearings. This only the manufacturers can remedy. Will they? L. A. WELD.

Oklahoma.

Small Horse-Weed.

A Shawnee County subscriber brought in samples of a small weed which is becoming troublesome in pastures and to some extent in meadows. These samples were submitted to Prof. B. B. Smyth, of Topeka, who reports as follows:

The weed you laid on my desk is *Leptilon divaricatum*, low horse-weed. It is quite common in some of our blue-grass pastures along streams, especially where the soil is a little sandy. Pasturing a field heavily for several years has a tendency to increase it, as the cattle do not eat it. Goats eat it. It is a "winter annual," the seeds germinating in the fall, and being but small and unnoticeable in the spring. Close mowing, or, better still, cutting out with a hoe before blooming time, destroys it. Cultivation kills it readily.

This plant has a near relative that is better known, a tall weed, four or five feet high, known as Canada fleabane, horseweed, fireweed, colt-tail, and bitter-weed. All these names except the first are also applied to various other weeds.

This low horseweed grows in pastures only where the blue-grass is killed out by any cause. The remedy is to change the pasture and cultivate for a year or two. Where this is impracticable a persistent and early mowing will benefit. Portions of a pasture where this weed is prevalent should be reseeded with blue-grass at suitable times for several winters, without disturbing the existing sod. Vigorous blue-grass chokes it.

The leaves of this plant, like other fleabanes, when properly applied, in dog kennels, chicken coops, etc., will drive away fleas, bedbugs, and other insects. It is also a styptic, useful in staunching the flow of blood.

Substantial Progress Made During Congress Just Closed.

The Fifty-seventh Congress closed without enacting into law the post-check bill, but the friends of the measure may well feel greatly encouraged at the substantial progress made within the past year. During that time, or in six months' actual session of Congress, the bills were introduced, then amended and reintroduced; referred to the postoffice committees of the House and Senate; by them referred to the Postmaster-General and the Secretary of the Treasury, considered by a commission of high officials of each department, and then sent back to Congress with a divided report.

At the opening of the second session such pressure was brought to bear again from the newspapers and business houses that the bills were taken up for serious consideration by the committees. The House committee gave hearings on the bill, and after considering carefully the statements

pro and con, voted, on January 30, to report the bill providing for \$1, \$2, and \$5 post-check notes with amendments to the House with the recommendation that it be passed as amended. The amendments do not change the general principle of the plan, but tend to greater simplicity in detail, and are designed to overcome certain objections raised by Treasury officials.

This bill as amended was reintroduced by Representative Washington Gardner, of Michigan, and he and other members friendly to the measure made every effort to have the bill brought up and passed, but this was found to be impossible.

In the Senate the amended bill was introduced by Senator A. J. Beveridge, and the subcommittee of which he was chairman favored the bill, but, owing to the congested condition of business in the Senate it was impossible for him to secure definite action.

We are pleased to report the above facts because they evidence an unusual degree of success in a comparatively short time, and we believe that this success has been achieved through the hearty efforts of the press throughout the country, the representations from business houses, and the pressure from the people generally, who demand this additional postal convenience.

The thanks of the advocates of the post-check are especially due to the following public officials and members of Congress for their efforts in behalf of the measure during the past year:

Hon. Henry C. Payne, Postmaster-general; Hon. E. C. Madden, Third Assistant Postmaster-General; Hon. H. A. Castle, Auditor for the Postoffice Department; Senator A. J. Beveridge, Member Senate Postoffice Committee; Representative Washington Gardner, of Michigan; Hon. E. F. Loud, Cal., Chairman House Postoffice Committee; Hon. J. H. Bromwell, Ohio, Member House Postoffice Committee; Hon. W. E. Mason, Ill., Chairman Senate Postoffice Committee; Hons. Boies Penrose, Pennsylvania; S. B. Elkins, West Virginia; H. C. Lodge, Massachusetts; J. H. Mitchell, Oregon; F. T. Dubois, Idaho; G. W. Smith, Illinois; W. S. Cowherd, Missouri; J. J. Gardner, New Jersey; H. H. Bingham, Pennsylvania; G. W. Cromer, Indiana; Thomas Hedge, Iowa; J. C. Sibley, Pennsylvania; H. S. Boutell, Illinois; B. S. Rodey, New Mexico.

Broom-Corn.

EDITOR KANSAS FARMERS—I am planning to experiment with broom-corn, and if the KANSAS FARMER can spare the space to give its readers a discussion on broom-corn, as to what kind of ground is best adapted and how thick to plant it; what it will yield; when to plant it; etc., anything you may see fit to write upon the subject—it will greatly oblige a reader who is not acquainted with it sufficiently to cultivate it.

A READER.

Marion County.

[Let us hear from the broom-corn growers.—Editor.]

The Stock Interest.

THOROUGHbred STOCK SALES.

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

March 19, 20, and 21, 1903—Combination horse sale at Riverside Barn, Wichita, Kans., 300 high class horses. J. S. Lehr, Eldorado, Kans., and others.
April 1-2, 1903—Shorthorn cattle. E. O. Tudor, Holton, Kans.
April 21, 1903—F. P. Healy, Bedford, Iowa, Scotch Shorthorns, at Seneca, Kans.
April 22, 1903—Shorthorn Breeders' Combination Sale, Buncheon, Mo. C. P. Tut, Secretary.
April 22, 1903—Breeders' combination sale at Kansas City. W. C. McGavock, Manager.
May 5-6, 1903—Collin Cameron, at Kansas City, Herefords.

National Live-Stock Association.

EXCERPTS FROM REPORT OF CHAS. F. MARTIN, SECRETARY OF THE NATIONAL LIVE-STOCK ASSOCIATION, AT THE ANNUAL MEETING, JANUARY 13, 1903.

OLEOMARGARINE.

As soon as the officers of this association returned to headquarters after the adjournment of the last meeting, the fight against the passage of H. R. 9,006, commonly known as the "Oleo-margarine Bill," was again actively taken up. This bill was finally passed in the House by a majority of 28, a reduction of more than 100 in the majority for the dairy combine the previous year. When the bill went to the Senate, it was passed by only two majority, and it is a well-known fact that had two Western Senators voted as their constituents demanded, the bill would have been defeated. It was simply a case of where "a man was slaughtered in the house of his friends." The creamery manufacturers who were urging the passage of this bill had un-



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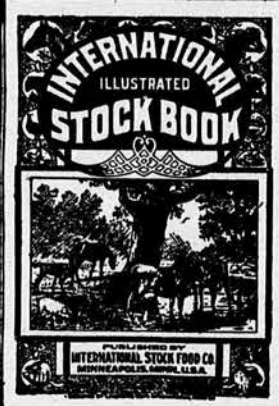
IT CONTAINS 183 LARGE ENGRAVINGS OF HORSES, CATTLE, SHEEP, POULTRY, ETC.

The Cover of this Book is a Beautiful Live Stock Picture. It is Printed in Six Brilliant Colors. Book is 6 1/2 by 9 1/2. See engraving for design of cover. It cost us \$3000 to have our Artists and Engravers make these life Engravings. This Book contains a Finely Illustrated Veterinary Department that will Save You Hundreds of Dollars. It describes common Diseases, and tells how to treat them. It also gives Description, History and Illustrations of the Different Breeds of Horses, Cattle, Sheep, Goats, Hogs and Poultry. It contains Testimonials, and Life Engravings of many noted Animals. The Editor of This Paper Will Tell You That You Ought to Have This Book in Your Library for Reference.

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limited means at their command, and had the officers of this association had sufficient funds to bring witnesses to Washington from laboring districts and from other sources where our strength was greatest, the measure could never have become a law. The association, however, succeeded in having several amendments injected into the bill regarding the manufacture of process butter and other material points, which have proven to be of very great benefit to the live-stock industry, and very distasteful to the people who desired to place a prohibitory tax on the manufacture of oleomargarine.

I desire to say in this connection, that in this fight the stockmen did not receive any support whatever, financially or morally, from the packers or manufacturers of oleomargarine who were equally as greatly interested in the defeat of the measure as the stockmen, with the exception of a single manufacturer in Washington, D. C., who sent a representative to appear before the Committee on Agriculture.

ANTI-SHODDY BILL.

The bill regulating the manufacture of shoddy, which was endorsed by your last convention, was introduced in the House of Representatives early during the month of December a year ago by Hon. Charles H. Grosvenor, Congressman from Ohio. This bill is known as H. R. 14,488, and after being read was referred to the Committee on Ways and Means. Every effort possible was made to have this committee report the bill to the House during the first session of the present Congress, but without success.

Petitions calling upon the Committee on Ways and Means of the House, asking for an early and favorable report upon this measure, were sent out by the secretary of this association to organizations and prominent stockmen affiliated with the live-stock industry, asking them to have these petitions signed and sent to headquarters at once, so that they might be forwarded to Washington. I regret to say that not one out of fifteen of these requests were complied with. Resolutions from live-stock associations all over the country were sent in, but notwithstanding all of this work, no action was taken by the committee. During all this, the National Association of Wool Manufacturers, the members of which were secretly opposing the bill, did not appear before the Committee of Ways and Means of the House, no doubt not desiring to make answers to the questions which we would have asked them.

Within the past two weeks I have

sent out additional letters to members of Congress and to this Committee, again urging prompt action on this bill. I have received replies from a majority of the members of the House, and I am satisfied that if the committee would report the Anti-Shoddy Bill to the House, it would pass before the adjournment of the present session. The leading argument which they advance is, that the bill can not be made operative. It does not seem that it is any more difficult to have federal inspectors regulate the importation of rotten rags gathered from the slums of Europe and their manufacture into clothing for the American people, than it is for federal inspectors to supervise the slaughter of American steers and the manufacture of the "oleo" contained in the carcass into healthy, clean, and pure butter.

The tax which this legislation imposes is one-tenth of one cent a pound to be paid by the manufacturers. It can hardly be said that this would work a hardship upon the class of manufacturers who use shoddy and sell an "all wool" \$3 suit to the American people for \$15. It is not protection simply for the growers of wool that we are asking, but protection for the consumers as well.

The opposition to this measure is almost entirely from Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island, and a little bunch of shoddy mills in Cleveland, Ohio. This territory has an area of 67,384 square miles, and a population 5,593,000. The remainder of the United States, composed of 7,000,000 farmers with a total area of 3,692,125 square miles and a population of 78,000,000 is asking that this bill become a law. The total amount of money invested in the manufacture of shoddy and of woolen goods in New England amounts to less than \$100,000,000, while the interests asking for the passage of the bill have invested in live stock and farms more than \$5,000,000,000. If there is any justice in the statement that the majority should rule, this bill should be immediately passed.

TARIFF.

During the first part of the present session of Congress, the usual movement by Eastern manufacturers was made for the purpose of having the duty on wool, hides, and live stock removed, but through the prompt action of this association, the bill was never introduced.

THE REID INSPECTION CASE.

The case of the State of Colorado vs.

Edward H. Reid, which this association carried from the local court of Colorado to the Supreme Court of the United States, protesting against the right of local sanitary boards to levy double inspection and charge fees on interstate shipments of live stock which had been previously examined by federal inspectors and granted a clean bill of health, has been decided against us and the laws of Colorado upheld. While this was discouraging at first sight, it probably was the best thing that could have happened to the association. Messrs. Talbot, Denison & Wadley carried the case to the Supreme Court and filed their brief in the Supreme Court early in October, and October 24, in connection with Hon. William M. Springer, of Washington, made the final argument before this body, and decision was rendered by a divided bench, on December 1. We immediately wired Judge Springer requesting him to introduce a bill amending the present law, so as to give the stockmen what they had been fighting for. This bill was endorsed by Secretary Wilson and the Bureau of Animal Industry, immediately introduced in the House, was reported favorably by the Committee on Agriculture, and on December 16, passed the House with only two opposing votes, and no doubt will pass the Senate before the adjournment of the present session. The enactment of this law will not only by a great convenience to the stockmen of this country, but will be a saving to them of from \$150,000 to \$200,000 per annum.

TWENTY- EIGHT HOUR LAW.

I have also the pleasure of advising you that H. R. 12,002, which is a bill introduced at the last session of Congress at the instigation of this association, amending the interstate commerce act so as to extend the time-limit for unloading interstate shipments of live stock from twenty-eight to forty hours, has passed the House by a large majority and is now before the Senate. We have an unconfirmed statement to the effect that Secretary Wilson is not wholly satisfied with the measure, and that it will probably meet with some opposition from one of the New York Senators. This opposition in my opinion can be easily overcome by members of this association writing to these gentlemen and members of the Senate, giving them our reasons and asking that this bill become a law, and urging their support. Our argument in favor the measure is contained in the resolution which was

unanimously adopted at the Chicago convention.

CLASSIFIED CENSUS OF LIVE STOCK.

H. R. 14,643, a bill providing for a classified census of live stock, was introduced in the House of Representatives by Congressman Hopkins of Illinois early in December. There seems to be no opposition to this measure, and I firmly believe that as soon as Congress can get time to take this matter up it will become a law.

RATES ON PURE-BRED STOCK.

The resolution introduced by T. A. Butterworth, of Illinois, asking the association to use its influence with transportation companies with a view of securing a low special rate on shipments of pure-bred and pedigreed stock to State fairs and exhibitions was presented to the Western Traffic Association which met in Denver, and the request for these rates refused. The matter was then referred to the National Association of Live Stock Agents, asking them to endorse it. The resolution is still with that organization, not having been acted upon.

I can not offer any encouragement as to the possibility of this request being granted, for, as one live-stock agent expressed it, "Railroad companies do not care for this class of business, and would rather not have it, and so far as I am concerned, I would increase the rate rather than reduce it."

BULLETIN SERVICE.

The bulletin service inaugurated by the association in its first year, has been continued with marked success. The issue of these reports whenever the occasion demands, has been greatly appreciated by our members, and also by the newspapers. In this connection I desire to say that we still maintain most friendly relations with the members of the press, all of whom have assisted us in our work, and with two exceptions, have favorably commented upon the work which we have accomplished, and that which we have in hand.

CLASSIFIED ASSESSMENT.

The bill submitted to the Chicago convention by General John B. Castleman, of Louisville, Ky., providing for a classified assessment of live stock in the various States has been printed and distributed among the committeemen of the various States and prominent stockmen of the States, together with a letter requesting that this bill be presented at the coming sessions of the various State legislatures with a view of having it become a law. It is hoped that the committeemen and stockmen from States belonging to this organization will give this matter consideration during the coming winter.

I desire to impress upon you with all force in my power, the influence which this association has attained during the six years of its existence. It now has memberships in nearly every State and Territory in the Union, and through its impartial policy and express desire to be of benefit to the live-stock industry, has gained the good will and respect of every legislative body in the United States. I do not exaggerate when I say that any just request made by this organization will receive prompt and reasonable consideration not only by Congress, but by State legislative bodies.

FINANCES.

The assessments required by this association of 50 cents per thousand head, when taken into consideration with the amount and value of the work which this organization is doing, is insignificant. It means simply that stockmen are taxed one-twentieth of one per cent per head on every animal he owns. It would seem that if an industry can not stand an assessment as low as this, the value of the work done by this organization is little appreciated, and I am surprised that any association affiliated with the live-stock industry should refuse to pay it.

The finances of the organization are not as prosperous as I would wish they were. Our outstanding obligations are confined to fees which we owe our attorneys. If these were liquidated, there would be no balance in the treasury. The receipts for the year were within a few hundred dollars as large as the year previous, but our expenses have been heavier.

I would also call the attention of the Executive Committee to the recent action of the German Government in passing legislation imposing a prohibitive tariff on American meats, and would recommend that this Association before it adjourns, adopt some res-

olution calling upon the government to enact retaliatory measures.

I would also call the attention of this Committee to the recent outbreak of the foot and mouth disease in New England, and the prompt action of Secretary Wilson of the Department of Agriculture and Dr. Salmon of the Bureau of Animal Industry in quarantining the infected section, and in using their best efforts to stamp out this plague.

I also recommend that this Convention adopt resolutions endorsing the action of the above mentioned officials, and upholding them in the excellent work they have done.

Grazing and Feeding Experiments with Pigs.

PRESS BULLETIN NO. 15, ALABAMA EXPERIMENT STATION.

The following plants were tested as hog food on the farm of the Experiment Station at Auburn, the hogs doing the harvesting; these plants are available for use in the months indicated:

Spanish peanuts, August to December.
Chufas, November to March.
Cowpeas, July to November.
Sweet potatoes, August to November.
Sorghum, July to November.
Vetch and oats, March, April and May.
Dwarf Essex rape (spring sown), May and June.
Dwarf Essex rape (fall sown), December, January, February, March, and part of April.

In most cases it was found best to feed, in addition to the above crops, from one-fourth to one-half of the usual ration of grain. If we assume that of this grain five pounds was required to produce one pound of increase in live weight, we have left the following amount of growth of shoats attributable to one acre of each crop after deducting the increase due to the grain consumed:

An acre of peanuts in seven tests averaged a net return of 333 pounds of growth, now worth \$16.65.

Peanuts alone in two tests averaged 281 pounds, worth \$14.05.

Chufas in two tests averaged 307 pounds, worth \$15.35.

Cowpeas in two tests averaged 229 pounds, worth \$11.45.

Essex rape in two tests averaged 452 pounds, worth \$22.50.

Sorghum in two tests averaged 174 pounds, worth \$8.70.

One acre of the best of these crops (peanuts, rape and chufas), afforded pasturage for one month for at least twenty-five 100-pound shoats, when a half ration of grain was fed.

It usually requires about five pounds of grain to make one pound of growth in live weight of such shoats as these. However, when they grazed on the crops named below, one pound of increase in weight required only 1.77 pounds of grain with peanuts; 2.30 pounds of grain with chufas; 3.07 pounds of grain with cowpeas; 2.68 pounds of grain with rape; 3.70 pounds of grain with sorghum; 3.13 pounds of grain with sweet potatoes.

Pigs grazing on sorghum, fully headed out, ate only 12 per cent less grain per pound of growth than those supported entirely on corn.

Shoats fed on a mixture of corn-meal and of 20 or 25 per cent cottonseed-meal in most experiments ate but little food and made very slow growth. In other experiments they required only 3.84 and 4.68 pounds of this mixture per pound of growth.

The feeding of cottonseed-meal as one-fifth or one-fourth of the grain ration for thirty-four to thirty-eight days in most cases had a poisonous effect on shoats weighing from 59 to 118 pounds each. No ill effect was noticed prior to the thirty-third day, and some pigs showed no perceptible ill effects on the thirty-second day.

Young pigs were more susceptible to injury from cottonseed-meal than older shoats.

Peanuts fed up to the date of slaughter made a very soft lard. Chufas softened the lard to an almost equal degree. Sorghum did not soften the lard to the same extent.

Rice polish proved to be a better hog food than corn-meal, 78.6 pounds of polish equaling in feeding value 100 pounds of corn-meal.

Numerous other grains and mixtures of grains were tested and the results recorded in full in Experiment Station Bulletin No. 122, of which the above is a brief outline. It will be distributed soon to the names on our mailing list, and can be obtained free by any other parties on application to Experiment Station, Auburn, Ala.

J. F. DUGGAR,
Agriculturist, Alabama Experiment Station.

The Great Opportunities in the Canadian Northwest are attracting large numbers of settlers from the United States.

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C. W. Rowley, Mgr.	H. E. P. Jemmett, Mgr.
CARMAN—Manitoba.	MEDICINE HAT—N. W. T.,
E. C. Complin, Mgr.	F. L. Crawford, Mgr.
DAUPHIN—Manitoba.	MOOSOMIN—N. W. T.
J. S. Munro, Mgr.	E. M. Saunders, Mgr.
EDMONTON—N. W. T.	NEEPAWA—Manitoba.
T. M. Turnbull, Mgr.	G. M. Gibbs, Mgr.
ELGIN—Manitoba.	SWAN RIVER—Manitoba.
G. H. Horne, Mgr.	F. J. Macoun, Mgr.
GILBERT PLAINS—Manitoba	TREHERNE—Manitoba.
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Stock-Judging Contests.

EDITOR KANSAS FARMER:—The Agricultural Association of the Kansas State Agricultural College has charge of the stock-judging contests held at the close of each week. During the first week in March the State Dairy Association met at the college and instruction was given in judging dairy cattle throughout the week, it being finished by a contest among the several classes (five members from each class), for the purpose of ascertaining who could make the best selection of dairy cows. There were three types of cows in the judging ring, viz.: Jersey, half-blood Guernsey, and scrubs. Each student was required to place the animals of each lot in order of their rank as dairy animals. After the placing of the animals, each student was required to write his reasons for thus placing the animals. Professor Otis looked over and graded the different papers according to the score of the judge, Mr. John Schaffs, of Lincoln, Neb., who had charge of the feeding department of the Pan-American dairy test.

The Agricultural Association has received contributions for a prize fund and will give a first and second prize to the winners in each of the contests, the first prize to be a silver cup, and the second prize to be a book, or books. The student winning first prize in judging dairy cattle was Mr. E. H. Hodgson of the senior class, and the second prize was won by Mr. Fred Van Dorp, of the sophomore class. As a class the first-year students received the highest grade, thus showing that they received much good from the judging school under the direction of the animal husbandry department.

Several prominent stockmen of the State and some of the creamerymen have contributed to our prize fund, the names of whom appear below:
J. W. & J. C. Robison, Towanda, Kans. (Percheron), \$10; Henry Avery

& Son, Wakefield, Kans. (Percheron), \$10; T. K. Tomson & Sons, Dover, Kans. (Shorthorn), \$5; McIntoch & Peters, Kansas City (commission men), \$2.50; Mr. A. M. Jordan, Alma, Kans., \$1; C. L. Dille, Ottawa, \$1; B. T. Engle, 50 cents; John M. Morrison, \$1; E. W. Curtis, \$1; J. F. Schlappi, \$1; J. A. Rees, \$1; Chas. Crote, \$1; H. C. Larson, \$1; C. A. Barnes, \$1; H. E. Buck, \$1; W. A. Man, \$1; W. H. Phipps, \$1; L. G. Humsaegar, \$1; N. A. Needham, 50 cents; E. A. Evans, \$1; John Parker, \$1; J. S. Tapleson, \$1.

The students appreciate what has been contributed. Some others have said that they would give assistance.

The Zenner Disinfectant Company, of Detroit, Mich., has forwarded a large silver cup to be awarded to the best judge of beef cattle, the contest to be held the latter part of March, with John Gosling, of Kansas City, as expert judge.

Much interest is taken in these contests and it will no doubt result in the development of expert stock-judges, more of whom are very much needed in Kansas at the present time.

E. H. HODGSON,
Cor. Sec. of Agricultural Association.
Manhattan, Kans.

Good Roads in Congress.

In the House of Representatives, December 1, 1902, Mr. Brownlow, of Tennessee, introduced the following bill, which was referred to the Committee on Agriculture and ordered to be printed:

A bill to create in the Department of Agriculture a bureau to be known as the Bureau of Public Roads, and to provide for a system of National, State, and local cooperation in the permanent improvement of the public highways.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that there shall be in the Department of Agriculture a bureau to be known as the Bureau of Public Roads.

Sec. 2. That the object and purposes of said bureau shall be to instruct, assist, and cooperate in the building and

improvement of the public roads, at the discretion and under the direction of the director of said bureau, in such States, counties, parishes, townships, and districts in the United States as shall be determined upon by said director. The general policy of such bureau shall be to bring about, so far as may be, a uniform system of taxation for road purposes and a uniform method of road construction, repair, and maintenance throughout the United States, and to cooperate with any State or political subdivision thereof in the actual construction of permanent highways.

Sec. 3. That said bureau shall be under the management and direction of the Secretary of Agriculture, and shall consist of one director of said bureau, who shall receive a salary of four thousand five hundred dollars per annum; one assistant director, who shall receive two thousand five hundred dollars per annum; one chief clerk, who shall receive two thousand dollars per annum; one stenographer, who shall receive one thousand four hundred dollars per annum; one clerk who shall receive one thousand dollars per annum; one messenger, who shall receive seven hundred and twenty dollars per annum; four field experts, who shall receive two thousand dollars per annum each; four civil engineers, who shall receive one thousand eight hundred dollars per annum each; four road experts, who shall receive one thousand four hundred dollars per annum each; one assistant, in charge of road-material laboratory, who shall receive two thousand five hundred dollars per annum; one engineer, who shall receive two thousand dollars per annum; one chemist, who shall receive one thousand eight hundred dollars per annum; one petrographer, who shall receive one thousand two hundred dollars per annum, and such other officers, agents, and servants as the director may from time to time require for the purpose of carrying into effect the provisions of this Act.

Sec. 4. That there shall be appropriated for the maintenance of said bureau and the use thereof, out of any money in the Treasury of the United States not otherwise appropriated, the sum of seventy-five dollars for the salaries herein provided for and for the following items: The general expenses of said bureau; to enable the director, under the direction of the Secretary of Agriculture, to make inquiries in regard to systems of road-building and management throughout the United States; to make investigations and experiments in regard to the best methods of road-making and the best kinds of road-making materials; to cooperate in the building of object-lesson roads in the several States, in accordance with the plan hereof; to employ local and special agents, clerks, assistants, and other labor required in conducting experiments and collecting, digesting, reporting, and illustrating the results of such experiments; to investigate the chemical and physical character of road materials; to purchase necessary apparatus, materials, supplies, office and laboratory fixtures; to pay freight and express charges and traveling and other necessary expenses; to prepare, publish, and distribute bulletins and reports on the subject of road improvement; to enable him to instruct and assist in the building and improving of the public roads and highways in such States, parishes, counties, townships, and districts in the United States as shall determine to follow the plans and methods directed and determined upon by the director or said bureau; and to enable him to assist agricultural colleges and experiment stations in disseminating information on the subject of improved roads.

Sec. 5. That any State or political subdivision thereof, through its proper officers having jurisdiction of the public roads, may apply to the director of said bureau for cooperation in the actual construction of a permanent improvement of any public highway within said State in the following manner: Every application for the cooperation herein provided for shall be accompanied by a properly certified resolution stating that the public interest demands the improvement of the highway described therein, but such description shall not include any portion of a highway within the boundaries of any city or incorporated village.

Sec. 6. That the director of said bureau, upon receipt of any such application, shall investigate and determine whether the highway or section thereof sought to be improved is of sufficient public importance to come within the purposes of this Act, taking into account the use, location and value of such highway or section thereof

for the purposes of common traffic and travel, and for the rural free delivery of mail by the United States Government, and after such investigation shall certify his approval or disapproval of such application. If he shall disapprove of such application, he shall certify his reasons therefor to the public officer or officers making the application.

Sec. 7. That if the director of said bureau shall approve such application, he shall cause the highway or section thereof therein described to be mapped, both in outline and profile. He shall indicate how much of such highway or section thereof may be improved by deviation from the existing lines whenever it shall be deemed of advantage to obtain a shorter or more direct road without lessening its usefulness, or wherever such deviation is of advantage by reason of lessened gradients. He shall also cause plans and specifications of such highway or section thereof to be made for telford, macadam, or gravel roadway, or other suitable construction, taking into consideration climate, soil, and material to be had in the vicinity thereof and the extent and nature of the traffic likely to be upon the highway, specifying in his judgment the kind of road a wise economy demands. The improved or permanent roadway of all



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Indispensable to Horse Owners and Stock Raisers. It seldom fails in cases of Chafe, Blister, Scald, Collar Bruises, Sore Shoulders, Sore Withers and all kinds of Harness and Saddle Galls. Equally effective in healing Barb Wire Cuts and wounds of any kind. Cures quickly and without loss of the horse's service. Will not blister or take off the hair. It is the biggest box of good ointment anybody ever saw for 50 cents.



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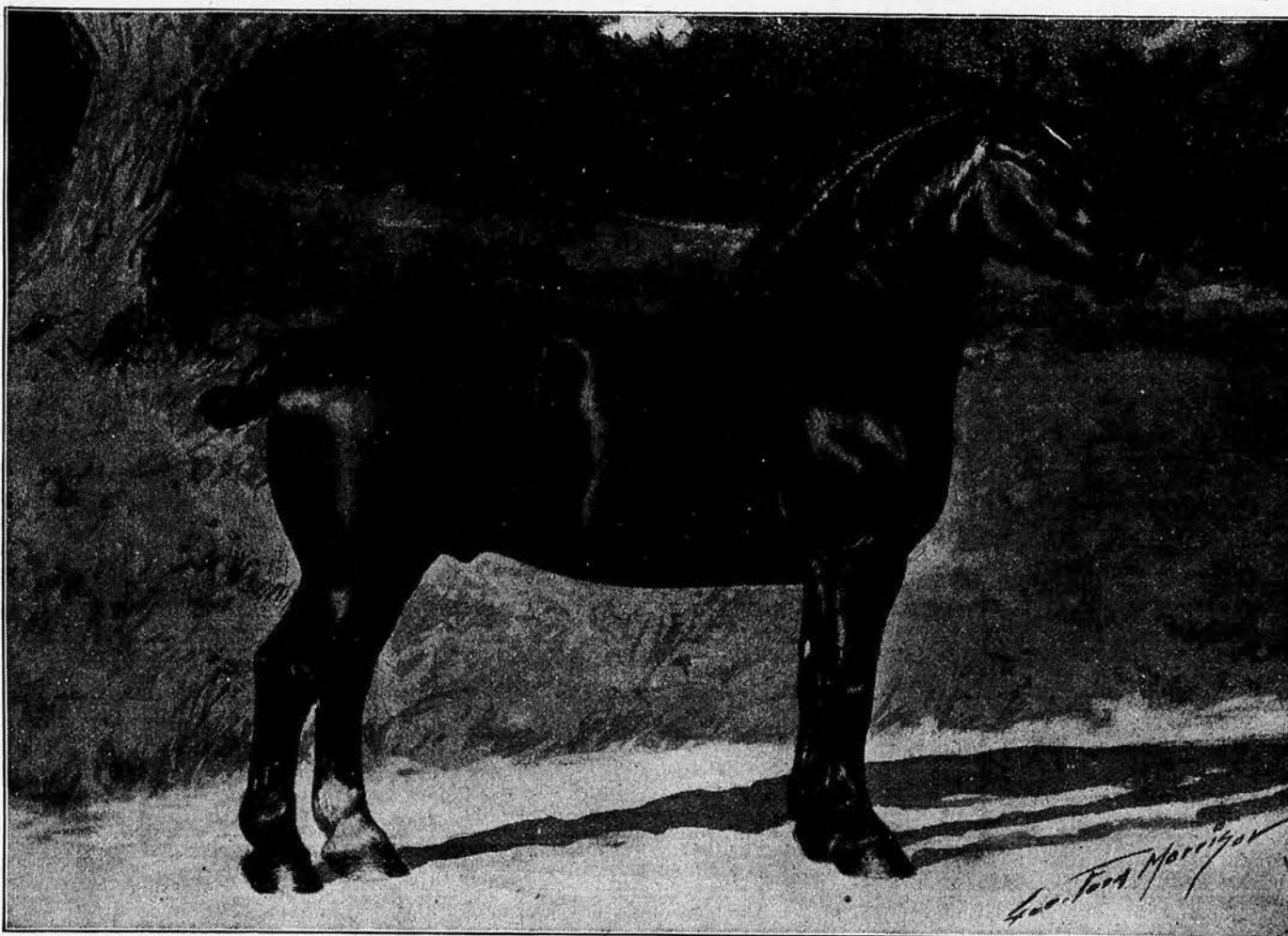
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Sec. 11. That upon receipt of the application and certified copy of the resolution provided in section nine, said director shall advertise for bids for two successive weeks in a newspaper published at the county seat of the

herein, except as the work of actual construction progresses, and in no case shall the payment or payments made thus prior to the completion of the work be in excess of eighty per centum of the value of the work per-



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highways so improved shall not be less than eight nor more than twenty-four feet in width, unless for special reasons it is required that it shall be of greater width. He shall, if requested by the application, include provisions for steel-plate or other flat-rail construction in double track.

Sec. 8. That upon the completion of such maps, plans, and specifications, said director shall cause an estimate to be made of the cost of construction of the road intended for improvement and transmit such estimate to the officer or officers from whom the application proceeded, together with a certified copy of said maps, plans, and specifications, including a certificate of his approval of the highway or section thereof so designated as aforesaid.

Sec. 9. That after the receipt thereof of the official making the application may file with the director of said bureau a second application, with resolution properly certified, stating that such highway or section thereof so approved shall be constructed and maintained according to the provisions of this Act.

Sec. 10. That in case the boundaries of such proposed highway shall deviate from the existing highway, the officials making the application must provide for securing the requisite right of way prior to the actual commencement of the work of improvement.

county in which the road is to be built, and in such other newspapers as shall be deemed of advantage, for the construction of such road or section thereof, according to said plans and specifications, and shall award such contract to the lowest responsible bidder, except that he may in his discretion award the contract to the State or political subdivision thereof making the application, and except that no contract shall be awarded at a greater sum than the estimate provided in section eight.

Sec. 12. That one-half of the expense of the construction thereof shall be paid by the Treasurer of the United States upon the warrant of the Comptroller, issued upon the requisition of the director of said bureau, out of any specific appropriations made to carry out the provisions of this Act, and one-half of the expense thereof shall be paid by the State or political subdivision thereof making application for the cooperation provided for herein: Provided, That nothing herein shall be construed to prevent the State or political subdivision thereof from distributing the said one-half so that the State may pay a portion, the county a portion, and the owners of the land abutting upon said road another portion: And provided further, That no money be advanced by the United States in payment of its portion of the cost of construction as provided for

formed, but in all cases twenty per centum must be held until the completion of the work according to the plans and specifications and to the satisfaction of the director of said bureau.

Sec. 13. That for the specific purpose of carrying out the cooperation and actual construction provided for herein and for the maintenance of said Bureau of Public Roads, there is hereby appropriated out of any money in the Treasury of the United States not otherwise appropriated the sum of twenty millions of dollars: Provided, That no State shall receive in aid of road construction out of any money appropriated for that purpose according to the provision of this Act a greater proportion of the total amount appropriated than its population bears to the total population of the United States.

The best tonic for business is continuous advertising, taken "quantum sufficit," as the doctors say.

Young Man
STRIKE out for yourself with one of our Latest Well Drilling Machines. They are great money-makers! Think it over and write for catalogue.
LOOMIS MACHINE CO., Tiffin, Ohio.

Fistulous Withers and Poll-Evil.

N. S. MAYO, KANSAS EXPERIMENT STATION.

Fistulous withers, often called "this-telow," is a running sore that follows the formation of an abscess or "gathering" in the region of the withers of horses, or in the upper part of the neck just in front of the withers. A poll-evil is a similar condition occurring in the region of the poll.

CAUSES.

Fistulous withers and poll-evil are caused by specific germs gaining entrance to the system probably through the food or water, and locating in the regions above described, where they cause pus or matter to form and thus produce an abscess. It is possible that they may be caused or aggravated by local injuries such as blows or ill-fitting collars or saddles, or from hitting the poll against the ceiling, or from pulling on a halter.

SYMPTOMS.

At first there is a diffuse swelling of the withers or poll, usually on one side or the other; this swelling is often tender and causes some stiffness in the muscles of the part. Later the swelling becomes more prominent in some part, softens, and, unless opened, breaks and discharges pus or matter. The sore thus formed is lined with a smooth "false membrane" that secretes pus and is very difficult to heal. Sometimes a fistula of the withers or poll-evil, will discharge for a year or two and frequently causes the death of the animal.

TREATMENT.

In the early stages it is often possible to cause their absorption or "scatter" them by bathing the affected part with hot water, rubbing and kneading the parts thoroughly and applying a stimulating liniment such as the following: Strong ammonia, one ounce; turpentine, one ounce; water, one ounce; linseed oil, five ounces. This should be applied once daily until the skin begins to get sore when it can be withheld for a few days and repeated. Application of tincture of iodine, and blisters, are also used to "scatter" fistulae and poll-evil.

After much pus or matter has accumulated it is impossible to "scatter" them, then they should be opened freely with a knife; good surgeons often dissect them out, at least so far as is possible. The incision should be made as low down as possible to give free drainage. In most cases a cavity will be found with one or more "pipes" extending into the tissues. In case the bones of the withers are ulcerated they must be removed surgically. The cavity should be thoroughly cleaned out and kept clean, all pieces of diseased tissue removed and the cavity dried by swabbing with absorbent cotton. Pure tincture of iodine should be injected once daily after cleaning and drying. A solution of one part of carbolic acid in twenty-five parts of water is good to clean it out. Pure turpentine can be used in place of iodine with good results in some cases.

Another method of treating after opening is to thoroughly swab out the inside of the cavity and "pipes" with a good liquid caustic such as butter of antimony. In place of a swab, rags saturated with butter of antimony can be packed in the cavity and "pipes;" they should be removed in a few minutes. This destroys the "false membrane," which sloughs out in a day or two. The fistula should be washed out daily, a 4 per cent solution of carbolic acid used, and the parts kept clean. In using a caustic it should be used once carefully and thoroughly. Repeated use of caustics is injurious, and strong caustics should be used with caution.

Rubbing with liniment or applying a light blister about the diseased part is often useful in assisting the healing process. Other good solutions used to inject into the cavities for cleansing and healing are: Corrosive sublimate one part, water one thousand parts; blue vitriol, pulverized, one teaspoonful dissolved in a pint of water, or a 1 per cent solution of creolin or similar coal-tar products.

In treating these diseases, a good syringe with a long nozzle that can be inserted into all parts of the fistula, is essential. Showering the part once daily with cold water, with considerable force from a hose, and then rubbing briskly until it is dry, is often beneficial. It is important that the fistula should heal from the bottom; if the outside opening is allowed to close before the cavity has healed it will break out again.

Animals with a fistula or poll-evil should be well fed with nutritious food, and salted frequently. A tonic condition powder is often very useful. The following is good: Sulfate of

STRANGLES.



STRANGLES is an acute, febrile disease affecting horses. It is most common in young animals and is characterized by swelling and abscesses forming between the bones of the lower jaw, sometimes at other points.

Symptoms.—Languor, dullness, loss of appetite, staring coat and general unthriftiness precedes attacks. The glands between the jaws are swollen and extremely sensitive to the touch. There is a rise of temperature, with increased pulse rate. Sore throat is shown by food and water returning through the nose or dropping from the mouth. As the disease progresses abscesses in the glands point and break.

Treatment.—Animals should be placed in a well-lighted, clean box stall where the temperature is fairly even, and sufficient clothing should be applied to keep the animal comfortable. If temperature runs high, say 104° to 105° Fahrenheit and the pulse is strong give 10 drop doses of aconite with half dram doses of fluid extract of belladonna in an ounce of sweet spirits of nitre three or four times a day. If the throat is much irritated dram doses of chlorate of potash with two drams of powdered golden seal placed on the tongue three times a day after feeding gives good results.

Like all febrile troubles, strangles reduces the vitality. Tonics should not be neglected. Administer, as directed, regular doses of Dr. Hess' Stock Food—the most powerful of tonics and reconstructives. It is the only stock food formulated and manufactured by a regular graduate of both medical and veterinary colleges. If the medical and veterinary colleges know of nothing better than Dr. Hess' Stock Food it must be good. It gives vigor to both appetite and digestion and rapidly improves the whole systemic condition of the animal. Sold on a written guarantee, 100 pound sack \$5, smaller quantities at slight advance.

In every package of Dr. Hess' Stock Food a little yellow card is inserted. By returning it to Dr. Hess & Clark, care Information Bureau, together with symptoms and conditions of sick or injured animals, you will receive a letter from Dr. Hess describing the disease, its cause and the latest treatment, including a prescription. This article on strangles is a sample. Judge the value of it yourself.

Dr. Hess has also written a book on diseases of stock and poultry. It is the most comprehensive work for stockmen produced and enables them to treat their own domestic animals. This valuable book will be mailed free, postage paid, if you will write, state what stock you have, what kind of stock food you have fed, and mention this paper. This work is used and commended by many veterinary surgeons. Address Dr. Hess & Clark, Ashland, Ohio.

iron, one ounce; hyposulfite of soda, one ounce; saltpeter, two ounces; nux vomica seed, one ounce; gentian root, two ounces. All should be well pulverized and mixed. A heaping teaspoonful can be given in the feed twice daily.

Movement of Live Stock and Prospects for 1903.

THOMAS KELLY, ILLINOIS, BEFORE THE NATIONAL LIVE STOCK ASSOCIATION.

We can easily trace the market movement of live stock, but beyond this it has been difficult to obtain reliable statistics in time for this meeting, as railroads and other corporation accounts are difficult to obtain access to until made up and given to the public after the close of the calendar year.

We know that the movement of young cattle from the Southwest to Northern ranges the past year was largely increased, being heavier than for several years past. This increase will not affect market results appreciably, however, before 1904. The determining factor governing prices during 1903 will be the number of fed cattle from the corn-belt and their distribution throughout the season. The feeder movement to the interior from the combined markets shows a marked increase during the past twelve months, Chicago's percentage of gain over 1901 being 15 per cent; Kansas City's, 20 per cent; Omaha's, 38 per cent; St. Louis's, 40 per cent; Sioux City's, 50 per cent; St. Joseph's, 95 per cent; the total movement aggregating about two million one hundred thousand (2,100,000) head of stockers and feeders shipped to the farm and feed-lot from the combined markets during 1902. We are unable to furnish figures on the movement from the ranges direct to the feed-lot, but enough is known to warrant the belief that it was not diminished from former years. The question now arises as to the home supply of cattle suitable for feeding purposes within the corn-belt or middle West, and herein lies the key to the situation. Solve this problem and we are enabled to predict with a fair degree of accuracy the probable course of prices during 1903. To enable us to draw an intelligent conclusion it will be necessary to go back several years and notice events in the order they occurred. The years of depression through which our country passed from 1893 to 1897 affected the cattle interest adversely, resulting in depleted herds, and very low

values at the close of 1896. With the advent of prosperity, beginning with 1897, cattle values rapidly appreciated until prices had doubled, and in some instances trebled, before the close of 1898. This advance in prices naturally attracted widespread attention, for the cattle business had again become prosperous and profitable. The resultant sequence followed, an era of speculation was inaugurated that only ended when banks, commission merchants and other leading interests learned from bitter experience that all cattle-paper was not "as safe as a government bond." This speculative era was beneficial, however, as it again enlisted the attention and universal interest of our people in the cattle industry. Fortunately the consumption of meats was largely increased, owing to general prosperity, and it gave us a market that consumed all that was offered at profitable prices, and still clamored for more. Cattle men made money. The newspapers affected a cattle aristocracy; we had our kings, barons and colonels, whose movements and opinions were duly chronicled. Their ranks were joined by thousands of volunteers who desired to share in the favors that were being distributed with such lavish hand, many of whom had made failures in other avocations, but joined the ranks of the cattlemen because credit was cheap and experience thought unnecessary. Naturally, the supply of cattle began to increase; but, on the other hand, consumption more than kept pace, and no one was pessimist enough to predict that the cattle business could be again overdone; breeders' sales of pure-breds increased and multiplied; average prices realized showed a constantly ascending scale; fat stock shows were organized in many States, and there developed such a general widespread interest in the cow and her progeny as this country had never seen before. It is an old axiom that two blades of grass should be made to grow where one grew before. The up-to-date stockman is not only doing this, but he is making his pastures feed two steers now where only one was fed before. Earlier maturity, diversified feed crops, windmills, wire fences, dry weather forage plants, Kaffir-corn, cottonseed-cake, and last but not least, widespread extension of credit, have all been cogs in the wheel and assisted in restocking America with the maximum supply of cattle in her history. It has taken six years to accomplish this in the face of an insatiable demand for meat products; but it only confirms the American idea, that whenever this country exerts its intelligence and energy toward the accomplishment of a desired end, failures can not result. The supply of feeders already within the corn States, not counting those shipped in, is largely in excess of the public estimate. Our prairie farmer has been raising a few cattle himself, because there was money to be made even on his high-priced land. The people are in the mood to feed cattle—it has been a very profitable business for several years past, and, then we have 1902's maximum corn-crop of 2,500,000,000 bushels to get rid of. Texas will not feed over 50 per cent of her average supply at the oil mills; but will show a decided increase in the number fed cottonseed-cake on the grass next spring—probably enough to offset the decrease at oil mills. Should the coming seasons be favorable and cattle get in marketable condition, she will also be heard from on grass cattle next summer and fall, for it is not a breach of confidence to whisper that Texas probably has 10,000,000 cattle within her borders and she will want to dispose of a few this season. What is true of Texas also applies to Oklahoma, Indian Territory, the Northwest ranges, and the entire corn-belt. The last United States government census showed a total of 67,800,000 cattle on the farms and ranges, June 1, 1900. This was more likely an under than an over estimate, but should be approximately correct. Allowing for the usual increase since it is not unreasonable to suppose that our country now has 80,000,000 cattle as a nucleus to build from. If these conclusions are well drawn, what does it mean? That we expect largely increased supplies of cattle at all markets not only during 1903, but probably for several years to come. There will

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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. SUFFICES ALL CAUTERIES 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.
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Dehorning Knife makes the dehorning of cattle simple and easy. Operation over in an instant, but a moment's pain. Clean, smooth, clear cut, with no bruising or crushing. Highly valued by stockmen. Fully warranted.
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Sold direct from our factory to the man who uses it and in no other way. Write to-day for free booklet. We make a price which will make you buy. Address,
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OMAHA, NEB.

be no meat famine; neither will our English cousins be deprived of their American roast beef.

In view of this fact, what can we reasonably expect as to prices? With a continuation of prosperity, increased home consumption, together with an enlarged export demand, are certain to follow any further decline in packing-house products. Larger supplies will be needed to meet the growing requirements of the trade already stimulated by the recent severe break. But it would be unreasonable to expect a continuation of the high values of the past few years. Yet there is nothing in the situation to cause alarm or discouragement.

A new prosperity for cattlemen that will be lasting will soon develop, for America is destined to feed the world as well as her own teeming millions. Temporary lowering of values are actually beneficial and necessary to enlarge our markets and increase the prestige of our meat products. Better bred cattle produced at less cost with each succeeding year should be the slogan of every progressive cattleman. We have not only the natural resources, but the energy and the intelligence to utilize them in the highest degree. Will the opportunity be neglected? Judging the future by the past, I unhesitatingly affirm that the live-stock industry can be relied on to keep pace with progress in all that pertains to its material growth and development, and that when called upon for an accounting, its trial-sheet will show a volume of assets reaching into the billions, with the balance on the right side of the ledger.

Swine-Judging Contest.

Saturday afternoon ended the hog judging contest at the Agricultural College. The judging school began on Monday, March 9, and continued through the week until Saturday afternoon, when the students' judging contest came off. There were twenty-five students in the contest, five from each of the four regular classes, and five from the short course. All students were required to place the hogs according to their rank. There were three lots of hogs, viz., Duroc-Jersey, Poland-China, and the "fat hogs." The hogs of each type were placed according to their excellency. The department of animal husbandry has been so busy that we are unable to send in the result of the contest score.

The Swine-Breeders' Association met here last week, and meetings were held in the college chapel in the evening, and much valuable information acquired by those who attended.

Perhaps the most interesting thing of the week was the pork demonstration on Thursday in which the various parts of the slaughtered hogs were on exhibition, and the judge showed the students wherein the slaughtered animals had excellent parts (much or little of the high-priced meat). The next day after the demonstration there was a luncheon served in the domestic science department in which a rib-roast of the various breeds of swine was served to the guests. A score card was provided each of the forty guests, and they scored the roast according to the quality of fiber, flavor, and tenderness. It was an occasion of much merriment, as the guests found it somewhat difficult to pass correct judgment on some of the specimens. On a final adding of the various scores it was found that the rank was as follows: Large Duroc-Jersey, small Tamworth, large Berkshire, fat hog, small Duroc-Jersey, large Poland-China, large Tamworth, small Poland-China, lean hog, and medium-fleshed hog. This is only one more of the many instances of the practicability of the work at the Agricultural College. Geo. W. Berry was instructor during the judging school and the students heartily appreciate the valuable information that they obtained from him. Mr. Berry also acted as expert judge during the contest in swine-judging.

Mr. Berry is not an advocate of the use of the score card in show-ring judging, insisting that its use is almost impracticable. In the show ring, he says judging by comparison can be the only true method. However, he favors the score card in the classes, finding that its use serves to distinguish to the student the relative importance of the different portions or qualities of the animal. Mr. James Hankinson, of Illinois, was the originator of the score card, and its use was general in the show rings until about ten years ago. In the score card, an illustration of which is given herewith, the ideal or perfect hog, as described in the standard of excellence by the different breed associations, is ranked as 100, the highest possible score. When it is known that such an animal as old Free Trade, who is acknowledged to have been the

best Poland-China hog of his time, scored but a trifle above 87 points, the score card will seem somewhat simpler. A hog scoring above 80 points would be considered an unusually good specimen. The sample score card shown in this connection gives the number of points allotted to the different parts of the animal. The column of figures to the right shows the score adopted by the National Swine-Breeders' Association. This score is the same as used by the Poland-China breeders, and in the table is labeled Poland-China. The columns headed Berkshire and Duroc-Jersey were adopted by their respective associations.

SWINE SCORE CARD.

	Berk.	D.-J.	P.-C.
Head.....	7	4	4
Eyes.....	2	2	2
Ears.....	4	2	2
Neck.....	4	2	2
Jowl.....	4	2	2
Shoulders.....	7	6	6
Chest.....	0	12	12
(back).....	8		
Back and loins.....	15	14	
(loins).....	9		
Sides and rib (rib).....	6	8	10
Belly and flank.....	5	6	4
Ham and rump (ham).....	10	10	10
Feet and legs.....	5	10	10
Tail.....	2	1	1
Coat (hair).....	3	2	3
Color.....	4	2	3
Size.....	0	5	3
Action and style.....	5	4	3
Condition.....	5	4	3

pure Cruickshank bull named Spartan. Mr. Dawdy will also offer one pure Bates heifer that has proved herself very useful. While some of his offering is rather young it is exceptionally good and the rest of it will be made up of cows that are not only finely bred but are good individuals and tried breeders.

M. K. NICHOLS' CONSIGNMENT.

M. K. Nichols, of Holton, who has been a breeder of Shorthorns for many years has found it necessary to sell his farm on account of the delicate health of his wife and as a consequence offers his entire herd as a contribution to this sale. His offering will consist of twenty-seven head, seven of which are bulls, fourteen bred cows and six heifers. The bull at the head of his herd was sired by Scotchman 137020, who was by imported Scotchman 195418, a red bull of the Sittytton Secret family. He is said to be a typical Scot and to represent Mr. Cruickshank's skill in combining the best Bates and Booth blood. Mr. Nichols will contribute a number of youngsters that are out of Imp. Rosabell 2d and also out of Queen of the Cedars who now carries 1,500 pounds of queenly dignity. While we regret the necessity which disperses this herd it will be good news to buyers who want to secure the kind of blood represented therein.

M. C. VANSELL'S CONSIGNMENT.

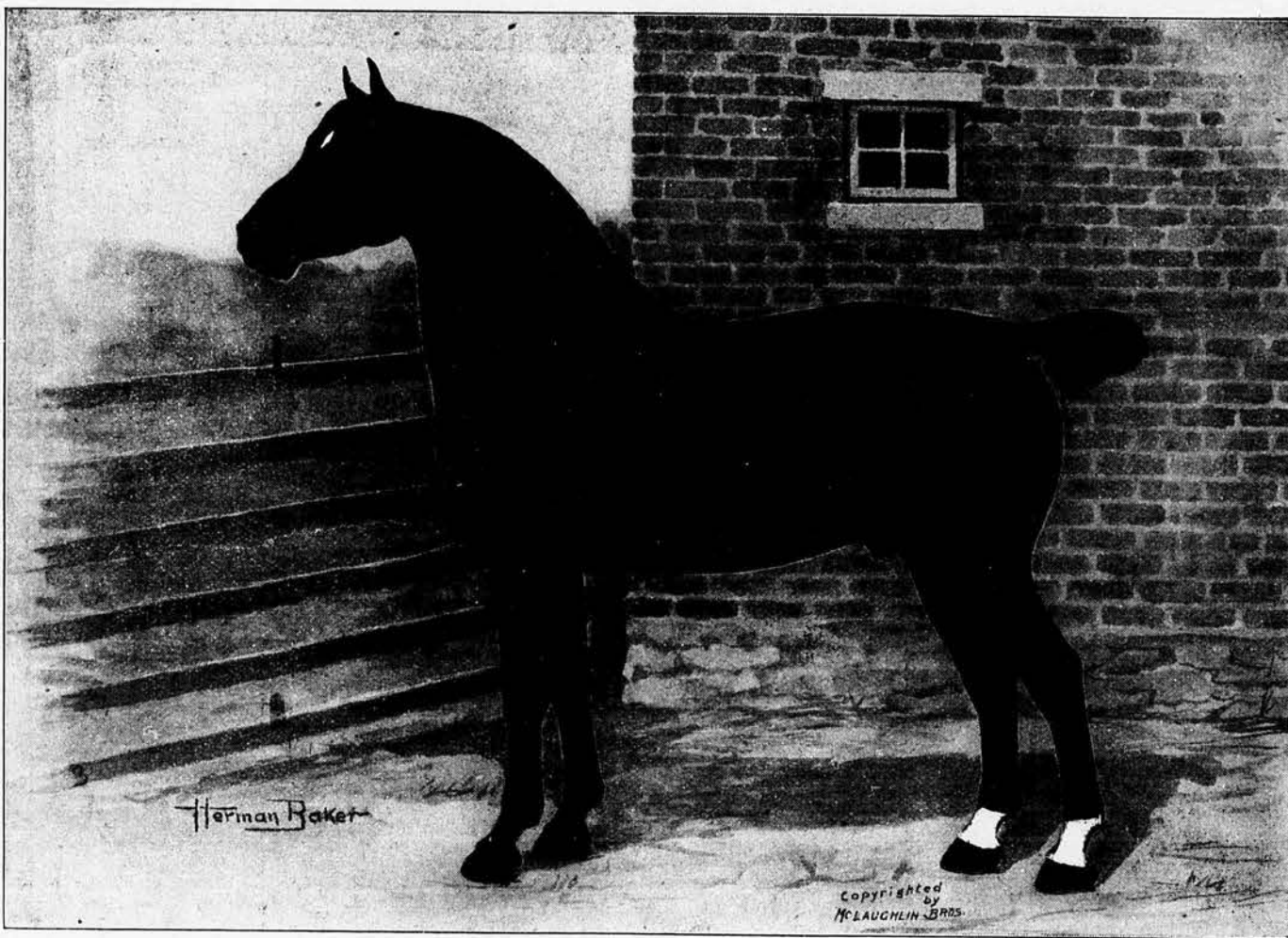
Mr. Vansell, of Muscotah, is the owner of a large herd of extra good Shorthorns which he knows how to feed. He will contribute eight females to this sale, six of which are 2- and 3-year-old heifers, sired by Golden Lad and bred to this present herd bull, Clipper Chief 174514. The other two animals contributed are coming yearlings. One of the best things

in this sale are Kansas Belle 3d by Lord Ashland 99132 out of Kansas Bell 2d, Marietta by Commander 111367 out of Lady of Maple Hill and Viola by Royal Thistle 105357 out of Victoria, Vol. 39. Further particulars about this and other consignments will be given in further detail next week.

The Big Taylor Sale at Manhattan.

Manhattan, Kans., has been noted for many years as the seat of the largest agricultural college in the world. She has always had a reputation for the culture and refinement of her citizens and the progressive energy of her farmers and stock breeders. Lately she has grown into prominence by reason of her rapid growth in population and civic improvements and the fact that she has become a rapidly growing and popular sale center for pure-bred live stock. She is readily accessible by the great Union Pacific and Rock Island railroad systems and has one of the best hotels between Topeka and Denver. She is located in the heart of what has long been a Shorthorn breeding section, and Mr. D. L. Taylor, of the Sun Flower herd of Herefords, and his son, W. W. Taylor, of the Elm Grove herd of Shorthorns, will make a draft from each of their herds near Sawyer, Kans., and offer them at public auction in the splendid new sale pavilion lately erected at Manhattan. This sale will occur on April 15, and will include nineteen cows and heifers and four bulls from the Hereford herd, and the same number of cows and heifers with seven bulls from the Shorthorn herd.

These Shorthorns are largely Cruickshank with some of the best of Booth and Bates blood. Roan Duke, the herd head, is by Roan Champion 159498 by Ben



VENDOME (3288), the Imported French Coach Stallion, Owned by McLaughlin Bros., Columbus, O., Twenty-Third and Grand Avenue, Kansas City, Mo.

Disposition (skin).....	4	3	2
Symmetry.....	6	0	3
Total.....	100	100	100

Note—The parenthetical terms note the different descriptions called for in the Berkshire score.

E. H. HOBSON,
Cor. Sec. of Agricultural Association.

The H. O. Tudor Combination Sale.

As appears in our advertising pages, there will be held one of the great sales of Shorthorns of the year at Holton, Kans. This sale will be contributed by a number of the best breeders in north-east Kansas.

D. L. DAWDY'S CONSIGNMENT.

Among these may be mentioned D. L. Dawdy, owner of the Riverside herd at Arrington, Kans. This herd is remarkable in several respects. In the first place it is the outgrowth of the foundation obtained at the dispersion sale of the famous Gov. Glick herd and it yet retains the blood which has done so much for Kansas Shorthorns. This herd is famous also for the reason that it is headed by Orange Viscount 157352 who stood second in his class at the American Royal in 1902 and who was sired by Lavender Viscount who was twice champion at the American Royal. His dam was Orange Bell by Imp. Master of the Rolls 99463 and out of Orange Girl, both of which are pure Cruickshanks. Mr. Dawdy will contribute eleven head, three of which are bulls. Among the good things offered in this sale will be the cow Annie, Vol. 48, by Britisher 106627 out of Little Belle by Nellie's Duke 2d 104533. Another good thing is Nellie, Vol. 52, by Earl of Crawford 115397, out of Queen of the Ozarks by Dick Nailer. Other good ones are Josephine 2d by Orange Viscount 157352 and her sister Mary of Riverdale 4th out of a Wild Eyes cow. One of Nellie's bull calves will also appear in the sale at an age which insures immediate usefulness. Another one of the young bulls is by Orange Viscount and the third one is a

we saw in the offering was Golden Beauty by Golden Lad 15691, who will be a prize for somebody. Rose of Idlewild 4th by Golden Lad is another cow to mark in your catalogue. The present herd bull is Clipper Chief by Orange Chief 144650, he by Imp. Orange Duke 144651. Clipper Chief is out of Imp. Red Ruth by Star of the Morning 121243 out of a Lord Mayor cow. He was bred by W. D. Platt, Hamilton, Ont., and is an extra good bull, red in color, and of a quality to reflect credit on his breeder. This will be a good consignment.

E. D. LUDWIG'S CONSIGNMENT.

E. D. Ludwig, of Sabetha, is another contributor who knows how to feed as well as to breed. He will contribute ten head, three of which will be cows with calves at foot and re-bred, and one cow which will calve about sale time. Five of the offering will be short yearling bulls. The last and most important animal in this contribution will be the herd bull John Ward 159491 who is the sire of the other bulls offered and of the calves which will be sold with their dams. John Ward is by Roan Champion 159498, out of Silver by Scottish Lad 113723. Of the cows offered Red Mary is by Emerson 141232 out of Maud. Rosebud is by Imperial Knight 119669 out of Red Rose by Cromwell and Dewdrop by Favors 121714 out of Roan Lady, all of which are tried breeders and good individuals and ought to bring in some money. This will be a herd to watch in buying.

JOHN MCCOY'S CONSIGNMENT.

John McCoy, Sabetha, Kans., is another breeder whose herd it is a pleasure to visit. He will contribute eight bulls and three cows, two of which will have calves at foot and the other one will be bred to the present herd bull, Gladys Chief 152384. Six of the eight bulls to be sold are by this herd bull and two are by the former herd bull Duke of Walnut Grove 121710. Gladys Chief, now in service, is by Chief Justice 106824 out of Gladys, Vol. 38, and both as an individual and as a sire he leaves little to be desired. The cows

Hur 121928 out of Red Minnie, Vol. 43. His dam was Surprise of Highland, Vol. 48, by Scottish Lad 113723 out of Julie 4th. The foot notes in the herd book state the remarkable fact that this bull is descended or traces to the great champion of England about 150 times. He will be offered in the sale together with twelve of his sons and daughters. Among the Herefords will be four bulls, which it would be difficult to choose among. Perhaps the most prominent of the four is Greatness 98472 by Corrector 48976 out of Imp. Gaily 21120, she by Hesiod. This bull is a full brother to Grandee, who now stands at the head of Marshall Field's Stanton Breeding Farm. Mr. Sotham, his breeder, considered him one of the best sons of old Corrector and sold him to Mr. Taylor for \$1,500. He is a splendid young animal and now weighs 2,200 pounds. Don Louis is a splendid young bull of a deep, rich red color, great size, good bone and coat of hair. He is about 15 months old and will bring a bushel of money if he sells right. Kansas Boy 110918 is by one of the herd bulls of this ranch that was also the sire of Marcus, another of the sale bulls. The sire of these two young bulls is Preordination 71783 by Don Carlos. The dam of Kansas Boy was Amaryllis 2d 60920 by Wild Tom out of Amaryllis by Cherry Boy. She was bought by Mr. Taylor from Sunny Slope farm for \$580, and will go in the sale as one of the choice things in the offering. This herd of Hereford cattle numbers about three hundred head and belongs to a man who insists that they shall have plenty to eat and comfortable quarters in which to live and a brief description of their home will be found on page 225 of our issue of February 26. We make the assertion that there is no herd in Kansas that is better fed and better cared for than is the Sunflower herd of Herefords at Sawyer, Kans. While the Elm Grove herd of Shorthorns is of practically the same ownership and has had the same care because they belong to a son of the owner of the Sun Flower herd. This will be two of the greatest offerings of the season combined into one sale, and the

writer is unable to name a place from which one could get such breeding and such quality as will be offered by both these owners at Manhattan, Kans., on April 15. Col. L. R. Brady, of Manhattan, will furnish you a catalogue if you will drop him a card.

The Weiss Shorthorn Sale.

Mr. H. W. Weiss, of Westphalia, Kans., formerly of Sutherland, Iowa, held a sale of Shorthorn cattle, drafted from his splendid herd, at South Omaha, Neb., on March 13, where he seems to have had the misfortune of meeting a small crowd of buyers. His herd is very richly bred and the consignment to the sale were in good breeding condition though not in high flesh. The top of the cow sale was brought by Imp. Orange Blossom 55th, who went to Jos. Duncan, Osborn, Mo., for \$620. The top of the bull sale was brought by the 11-months-old calf, Choice Goods O. K. by Choice Goods, who went to Jas. Hagey, Aurora, Neb., for \$510. This bull cost Mr. Weiss \$1,375. While the average of the sale was a fairly good one, the writer confesses to a feeling of disappointment that a good many of these animals did not bring higher prices. Mr. Weiss is a gentleman of experience in breeding and his herd contains some of the best blood known to the breed, and although not well known in Kansas as yet his herd will soon make him a reputation second to none. Some representative sales and the summary are given herewith:

COWS.

Imported Orange Blossom 55th, Joseph Duncan, Osborn, Mo.	\$620
Imp. Edith, Daniel Kerr, Burch, Neb.	315
Imp. Rosemary 3d, and heifer calf, Woodford Bros., Shenandoah, Iowa.	210
Rosemary 4th, Jas. Hagey, Aurora, Neb.	135
Mysie of Beaver Creek 2d, Robert Burt Jr., South Omaha.	205
Imp. Beauty 31st, F. W. Retzlaff, Walton, Neb.	375
Ballad Lass 2d, Joseph Duncan.	175
Lady Bessie, Joseph Duncan.	210
Imp. Queen Bess 33d, Woodford Bros.	300
Ury 25th, Rubel Bros., Rockwell City, Iowa.	165
Princess of Maine Valley, and heifer calf, Wm. Lambing & Son, West Liberty, Iowa.	405
Princess 12th of Maine Valley, Rubel Bros.	150
Angala, and bull calf, H. G. Furhoff, Dodge, Neb.	325
Fairy's Last, C. Stube, Manning, Iowa	100
Maid of Hope, L. H. Kilbourne.	130
Florentina, and heifer calf, Anton Novotny, Clarkson.	130
Flora 2d, L. H. Kilbourne.	100
Royals Young Daisy, L. H. Kilbourne	100
Myrett, Rubel Bros.	150
Miss Campbell 2d, C. E. Ladd, Portland, Ore.	165
Venetia Red, Rubel Bros.	130
Lady Bampton's, C. Stube.	100
8th Phyllis of Sanborn, Rubel Bros.	125
Royal's Mollie, and bull calf, Robt. Burt Jr.	125
Maid of Veronica 2d, Rubel Bros.	165
Princess Alexandria, C. E. Ladd.	200
Verbenia 2d, L. J. Hitchcock, Fall City, Neb.	125
Crimson Rose, Robt. Burt Jr.	265
Imp. Louis, Koms & Lee, Hartwick, Iowa.	225
Morris Beauty, and heifer calf, Rubel Bros.	215
Godard's Lassie, and bull calf at foot, C. H. Ladd.	305
Sunny Blink 12th, Koms & Lee.	110
Miss Fannie, Rubel Bros.	105

BULLS.

Imp. Challenger 2d 166491, M. S. Williams, Lone Star, Mo.	340
Croice Goods O. K. Jas. Hagey.	510
Mollie's Duke, P. J. Belne, Vail, Iowa	100
44th Moss Rose of Maple Hill, Peter Hansen, Villisca, Iowa.	180
Imp. Clung, Woodford Bros.	305
Imp. Sunny Blink 9th, E. Kerr, Birch, Neb.	280

SUMMARY.

49 cows brought....\$3,485; average....\$173.16
7 bulls brought.... 1,215; average.... 173.57
56 head brought....\$9,700; average....\$173.20

The Haub Poland-China Sale.

When young Mr. Herbert Haub went into the sale ring on March 10 with a handsome bunch of bred Poland-China sows he had an experience that was new to him. We are glad to note, however, that the young gentleman has started right. Beginning with good blood lines he has continued with judicious feeding and the results shown in the sale ring were creditable at once to his father's teachings, his own ability, and the breed he has chosen to foster. In spite of exceedingly disagreeable weather, a small crowd, and the fact that the owner was practically unknown among breeders, his first annual sale was a distinct victory for Mr. Haub. Perhaps the highest compliment that could have been paid this young breeder lay in the manner in which two such experienced breeders as W. P. Goode, Lenexa, and W. H. Cottingham, McPherson, picked up the good things of the sale. These men do not buy unless the offering is a good one.

Col. J. N. Harshberger, of Lawrence, conducted the sale without assistance, which is equivalent to saying that it was an assured success from the beginning. When we see the Colonel selling purebred horses or cattle we think he is at his best, but in the hog-ring he certainly leaves little to be desired. The top of the sale was brought by Lambing's Choice by Curtis Chief out of Miss Dickerson, a granddaughter of Eclipse, who went to W. H. Cottingham at \$41. The thirty-two bred sows sold for \$821, average \$25.65. A number of open gilts and young boars were sold but are not included in this summary.

The purchasers were as follows: W. H. Cottingham, McPherson, 11; W. P. Goode, Lenexa, 4; A. Gilman, Whiting, 4; S. Mastin, Whiting, 3; W. Gray, Whiting, 2; C. L. Christenson, Whiting, 1; W. J. Fish, Whiting, 3; John Arnold, Whiting, 1; J. J. Monroe, Whiting, 1; J. W. Pope, Muscotah, 2; Frank Eames, Whiting, 1; A. Phillips, Whiting, 1; L. H. Davidson, Whiting, 1; A. Deline, Whiting, 2; John May, Whiting, 1; Henry Haub, Whiting, 1; W. A. Fleischer, Hoyt, 4; J. C. Knisel, Whiting, 1.

Sabetha's Successful Sale.

The breeders' combination sale of Poland-China brood-sows held at Sabetha on March 6, was very satisfactory although prices did not rule high for the class of stuff sold. The average was \$35 on forty head of bred sows and gilts, and eleven boars sold cheap as it was too late in the season for them to sell well.

Most of the offering went to local buyers. The top went to John Moser, Berwick, Kans., \$67.
2. Geo. Sperline, Sabetha.....\$34.00
3. J. K. Shintaffer, Fairview..... 31.00
4. Geo. Sperline..... 30.00
5. H. Tarr, Sabetha..... 33.00
6. Wm. Murry, Sabetha..... 32.00
7. Mrs. Belle Lahr, Sabetha..... 66.00
8. Masterson, Sabetha..... 24.00
9. R. R. Potter, Powhattan..... 45.00
10. Geo. Keck, Berwick..... 43.00
11. P. L. Hanson, Sabetha..... 28.00
12. M. B. Hitchcock, Sabetha..... 28.00
13. Walter Hildwein, Fairview..... 30.00
14. John Moser, Berwick..... 23.00
15. Walter Hildwein..... 38.00
16. M. B. Hitchcock..... 30.00
17. H. L. Guild, Sabetha..... 25.00
18. H. M. Farrar, Axtell..... 30.00
19. John Moser..... 26.00
20. Geo. Keck..... 30.00
21. Jas. P. Lahr, Sabetha..... 43.00
22. John Blain, Pawnee City, Neb..... 45.00
23. John Moser..... 67.00
24. Chas. F. Lewis, Sabetha..... 42.50
25. Louis Schneider, Berwick..... 41.00
26. Ellis Ludwig, Sabetha..... 26.00
27. J. J. Lahr, Sabetha..... 32.00
28. John Moser..... 25.00
29. G. Cox, Sabetha..... 23.00
30. Ellis Ludwig..... 38.00
31. E. Zimmerman, Fairview..... 25.00
32. T. J. Pace, Sabetha..... 27.00
33. John McCoy, Sabetha..... 22.00
34. W. J. Stewart, Berwick..... 19.00
35. Riden Bros., Salem, Neb..... 46.00
36. W. W. Litchy, Sabetha..... 51.00
37. Wm. Murry..... 20.00
38. John McCoy..... 22.00
39. John Moser..... 24.00
40. John Moser..... 22.00

Kansas Cattle Topped the Market.

Kansas cattle have been getting to the front on the Chicago market this week. Incidentally Kansas is a great State. The denizens of the land of salt, sand and sunflowers are a perceptive lot. They can see a good thing a long way off and distance is no bar to their getting next to the best there is in sight. They had a great corn crop in Kansas last year and the feeders who have been here this week evidently knew how to make that corn bring the best results, fed their cattle right and to a finish, then loaded them on the cars and billed them straight through to the best market in the whole country—and topped the market when they got there. We have not noticed any record of cattle selling above \$5.40 at the River markets this week but Kansas cattle have sold at \$5.75 for one lot, \$5.70 for another with whole train loads at \$5.35 to \$5.40 on this market.—Chicago Live Stock World.

Gossip About Stock.

The popular headquarters for stockmen who visit Kansas City is the Coates House. Direct car lines from the Union Depot and to the stock-yards. Whenever public sales of fine stock are held at Kansas City you can depend on meeting the crowd at the new Coates House. Special rates to stockmen.

D. H. Otis, professor animal husbandry, Manhattan, Kans., writes: "We have been using Zenoleum as a disinfectant at the Kansas Agricultural College with excellent results. We find that it will kill lice on either cattle or hogs. I can heartily recommend it to anyone looking for an economical and effective disinfectant."

At the recent dispersal sale by Burrton & Burrton, at Topeka, the Duroc-Jersey swine averaged as follows: April and May pigs, \$32.25; September and October pigs, \$25.50; bred gilts, \$38.40; sows and litters averaged \$45; aged bred sows, \$53.20. Mr. Burrton is doing some special work in Texas but expects to continue to breed Duroc-Jersey swine in Shawnee County.

The Texas Cattle Raisers' Association in session last week at El Paso elected the following officers: President, W. W. Turney, El Paso; first vice-president, Ike T. Fryer, San Antonio; second vice-president, Richard Walsh, Palodura; secretary, John T. Lytle, San Antonio; treasurer, S. E. Burnett, Fort Worth. This great association is well officered for future usefulness and we predict that its growth in the future will be fully equal to that which it has made in the past.

The announcements which appear each week in our "Special Want" column constitute quite interesting reading and are very productive of good business results for our subscribers who have anything for sale, for exchange, or wants which they wish to announce. For example, in this issue H. C. Wann, Abilene, Kans., announces the sale of two young Percheron stallions at very low prices. Also a great bargain in the way of a trotting-bred mare. He wishes to dispose of these promptly and makes a low price so as to make room for standard-bred stock.

Mr. W. Guy McCandless, Cottonwood Falls, Kans., who has one of the largest and best-bred herds of Galloways in the West, announces in to-day's paper that he has a car-load each of young bulls and heifers of this choice breeding that yet remain for sale. A letter to him will bring a prompt reply giving information as to breeding and prices. From personal inspection of his herd we can say that his Galloways are among the best bred and best fed of any of the large herds in the State. His advertising card is on page 337.

The officers elected for the American Royal for the ensuing years are as follows: President, C. E. Leonard, Bellair, Mo.; first vice-president, Charles Gudgell, Independence, Mo.; second vice-president, A. M. Thompson, Nashua, Mo.; third vice-president, H. W. Elliott, Estill, Mo.; secretary and treasurer, T. J. Wornall, Liberty, Mo.; general manager, C. R. Thomas, Chicago; press representative, John M. Hazelton, Kansas City. The four beef breeds had representatives at the meeting, the Herefords being represented by C. R. Thomas, of Chicago; the

Shorthorns by B. O. Cowan, of Springfield, Ill.; the Galloways by C. N. Moody, of Atlanta, Mo., and the Aberdeen-Angus by George Stephenson, Jr., of Waterville, Kans.

McLaughlin Bros., of Kansas City and Columbus, Ohio, have recently sold their imported Percheron stallion, Pour-Quoi-Pas, for \$7,000, which is the highest price ever paid in America for a draft stallion. He won first prize in class and championship over all ages at the International Live Stock Exposition in both 1901 and 1902, which makes of him the most noted prize-winning stallion that ever lived, and the only one that ever won the championship two years in succession. The previous record for Percheron stallions was \$5,500.

Last week we announced the forthcoming sale of G. B. Scott, of Carbondale, the home of the celebrated sire, Kansas Chief. Mr. Scott now announces that his sale will be held at Carbondale on Monday, March 30, at which time he will offer a very desirable lot of bred sows, the entire offering about due to farrow. This is probably the last chance to get Poland-China bred sows and gilts at auction this season. Among some of the bred sows may be mentioned Miss Corwin U. S. 61748 by Kansas Chief, Great Scott 61211, by Kansas Chief, Miss D. 614801, by Model U. S. and Tecumseh 59887 by L's Sensation 2d. Write for catalogue.

The two days' sale of Angus cattle held at the Dexter Park pavilion, Chicago, last week resulted in some good prices. Eighty-eight head were sold for \$41,405, average \$465.51. The top of the sale was brought by the cow Black Bird 14th with bull calf at foot, consigned by M. A. Judy & Son, and sold to W. A. McHenry, Dennison, Iowa, for \$2,050. The highest price for bulls was brought by Eliminator of Ballindalloch, who brought \$1,600 and went to the same party. M. A. Judy & Sons' average on thirty-three head was \$695.90. C. H. Gardner's average on twenty-four head was \$244.37. B. R. & Stanley Pierce's average on twenty-one head was \$433.57. O. G. Callahan's average on eight head was \$278.75. John S. Goodwin sold two head at an average of \$615.

Some two years ago the Union Stock Yards Company of Chicago placed funds in the hands of the department of animal husbandry of the Iowa Agricultural College for the purpose of inaugurating an unique experiment. These funds were to be used in the purchase of fifty Galloway heifers, which were to be crossed with Shorthorns for the purpose of producing the "blue-grays," so well known across the water. This blue-gray crossbred animal is very popular in Great Britain on account of its beef-producing qualities, but is comparatively unknown in this country. The experiment is now well under way that a herd of blue-gray calves will be fitted under the personal direction of Prof. W. J. Kennedy for exhibition at the World's Fair at St. Louis.

The Kansas Farmer is in receipt of the finest stallion catalogue ever published. It is of the world's famous stallion, Directum 2:054, owned by the International Stock Food Company, Minneapolis, Minn. Mr. M. W. Savage, the proprietor of the International Stock Food farm has 100 head of horses of which Directum 2:054, Dan Patch 1:59 1-5, and Roy Wilkes 2:06 1-2 are at the head of the stud. The International Stock Food farm will be primarily a breeding farm and at the same time will afford a potent object lesson to prove that the great Northwest can raise as high-class horses as any other section of the country and Mr. Savage's demonstration will result in adding hundreds of thousands of dollars every year to the live-stock interests of that section. In this connection we call special attention to the International Stock Food as one of the most popular and useful articles of its kind in America.

In the combination sale of Aberdeen-Angus cattle to be held at South Omaha on March 24 and 25, we notice among the other good things a contribution by Parrish & Miller, Hudson, Kans. They contribute ten cows and heifers and four bulls to this sale. The cows are largely Western Fowls and Guysachan Ariadanes, and the bulls are of the latter family. The Sunflower herd of Angus cattle at Hudson numbers about 300 head and is one of the largest in the country. It has the distinction of being the largest herd in America bred by its owner. It is headed by the prize-winning bull, Hale Lad 30645, and numbers among its members many other prize-winners. Hale Lad is one of the highest priced sons of the \$3,000 Champion Gay Lad. The records of this breed show that none have equaled it in robust constitution and ripe old age. Atlanta reached the mature age of 20 years, and produced sixteen calves, while Old Grannie lived to be 36 years old and was the dam of twenty-five living calves. In the hands of such competent breeders as Parker Parrish & Miller this breed will show its possibilities as a mortgage-lifter.

The dispersal sale of the Bigler Shorthorn cattle was a more or less notable event in the history of the breed in Iowa. The famous Imperial Merry Hampton 132572, sold to McLaughlin & Watte, Good Lake, Iowa, for \$2,500. It will be remembered that Bigler & Sons purchased Merry Hampton for \$15,000 which gave him the reputation of being the highest priced Shorthorn bull in the United States. He is undoubtedly one of the great bulls of the breed, but the price at which he was formerly bought has always seemed to us somewhat inflated when compared with that brought by other great bulls. The fact that this was a forced sale may have had something to do in lowering the prices realized, but taken as a whole the sale must be considered a very good one. Some of the higher prices realized during the sale include Gypsy Maid 3d, who went to C. B. Dustin, her former owner, at \$625. Banff's Lord, a son of Lord Banff, brought \$435 which was the second highest price paid for bulls. The Imp. cow, Gazelle, went for \$605. Among the purchasers we note the name of the Illinois Agricultural College which was the buyer of a considerable number of good females. The total average of the sale was right around \$220.

IN THE WHIRLPOOL

LOSS OF THE STEAMER STRECKER IN THE GREEN RIVER RAPIDS.

Many Passengers Narrowly Escape With Their Lives—Thrilling Experience of a Rochester Girl—The Story of the Rescue.

The captain of the steamer George Strecker which went down during a blizzard, in the whirlpool of the Green river, had navigated the rapids for over twenty years previous to the fateful trip. The accident occurred soon after the passengers had breakfasted and many of them were on deck watching the troubled waters. Among them was Miss G. E. Redfern, of No. 98 Ambrose street, Rochester, N. Y., and her account of the accident and of her thrilling rescue gives the best story of the passengers' fierce struggle for life.

"When the boat sunk," says Miss Redfern, "some of the men jumped into the water and swam for shore. Others were clinging to floating bales of goods and these were rescued by some men in a long boat. I was caught on a projection of the steamer and went down with her. One of the crew dived and brought me to the surface when somebody threw a life preserver over my head. A young man helped me on a bale of wool which floated past and so I reached the shore."

At the time of the accident Miss Redfern was returning to Rochester from Kentucky but, owing to the shock of the accident, she reached home in an alarming state of health.

"I was covered with ice," she said, "when they brought me ashore. I was black and blue from my bruises and my relatives said they did not think I would live. And for a long time, until I took Dr. Williams' Pink Pills for Pale People, my nervous system was a wreck. Doctors had not helped me and I was very miserable. My health ran down to an alarming degree, I was weak, grew thin and was extremely nervous and irritable. But Dr. Williams' Pink Pills changed all this. In a short time after beginning with them I felt better and, after using a few boxes more, I felt like my old self again."

These pills have become famous all over the world for their wonderful efficacy in cases of nervous troubles, small or great. They have cured when the trouble was more severe than Miss Redfern's and they cure lesser nervous disorders without fail.

At all dealers or direct from Dr. Williams Medicine Company, Schenectady, N. Y., 50 cents per box; six boxes, \$2.50.

PATENTS.

The patent law firm of
HIGDON & HIGDON,

431 to 434 New York Life Building, Kansas City, Mo., report the following list of patents issued to inventors living in Missouri, Kansas and Nebraska, the week ending March 10, 1903:

MISSOURI.

Joseph G. Branch, St. Louis, Hydro-carbon-burner.
Charley O. Devilbliss, Derrahs, Carpet-stretcher.
Will J. Hughes, St. Louis, Account-sheet.
James P. Hunt, Maitland, Buckle.
Charles Jack, St. Louis, Box-lid holder.
Linden Kirlin, Kansas City, two row disk cultivator.
Calvin S. Morris, St. Louis, Traveling-case.
Moses J. Rogers, Kansas City, journal bearing shell.
John A. Scott, Kansas City, Window shade bracket.
William T. Treadway, St. Louis, keyboard for calculating machines.
Frank H. Wilsdorf, St. Louis, barber-chair.

KANSAS.

Alvin J. Musselman, Wichita, Game Apparatus.

NEBRASKA.

William Linhoff, Nebraska City, Neb., hedge-trimmer.

ISSUE FOR TUESDAY, MARCH 10, 1903.

Patents.....	458
Designs.....	3
Trademarks.....	30
Labels.....	14
Reissues.....	6

Total..... 511
A copy of any of the above can be secured for 10 cents in stamps or currency.

The Sharples Tubular Separator Works.



The oldest cream separator works in America, and the best equipped in the world. A complete separator turned out every 6 minutes.

Twice as many made this year as last—twice as many last year as the year before. It's the greatest record ever made and the cause of it is superior merit. We advertise less and do less drumming, but the demand for the Sharples is greater and grows faster than for any other.

More and finer butter from the milk—a separator easily turned and easily cleaned—these are the secrets of the Sharples success. Send for catalogue No. 165.

Sharples Co., P. M. Sharples, Chicago, Ill. West Chester, Pa.

In the Dairy.

Conducted by Ed. M. Webster, Professor of Dairy Husbandry, Kansas Experiment Station, Manhattan, Kans., to whom all correspondence with this department should be addressed.

Cheap and Efficient Calf Quarters.

One of the reasons for failure in rearing calves on skim-milk is the lack of proper quarters for the calves. The old way of feeding a calf from a pail in an open lot may do if there is but one calf. Where there are two calves in the lot together, the trouble begins;

this shed, three and one-half or four feet from the back wall, can be built our stanchions. The photographs show their general construction. The lumber for a section of ten stanchions is as follows: Thirteen pieces one by six by fourteen feet, three pieces one by four by fourteen feet, two pieces one by twelve by fourteen feet, and two pieces one by twelve by sixteen feet. Other materials would be twenty bolts, three and one-half by three-eighths, four six-inch strap hinges, four hooks, and the necessary nails to put all together. Common fencing boards can be used for the four- and six-inch stuff, and hard-pine sheeting, free from knots, for the feed boxes and partition between them.

The stalls and stanchions are two feet wide between the partitions and three and one-half feet high. The board along the front of the feed boxes is hinged so it may be turned down and the boxes thoroughly cleaned out. The three and one-half foot alley between the front of the stall and the wall gives plenty of room for the feeder to work in feeding milk and grain.

The calves quickly learn their places. They can get no feed until they are in place, when a simple turn of the wrist fastens them. When they are through eating their grain, the loose side of the stanchion is thrown back and the calf is free. At the end of these stanchions should be made a rack for hay, as shown in the photograph. This is the cheapest labor-saver and money-maker on the dairy farm, except the hand separator.

The New Quarters for Our Dairy Cows.

GEO. C. WHEELER.

The cows with which the farm department began the work of building up a dairy herd at the Kansas State Agricultural College were first quartered in the basement of the old college barn. This damp, underground dungeon into which the sunlight rarely, if ever, penetrates, was made to do duty as the "dairy cow barn" up to the

(Continued on page 330)

BUYING A CREAM SEPARATOR.

To make no mistake in this is of the utmost importance. You don't buy one very often and it is not only a question of first cost but of daily profit or loss, daily operation, and daily wear and tear.

The right choice is really simple. In reality the De Laval machines are in a class by themselves—head and shoulders above all imitating machines.

Protecting patents make and keep them so—together with far greater experience and superior facilities in every way for cream separator manufacture.

Every big and experienced user of separators knows this and uses De Laval machines exclusively—both in factory and farm sizes.

But you may be without separator knowledge or experience. Therefore take steps to see and try a De Laval machine for yourself. It will cost you nothing to do so. That is part of the local agent's business. If you don't know him write for his name and address.

Try imitating machines too if you will and can get them, but don't put your name to an order of any kind until you know the facts about the De Laval machines and have tried one. That means your buying one.

THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS., CHICAGO.

1219 FILBERT STREET, PHILADELPHIA.

217-221 DRUMM ST., SAN FRANCISCO.

General Offices:

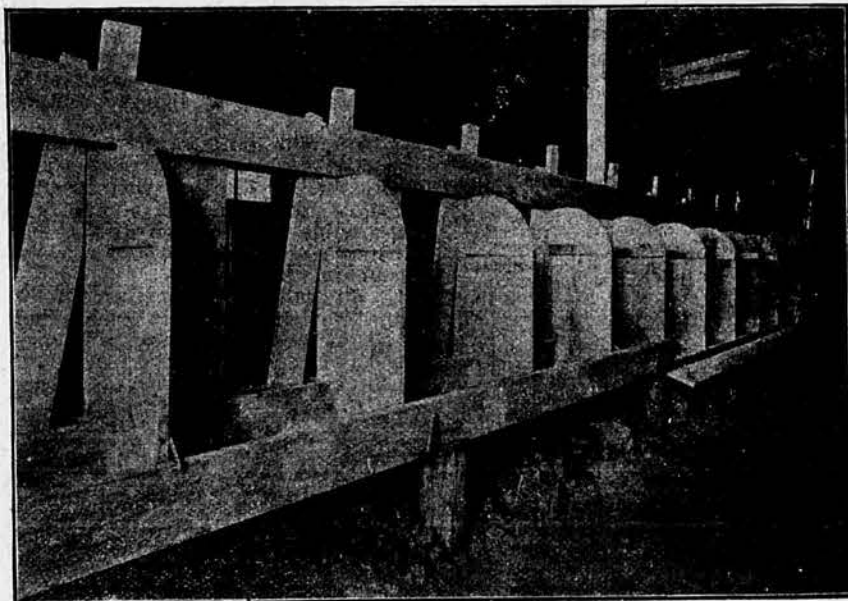
74 CORTLANDT STREET,

NEW YORK.

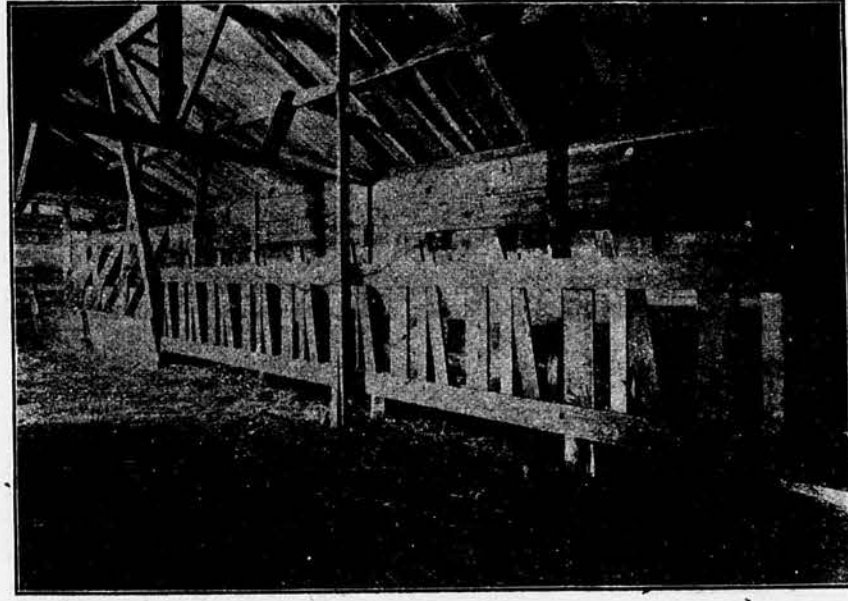
121 YOUNVILLE SQUARE, MONTREAL.

75 & 77 YORK STREET, TORONTO.

248 McDermott Avenue WINNIPEG.



Front View.



Back View.

Total Record of Prize Herd, from March, 1902, to March, 1903.

No.	Name of Cow.	Selected by—	Fresh—	Feed												Judges' rank for profit.	Record rank
				Grain.		Roughness.											
				Bran.	Corn chop.	Alfalfa.	Kafir-corn stover.	Green alfalfa.	Cow-pea hay.	Millet hay.	Ensilage.	Cut cane.	Oat hay.				
243....	Cowslip.....	J. W. Bigger.....	Nov. 3, 1901—Jan. 10, 1903.....	1524	459	3295	924	110	324	596	601	681	63	3	2		
236....	Haster.....	E. C. Cowles.....	Dec. 10, 1901—Dec. 5, 1902.....	1569	474	3295	924	110	324	596	601	681	63	1	4		
244....	Rose of Cunningham.....	J. W. Cunningham.....	Jan. 28, 1902—Jan. 29, 1903.....	1801	562	3295	924	110	324	596	601	681	63	2	1		
238....	Clover Leaf.....	M. L. Bickson.....	Jan. 12, 1902.....	1032	330	3295	924	110	324	596	601	681	63	7	9		
245....	Molly.....	A. H. Diehl.....	Jan. 20, 1902.....	1129	316	3295	924	110	324	596	601	681	63	5	8		
241....	Rose of Industry.....	C. L. Elssasser.....	Jan. 15, 1902—Feb. 12, 1903.....	1226	411	3295	924	110	324	596	601	681	63	8	6		
240....	Daisy Belle.....	S. A. Johnson.....	April, 1901—May 3, 1902.....	1120	576	3295	924	110	324	596	601	681	63	9	5		
246....	Floss.....	C. C. Lewis.....	October, 1901—Nov. 10, 1902.....	1124	255	3295	924	110	324	596	601	681	63	6	7		
242....	May Queen.....	G. L. Priest.....	Dec. 25, 1901.....	1475	527	3295	924	110	324	596	601	681	63	4	3		

Yield—Milk and Butter-Fat.

No.	Name of cow	March		April		May		Yield June		July		August		September.	
		Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.
243....	Cowslip.....	761.6	33.89	762.1	32	797.5	35.88	658.9	30.64	559.2	25.16	585.1	24.87	577.0	27.69
236....	Haster.....	849.5	32.28	743.7	29	878.4	36.01	793.0	34.10	657.5	27.29	582.7	25.06	385.9	20.84
244....	Rose of Cunningham.....	1200.1	36.00	1090.1	35.97	1241.2	41.58	1065.5	36.41	826.6	30.58	913.0	32.87	820.5	38.56
238....	Clover Leaf.....	733.1	21.62	642.9	20.25	745.7	23.86	593.9	21.97	401.9	13.65	478.0	16.76	569.4	18.79
245....	Molly.....	824.0	25.95	726.8	24.34	830.3	29.47	742.5	28.73	633.2	24.60	610.7	22.29	552.7	25.42
241....	Rose of Industry.....	802.0	25.27	791.5	26.91	838.1	33.10	664.6	23.92	511.4	20.97	529.4	21.97	512.6	26.14
240....	Daisy Belle.....	503.6	25.68	477.0	25.04	564.6	30.40	438.3	23.89	628.0	13.35	314.6	18.40	15.80	.92
246....	Floss.....	630.3	30.88	582.8	29.43	687.3	35.39	613.0	31.84	532.0	26.58	547.1	29.82	459.9	31.78
242....	May Queen.....														
		October.		November.		December.		January.		February.		Totals.			
		Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.
243....	Cowslip.....	476.7	28.36	275.8	16.00	.....	.....	608.0	27.36	782.8	32.40	6235.5	314.33		
236....	Haster.....	314.4	16.97	209.0	11.29	194.3	10.10	380.5	17.50	332.6	14.45	5663.5	274.89		
244....	Rose of Cunningham.....	415.0	18.88	186.4	11.00	33.5	2.24	.....	.....	1152.2	40.09	8107.5	324.18		
238....	Clover Leaf.....	513.2	17.45	332.3	11.64	315.8	11.23	327.6	12.61	278.6	10.45	5530.9	200.28		
245....	Molly.....	380.5	18.20	110.0	4.62	.....	.....	339.4	12.22	339.4	12.22	5096.9	222.30		
241....	Rose of Industry.....	466.7	25.20	317.4	15.71	340.2	18.08	262.0	17.75	348.4	16.20	5972.9	273.17		
240....	Daisy Belle.....	755.3	20.61	531.9	24.15	579.2	25.20	534.3	23.24	390.3	17.56	6329.7	273.24		
246....	Floss.....	.....	.....	334.7	18.75	562.5	33.75	545.1	30.53	473.6	25.10	4230.0	251.90		
242....	May Queen.....	398.0	27.86	293.8	20.71	272.0	20.26	306.8	21.94	18.9	1.34	4809.9	308.74		

if there are more than two, the trouble multiplies with each additional calf. We may tie them with ropes, but in this, as in many other things, time is money, the ropes are gone half the time, and the calves will not always want to come without persuasion.

When a neat, strong, and efficient stanchion can be made like the accompanying illustration, there is no excuse for the old "happy-go-lucky" way of doing things. For successful work in rearing calves, one must have a shed for them in stormy weather and in hot weather.

We grant that the dairyman has this shed, and that it is at least sixteen feet wide and closed tight on the north side and the ends. It may be built out of any kind of material, even to the straw roof, if nothing better can be afforded. It may be any length, so that it affords sufficient room for our calves. Under

Grange Department.

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

Conducted by Ed. Blair, Cadmus, to whom all correspondence for this department should be addressed. Papers from Kansas Granges are especially solicited.

NATIONAL GRANGE.

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

KANSAS STATE GRANGE.

Master..... E. W. Westgate, Manhattan
Overseer..... J. C. Lovett, Bucyrus
Lecturer..... Ole Hibner, Olathe
Steward..... R. C. Post, Spring Hill
Assistant Steward..... W. H. Coultis, Richland
Chaplain..... Mrs. M. J. Ramage, Arkansas City
Treasurer..... Wm. Henry, Olathe
Secretary..... Geo. Black, Olathe
Gate Keeper..... G. F. Kyner, Lone Elm
Cores..... Mrs. M. J. Allison, Lyndon
Pomona..... Mrs. Ida E. Filer, Madison
Flora..... Mrs. L. J. Lovett, Larned
L. A. S..... Mrs. Lola Radcliff, Overbrook

EXECUTIVE COMMITTEE.

Henry Rhodes..... Gardner
J. T. Lincoln..... Olpe
A. P. Beardon..... McLouth

Value of a Grange to a Town.

N. J. BACHELDER, LECTURER NATIONAL GRANGE.

A subordinate grange is the most practical and the most natural means of promoting all the interests of a rural town ever conceived in the history of the world for the following reasons:

1. It contributes to the social life of a town by frequent regular meetings in which the art of sociability is so agreeably and informally taught as to fascinate rather than to repel those participating in the exercises.
2. It contributes to the high moral standard of a town by affording convenient and agreeable society for old and young in which the highest standard of morality is maintained, thereby preventing association of its members in society of the opposite nature.
3. It contributes to the happiness of home by the mental recreation afforded all members of the family in the various grange gatherings attended, thereby broadening their mental vision and increasing their happiness, which is sure to be reflected in their home life.
4. It contributes to the material prosperity of a town by its discussion of all matters of importance tending to local development, and often is instrumental in securing the establishment of industries that give added population as well as taxable property, thereby indirectly aiding every tax-payer in town.
5. It contributes to the general intelligence of the inhabitants of a town by its frequent discussion of questions of a public nature and by the educating influence of other exercises, resulting in mental development and a more intelligent citizenship which is an uplifting force in any town.
6. It contributes to the general welfare of a town by dissipating neighborhood quarrels, by breaking up long-standing feuds caused by church, school, or society troubles, by promoting better roads, better schools and better farming, by stimulating more interest in public affairs, resulting in the election of better men to office and better enforcement of law as well as the better transaction of the public business of towns, counties, and States.
7. A subordinate grange contributes in these ways to the up-building of a town making it a more desirable place in which to live and making its citizens more intelligent, more prosperous, and more happy.

The Grange Outlook.

The grange enters upon the new year in splendid condition in all sections of the country, and prepared to fight the battles of the farmers in every legitimate manner. The success of the organization in 1902, both in membership and influence, has given the members renewed courage and increased vigor from ocean to ocean, and will stimulate them to still greater work in the year to come. It has finally dawned upon the people of the country that this organization has assumed a permanent character, and is to be treated with all the respect and consideration accorded older and more pretentious organizations. It has taken its place by the side of the school as an educational factor, next to the church as a great moral power, and has demonstrated its right to a place in the front ranks of the world's numerous and worthy fraternal organizations.

The grange has won this reputation by an honest, earnest, straightforward course, neither catering to the sympathies of people by the advocacy of specious measures, nor deceiving the people

by shifting its course with every shift in public sentiment. For several years this organization has proclaimed to the world its position in legislative matters, and has not had occasion to recede from the position taken upon any of them. This is more than can be said of any of the leading political parties of to-day. Under the valiant leadership of Worthy Master Jones the National Congress has listened to the demands of the grange by establishing rural free mail delivery, by the enactment of the Grout bill giving protection to producers of honest dairy products and by the passage of a bill insuring the early construction of the inter-oceanic canal. The grange also scored a victory in the defeat of the ship subsidy bill, which had behind it one of the most powerful and aggressive lobbies ever organized in the country.

The record of the grange in State legislation in the several States is a long and a brilliant one. In matters of taxation, education, philanthropy, road construction, and forestry, in every State where the grange exists, there has been great progress made and grand results obtained. In financial matters, through the agency of mutual fire and life insurance companies, and cooperative purchasing associations, vast savings have been made by the members. But the greatest work of all, that for which the grange will be praised in future years when generations now unborn are shaping its policies and directing its work, is the education of mind and heart, developing a true and grand type of manhood and womanhood among the rural people. This is manifested in many ways. It is manifested in the breaking down of social barriers and in the elimination of neighborhood quarrels, in the increased interest in schools and libraries and social functions. In better farming and more public spirited citizens. In love of home and more thoughtful care for the members of the household. In more comforts and luxuries in the farmers' homes, and more sociability and good cheer around the farm fireside. In more ability to fill positions of honor and trust, and more frequent selection of farmers for these positions. These and many other facts that might be stated indicate the grand success of the grange in the past, and constitute a grand argument for vigorous and unstinted effort in its behalf in the future.—National Grange Bulletin.

The Grange in Cowley Cowley.

It gives us pleasure to have this opportunity to let the membership in other parts of the State know that the lever of the State Grange has not lost its vitality in keeping up the enthusiasm among the membership in this county, and they are still keeping the Grange banner waving.

But the Arkansas City members seem to be taking the lead at the present time, having enrolled and initiated thirteen new members, while the Hackney members have only added six new names to their roll, but they are on the track of some good material which they think can be secured in a short time.

The Arkansas City Grange had a splendid farmers' institute in their hall on February 17 and 18, which was highly appreciated by a large number of farmers who were not members of the Grange, and there is no doubt but this institute meeting will be the means of adding some more members to their grange. R. W. ANDERSON.

Crowding Out the Lecture Hour.

Lecturers often complain that the greatest drawback to successful literary or educational work in their granges is the lack of time to devote to it after the completion of the regular business of the session. Their "Lecture Hour" is either condensed into fifteen minutes or omitted altogether. This is wrong and can not do otherwise than work injury to the order.

The routine work is essential, but no more so than that of disciplining and developing the minds of the members, calling forth their latent powers, in short preparing them for future usefulness. This crowding out of the "Lecture Hour," in almost every instance, can be traced to the master.

The normal work of the Grange brings no such rush of business. If business has actually accumulated until the whole time of the sessions must be spent in disposing of it, we would suggest frequent special meetings until there is a shortage. But these cases are rare. The condition exists in most instances, not from a superfluity of business, but from a lack of dispatch or tardiness in beginning. The ideal master will drop the

WHEN YOU NEED A RAKE



HITCH TO A NEW CHAMPION LOCK-LEVER

YOU will thereby escape the annoyances and expense which your old rake caused. Champion teeth-holders are malleable and will not break; the rake head is heavy angle steel securely trussed and will not sag; and the wheels have each 16 strong, oval staggered spokes with heavy flanged tire. But more than this, you secure greater convenience of operation and adjustment. The teeth may be locked down or not for gathering as desired. When locked, no effort is required to hold them while gathering, and a boy may rake the heaviest hay and bunch it with the rake as well as a man. This is why it is called a lock-lever rake. Another convenience is the hand latch, by which the driver may change the position of the teeth on the ground without taking out bolts or pins, and as easily as he can change the tilt of the cutters on his mowing machine. Besides, the Champion has reversible ratchets and axles, providing double life at a single cost, and removable axle bushings in the hubs which may be easily replaced when worn. Write for catalog describing Champion binders, mowers and rakes, and for handsome colored calendar, sent free on request.

CHAMPION DIVISION, INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO.

gavel exactly at the minute set for opening. If a quorum is present, proceed; if not, proceed as soon as there is. He must not wait for the members or he will beget in them a feeling of "O, well, they won't begin anyway until we get there."

Take a lesson from our legislative bodies which provide themselves with committees to digest and condense the business before being presented for final action. Let the master plan at home and be prepared to rush business instead of allowing business to rush him. In other words, let him dispatch business and not let it drag and it will forever rebound to his usefulness as a presiding officer, and will merit the lasting gratitude of the membership.

Worthy lecturer, we say to you, insist upon having your hour at every meeting and see to it that it contains not less than sixty minutes.—Exchange.

The name of the Kansas Patron of Olathe, Kans., has been changed to the Kansas Patron and Cooperator. It is the belief of the managers of the paper that there is a field in Kansas sufficiently large to support a paper distinctively cooperative and we agree with them. The Patron is the official organ of the Kansas State Grange and is owned by the Johnson County Co-operative Association. Brother I. D. Hibner, secretary of the Patrons' Fire and Tornado Association, has removed to Olathe and will devote his spare time to the upbuilding of the paper. He is one of the clearest and most forceful writers in Kansas and to his energy perhaps more than to any other does the Patrons' Fire and Tornado Association owe its present standing. Mr. Bancroft, the able editor of the Patron and Cooperator, is to be congratulated on this addition to the editorial force; and if the Patrons of Kansas give the Patron and Cooperator one-half the support it deserves, its success is assured.

Lenawee County, Mich., has thirty-six granges with an average membership of over 100. They have their mail delivered of course by rural carriers, but the carriers use automobiles instead of horses. This is an experiment only, but everything seems to indicate that "autos" will be the proper thing for the delivery of mail. Down

here in Linn County, Kansas, it will be necessary for wings to be attached to the "autos," as they will have to either fly or swim, and an "auto" can't swim. We are thankful for the rocks that are in the road here although they have in the past caused many execrations. The rocks are the only places on which one dares stop—without going out of sight.

Of the seven founders of the order O. H. Kelley, Carrabelle, Fla., is the only one now living.

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

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

FRANK J. CHENEY.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886.

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The Missouri Pacific Railway is bending every effort towards developing the agricultural, mineral, and industrial resources of the West and Southwest. To attain this end, it asks the aid and cooperation of every farmer, miner, merchant, and professional man along its lines. The development of the products of any section of the country means just so much more capital to be spent in that section. Prosperous neighbors make a prosperous community, especially if they live and have their interests at home.

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The Young Folks.

Conducted by Ruth Cowgill.

WHEN GRANDMAMMA WAS YOUNG AND SWEET.

When grandmamma was young and sweet—
At least she always tells us so—
Young girls were modest and discreet.
Their gowns were few but always neat.
Their muslin kerchiefs white as snow,
When grandmamma was young and sweet.

Through winter's cold and summer's heat
Life glided on in tranquil flow—
Young girls were modest and discreet.
They worked their samplers—as was meet—
For needlework was prized, you know,
When grandmamma was young and sweet.

They rarely roamed with restless feet,
But stayed at home to cook and sew—
Young girls were modest and discreet.
The simplest party was a treat
In those old days so long ago—
When grandmamma was young and sweet!

When youthful lovers chanced to meet,
The fair maids blushed and whispered low—
Young girls were modest and discreet.
Their housewife's skill was most complete,
And servants, too, were good, I trow—
When grandmamma was young and sweet
Young girls were modest and discreet!

The Mayor's Retribution.

CLARA MOLER.

CHAPTER I.

"I tell you we must have the saloons, Mary; there's no getting around it. This town needs a great many improvements that must necessarily come out of the city funds. Our taxes are high, and there is very little money left in the treasury, and the property-holders are complaining about the high rate of taxes levied upon them. If we accept license from the saloon-keepers, it will make our taxes lighter, and we will have more money for city improvements."

"But, Rodger," said his wife, pleadingly, "you promised our good temperance friends, when you ran for mayor, that you would do all in your power to drive this curse of intemperance from our town if you were elected, and you surely can not go back upon your word; you would certainly have more honor, more self-respect than to disappoint those who have placed so much confidence in you."

"Bah! Mary, that's just like you women, you never can understand what is for the public good. You believe in strict adherence to gospel truth, and would have me keep my pledge to a few of these temperance fanatics at any cost. I tell you there is no such thing as running the Bible and politics on the same basis nowadays; the majority always has ruled, and always will; and at present they are in favor of licensed saloons."

"Then," said Mary slowly, and with a fine ring of scorn in her clear, musical voice, "you really mean to break your word? You intend to grant the right to these hell holes to run wide open? You intend to give them permission to ruin the young boys and men of this town, and finally to thrust them into dishonorable graves? Oh, Rodger! Rodger! I never would have thought you could be guilty of so cruel and heartless a deed. How do you know that our dear boy Ned will not be one of the first to fall?"

"Oh, pshaw! not the least danger in the world. My dear Ned is a Carrollton, and has far to much sense and family pride to be led away by any such folly. Rest easy, Mary, our boy is far above the average, and a Carrollton, every inch of him."

"Our boy is just like other boys, Rodger, not a bit different; he is bright, handsome, and spirited, ready for anything that promises fun and frolic. Oh, Rodger! for Ned's sake, if not for mine, won't you do what you can to drive these cursed drinking dens from our town?"

She clasped his neck with her white arms, looking up imploringly through a mist of tears. "For Ned's sake, Rodger, for our dear boy's sake, I pray, I implore you to use your influence to suppress the saloon."

"Come, come, Mary, this will never do; cheer up, little wife, I hate to hurt you, but then I see no reason why I should take such a high hand in this matter; besides, I must be off down town at once; there is a lot of urgent business on hand, and I have already delayed longer than I intended to; I expect those show fellows will put in an appearance this afternoon, they want to bring their big show here in a few days."

"Yes, and a pretty set of pickpocket-

ets, gamblers, and drunkards they are; I do declare, Rodger, you are making a pretty mayor of yourself—why, I could manage the business twice as well as you do."

"Haven't the least doubt in the world, my dear," replied Mayor Carrollton, as he seized his hat and umbrella, and made for the hall door, softly whistling a late operatic air. But try as he would, Rodger Carrollton could not quite get over the rather uncomfortable impression his wife's words had made upon him.

"Hang it all!" he mused, "Mary's a jewel, and knows what she's talking about, but all the same she makes a fellow feel deuced mean at times; didn't know she possessed such a fine fund of indignation and good sense combined; she'll make things hot for me yet."

Rodger Carrollton, like many other men of his class, had always believed women to be of the wax-doll order, only fit for love, kisses and his own amusement; a being who would make his home comfortable and bright, and be his companion in such ways as he chose to permit. That she had any right to interfere in public affairs, he could never be willingly brought to admit, nor would he believe that she had any very great fund of sense or reason—where politics was concerned. He was a democrat of the old school, as far as suffrage went; she most certainly could not be compared to men for one single moment, but his wife's speech was a revelation to him.

Perhaps she's right after all, he thought. Office seeking is a dirty business, and politicians are not angels by any means; I begin to wish I was well out of it. But she's silly to feel so uneasy about the boy, the Carrolltons never drink, and, besides, Ned will be off to college in another year. Bosh! These women make me tired; give them the rein, and where would our city improvements be? But, after all, I must admit that there is a spice of reason in all that Mary said; it's a dirty shame to be so upset, though.

"Why, Wheeler! I didn't expect to see you here at this hour," he said to the new councilman.

"Just managed to escape from home with a whole scalp; I tell you, Carrollton, the petticoats are up in arms over this saloon affair, and they threaten to start a crusade if saloons are licensed."

"Oh, nonsense! they'll quiet down in a short time, just keep a tight rein on them; they're all easy to manage if taken in time."

"Ah! but, Carrollton, all women are not alike. I've been trying to manage my wife for over thirty-five years, but I can't make it out; she's got the longest, sharpest tongue in her head, and she's not afraid to use it either."

"Well, here we are at last, now for business, and give the petticoats a rest," said Carrollton, as he and the councilman mounted the steps of the city building together.

CHAPTER II.

"Well, mother, I am back from school at last, an awful tiresome day. I'm glad tomorrow's Saturday. I'm just dying for a lark of some kind. A lot of us fellows are going out to Lake View tomorrow. We are going to stay over Sunday and camp out; won't that be fun?"

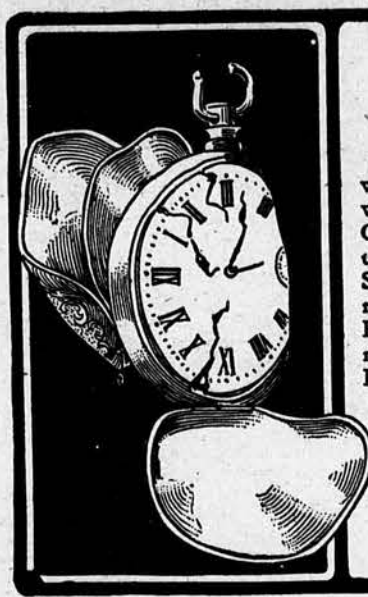
And Edward Carrollton threw his books down upon the table with a loud bang, and proceeded to stretch his six-foot form upon the sitting-room couch.

The mother's eyes rested lovingly upon the bright, manly face of her 18-year-old son.

The big, full, dark eyes, beaming with mirth and intelligence, the clear-cut beardless face, the little black ringlets clustering about a broad, high forehead white and pure as alabaster. All this the mother's eyes took in at a glance; could such a handsome, princely boy be led into temptation? Would he fall a victim to the curse of drink? The mother's heart seemed to stand still as she asked herself this question. "Ned, dear Ned!" Suddenly she threw herself down beside him, and laid her cheek to his. "Oh, my boy! We'll have sorry times here now, the saloons are coming back," and she sobbed aloud.

The boy moved uneasily. "Why, mother, what does it matter? Of course it would be much nicer without the miserable holes about, but then if they will come, I see no reason to worry about them; they only get the lowest class of people any way; no honorable, self-respecting man would be seen in such a hole as Pat O'Connor and Pete Mackey keep at the corners."

"Ah! but Ned, they put up fine, hand-



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light and beauty, and the wealthiest, proudest citizens are lured within them, alas, too often, to come forth ruined in body, mind and soul. Oh, Ned, my boy! promise me that under no circumstances will you permit yourself to be led into any of these hell holes. I know it would kill me if you should come home with the faintest odor of liquor in your breath."

"Rest easy on that score, mother," said Ned, heartily, "there's not the least danger. I'll never run with that class of men, be assured; besides, I am a Carrollton, and my sweet mother's only son."

"My boy," she said, kissing the broad, white forehead, "you are all the world to me, and I hope to see you prosperous and happy some day, a man against whom no black, sin-stained past can rise like a specter to haunt. By the way, dear, who did you say your companions were?"

"Billy Hilliard, Jack Harmon, Charlie Grayson, and Clyde Clifford; they are jolly fine fellows, brave, full of fun, and two of them are crack shots."

"Yes, they swear, play cards, run races Sunday afternoons, and are generally a bad lot; don't go with them, Ned, I had no idea you were forming a liking for such rough associates."

"Why, mother, they belong to the best families, and move in the highest circles; I know they are considered fast, but then all the fellows are, for that matter."

"No, Ned, no man of honor will do such things; and I want you to be strong, and by keeping out of evil society be able to resist all wicked temptation. My son, won't you give them up? You will miss them, perhaps, but soon you will outgrow both them and their influence. Ned, for my sake, don't go; you'll rue it if you keep them for chums. Mother knows best, she has only your welfare at heart. Oh, my boy! you can never know how strong, how almost holy is a mother's love."

Ned hesitated; he loved his mother very dearly indeed, but he could see no reason why he should give up the gay companionship of these merry boys. They could never do him any harm, he told himself, and after all, his mother was only a woman with all a woman's silly, nervous fear. Why should he give up this pleasant journey on the morrow? They had made all their plans for the trip, and besides, he needed an outing. I will never be tied to any woman's apron-string, he thought, rebelliously, be that woman whom she may. But he said:

"Cheer up, mother mine. You know I have always obeyed you, but then I am getting old enough to be judge of my own actions, don't you think?"

"You are a man in size, Ned, but not in experience. I am proud of my big, handsome son, and I want him to shun those who will lead him into temptation."

"Don't worry about me, mother. I am fully able to take care of myself. I am not such a bad lot after all, am I, little mother?"

"To your mother's eyes, my boy, you are faultless, and I suppose I must yield; but oh, my dear! never be rash, remember it so easy to be led astray."

Ned Carrollton arose, pressed a kiss upon his mother's brow, then walked to the window and looked down the broad street, where the tall maples seemed almost to interlace their foliage-laden branches across the dusty road which wound like a white ribbon far into the distance.

"Why, here comes the governor!" he ejaculated. "I wonder what brings him home so early? And his face is just like a thunder-cloud."

Rodger Carrollton strode swiftly and

heavily into the hall of his home, deposited his hat and umbrella in the rack with a bang, and entering the pleasant sitting room, threw himself into the nearest chair.

"Well, I'll be hanged if this day hasn't been full of surprises. The office has been literally besieged by women all the afternoon. Confound them and their racket, I haven't been able to do a thing but listen to their clack. They threaten to hang me in effigy if I don't do so and so. This town has come to a pretty pass when women rise in a body to say what a man shall do and what he shall not do."

Mrs. Carrollton's mild blue eyes flashed fire. "I think it would be a disgrace to womanhood if they did not rise. The town is coming to a pretty pass, indeed, when men break their sacred pledges, and make it necessary for women to rise in open revolt to protect their homes and the honor of their children," she said. "Shame upon you, Rodger Carrollton, you are a traitor to the cause you promised to aid."

"Mary Carrollton," cried the husband, his voice hoarse with anger, "take back those last words—take them back, I say, or I'll not be responsible for what happens."

Mrs. Carrollton looked coolly up into the stormy face bending above her. "I shall not take back one word, Rodger Carrollton. You are responsible for the life of every man and boy in this town, and God will deal with you as you deal with them."

Mayor Carrollton stood amazed. Could this cold, impassioned woman be his sweet, mild, impulsive little Mary? It can not be; I must be asleep and dreaming, he thought, passing one hand slowly across his brow. But there she stood, shedding that same changeless smile of scorn upon him. He shuddered—as well he might—and walked to the window.

Ah, Rodger Carrollton, the shadows of an unknown future are hovering around thee, and thy sin will engulf thee yet.

(To be continued.)

"The Man with the Hoe."

The only things that are worth while are those things which are acquired by work. The only man who is worth while is he who has become what he is by effort, and it is only the professions which require such men to fill them that are inviting to worthy ambitions.

Farming is no longer the occupation of the mere toiler. It demands the trained brain as well as the strong body, knowledge as well as physical endurance, and in it should be satisfaction to the most ardent ambitions for it calls for an all-round cultivation, rather than the one-sided one of the other professions. The farmer of today—and this will be increasingly true as the days roll on—is no mere machine, but a strong, vigorously-thinking man.

Josiah Strong, who is a well-known and thoughtful writer, has written keenly of this in the magazine, "Success." "In agriculture," says he, "as in manufactures, success consists in securing the largest and best production at the smallest expenditure of force, time, and money. Evidently the farmer who aims at such success must have an understanding of plant life and what proportion of its sustenance it draws respectively from the air and soil. He must know the chemical constituents of the latter, and the treatment which it requires to restore the plant food exhausted by his crops. He must have a knowledge of the climates demanded by different cereals, vegetables, and fruits. He must be ac-

quainted with the diseases and insect pests which endanger both plant and animal life, and should know how to treat them. He should be familiar with the principles of animal nutrition and the value of foods. In addition to all the expert knowledge required, there are those mental qualities which are developed by scientific training—a keen perception and an alert habit of mind, a full appreciation of the value of facts and hospitality to new ideas, together with that flexibility which enables its possessor to adapt himself more readily to changed conditions. Evidently the farmer of the future will not be 'the man with the hoe.'

Millet painted "the man with the hoe" stolid, bent and weary with work, infinitely pathetic in his cheerless acquiescence in a dullard lot.

"Bowed by the weight of centuries he leans
Upon his hoe and gazes on the ground,
The emptiness of ages in his face,
And on his back the burden of the world."

So great is the contrast between his picture and the wide-awake, intelligent young farmer of present-day America, seated upon his plow of latest manufacture, that one can not think they are the produce of the same profession. So it is with exceeding truthfulness that Mr. Strong says, "The farmer of the future will not be 'the man with the hoe,' for 'the man with the hoe' as a class, never existed in America. The American farmer is the equal of men in any other profession; he has in his possession an independence more real than the lawyer, the doctor, the merchant, or the politician; he traces his ancestry back through generations of educated men; he lives a useful, honest life, and, ever ready to serve his country in war or in peace, he often fills places of highest honor.

Truly it is a birthright of real honor, to be born the son of an American farmer, and may the heir of such a heritage appreciate his rank and seek ever to maintain it worthily and to honor it.

For the Little Ones

THE FUSSING PLACE.

I have to go to the Fussing Place
When I'm very bad,
And mother has such a sorry face,
And her eyes look sad.
But she says, in just the firmest tone,
"The boy that fusses must stay alone,"
When I have been bad.

At first I pretend I do not care,
And I hum a tune,
And walk off quick with my head in the air.
But pretty soon
I begin to hate the Fussing Place,
And to be there seems a great disgrace,
So I stop my tune.

And then I think of mother's eyes
With that sorry look,
And soon I think it is time to surprise
Her over her book.
So I hunt up a smile, and put it on
(For I can't come out till the frowns are gone).
How happy she'll look.

The Fussing Place? Oh, it's where you're sent
When you're naughty and mean,
And there you must stay till you're good again,
And fit to be seen.
It's up in the attic, or under the stairs,
Or seated on one of the kitchen chairs,
And oh, you feel mean!

But it doesn't matter much where it is—
This old Fussing Place;
For the very spot that seems so bad
When you're in disgrace,
Is nice enough when you're loving and true.
So it's not where you are, but how you do,
That makes it a "Fussing Place!"
—Annie Willis McCullough, in Youth's Companion.

Miss Kate's Story.

"Dear children, I have a story to tell you!"
When Miss Kate said that, the children all dropped their toys and stopped in the midst of their games, and crowded around her, for they loved her stories.
"This is a really, truly story," said Miss Kate, "and I saw it all myself. Last night I was coming along the path and looked up and the Old Man in the Moon was smiling down at something in the garden. 'Dear me,' I said, 'I must see what is the joke.'"
"So I went softly over into the garden, and saw a frog sitting there, singing as loudly as he could sing. Now you know that frogs do not sing very prettily, but this frog must have thought he had a lovely voice, for he sang so big and loud. I looked up into the tree above him and saw that a little bird sat there, fast asleep, with her little head tucked under her wing. I suppose Mr. Frog was singing to her, and fancied she was listening, though



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Light the clearest, steadiest, strongest, with never a thought of its being blown out when you carry a

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It's the lantern that never smokes, soots or flickers. Dietz makes many styles for many purposes. When you see the name Dietz rest assured you have the best.

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she really was sound asleep. And that is what the Man in the Moon was smiling at. I thought it was a joke, myself.

"Well, when I looked up to laugh back at the old moon, I noticed that the stars were smiling, and I followed where they seemed to be looking, and there, on the bed, near the window, Baby Helen was sleeping, and I smiled, too, for she looked very cunning, with her little hand thrown up over her head.

"Then I started around toward the door, and I saw that all the little flowers were asleep. Did you know, children, that all the flowers go to sleep when it is night, just as you do? Yes, they fold their petals, and nod their pretty heads and sleep. When I saw that everything was asleep but the moon and the stars, who have to stay awake all night to watch, I said, 'Good night, dear birds, and flowers, and children. It is time for me, too, to close my eyes and tuck my head under my wing.' Then I wished the moon and the twinkling stars good night, and went to bed. And this morning when I opened my eyes the moon had gone, and so had the stars. The little birds were all wide awake, twittering and chirping while they built their nests. And the flowers were open and even the dear baby was crowing and singing her funny little songs. And that is the end of the story."

Miss Kate picked up Baby Helen, and gave her a kiss and a kiss, and ran out of the room before the children could ask her another word about it. But that night when they looked at the Man in the Moon, he was still laughing about that joke on the musical frog, and the watching stars looked just as pleasant as Miss Kate had said.

Puzzle Corner

Riddles.

1. How do we know that there are sandwiches in the desert of Sahara?
2. Why didn't Adam and Eve have any molasses?

Spelling Puzzles.

3. Spell dried grass with three letters.
4. What word is shorter when you add a syllable to it?
5. What makes a road broad?

A Dinner with Celebrities.

6. [The blank spaces are to be filled with the names of celebrated people.]
I had invited a distinguished company to dine, and was getting the meal ready, the guests had arrived from their — and a — company it would be hard to find. They were the great men of the —. The — was sizzling on the stove. I was just taking the bread from the oven, where it had been —, for it is spoiled when it —, when, on looking toward the door I saw a — of hungry-looking strangers. "— us the right to eat with you," said the spokesman, a — with — hair. They had just come in from the — and looked very —.

"— can I?" I replied. "I know not where I could be — you. I should have to — in an extra table." "So they turned away, and I pro-

ceeded to set the dinner upon the table. And, though the coffee was —, we had a jolly time.

Answers to Last Week's Puzzles.

1. 20 fore-feet.
2. Ireland; for its capital is always Dublin.
3. Because of the sand which is there (sandwiches there).
4. Kansas.
K I T T E N
A D V E R B
N A T U R E
S P E E C H
A R R E S T
S A U C E Y
5. Red, read.
6. Rose, rose, rows.
7. Bear, bear, bare.

WITH NATURE'S WONDERS.

The Tourist Finds Much of Interest Among the Caves and Natural Bridges of California.

California has numerous natural bridges, caves, etc., of no little interest. The mammoth cave of Calaveras was discovered by miners in 1850. It contains, among other striking features, a rock shaped like a boat, and various apartments whose peculiar conformation or apertures have caused them to receive such names as Odd Fellows' Hall, Music Hall, Bridal Chamber, Cataract, etc.

In Placer County, eight miles from the Central Pacific tract, is the Alabaster Cave, containing large rooms, crystalline waters, and innumerable stalagmites, stalactites, etc.

In Tuolumne County is the Crystal Palace Cave, discovered in 1873. It has a number of attractive subterranean apartments, such as the Bridal Chamber, the Crystal Palace home, and a curious apartment called the Music Hall, where the deposits of aqueous origin not only have taken the form of organ pipes, sounding boards, etc., but they also emit, when struck, sounds or vibrations distinctly musical in quality.

Near this cave are two natural bridges, which the tourist can visit and return to the railway within half an hour. They are respectively 180 and 240 feet long, and the upper and larger is very curious.

On the beach near Santa Cruz is a natural bridge of imposing proportions and picturesque formation into which the sea washes.

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The Home Circle.

Conducted by Ruth Cowgill.

THE VOW OF WASHINGTON.

The sword was sheathed; in April's sun
Lay green the fields by Freedom won;
And several sections, weary of debates,
Joined hands at last and were United States.

Oh city sitting by the Sea!
How proud the day that dawned on thee,
When the new era, long desired, began,
And, in its need, the hour had found the man!

One thought the cannon salvos spoke,
The resonant bell tower's vibrant stroke,
The voiceful streets, the plaudits-echoing
And prayer and hymn borne heavenward
from St. Paul's!

How felt the land in every part
The strong throb of a nation's heart,
As its great leader gave, with reverent
awe,
His pledge to Union, Liberty, and Law!

That pledge the heavens above him
heard,
That vow the sleep of centuries stirred;
In world-wide wonder listening peoples
bent
Their gaze on Freedom's great experi-
ment.

Could it succeed? Of honor sold
And hopes deceived, all history told,
Above the wrecks that strewed the
mournful past,
Was the long dream of ages true at last?

Thank God! the people's choice was
just,
The one man equal to his trust,
Wise beyond lore, and without weakness
good,
Calm in the strength of flawless recti-
tude!

His rule of justice, order, peace,
Made possible the world's release;
Taught prince and serf that power is but
a trust,
And rules alone which serves the ruled,
is just.

—J. G. Whittier.

"Thou Shalt Not Be Inefficient."—
Roosevelt.

MRS. W. A. JOHNSTON, PRESIDENT STATE
FEDERATION OF CLUBS.

A few years ago when the library committee was trying to establish a travelling library in Kansas without money and without experience in library work, and were sustained only by a strong conviction that such an institution was needed, a young girl came and offered her services in any way that they might be acceptable. As we looked into her big brown eyes we read that there was courage and earnest purpose back of them, and later when the books—thousands of them—were to be censored, classified, catalogued and packed, and we saw this young woman going back and forth through the heat of summer and the cold of winter, and never once flagging, we knew we had made no mistake in accepting her offer. Later still, after the Legislature had been successfully besieged and the traveling library had been made a State institution, the president of a great domestic science school asked the chairman of the committee to name a girl who could accept a free scholarship and represent Kansas in that institution. Seeing an opportunity to in part repay a great favor which had been rendered the federation, without any thought of remuneration or reward, is it any wonder that we turned first to this helper and gave her the opportunity? I believe every club woman who had been helpful in the traveling library work rejoiced when this bit of good fortune came to our librarian, and you will, I am sure, be interested in knowing that this young woman is now doing a work whereby many homes are being made more wholesome and happy in the slum district of Pittsburg, Pa., where she was called to institute a domestic science department in the public schools of that city.

Such little things sometimes seem to turn the tide in our lives. Had Miss Hillis chosen that June morning to plan for a luxuriantly idle summer, instead of a useful, helpful one, she probably never would have known the happiness of the broader life she now enjoys.

This is perhaps only a homely little picture, but it is a true one from life, and I give it to you because, through the incidents related, I became very much interested in this domestic science school in the East, where half a dozen Kansas girls have recently received industrial training, and from a knowledge of that school and of other manual training schools, I have come to believe that the introduction of industrial training in our public schools, both in country and town, is practical.

Through the influence of our conference committee the State Board of Charities asked Miss Gertrude Coburn to institute a domestic science depart-

ment in the industrial school for girls at Beloit, which is now in successful operation; and at Salina during our annual meeting the subject was one touched upon from many sides in papers, talks, and discussions, and one of the most interesting features of that meeting was the manual training exhibit from the public schools of Pittsburg, Kans. We believe many women while there saw the opportunity that belongs to the clubs of establishing a closer relationship between the home and the school, through the introduction of industrial training in the public schools.

We have a school system to which we all point with pride, but there the danger lies, in being too well satisfied. New conditions demand changes. The curriculum of our high schools and colleges is based upon the theory that obtained a century or more ago, when all who were so fortunate as to receive the higher education were expected to enter the professions, and little or no thought was given to the needs of women in educational lines. To-day all is changed. More girls than boys take diplomas from our high schools and colleges, and three-fourths of the boys and girls graduating are going to earn their livelihood with their hands. Are they equipped for it? If not, is there not something wrong? Can we in any way be of service in bringing about a better condition of things.

Statistics tell us that 80 per cent of the pupils complete their school education before reaching the fifth grade, and from that on many drop out until of the hundreds who start, only a score, a dozen or less, graduate. If this is true ought we not to use our best endeavors to improve and enrich the opportunities, especially in those four grades, to the end that those who must leave school at that age will go out with the well-imbued lesson that there is a dignity and respectability in all labor that is well and conscientiously performed? And would not these young people, countless numbers of them, remain in the schools and get the benefit of the further mental training, which they all need, if at the same time the boys could see an opportunity to learn the skillful use of the hammer and saw, and the girls be assured of a diploma at the end of a course in cooking or sewing?

For centuries there has been no great change in educational methods. From the time the child enters school at the age of 6 until he leaves it at 18—all of these twelve years, the only tools he is taught to use are the pen and pencil, and he has to submit all this time to being soaked and saturated with a taste for literary things, while he, with the other 75 per cent of his fellows, would not if he could, and could not if he would, enter any one of the professions, or even one of the schools of higher education for which his training has been designed to fit him. Instead, through choice or necessity, he stands at the open door of the industrial world, not only unarmed and unprepared, but physically and intellectually perverted. The wonder is not that so many fall and finally become criminals, or paupers, but that so many succeed in earning their living with their hands, when the three, six, or twelve years of their school life has been devoted only to the sharpening of their wits.

The manual training department in our schools not only trains the boys and girls to think, but trains their hands to do, and this old world in which we live has a demand for thinking people who can do things. They are vastly more needed than people who know things, but can make no practical use of their knowledge. The

boys in school to-day are going to shoe the horses, make the carriages, build the houses, and till the soil for the next generation; and the girls will cook the meals, make the gowns, guide the souls, and order the homes. With all which this implies should there not be some bent or direction towards it given in the school education?

Three-fourths of the people you meet will tell you they have deranged stomachs. This means that they also have deranged heads and souls; that is, they are not capable of doing so much, or as good mental work as the person who has a perfectly healthy body. The moral question enters in too. The well and properly fed man will not have that craving which tempts him to keep in his cupboard, or to stop on his way down town to get something to tone him up. I once heard a dyspeptic woman say that she thought St. Peter should give her "a pass" into Heaven, for, suffering as she did, it was impossible to act like a Christian, although her intentions were good.

Now, if the physical, mental, and spiritual conditions of the future generations depend so much upon the home-keepers, would it not be well to have the girls who are in our schools to-day know something more of the chemistry of food, house economics, sanitation, bacteriology, the feeding of children, and of emergencies in case of accidents? Would it not be better for the children as they come up through the grades to spend twenty minutes each day in practical industrial training and the study of these subjects, even though in the end they could not name all the capital cities of Europe, or translate a Greek testament?

I have known pupils to go through the public school without any knowledge of the use of a nail, tooth- or hair-brush. A woman who was serving on the school board told me that one of the high school teachers came to her in distress because one of the pupils made herself objectionable and rendered the air of the room obnoxious by neglecting the ordinary rules in regard to baths, change of clothes, etc. The young woman was at that time committing to memory page after page of physiology to recite, but which impressed her no farther. The teacher was advised to give a talk upon the use and the necessity of the bath and well-laundried clothes to her class, and to buy a nail, tooth-, and hair-brush and give practical illustrations of their use. Of course, there are no families in this community where the rules of cleanliness and health are not observed, but there are many children in other places whose only opportunity to learn the ordinary rules of bodily cleanliness is in the public school.

These things and many others pertaining to sanitation and health are taught in the domestic science department of schools, and may count in the end the most valuable lessons learned.

It was my privilege not long since to visit the Manual Training High School of Kansas City, Mo. It was opened six years ago with 300 pupils, some of them from neighboring towns. It now has 1,600 pupils, a waiting list, and no pay pupils because of lack of room. These boys have not much use for foot- and base-ball teams, for they work their energies off in the iron- and wood-shop; and the girls find real recreation in the kitchen and sewing room. Their teachers say that their examination papers prove that their intellectual pursuits are stimulated rather than retarded by their industrial training. It was a rare privilege to see a class of twenty-five girls in their uniform caps and aprons, and with their individual cabinets and gas-stoves, all intensely interested in the making of apple-jelly. In this same room all the lessons in the science of cooking, from the boiling of a cup of water to the making of a loaf of cake or bread are taught.

The visit to the sewing-room was no less interesting, and when we crossed the hall and entered the machine shops and saw thirty or forty boys uniformed in blue check blouse and apron, and working at forge and bench, we felt the country was safe, or would be if every boy could have this chance. Walking among them we asked a lad of 14 if he intended to be a machinist? He said, "No, I intend to be a farmer." "Then why did you choose to take this course?" "Because I expect to have a good deal of machinery on my farm, and I want to know about it." Another said he expected to always work in some kind of machine shops. Another had not yet chosen, but wanted to know how to handle tools. Another had decided to be a lawyer, and when asked what good his training would do, answered, "I don't know, but a good many law-



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suits are caused by engines and other machinery." And then I remembered that a lawyer had told me that his experience of one season with a thrashing machine had been as valuable to him as the study of any law-book in his library. I asked the instructor if a large per cent of the boys went out of school into the trades. He said, "I think not many more than would go, or want to go, if they had not had this training, but they go equipped and are soon foremen, and we can not supply boys to fill the demand that comes for them from offices where the business involves a knowledge of practical mechanism or drawing.

The aim of this paper has been to show the need and benefit of industrial training for our boys and girls rather than a treatise upon the subject, believing if these were realized it would soon become a part of our free school system.

A report made by Dr. H. H. Belfield, of Illinois, to the United States Commissioner of Labor includes this testimony from the officers of manual training schools all over the country: "The effects of manual training upon the character are that it develops judgment, earnestness, readiness, independence; the will is disciplined, the mind is broadened and made more logical with a tendency to original investigation, and habits of industry are formed."

When it comes to making for better conditions Kansas will not be slow in coming to the front. Her citizens shall not be inefficient.

[Mrs. W. A. Johnston as president of the State Federation of Clubs has been directing the influence of that organization in favor of industrial training in the public schools, and she, with many others, are much pleased that the club women's bill providing for such instruction with an appropriation for its encouragement was enacted by the Legislature. Her faith in Kansas, as voiced in the last paragraph of the above paper, was not misplaced.—Editor.]

How Shall the Busy Mother Find Time for Cultivation of the Higher Life?

Did you ever notice we find, take, or make time for all things we really consider essential? When the bread jar is empty we take time to make another batch. In the fruit season we find time to fill our cellars with canned goods, pickles, jellies, and preserves. When company is expected we use time for cake-making, and the thousand and one other duties required to make the occasion outshine preceding ones. We find time for ruffling and belacing baby's dresses and skirts—and for ironing them thereafter; for hem-stitching our table-linen, frizzing our hair, sweeping, dusting, scrubbing, cooking, and dish-washing. We take time to help Johnny with his lessons and to dress Susie's doll; and as for our "daily bread," one might conclude from the looks of the dining table that the road to higher life leads through the stomach.

Perhaps it is not so much lack of time that prevents our grasp of the best things of life while passing, as a lack of predetermined will to have them. We drift along, and uncon-



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sciously, perhaps, prefer puddings to poems, pies to art, embroidery to history or biography. It is time to call a halt, put on the brakes and, like Samantha's Josiah, "meditate." "Choose ye this day whom ye will serve" applies right here, not that the material things of home life should be ignored or even slighted; but the proportion between such, and food for spiritual and intellectual growth, should be thoughtfully readjusted to a balanced ration. With determined, systematic energy time will be found for daily improvement, and life proved to be worth the living.

Mrs. ALICE E. WELLS.
Princeton, Kans.

Some Women's Ways.

Some weeks ago we asked the question, How shall the busy mothers find time for rest and reading? and have been watching, together with many of our readers, for an answer to it. In this issue is the first we have received, and it seems to answer the question conclusively. "Where there's a will there's a way." Yet what that is by which we shall accomplish that "balanced ration" of daily work, each woman must determine for herself.

Some women were discussing this question some time ago. They were generally mothers with children. They kept no servants, and their daily duties were crowding them as only the busy housewife's can crowd.

That their homes were in the city makes no difference in the value of this discussion, since they were as busy as they could be, anyway.

One of them, whose home was a model of neatness, whose children were always dressed with clean simplicity, and whose family was more than ordinarily devoted to their home, said hesitatingly:

"I am afraid I shall shock you, but I am going to tell you some of the ways I manage to shirk!"

The other women looked at her in surprise, wondering just what she meant.

"Yes, I shirk systematically. I would rather leave some things undone than—others. I would rather clothe and feed my mind, which is going to last forever, than be a model housewife. Shall I confess to you my sins of omission? Well, the first place in which I began to shirk was in my ironing. I used to iron everything, even the stockings, and the strings in my kitchen apron. Now I do not iron the sheets, the towels, the knit wool or gauze underclothing, the dish-towels, the tennis flannel nightgowns—in short I never iron anything that we can possibly wear unironed. Another thing I do not do is to black my kitchen stove. I brush it and keep it clean, but I do not waste time and energy to make it shine. I do not make rich nor elaborate dishes for my family. We have simple, wholesome food, which is easily prepared and will never give them indigestion. I suppose they may sometimes wish for other things, but I am sure they love me better for being well and able to share their amusements and to talk to them intelligently, than if I gave them a seven-course dinner every day, and was too tired and stupid to be one of them."

"Mrs. B.—is right," said a worn little woman. "Though I do not see how I could ever sleep under unironed sheets or cook on a dirty stove! But she has logic on her side. I do economize on time, though not in the same ways. I have ceased to beruffle and betuck the children's dresses. I make all their clothes as plainly as I can, and most of them are of dark stuff, so that, though I may know that they are dirty, it may not be so apparent to the casual observer."

"I am going to adopt some of these new ways," said a young married woman, whose bright face was just beginning to show tired and worried lines. "I have been doing something lately which would have horrified mother in the old days at home, but I think she would excuse me now. I take my books or my paper into the kitchen with me, stick it up on some convenient shelf or table, and read while I wash dishes and peel potatoes, and iron, and rock the baby."

"I hope you sit down at your work, my dear," said a sweet, motherly woman, whom everybody confides in. "When you are used to it, you can work just as well in a high chair, and you save your strength for other duties. You know we only have so much time given us, and so much strength, and we must learn to use both to the best advantage."

"Well, I've got some new ideas," said the one who had sat in astonished silence through most of the discussion. "I never should have suspected that Mrs. B.—'s children wore clothes that

had never been ironed, or that Mrs. E.—'s little tots were dressed in browns and grays so that I would not see the dirt. And to think that you, Susie S.—, whose mother brought you up so carefully, should go stumbling about your work with your eyes in a book! It is simply absurd—but I've a great notion to go home and try it myself."

Those women are real women, and this is a bona fide discussion, though perhaps not exactly as it took place, word for word. But they all are women of intelligence, women whose opinions are sought and whose refinement is as real as their culture is deep. Doubtless they would prefer to do their work scrupulously, yet, as one correspondent says, must make the right proportions in life, and stick to them in the predetermined purpose.

Won't you tell us how you manage? Many will have different methods of encouraging energy, and different solutions for the problem. Tell the rest of us about it, and so "pass it on."

The Value of the Lemon.

A California exchange gives a eulogium on the lemon, with several helpful hints as to its use.

It says: The full value of this fruit is not appreciated. As a cure for rheumatism and preventive of scurvy, it forms a part of the stores of every ship. In fevers it is invaluable, cooling the blood, allaying thirst and checking nausea. Persons living in malarial countries keep off the dreaded disease by drinking hot lemonade every morning before leaving their rooms. Many a sore throat is nipped in the bud by eating a lemon baked with brown sugar or molasses, and almost every one knows that a hot lemonade, taken at bed time, with an extra allowance of covering afterwards, will break up a cold that has not been of long duration.

Lemonade made with boiling water is better than that made with cold, and its medicinal value is increased by the use of the rinds. Pare off the thin, yellow rind, reject the white skin and seeds, and pour over boiling water. When cold, sweeten and use.

Lemon Butter.—Beat together the yolks of five eggs, one pound of powdered sugar and four ounces of butter, until very light; stir in the whipped whites of four eggs; pour into a double boiler and stir until it thickens, then add the juice of three lemons and the grated rind of one. Turn into a bowl to cool, or put up in tiny jars. Delicious with thin bread and butter for afternoon tea.

Lemon Water Ice.—Boil a quart of water with a pound and a quarter of sugar, the yellow rind from lemons, and from one orange if you have it, for five minutes; then stand away to cool. Squeeze into this the juice of four lemons and one orange, or a gill of currant or strawberry juice may be added instead of the latter; turn into the freezer and freeze.

Lemon Sponge.—Cover one box of gelatine with a cupful of cold water and soak for an hour; pour over a quart of boiling water and a cupful of sugar and stir until dissolved; strain into a basin and set on ice, stirring occasionally until cold, when add the whites of eight eggs whipped to a froth; turn into a pudding mould to set, and serve with a sauce made of one pint of milk, brought to a boil in a boiler; add the yolks of four eggs and two tablespoonfuls of sugar; stir for two minutes, flavor to taste, and remove from the fire.

Lemon Syrup.—This is an article to make when lemons are cheap. Grate the rind of sixteen large lemons over eight pounds of granulated sugar; add the juice and two quarts of boiling water; stir until the sugar is dissolved, strain through a fine flannel bag and cork up in pint bottles.

If the hands be rubbed with a cut lemon every time after washing, particularly when one is engaged in any work which strains them, it will keep them white and soft. This is a simple remedy.

The True Conservatives in America.

It seems to be a well established custom of the American press to term the rich our "conservative class." Are they really so? I should rather say the farmers were the conservative class—"slow to wrath but mighty in anger." The radicals are of the cities—the rich who live by speculation, and the toilers who take wages. They are less thrifty than the farmers—for obvious reasons. The farmer is almost the only man left among us who is master of a whole trade. Our iron-smiths, our shoe-makers, our clothing-makers, our furniture makers—all our friends employed in gainful labor, have become—most of them—half tradesmen, mere cogs in wheels. Their work demands

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MENTION THIS PAPER.

DEPT 153,

East St. Louis, Ill.

a constantly diminishing quantity of creative ability—of individuality. Working with machines, and like machines, they inevitably lose much of the independence that sustained their fathers who were the all-around masters of useful trades. Their money is earned with less thought than the farmer's; naturally they give less thought to spending it. Their environment induces more and more a blind dependence on their more or less remote and impersonal employers. The city toiler begins work at an hour set by his employer; he does the thing his employer orders, in the way his employer orders it; he quits work at an hour fixed by his employer. He is a part of the machinery of his employer's establishment. His employer takes all the risks of marketing their joint product—interposes between the workman and the outer world—does his thinking and planning for him, in all that concerns the source of his livelihood. The employee not unnaturally comes to regard the employer—man or company or corporation—as a sort of special providence; and when this providence fails, he is likely to be surprised—unprepared. (There are exceptions, to be sure; I am considering the rank and file.)

The farmer is still a full tradesman—an individual. He must pit his knowledge, his energy, and his thrift against the elements. He is perhaps less open than his city brothers to the influence of new thought; but when it does awaken his interest, he gives it a saner and serenely consideration—and he casts the deciding vote upon whatever question vitally concerns the nation. He reads less than the city man, but he thinks more.

On the other hand, it should be noted that all, or nearly all, social movements of a progressive nature originate in the cities. Keenly studious and thoughtful members of this division of society, reacting from the iron pressure to which their surroundings subject them, sooner feel the need of remedies for social ills. But all their proposals must gain the slow and often reluctant approval of the farmers and the village folk before they can be made of any effect. The city proposes and the country disposes. It is well to give the conservative the deciding word. He makes haste slowly, but he has fewer blunders to correct, fewer steps to retrace.—Frank Putnam in March National.

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STOCK MELONS.

(Continued from page 314)

of this lack of concentration by their enormous yield, so that about as much feed per acre can be produced as with other crops.

The writer has no experience in feeding these melons but has been informed that all kinds of animals eat them readily. What information can our readers give from experience?

THE DEMAND FOR POULTRY.

Even to the ordinary observer of live-stock conditions the present situation, which shows a comparatively low price for cattle and high price for hogs, seems anomalous. Further observation develops the fact that a somewhat similar condition exists in the poultry market to that found in the hog market, though probably for a different reason. The relatively high price of hogs is unquestionably due to their scarcity, while the very strong demand for poultry may be explained by the increased use to which it is put and the realization on the part of producers that the raising of poultry is a profitable source of income which has been heretofore much neglected. There is no domestic animal that can be profitably raised on so small an acreage and with so little cash capital as the hen, and the labor of raising and caring for poultry is so light that it can be attended to by members of the family who are unable to take part in the heavier occupations of the farm. One great fascination in poultry-raising in addition to the small capital and profitable returns lies in the fact that the market for both birds and eggs is one which can never be glutted. Even with the advent of the perfected incubator and its capacity for turning out immense numbers of chickens, there has been no depression in the market. Indeed the development of the incubator has seemed almost to create an increased demand for poultry, and never within the recollection of the writer has there been so strong a demand for pure-bred poultry as at present. Within the past few years there have grown up great wholesale and packing houses which handle poultry and eggs alone and the incubator has found its rapidly increasing popularity in the demand which has been locally created by these wholesale dealers. So great is this demand that one of the poultry advertisers in the KANSAS FARMER announces an income of \$700 per annum from his flock of 350 hens, while another who owns several hundred hens, complains that he can not supply the demands of the market for breeding stuff and contemplates a change of location in order to properly care for the business which he has built up through his advertising in the KANSAS FARMER. A lady announces that she has cleared \$50 in cash for every \$2 spent in advertising in the KANSAS FARMER. These statements are quoted as a few from the hundreds of letters received at the KANSAS FARMER office, and serve but to indicate the increasing interest and profit that is to be found in poultry-raising when rightly undertaken. Perhaps there is no country on earth that is so well adapted to poultry-raising as are Kansas and Oklahoma. The agricultural division of the census bureau reports the total number of fowls in the United States 3 months old and over, to be 250,681,673, while the egg product is represented by the figures 1,295,819,186 dozen. In the State of Iowa the value of poultry alone was over six and one-half million dollars, while Kansas stood a close second. Iowa reported nearly one billion dozen eggs, and Kansas again stood a close second. One packing firm in Kansas City shipped over one million pounds of dressed poultry to England, besides the immense quantities packed for consumption in the United States, and all of this received from Kansas, Missouri, and Nebraska, and all from only one of the many firms in the business.

The poultry business has unlimited possibilities ahead of it and the poultry-breeders have so far been wholly unable to meet the demands made upon them for good breeding stock.

THE AGRICULTURAL COLLEGE APPROPRIATION.

Kansas has the finest school system in the world, the highest and most important branch of which is the common schools of the State. Second in importance only to the common schools, is the Agricultural College at Manhattan. The common schools of the State come in contact with the daily lives of the entire citizenship, and the Agricultural College takes second rank only because of its limited capacity which does not make its influence as widespread as is that of the common schools. Standing as it does at the

very foundation of the prosperity of the country, its students will be the men and women who will make the future history of agricultural and live-stock breeding in this great State. This college has had a difficult struggle for proper development. Its usefulness has grown into the knowledge of the people in such manner that its capacity has been sorely tried.

It is with pleasure that we note the fact that this year the Legislature has given it a larger appropriation for the ensuing two years than it has ever received in its history. While it did not receive all that it needs, it has been better equipped by this appropriation and is now in position to do more good than hitherto.

A very large measure of the credit for presenting the needs of the college to the Legislature is due to the Hon. Frank M. Emmons, of Riley County, most ably and strongly seconded by the officers and members of the Improved Stock Breeders' Association of Kansas. Mr. Emmons spent a large amount of time during the vacation of the past two years in working among members of the Senate and candidates for the House in favor of this bill and succeeded in getting favorable action thereon, although some of the most important items were cut in half. At a critical period in the history of the passage of this bill the Live Stock Breeders' Association rallied to his support and the victory was won.

WANTED, A PASTURE GRASS FOR CENTRAL KANSAS.

EDITOR KANSAS FARMER:—Will you please discuss Meadow Fescue, orchard grass, Bromus inermis, and Red Top or Herd's grass in the KANSAS FARMER? I wish to secure a good permanent pasture grass, one not easily winter killed and able to withstand the severe drouths of central and western Kansas. My soil is good but mostly underlaid with the toughest sort of "hard-pan," approaching within a foot to three feet of the surface, and water stands a long time in some places. I have Secretary Coburn's "Forage and Fodders," but can not you give us something later, something fitting our conditions? FARMER.

Rice County.

Taking corn as the standard, the following are the estimated nutritive values of hays from some of the grasses:

Corn.....	100.0
Timothy hay.....	48.2
Orchard-grass hay.....	61.6
Redtop hay.....	63.6
Kentucky blue-grass hay.....	53.4
Meadow-fescue hay.....	58.2
Alfalfa hay.....	101.0

We have seen no determination of the nutritive value of Bromus inermis. The Department of Agriculture says it is low.

The nutritive values of the fresh grasses are, of course, very much lower than those of the hays, account having to be taken of the large amounts of water contained in the fresh grasses.

It is not understood that these hays serve the same purposes as corn, but their nutritive values are compared with that of corn as the best known and most nearly standard feeding stuff.

Doubtless some of these grasses would be out of their longitude in Rice County. It may be worth while for our correspondent to experiment, in a small way at first, with orchard-grass, meadow fescue, and Bromus inermis. There is no probability, however, that he will find anything better adapted to the situation he describes than alfalfa. That hard-pan should furnish only amusement for the alfalfa roots. The standing water is bad for any grass and is especially bad for alfalfa. Can not the places where water stands be drained? There is, it is true, the ever-present danger of bloat from pasturing alfalfa and it is worth while to do a large amount of experimenting to find a good, productive pasture grass free from this objectionable tendency.

TRY MIXTURE.

EDITOR KANSAS FARMER:—Will you please tell me in your valuable paper what variety of grasses make best permanent pasture for cows and horses? I have a good farm and it is all level and all in cultivation, and I want to seed down some of it for permanent pasture. Alfalfa does very well here but will not stand pasturing. I want information as to what is best in this part of the State and when to sow, and how much seed per acre. Do you think a mixed variety would be the best? JAMES MCINN.

Cowley County.

Try a mixture of English blue-grass and orchard-grass, using one bushel of each to the acre, or 14 pounds of Eng-

lish blue-grass and 24 pounds of orchard-grass, and report results for the benefit of other farmers in south central Kansas.

CANE AND MILLET FOR ANIMALS WITH YOUNG.

EDITOR KANSAS FARMER:—Please inform me through the FARMER if it is injurious to feed cane that is headed and seeds ripe or millet-hay to mares or cows with young.

E. CHRISTENSON.

Ellis County.

Definite experimental data on this question can scarcely be given. It is known in a general way that these feeds are diuretic in their effects. Some cases of abortion have followed their use in such a way as to make the conclusion that they resulted from the effects of the feeds almost unavoidable.

KANSAS FARMER'S NEW WALL ATLAS.

The KANSAS FARMER has arranged with the leading publisher of maps and atlases to prepare especially for us a New Wall Atlas, showing colored reference maps of Kansas, Oklahoma, Indian Territory, the United States, and the world, with the census of 1900. The size of the New Wall Atlas is 22 by 28 inches and it is decorated on the outer cover with a handsome design composed of the flags of all nations.

Tables showing products of the United States and the world, with their values, the growth of our country for the last three decades, and a complete map of the greater United States are given. This is an excellent educational work and should be in every home. The retail price of this New Wall Atlas is \$1.

Every one of our old subscribers who will send us \$1 for two new trial subscriptions for one year will receive as a present a copy of this splendid New Wall Atlas, postpaid, free.

Any one not now a subscriber who will send us 50 cents at once will receive the KANSAS FARMER for five months and will be given a copy of our New Wall Atlas free and postpaid.

\$2.50 Value for Only \$1.00.

The Western Swine Breeders' Journal, of Lincoln, Neb., is a very valuable publication for Western swine raisers. The price is 50 cents a year. The Kansas Farmer is \$1.00 a year. For a limited time we make this great offer: To any of our subscribers who will send us two new subscribers for one year and enclose a dollar bill, we will make them a present of the Western Swine Breeder's Journal one year free, thus giving \$2.50 in value for only \$1.00. Address Kansas Farmer, Topeka, Kans.

Has Used 200 Bottles.

Lamont, Iowa, Dec. 13, 1902.
The Lawrence-Williams Co., Cleveland, Ohio:

I have used GOMBAULT'S CAUSTIC BALSAM for the past five years with the greatest of success on almost everything that animals are heir to. I think as near as I can tell you I have used two hundred bottles of GOMBAULT'S CAUSTIC BALSAM since I became acquainted with it, both for man and beast.—A. R. JONES, V. S.

Champion Harvesters.

Are popular the world around. The tremendous amount of business being done by the Champion division of the International Harvester Company is well known. There are sixty branch houses located in the United States, devoted exclusively to the demonstration and sale of the Champion line.

This makes it possible for purchasers of these machines to examine them and see them demonstrated at some point near their home. These branches are in close communication with all selling agents throughout their territory, and it is a simple and easy matter for purchasers to secure repairs or special parts without sending to the home plant for them.

This is a special advantage during the busy season when the breaking of a part may mean a great delay if it is necessary to send to Chicago to replace the part that is broken.

Money Saved on Groceries.

All of our readers during the year spend several hundred dollars for groceries, and many of them have to buy in large lots. By taking advantage of the offers made by the Manter Mercantile Company, of Kansas City, at least 25 per cent can be saved. The offer they have in this week's Farmer is made up only of such groceries as are used in every home, and we can assure our readers that they will receive good goods and fair treatment. This house is perfectly reliable. Send for their assortment and you will buy of them again.

"How to Grow Corn" is the title of a very handsome illustrated catalogue issued by the "101" Ranch of Bliss, Okla. This great establishment claims to be the largest growers of seed-corn and wheat in the world, and this handsome catalogue tells exactly how it is done. Most of our readers will be interested in perusing a copy, which will be sent free to those requesting it and who consult the advertisement of the "101" Ranch on page 325 in this issue.

Miscellany.**For Pasture.**

EDITOR KANSAS FARMER:—Having seen several letters from brother farmers in regard to English blue-grass and Alsike clover for pasture will say: The best time for spring sowing in eastern Kansas is the last week in March and first half of April, just as soon as it is safe from freezing. As regards quantity of seed that should be sown per acre, that depends on quality of seed and condition of soil at seeding time. If land is spring-plowed it should be well harrowed and rolled so as to smooth and pack the soil, or much seed will be lost by being covered too deep. Disking two inches deep, soil well firmed is sufficient. Twelve pounds of English blue-grass and three pounds of Alsike clover per acre will make a good stand if seed is number one, clean and new. Old blue-grass seed of either kind will not be good. I do not know whether old Alsike seed will grow or not, but my opinion is it will. Red clover, if properly cared for, will grow at eight years of age. English blue-grass is one of the best, if not the very best, pasture grass we have in Kansas. When quantity is considered, as well as quality, it will produce more feed per acre than any other tame grass; it will stand closer cropping, and still live than any other, Kentucky blue-grass excepted. The summers are too hot and dry for Kentucky blue-grass to do well on most soils in Kansas, though I know of some fine pastures of Kentucky blue-grass and white clover. But English blue-grass and red clover Alsike and alfalfa sown together would discount it for quantity and the quantity would be so much greater that the difference in quality would be buried so deep that it would never be dug after. For dry soil, either bottom or upland, I would advise sowing alfalfa and red clover with English blue-grass. It makes excellent pasture and lots of it. But for heavy mucky bottom or black-loam soils that are spouty, sow English blue-grass and Alsike, and you will not make any mistake; no danger of the English blue-grass getting the hard-pan on top; it takes a good team and plow to do that. But your soil might wash away, if your land lies so it can, and your grass keeps reseeding itself. English blue-grass does not make a very heavy sod, and such land should be heavily seeded on the start. POMONA FARMER.

Franklin County.

Lime, Sulfur, and Salt for Scale Insects.

Fruit-growers and others who are interested in the repression of San Jose scale should send for Bulletin No. 228, of the Station at Geneva, N. Y. The lime-sulfur-salt mixture was thoroughly tested by the station in several localities throughout the State and proved very effective against the scale and harmless to the trees. It appears to be very resistant to the influence of heavy rains, as it was given a severe test along this line by the conditions of last year.

In the West, especially in California, where San Jose scale and similar insects have been a great menace to fruit-growing, the lime-sulfur-salt wash has become the dependable means of repression. Tested in the East, some years ago, it received an unfavorable report, as it seemed to wash off the trees by rains before exerting much destructive effect on the insects. But tests made by the station at Geneva, during the past season show that, properly made, it adheres to the twigs and limbs remarkably well, even during such exceptionally wet weather as we had last spring.

In the tests more than seven hundred trees, in five orchards scattered well over the State, were treated with this wash. Only in one instance, when the foliage was too far advanced, was there any injury to fruit, leaf, or twig, and this damage was slight. When applied before the buds began to swell, their opening was retarded a few days, but within two weeks or so all difference between treated and untreated trees, in this respect, had disappeared; but later the untreated trees continued to lose vigor and healthfulness through the work of the scale, while the treated trees were practically cleared of the pests.

The mixture is made by boiling together 40 pounds of lime, 20 pounds of sulfur, and 15 pounds of salt, in about 30 gallons of water. Boil for two hours; then add more water to make 60 gallons, and apply while hot, using a powerful pump and good nozzle.

Tests of other washes and interesting laboratory experiments to ascer-

tain the effect of the different ingredients of this lime-sulfur-salt wash are also reported in this bulletin. This is free to all applicants.

How to Drain that Pond.

EDITOR KANSAS FARMER:—Tell L. D. Hutchens to make an open ditch. Buy a 16-inch sewer tile (I paid \$1.50), lay in mortar, and any kind of stone. Do the work himself. If he has not a trowel, use a shingle; put a 2 by 6 on top of rim for hinge (one will do); build some weight on this; make a lid of inch boards doubled (crossed), one to go in the sewer, the other the rim. When it rains it will swell so the water will not run in from the creek. If the force of the pond water does not open, punch open with a pole left there for the purpose.

JOHN E. HINSHAW.

Lyon County.

Macaroni Wheat.

There has been a good deal of inquiry about macaroni wheat. The North Dakota Experiment Station has just published a bulletin giving the results of experiments with this new wheat at that station. Following is the summary of the bulletin by E. C. Chilcott, agriculturist of the station:

While we are not prepared to give final and definite answers to some of the many problems concerning the growing, marketing, and milling of macaroni wheat, it is believed that the following facts have been fully established by the experiments already conducted:

1. Macaroni wheat of good quality can be raised in all parts of South Dakota.

2. It will yield from 25 to 100 per cent more than the best blue stem and five wheats, under ordinary conditions.

3. The difference in yield in favor of the macaroni wheats increases as the conditions for bread wheat raising become less favorable.

4. A light to fair crop of macaroni wheat may be raised during dry seasons when ordinary bread wheat fails.

5. Macaroni wheat can be ground into flour by any good flouring mill without any extensive modification of the methods used for milling ordinary bread wheats.

6. The flour from macaroni wheat can be made into bread of excellent quality, more nutritious, and by many preferred to that made from ordinary bread wheat.

7. There is a steadily increasing demand for this wheat for making macaroni and like products both in this and in foreign countries.

8. Macaroni wheat has a considerably higher percentage of nitrogen than ordinary bread wheat and, consequently, the whole wheat as well as the flour and by-products make richer food.

9. Macaroni wheat can be profitably grown in all parts of the State where the ordinary bread wheats can, and in some localities, and under some conditions, where they can not.

10. The channels of consumption of macaroni wheat are: (a) A large export demand. (b) A large home demand for milling, the flour being used to manufacture macaroni, spaghetti, noodles, etc., as the products manufactured from home-grown wheat fully equal the imported articles. (c) We hope that, as in Russia, there will be a large and growing demand for macaroni wheat bread, bread sticks, pretzels, etc.

11. We are not in position to express an opinion as to whether the demand for macaroni wheat will increase as rapidly as the supply, provided that the farmers of the State begin at once to raise it on a large scale; but it is a fact that we are now importing several million dollars worth of macaroni products that should be produced at home. Many of the home manufacturers have been unable to procure enough macaroni flour and have been compelled to use flour from bread wheats, although the macaroni made from this [bread] wheat is very inferior; and, moreover, we do believe that any temporary overproduction that may occur can be profitably disposed of by feeding it to fattening animals.

12. Macaroni wheat requires the same culture as the ordinary bread wheat, except that the seeding should be somewhat heavier. We recommend one and one-half bushels per acre of macaroni wheat where one and one-fourth bushels per acre of ordinary wheat is sown.

13. We are not prepared to name the best varieties of macaroni wheat, but the following have all yielded well with us:

Pellissier, Berdiansk, Kubanka, Arnautka, Gharnovka, Yellow Gharnovka,

Taganrog, Argentine Medeah, Velvet Don, Black Don.

14. "Wild Goose" or "Goose" wheat is macaroni wheat, but as most of the wheat of this variety has been grown for years without any effort to keep it pure or to maintain its quality, it is usually decidedly inferior to the recently imported varieties. It may, however, be greatly improved by careful selection.

15. Macaroni wheat for seed may be obtained from many of the cooperators who obtained seed from this Station last year. A list of these cooperators is given in another part of this bulletin. This Station can supply a limited quantity of seed at \$1 per bushel, without sacks, or \$1.10 per bushel, sacked and delivered f. o. b. Brookings, S. D.

16. It is of the greatest importance that this seed be kept pure. Not only should the mixing of macaroni with bread wheats be avoided, but care should also be taken with the different varieties of macaroni wheat and not allow them to become mixed. The reason for this is that the time of ripening of the macaroni wheat differs quite from that of bread wheat; and there is also considerable difference between the several varieties of macaroni wheat in this respect. When these wheats become mixed they are very difficult to separate.

Development of the Underflow: Pump Test at the New Mexico Experiment Station.

J. J. VERNON, MASILLA PARK, N. M.

The experimental well upon the station farm has supplied more than 1,000 gallons per minute and has been demonstrated to be a success.

The second line of investigation undertaken by the Experiment Station was that of a test of pumps for lifting the water to the surface of the ground. Letters were sent out to manufacturers of pumping machinery soliciting pumps for a competitive test. Several manufacturers entered pumps for this test. Each pump was tested upon the same well, using the same engine for power. In so far as the kind and type of the pumps would permit, they were placed, and the tests run, under as nearly identical conditions throughout as possible. Each pump was tested at four different speeds. These speeds were such as to develop the following number of gallons per minute—600, 824, 944, and 988.

The test was made with a steam engine, and with dry tornillo wood at \$2.25 per cord, for fuel. A record was kept of the length of time each pump ran at the different speeds on one-fourth cord of wood by weight.

This data which is given in the following table, indicates the relative efficiency of each pump at the various speeds.

Cost of Fuel per Acre for Irrigating Three Inches Deep, Using Dry Tornillo Wood at \$2.25 per Cord.

Name of pump.	At most economical speed.	At 600 gal. per min.	At 824 gal. per min.	At 944 gal. per min.	At 988 gal. per min.
Van Wie.....	.512	.512	.539	.545	.76
Wood's.....	.647	.647	.669	.703	
Kingsford.....	.597	.615	.597	.622	.909
Byron Jackson.....	.614	.620	.661	.614	.618
Fairbanks-Morse.....	.617	.675	.617	.655	.702

All the pumps tested ran smoothly and gave little or no trouble in their operation. From an inspection of the table, it will be seen that there is quite a difference in the pumps, when estimated upon the basis of economic use of fuel.

The construction of the paddles seems to have something to do with this difference, since we have noticed that the pumps making the best showing have a different arrangement in connection or supports of the paddles than the poor ones.

The experimental work to determine the cost of irrigating, is to be conducted this season, but using the data from the short runs made while testing the different pumps, we get the following table:

Name of pump.	Speed of pump.	Gallons per minute.	Time run on 492 lbs. wood—hrs. min.
Van Wie.....	455	600	2 29
Kingsford.....	415	600	2 4
R. D. Wood's.....	695	600	1 58
Byron Jackson.....	570	600	1 46
Fairbanks-Morse.....	448	600	1 53
Van Wie.....	515	824	1 43
Kingsford.....	450	824	1 33
R. D. Wood's.....	797	824	1 23
Byron Jackson.....	650	824	1 24
Fairbanks-Morse.....	517	824	1 30
Van Wie.....	530	944	1 25
Kingsford.....	505	944	1 18
R. D. Wood's.....	900	944	1 9
Byron Jackson.....	700	944	1 14
Fairbanks-Morse.....	528	944	1 19
Van Wie.....	540	988	1 1
Kingsford.....	600	988	0 51
Byron Jackson.....	730	988	1 15
Fairbanks-Morse.....	545	988	1 6
Van Wie.....	760	997	
Kingsford.....	640	1000	
Byron Jackson.....	790	1028	
Fairbanks-Morse.....	680	1055	

The above indicated results would probably be considerably lower when long runs of ten hours each are made,

but even at the above figures irrigating alfalfa by pumping seems a safe proposition, and where vegetables and fruits are to be grown, no hesitation need be felt in the matter.

The Farm Boy's Opportunity.

J. S. Trigg gives this interesting account in the Rockford Register of what a short winter course in agriculture did for a farm boy.

The man was a Scandinavian. He had worked his way up from absolute poverty to one of financial and agricultural independence and is now well fixed as the owner of 320 acres of land and a good equipment of stock. He had a boy, a very common-place, everyday sort of a boy, seventeen years old. This boy had always worked on the farm, and his education had been limited to what he could learn in the country school during the winter term. It was agreed between father and son that the boy should go to one of the best agricultural colleges in the West and take a course of thirteen weeks each winter for two years, returning to his farm work during the summer. We met the father after the boy had completed this course of study at the college and asked him what it had done for the boy. He said that "it had done wonders, that the boy was taking up the farm work in a different and better way, that he could repair any of the farm machinery, adjust the farm separator, test the milk and the cows, had learned how to judge stock, could pick out a good cow on sight, knew how to properly balance the rations fed, could treat the sick animals on the farm, and wanted me to take five or six of the best agricultural papers. He did all his work with more method and intelligence and so accomplished more with less labor. He did not get the big head and want to become a professor and teacher, and has settled down to his old farm work as steady as an old clock. It cost me \$325 to give him this course of study, and it was the best investment that I ever made. The fact is the boy knows more than I do, but he is kind enough never to rub it in."

PUBLISHERS' PARAGRAPHS.

The Dietz Search-light.



sheds is strong and clear, very effectually taking the place of electric light. A definite position should be assigned it

on shelf or wall where it will best command each apartment where work is frequently done at night. It will serve a hundred most valuable purposes, as grooming and harnessing horses, cleaning stables, hitching up and unhitching, milking, feeding, etc. It is also a most valuable, inexpensive light to install in a hall or on the front porch to command the approach to the house. It will be noted that it is fitted for hanging or setting on shelf. It is also conveniently carried from place to place, so that the same light may do duty in the yard and in each of several chosen stations inside. It is one of a long line of lanterns and lamps manufactured by the Dietz Company who advertise in our columns. They will send free their illustrated lantern catalogue to anyone writing for it.

What a Squirrel Does.

There's a store window in Grand Rapids which draws the attention of passers-by all the day long. In it is a squirrel's cage, which, instead of having the customary revolving wire treadmill, has a mower wheel which is held clear of the ground and extends into the cage.

When Mr. Squirrel wishes to take a little exercise he jumps nimbly upon the wheel and sets it twirling at a merry pace. What surprises the spectator is the facility with which the large iron wheel revolves. One of them, marveling at the result accomplished with such little exertion, said to a neighbor: "How is it possible for that little animal to turn that big wheel?" "Dat's an easy one," piped out a street urchin. "Dat's a Deering Mower."

Business Opportunities for All.

Locations in Iowa, Illinois, Minnesota, and Missouri on the Chicago Great Western Railway; the very best agricul-

FARMERS WHO MAKE MONEY

Use modern machinery like

Deering
Light
Draft
Harvesters



"They save all the crop"

They aid materially to place farming on a profitable basis

BINDERS, HEADERS, HEADER-BINDERS, MOWERS, REAPERS, CORN BINDERS, CORN SHOCKERS, HUSKERS and SHREDDERS, RAKES, KNIFE GRINDERS, BINDER TWINE, and OIL

Deering Division
International Harvester Co. of
America, Chicago

tural section of the United States where farmers are prosperous and business men successful. We have a demand for competent men with the necessary capital for all branches of business. Some special opportunities for creamerymen and millers. Good locations for general merchandise, hardware, harness, hotels, banks, and stock-buyers. Correspondence solicited. Write for maps and sample leaflets. W. J. Reed, Industrial Agent, 604 Endicott Building, St. Paul, Minn.

To Whom It May Concern.

And especially those who contemplate having public auctions, stock or farm sales, I take pleasure in recommending Mr. J. M. Sare as a first-class salesman, having this day conducted my horse and mule sale, which was the most successful of all my eight annual sales which I have had. Mr. Sare treats his bidders and all persons present with both courtesy and respect. He is faithful and a very hard worker, and can come as near getting every cent out of property as any salesman I ever heard. My sale was a clean one throughout and satisfactory to me in every particular. I do heartily recommend Mr. Sare as a salesman and a gentleman who made many friends at my sale. WM. E. CORBETT.

Being clerk of the above sale I heartily endorse Mr. Corbett's statement as to Mr. Sare. BRADFORD MILLER.

Removed Large Splint—Cured Callous.

Moscow Mills, Mo., Feb. 4, 1903.
The Lawrence-Williams Co., Cleveland, Ohio:
I have very successfully used GOM-BAULT'S CAUSTIC BALSAM for various ailments. It removed a large splint from my mare "Birdie Sharp" with but two applications. I applied it with good results on another mare—"Flora M."—for a callous excrescence caused by a barb wire cut. I do not own anything with a splint, but my experience with your GOM-BAULT'S CAUSTIC BALSAM has been such that I am very sanguine in the belief that I could readily remove and cure even that. I ordered two bottles thinking I should have to use it as freely as other liniment. I have never opened but one bottle, and have part of that left.—GEO. M. TIFFANY.

PILES NO MONEY TILL CURED. 25 YEARS ESTABLISHED.
We send FREE and postpaid a 25 page treatise on Piles, Fistula and Diseases of the Rectum; also 100 page list of Diseases of Women. Of the thousands cured by our mild method—none paid a cent till cured—write their names on application.
DRS. THORNTON & MINOR, 1367 Oak St., Kansas City, Mo.

The New Quarters for Our Dairy Cows.

(Continued from page 332.)

building and equipment of the present structure which forms the subject for this sketch.

In 1899 \$3,000 was appropriated for the building of a dairy barn which would be worthy the name and for the purchase of additional cows. The

end. The rows of stalls, twenty-six to a side, face this alley, having a four-foot walk slightly sloping toward the gutter behind them. Sliding doors ten feet high give entrance from the outside, as shown in the cut. The west end has small doors at each corner for the entrance of cows to the stalls.

The stall, which was selected only

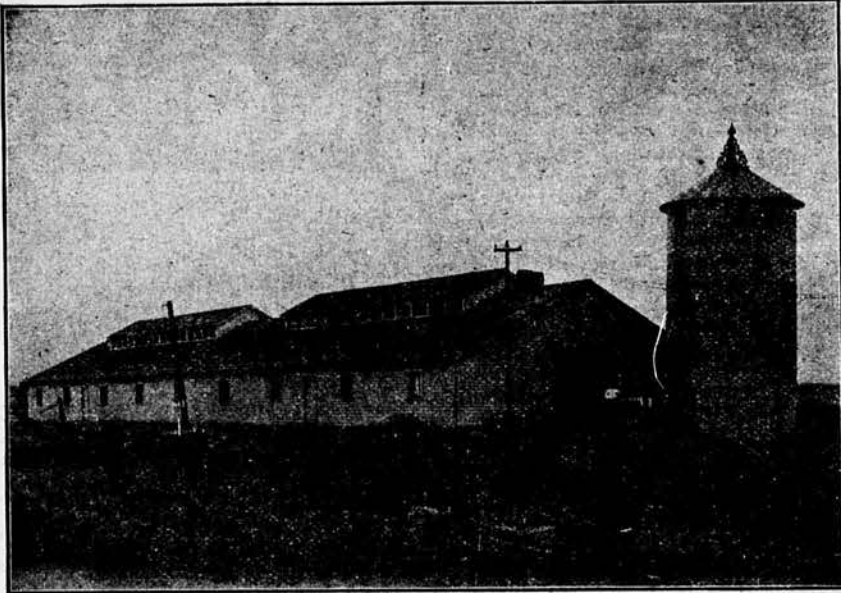


Plate 1.

building shown in Plate 1 was erected from this fund at a cost of about \$2,000. It is 175 feet long by 38 feet wide; the walls are double, and the whole interior is floored with concrete and cement laid crowning down the middle, the whole surface having a slight slope to the west, where the gutters lead to trapped drains. This newly

after much investigation and deliberation, is "The M. J. Drown Iron Cow Stall," manufactured by Garlius & Young, Madison, Wis. It combines greater possibilities for the comfort and absolute cleanliness of animal and product than any stall investigated. Two views of the stalls are shown in plates 2 and 3, the first giving the stall

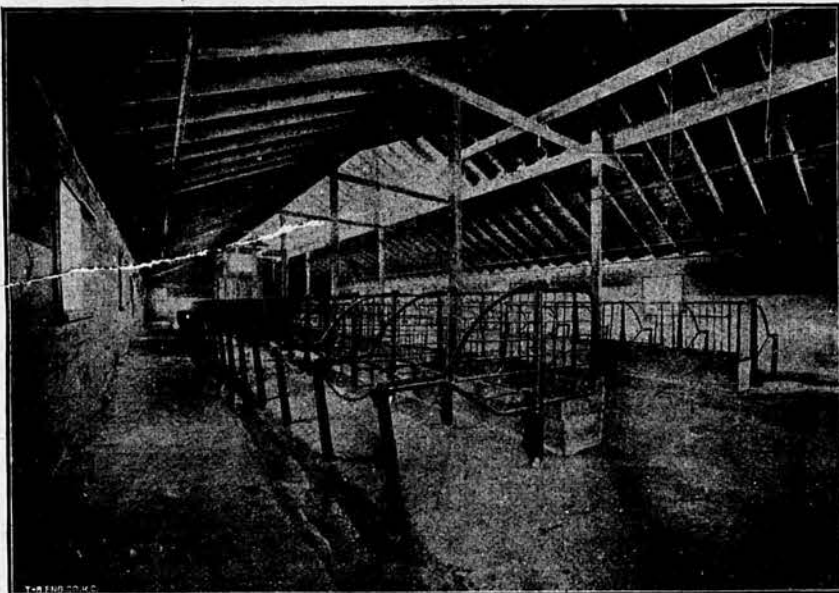


Plate 2.

completed structure, however, was not destined for immediate use as a dairy cow barn. The first year its only use was as a room for dairy industrial work; then came the fire, destroying the chemical building and the cow barn served as a makeshift chemical laboratory for two years.

In the fall of 1902, a fund was set

as occupied by the cow while the second shows the sides thrown up and the chains unhooked. The sides can be swung to the right when down and fastened in any position desired by dropping the chain into the slot at the rear end, thus giving the milker space and making it impossible for the cow at his back to crowd him. The stalls

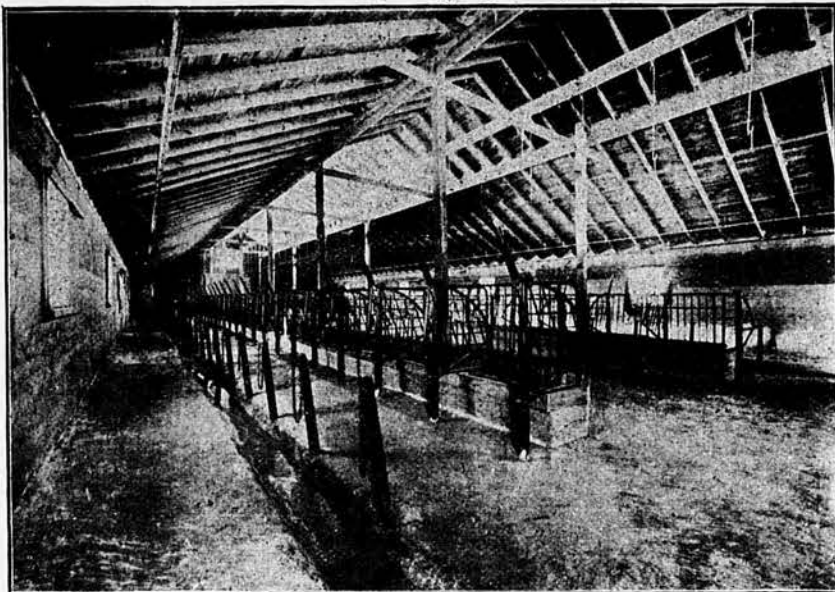


Plate 3.

aside for the equipment of the new barn, and early in January, 1903, the dairy cows, after first being subjected to a tuberculin test, were established in their new home. A feeding alley twelve feet wide, unobstructed by beams or braces extends from end to

in the barn are of two widths: three feet six inches and three feet three inches. Some small cows will turn around in the wider stalls. The front is formed by a swinging gate adjustable backward or forward according to the length of the cows. This gate

A Train Load of Separators!

Twenty car loads. Two thousand two hundred and fifty De Laval Hand Separators at a value of \$225,000.00, all sold during the first ten weeks of 1903. This is the record of The Continental Creamery Company of Kansas. Two hundred and twenty-five thousand dollars invested by Kansas dairymen in improved machinery.

Why do they buy the De Laval?

Simply because the dairy business has come to stay in Kansas and they want the separator which LASTS. The farmers buying these separators are selling their cream to The Continental Company. Why? Because they are better treated, are paid better prices, and have the advantage of seeing their cream weighed, sampled, and tested by a home man at a home station.

What are our Prices?

We pay three and one-half cents under New York market, NET, for butter-fat in Hand Separator cream delivered at our stations. In January we paid 24 cents, NET. In February we paid about 23 1-5 cents, NET. These prices were not beaten and our prices the year round cannot be beaten by any concern in the country. If you are not near one of our stations, twenty or more hand separator patrons in a given radius can get one. Write us or see our agents.

The Continental Creamery Co.,

Topeka, Kansas.

A CAR-LOAD IN TEN DAYS.

We know of no better evidence of the Empire machine than the fact that we sold a car-load in ten days in January to people who had seen them work.

200 NEW SHIPPERS IN 30 DAYS.

We know of no better answer as to what people think of our system than to tell you 200 new shippers commenced in January. All of these from localities where we had shippers and whose statements they had seen. Write us for any information, and commence doing business right.

Blue Valley Creamery Company St. Joseph, Mo

Pioneers of the Farm Separator System.

or front has a short chain at the bottom by which it is hooked to the rod clamped across the stall just above the edge of the manger. The sides are firmly held by being clamped into a deep slot in the rear post.

The mangers are made of wood, but are pointed up with cement around the floor, thus preventing food or other material from working into the cracks.

are brought together at the west end of the barn by curves and switches, and a section extends outside far enough to permit the manure to be dumped directly into a wagon or spreader.

A room for the use of the herdsman occupies the southeast corner. Two rooms are provided for the care of the milk, and one as a dressing-room for



Plate 4.

The handling of feed and manure is very easily accomplished by means of the track and carriers. The cuts show the arrangement of the track better than it can be described. Plate 4 gives a perfect view of the carrier used for feed. The three lines of track

the boys who milk and do other work about the barn. A hundred-gallon tank, connected with a heater, supplies the hot water for the milk rooms.

One room contains a "Star" milk-cooler, through which hot or cold wa-

(Continued on page 336.)

Internal Commerce of the United States.

The January Summary of Internal Commerce, issued by the Treasury Bureau of Statistics, throws some light on the question of whether the level of National prosperity shows any tendency to recede, when judged from the standpoint of traffic operations for the first month of three succeeding years.

The live-stock movement at the five most prominent markets of the West may be taken as an index of the conditions in that section of the country. For January, 1903, a total of 2,724,409 head of cattle, calves, hogs, and sheep was reported, in contrast with 2,947,631 head for January, 1902, and 2,789,209 head for January, 1901. A continuous increase has occurred in these three years in the case of the receipts of cattle, calves, and sheep, but a very marked falling off in the case of hogs. At Chicago, Kansas City, Omaha, St. Louis, and St. Joseph, the combined receipts of cattle in the first month of this year were 632,122 head, compared with 586,611 head in January, 1902, and 552,616 head in January, 1901. Receipts of calves were respectively 22,924 head, 17,500 head and 12,432 head, not including receipts at Omaha and St. Joseph. January receipts of sheep were, in 1903, 600,411; 1902, 529,000 head. Receipts of hogs in January, 1903, were 1,468,952 head. The much higher figures of 1,814,520 head for January, 1902, and 1,719,054 head for January, 1901, show how much of a decline has occurred in this feature of the live-stock trade. Nevertheless, the traffic receipts for January for three successive years beginning with 1901, have lost but little, the number of cars arriving being respectively 52,051 cars, 52,829 cars, and 52,609 cars.

The feeder movement, including stock driven to the country, for the corresponding period shows an opposite tendency, so far as Kansas City and St. Joseph are concerned. The combined feeder movement of these two markets in January, 1903, included 66,466 head, compared with 50,181 head in January, 1902, and 65,196 head in 1901.

A comparison of the wheat receipts at eight winter-wheat and spring-wheat markets for three seasons to the end of January shows that this year the receipts were considerably in excess of either of the two preceding seasons, the total being 189,661,368 bushels, compared with 174,483,763 bushels to the end of January, 1902, and 153,014,293 bushels to the end of January, 1901. Trunk-line shipments of grain of all kinds from Chicago for the first five weeks of 1903 amounted to 13,387,000 bushels, compared with 11,673,000 bushels in 1902, and 12,194,000 bushels in 1901. The provision shipments from Chicago are this year notably in excess of the two preceding years. For the first five weeks of 1903 there were shipped 133,935 tons, compared with 127,948 tons for the corresponding period of 1902, and 104,848 tons for the same weeks of 1901. The export flour movement from Minneapolis for five weeks ending with January amounted to 417,000 barrels, compared with 223,175 barrels for the corresponding period in 1902, and 317,305 barrels in 1901. The total shipments from this point, however, have not been quite equal to those of the corresponding period in 1902, though largely in excess of those of 1901.

Traffic on the Great Lakes during January of this year has been somewhat lighter than for either of the two preceding years. Winter lake movements of freights are chiefly trans-lake in their character, and belong principally to Lake Michigan. The total receipts reported from all transactions in January were 179,019 net tons, compared with 193,017 tons in January, 1902, and 200,450 tons in January, 1901. A feature of special interest in the lake trade is the increased quantity of shipments of grain from Canadian ports. During 1902 a grand total of 36,179,441 bushels of grain were shipped from Fort William and Port Arthur, Ontario, compared with 15,475,813 bushels in 1901. Out of a total of 35,525,798 bushels of wheat, 22,051,144 bushels were consigned to Canadian ports, and 13,474,654 bushels to United States ports.

Reports from 168 fueling and steamship companies show a total of 2,639,252 net tons of coal put on board vessels for their own steaming purposes during 1902, all except 488 tons of which were soft coal. The quantity reported for the year 1901 was 1,765,864 net tons. Coal shipments combined with fuel consumption by vessels amounted to 10,855,971 tons in 1902, in comparison with 11,052,418 tons in 1901. If to these totals be added the



A Hospital Case

There was a hurry call for the ambulance of the City Hospital. In the course of a few moments a very sick woman was brought in on a stretcher — she was pale as death and evidently suffering keen agony. There was a hasty examination and consultation, and in less than a quarter of an hour the poor creature was on the operating table to undergo an operation for ovaritis.

The above is an accurate account of an incident which occurred in New York recently; the young woman in question had warnings enough of her dangerous condition in the terrible pains and burning sensation low down in her left side. She had no one to advise her, and she suffered torture until it was too late for anything to save her life.

Women should remember that if they do not care to tell a doctor their troubles, they should be willing to tell them to a woman, who stands ever ready to advise and help them. Again we state that Mrs. Pinkham's advice is freely and confidentially given to every one who asks for it. Address, Lynn, Mass.

The following letters prove beyond question that Lydia E. Pinkham's Vegetable Compound has the power to cure, and does cure thousands of cases of inflammation of the ovaries, womb, and all other derangements of the female organism.

MRS. OTTOSON SAVED FROM A SURGICAL OPERATION.

"DEAR MRS. PINKHAM: — I cannot thank you enough for what your Vegetable Compound has done for me. If it had not been for your medicine, I think I would have died.

"I will tell you how I suffered. I could hardly walk, was unable to sleep or eat. Menstruation was irregular. At last I had to stay in my bed, and flowed so badly that they sent for a doctor, who said I had inflammation of the ovaries, and must go through an operation, as no medicine could help me, but I could not do that.

"I received a little book of yours, and after reading it I concluded to try Lydia E. Pinkham's Vegetable Compound, and I am now a well woman. I shall praise your medicine as long as I live, and also recommend the same to any one suffering as I was." — MRS. MINNIE OTTOSON, Otho, Iowa. (June 9, 1901.)

Follow the record of this medicine, and remember that these thousands of cures of women whose letters are constantly printed in this paper were not brought about by "something else," but by Lydia E. Pinkham's Vegetable Compound, the great Woman's Remedy for Woman's Ills.

Those women who refuse to accept anything else are rewarded a hundred thousand times, for they get what they want — a cure. Moral

— Stick to the medicine that you know is Best. Write to Mrs. Pinkham for advice.

INFLAMMATION OF THE OVARIES CURED WITHOUT THE KNIFE.

"DEAR MRS. PINKHAM: — I wish to express my gratitude for the restored health and happiness Lydia E. Pinkham's Vegetable Compound has brought into my life.

"I had suffered for three years with terrible pains at the time of menstruation, and did not know what the trouble was until the doctor pronounced it inflammation of the ovaries, and proposed an operation.

"I felt so weak and sick that I felt sure I could not survive the ordeal, and so I told him that I would not undergo it. The following week I read an advertisement in the paper of your Vegetable Compound in such an emergency, and so I decided to try it. Great was my joy to find that I actually improved after taking two bottles, so I kept taking it for ten weeks, and at the end of that time I was cured. I had gained eighteen pounds and was in excellent health, and am now.

"You surely deserve great success, and you have my very best wishes." — MISS ALICE BAILEY, 50 North Boulevard, Atlanta, Ga., Treasurer St. Francis Benevolent Association.

\$5000.00 FORFEIT if we cannot forthwith produce the original letters and signatures of above testimonials, which will prove their absolute genuineness. Lydia E. Pinkham Medicine Co., Lynn, Mass.

quantity exported through lake ports (which was 4,648,569 tons in 1902 and 4,815,605 tons in 1901), the grand total of the coal trade on the lakes would be 15,504,540 tons for 1902, and 15,868,023 tons for 1901.

Receipts of grain and flour at the Atlantic seaboard for the first month of 1903 are, as a rule, much in advance of those of January, 1902. For the four ports of Boston, New York, Philadelphia and Baltimore. January arrivals from the interior were 22,217,827 bushels, including flour reduced to bushels, compared with 18,432,409 bushels in January, 1902, making a gain of 3,785,418 bushels or 17 per cent.

Coastwise commerce at the Atlantic and Gulf ports for twelve months ending with December, 1902, shows that the four ports of New York, Philadelphia and Newport News shipped 16,210,318 tons of coal to coastwise destinations. Of this quantity, 10,224,834 tons were reported from New York; 2,771,230 tons from Philadelphia; 1,923,671 tons from Baltimore, and 1,290,583 tons from Newport News. These figures comprise about 75 per cent of the coal handled in coastwise traffic. Coal receipts at Boston for January, 1903, amounted to 594,328 tons, of which 252,858 tons were foreign coal by sea, and 341,470 tons domestic coal,

nearly all by water. In January, 1902, the grand total of receipts was 370,568 tons, of which only 51,302 tons were foreign by sea, and 319,262 tons domestic coal.

In the Southern States, a total of 8,256,063 bales of cotton are reported as constituting the available supply up to January 31 of this year. Of this amount, 8,040,989 bales were receipts in sight for the season, of which latter figure 5,921,685 bales were received at ports; 736,256 bales entered into the net overland shipments, and 1,008,000 bales were taken by Southern mills. Receipts of grain, including flour, at New Orleans for the 12 months ending

with December, 1902, were 25,044,926 bushels, compared with 4,012,731 bushels in 1901.

Citrus fruit shipments from California to January for the first 13 weeks of the season beginning with November 1, give 4,442 cars as having entered into this traffic to January 28, 1903, 4,822 cars to January, 1902, and 5,123 cars in 1901.

On the Monongahela river, the movement of freight passing lock No. 3, down stream, and lock No. 1, upstream, gives a total of 921,793 net tons in January, 1903, as against 709,771 net tons in 1902. At Louisville, Ky., a grand total traffic of 89,282 tons passed the river in January, 1903, and 130,783 tons in January, 1902.

Coal and coke traffic for representative railroads is reported as follows: On the Pennsylvania lines east of Pittsburgh and Erie, for January, 1903, 3,336,400 net tons, compared with 3,298,450 tons for January, last year and 3,171,771 tons for January, 1901. Over the Chesapeake & Ohio Railroad, 4,281,463 tons of coal and coke were carried in the year 1902, compared with 5,723,821 tons in 1901. The Baltimore & Ohio Railroad carried 21,322,716 tons in 1902, of which 16,936,391 tons were bituminous; 3,805,111 tons coke, and the balance anthracite coal.

Shipments of petroleum from the Beaumont field in January amounted to 6,540 cars containing 1,111,863 barrels. Since shipments began in 1901, to the end of January, 1903, a total of 83,461 cars have been shipped, containing 12,895,627 barrels of 42 gallons each.

Horticulture.

Getting Ready for the Great World's Fair.

L. A. GOODMAN, SECRETARY MISSOURI STATE HORTICULTURAL SOCIETY.

Definite directions of where to send and when to send will undoubtedly be sent out later, but at this time, the Missouri State Horticultural Society have thought best to prepare a series of instructions to our fruit-growers, helping them and advising them what to do in order to secure the best results in obtaining show fruits for our State exhibit at St. Louis.

No appointment has yet been made as to who shall be in charge of this work, but it seemed to be the province of the State society to take the matter in hand and have things in readiness. If we can prepare our plants, vines, and trees so as to give us the wonderful results we so much desire and at the same time secure some good practical facts and successful experiments which will be of lasting benefit to our fruit-growers, we will, in addition to getting some grand specimen fruits, give the State some mode of treatment that would be worth many times more to our State than all the money we have to spend for the display.

1. It should be the plan this coming summer to produce and secure during 1903 as large a collection of varieties of the highest possible type and largest size and put them up in glass jars to use as occasion demands.

2. All fruits that can possibly be held in cold storage should be collected and placed there for use as needed.

3. A large variety show should be made so as to give the exhibit an educational feature.

4. A commercial exhibit should be kept prominent, as every exhibit for commercial fruit-growing gives us the name, the honor, and the money.

5. Exhibits should be made by counties or districts or local organizations or county societies, so that each county may get credit for all its display. Appeal is made to our county pride for the success of our county exhibit.

6. Every man who contributes to the display should have due credit for himself, and to his county, for all his work.

7. The State should pay the expense of collecting, gathering, packing, wrapping, express, processing in glass jars and cold storage on all these fruits, and yet each individual and each county get credit for all fruit furnished. Every shipment should be plainly marked with the name of county, name of grower, postoffice, kind of fruit, variety and date of shipment.

8. A small but characteristic display should be kept up at all times in the State Building as well as the large and complete display in the Horticultural Building.

9. Every county or district should be represented, so that all parts of the State may have the honors, and not a few localities only.

10. There should be 1,000 barrels of apples, 100 barrels of pears, quinces,

and a number of bushels of native nuts of all kinds, put into cold storage in the fall of 1903.

11. As fast as fruits ripen during the year 1904 there should be the most complete exhibit made that it is possible to secure while the fruits are ripening and in their prime. And every kind and variety of fruits and nuts, both tame and wild, which grows in Missouri, should be on the tables during the year while each particular fruit is in its season.

12. There should be enough fruit secured so that we could give to those people who are interested, some specimens for testing, or to take to their homes as a good advertisement for the State. Acting as host, the State will often be called upon to do the honor of the occasion by the giving of an apple to the visitor.

IN GENERAL.

In order to secure the best results, therefore, we must begin the preparation this spring and continue this care and preparation not only this year, but this year and next also. Like the stockman in the preparation of his cattle for show, it often takes not only one year but two years and three years if he secures his ideal. Just so must the fruit-grower begin his preparation now and continue his care for the whole of the two years. Ofttimes results do not always show the first year but will show the second year in increased size, color, and quality of fruit, and this is the ideal we shall try and secure above all things.

We shall then appeal to you in the name of our State, for the honor of the State society, for the glory of your own county, for the reward to yourself individually, that you do your very best this year and next to grow and select the highest type of specimens that it is in your power to secure with all the knowledge you have and with the assistance and the advice and instruction given you by the society.

We appeal to you, for your own benefit and instruction, for the grand return it will give you individually, for the increased knowledge it will give you personally, for the good opportunity it will open to you for experiment, for the new insight it presents for the study of plant growth and plant-feeding, and for the securing of new facts in fruit-growing that may be of untold value to you in your work and to our State in its development.

If, in making this display, we shall discover some facts that will help to make horticulture a success, what a reward that will be.

Putting aside a few vigorous, healthy, prolific, individual trees, or vines, or plants, which shall receive the proper care, and cultivation, pruning, girdling, thinning, spraying, covering, sheltering, protecting, fertilizing, gathering, handling, packing, and shipping, you will secure a great, the greatest, lesson you have ever received, and the State the greatest show ever made by any people in the world.

A blank should be furnished so that a record can be kept of the steps taken in the production of the specimens sent for display, and then these experiments will be immensely valuable to us all.

Strawberries should be planted this spring in good land thoroughly subsoiled, the best of care and cultivation given during the summer (water if needed), all runners kept off so as to secure good strong crowns. The next year at blossoming time all stalks cut off, except two, or three, or four, and the berries on these thinned to three, or four, or five berries. The plants should be fertilized after blooming time with three pounds of muriate of potash and one pound of nitrate of soda per square rod, put on the ground not too close to the plant and hoed in, and you may be sure you will have some berries that will astonish even yourself. Mulch plants well and then you can water them if necessary.

For putting up in jars this next summer, we want the thinning of the plants in the row to one foot apart, and then thinning the stalks and berries the same as above. Fertilize the same as above also. Leave stem on each berry.

When packing to ship this year, wrap each berry, or cluster of berries, in two thicknesses of paraffine paper, each thickness separately, and pack in the usual berry box and crate, sending at once to the place appointed for processing them and putting into jars.

The Raspberry, Blackberry, and Dewberry will need careful thinning out and short pruning of the bearing canes, and then, after the fruit is well set, take off one-half to two-thirds of the berries, and keep down the young sprouts and canes so that the strength will go to the berries. Fertilize with

four pounds of muriate of potash and two pounds of nitrate of soda per square rod.

For next year's fruiting, grow the canes for this especial purpose, retaining about one-fourth as many canes as usual and then treat the same as above; picking, handling, wrapping, and packing the same as for the strawberry. Fine clusters and branches where they can be retained should be shipped as clusters after wrapping.

Twisting the canes often causes them to produce larger fruit, and water is often used with 1 pound muriate of potash and ½ pound nitrate of soda to 20 gallons of water to help increase the size especially if the weather is dry. Mulching is necessary and watering can then be done safely.

Large paper bags put over the clusters of fruit, will cause them to ripen evenly and color up beautifully as well as keep much better after gathering.

The Current and Gooseberry will need the same care as the other small fruits, the bushes well thinned out and the berries or bunches reduced to half the crop or even less. Clusters of them when ripe will be wanted both for jar exhibit in 1903, and for the fresh exhibit in 1904. Fertilize with ¼ to ½ pound muriate of potash and ¼ to ½ pound nitrate of soda per bush and keep them well mulched with old straw or hay.

The Grape will need special care in pruning for the crop this year and special preparation of the canes for the crop of 1904, when the grapes are to be shown fresh on the tables. Use the best canes for crop this year but not so many nor so long as usual. After the grapes are well set, tie a wire tightly around the canes below the bunches and then thin out the bunches so as to secure the largest size of bunch and berry. The very best of cultivation should be given to the vines during the whole summer and the use of fertilizer, ½ to ½ pound of muriate of potash and ¼ to ¼ pound of nitrate of soda per vine. Summer pruning should be closely followed, care being taken to leave enough leaf surface to shade the fruit well. Put 2-pound or 3-pound paper bags on all specimen bunches before June 1 each year.

The Apple, Pear, and Quince will require about the same treatment, and these rules are to be followed with some modification, perhaps, for different soils and locations. Select a healthy tree or two of each variety, which would seem to justify the experiment, because of its favorable location, or congenial soil, or peculiar surroundings, or its previous good crops; trees which have given the largest size, richest color, and best quantity of fruits, and use these individual trees for this work.

Plow shallow or dig about such trees as far as the branches reach, early this spring; cultivate and hoe about them once every two weeks during the whole spring, and summer, or mulch the trees heavily, if you prefer, as far as branches extend after fertilizer is applied. Fertilize these trees about April 1: 7 to 10 years, with 1 pound of muriate of potash and ½ pound nitrate of soda; 10 to 15 years, with 2 pounds muriate of potash and 1 pound

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nitrate of soda; 15 to 20 years, with 4 pounds of muriate of potash and 2 pounds nitrate of soda.

Before the buds start spray these trees thoroughly, if possible, with 1 pound of blue vitriol to 10 gallons of water; or, dust them twice with 20 pounds of airslaked lime and 1 pound of sulfur when the trees are wet with rain, so that the trees and ground are white with the lime. As soon as the blossoms fall, spray with Bordeaux and Paris green or dust with 20 pounds lime, 1 pound Paris green, 1 pound sulfur. Repeat this every two weeks until they ripen.

As soon as fruits are well set and the surplus dropped off, about June 1, girdle the trees or branches by taking a ring of bark off entirely around the tree, from 1 to 4 inches, depending upon the size of the branch or tree. This girdling will not injure the trees, but only check their growth. Then at once thin out the fruits so they will not be closer than ten inches. Another thinning may be advisable later if we wish to secure abnormal specimens. Put some of these single specimens in paper bags, fastening with a pin and cutting the corners off of the bags so they will hold no water; or cover some of the branches with mosquito netting. If fruits become very large, then place a sling under them to hold them on the trees; make it of cloth, fastened at the corners with cords and tied to the branch above the specimen. Where a bunch of fruit is very choice and the cluster is a notable one, then save the bunch or cluster and send them to the places appointed, well wrapped and packed in cotton.

If the orchard has been in clover, and is now in clover, then use the fertilizer and the girdling and thinning



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and other helps, especially if the trees have been giving good crops of fruit, and make a notation of which gives the best results. These fruits should be gathered when well colored and ripe, not soft, wrapped at once in two thicknesses of tissue paper and one of paraffine paper, and at once sent to the places designated, with the variety, your name and county marked plainly on the package.

The Peach, Plum, Cherry, Apricot, and Nectarine need much the same treatment as outlined for the apple, in care, cultivation, pruning, thinning, girdling, picking, and packing. The peaches should be thinned to 8 inches, except where clusters are wanted, and then thinned to 3 inches. The plums need selecting and thinning to 4 inches, except for clusters, and in that case to 2 inches. Cherries need clusters taken off so as to make the other clusters much larger; and specimens, except clusters, need to have not more than three to five in a cluster. All these fruits need to be well wrapped the same as apples and then packed in berry boxes, peach baskets and crates or one-third bushel boxes. All clusters packed in cotton after wrapping. Cherries and plums should have their stems.

Fertilize the peach, plum, and cherry: trees from 3 to 4 years, 1 pound muriate of potash and 1/2 pound nitrate of soda; 5 to 7 years, 2 pounds muriate of potash and 1 pound nitrate of soda; 7 to 10 years, 3 pounds muriate of potash and 1 1/2 pounds nitrate of soda. Fertilizer for all the above fruits will depend upon the vigor of the trees or plants. If very vigorous, then leave off the nitrate of soda.

EXTRA EFFORT FOR DISPLAY.

1. During the summer train some extra strawberry plants in pots for pot exhibit.

2. Raspberry, Blackberry, Currants, Gooseberry, and Grape can be grown through the bottom of pots and caused to root well enough so that the next year when wanted the vines can be cut off after the fruits ripen and the bushes will be beautiful pot plants loaded with fruits for show in 1904.

3. The Apple, Pear, Peach, Plum, Cherry, and Quince, even, can be taken, and a fine fruiting branch put through the bottom of a large pot and filled with soil and kept moist with moss about the pot so that the branch will be well rooted in the pot by fall, if the branch is cut or lipped in the proper way so that it will root. After the fruits ripen the branches can be cut off and this will give beautiful little trees that will be a curiosity and an attraction when filled with fruit and placed on the tables.

4. Such apples as Ewalt, Gloria Mundi, Wolf River, Culp Mammoth, Twenty Ounce, Pewaukee, Tulpahacking, Pumpkin Sweet, can be brought to extraordinary size, as also some of the larger varieties of pears and peaches by extra care and attention to the details under apples.

RULES FOR THE SELECTION OF FRUITS FOR EXHIBITION.

Apples and Pears should be in their natural state, picked when ripe, not soft, handled very carefully so as not to bruise or injure in any way, the fruit wrapped in two thicknesses of tissue paper and then in paraffine paper and at once packed for shipment closely and tightly so that they will not move in the package nor settle so as to bruise in shipment. These fruits should be perfect, not specked, bruised, eroded, nor wormy; should have all its parts—stem, calyx, segments—clean and well preserved, not wilted nor shriveled. The size should be large or very large. The form should be regular, except for abnormal specimens. The color and markings should be characteristic.

Peaches, Plums, Cherries. Size large, regular form, ripe but firm, well colored, perfect condition, with all the characteristic markings, well handled, no bruises, wrapped as above and packed in small packages firmly so that no movement can take place.

Grapes, Currants, Gooseberries. Good large bunches, fine, plump, large berry, well-colored, good bloom on the berry, perfect condition, carefully gathered, more carefully wrapped as above, not injuring the bloom or berry, bunches packed in cotton and in single layers, in small packages, well covered with cotton so not to bruise, boxes marked "this side up."

Strawberries, Raspberries, Blackberries. Size of berry or bunch of first importance, perfect form, well-marked and good color, solid and firm in berry, but ripe so as to get proper color, stem and calyx adherent, wrapped as above

(Continued on page 334)

GRAPE VINES

the best vines of any locality in the U. S. An Immense Stock.

BRIGHTON, large red, rich, sweet, best
CAMPBELL EARLY, early black
CATAWBA, large red; late, very good
CONCORD, well known "Old Stand-by"
DELAWARE, a most excellent red
DIAMOND, finest white; very early
IVES, black; fair quality, hardy, healthy
MOORE EARLY, large black; very early
NIAGARA, famous large white; good
WORDEN, richest, FINEST black, early
CURRENT, Fay, needs best of care
LONDON MARKET, best
GOOSEBERRY, Houghton, Old Reliable
Downing, large, good
Josselyn (Red Jacket) best new sort

A general assortment of Fruit Trees, including 250,000 Japan Plum and 1,000,000 Peach; Raspb'y, Blackb'y, Mulberry, 3 best varieties; Chestnut, Weir's Maple; Root Grafts and an extra fine stock of **Apple Seedlings**. Send for Colored Plate and Descriptive Circular of **STARK-STAR**, best of all late grapes. We Pay Freight on \$12 orders, box and pack free.
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Don't depend on your neighbor any longer but get Fresh and Reliable seeds of the
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We sell everything in the line of SEEDS. Seeds for the Garden, for the Field, the Farm, and the Flower Garden. Headquarters for ALFALFA—very scarce this year, too—Cane, Millet, Kafir-corn, Seed Potatoes, Onion Sets, and Gardening Tools. The Wonderful MACABONI WHEAT, the RUSSIAN SPELTZ, and the Hardest known forage plant HUNGARIAN BROME GRASS. Send at once for their Elegant New Catalogue telling all about everything in SEEDS.

Kansas Seed House. F. Barteldes & Co., Lawrence, Kans

The Poultry Yard.

Best Method of Starting a Market Poultry Plant.

D. W. INGERSOLL, IN AMERICAN POULTRY JOURNAL.

In starting a market poultry business, the first and most important step is its location with reference to your market. Proximity to a large city is well-nigh essential, as it simplifies the delivery of your products to your customers, saves time and transportation charges and tends to eliminate the middleman, which is a most important consideration.

Let us say that you have decided to locate within a few miles of the market you wish to develop or utilize. Then comes the choice of location, and here soil and water are to be carefully considered. Avoid a stiff clayey soil or one that has a large proportion of humus with little natural drainage, for they both predicate disease. The ideal soil for poultry culture is a loose, friable loam with sand or gravel subsoil and a moderate slope, preferably to the south, though that is not essential. A reliable supply of good water is necessary. By all means buy your land and pay cash for it, the interest on a mortgage is worth more to you than to any one else. Our improvements will be expensive, probably, and buildings designed for chickens can seldom be used for other purposes. If you rent property, your buildings will be a considerable loss if you should give up the business, while a well-built poultry plant suitably located is always in demand, for rent or purchase.

If you are working for your home, the various improvements and embellishments of fruit-trees and shrubbery undertaken for your own satisfaction add a very comfortable aggregate to the value of your place in case you sell or rent. Now that you have your site, let us consider the buildings essential from a poultry standpoint, and here the questions of what you have to spend for buildings, stock, and maintenance until your plant is, productive must be carefully considered. For the sake of argument let us say that you have \$3,000 to invest, and \$1,000 has been used to purchase ten acres of land with a cottage, barn and well, and possibly other buildings that can be utilized for chickens.

Let us set aside \$800 to be expended as follows: Build five modern scratching-shed houses, each one comprising two roosting-rooms and a scratching-shed at each end, length over all 48 feet, width 12 feet, back wall 5 feet to plate and front wall 6 feet 6 inches to plate, thus giving 6 feet head room above floor joist, foundation 5 inches, cedar posts charred and set 2½ feet in earth 6 feet apart, sills 4 by 6 inches on edge, joists 2 by 6, studs, plate, and rafters 2 by 4, 3 feet to centers, one 3 by 4 sash in each room, divided thus, house to be 12 feet wide outside measurement, roosting-rooms to be 9 feet 6 inches by 11 feet inside, sheds each 14 by 12 inside. Roosting-rooms to be double walled, floored and ceiled with building paper each side of studding or joist, built of drop siding outside and ceiled with flooring or other matched stuff inside. Roof of 3-ply roofing paper tarred. If a carpenter is dispensed with, these houses can be built with runs attached of 5-foot mesh netting, with 1 foot baseboard each 24 by 100 feet in size for \$110, each fitted with nest boxes, dropping platforms, and feed-troughs, and will accommodate with ample room 24 females and 3 males in each side, or 240 layers. If desired for market egg production alone, they will safely accommodate 30 females of the American or 35 of the Mediterranean breeds. You have thus expended \$550, leaving \$250 to build a brooder house and colony house. Build your brooder house 30 feet long and 10 feet wide, lying east and west, south wall 4 feet 6 inches high, north 6 feet 6 inches, thus pitching shed roof to the south, have it on 5-inch charred cedar posts 2½ feet in the earth and have an alleyway on north side of building 3 feet wide.

Build the walls, floor, and ceiling double as in previous construction. Set seven 3-by-4-foot sash in the south wall, divide the brooder into 7 sections, 4 of them 3 feet wide and 2 feet retained at end to give room for lamps under boiler of sectional heater, and the other 3 sections 5 feet wide; all sections will be 6 feet deep. Purchase or build a 12-foot sectional hot-water brooder, and 3 individual brooders; these, however, are not charged against construction account. This house properly, will cost without carpenters' wages \$130, including fences,

which should be built as follows: Take a 16-foot board, 12 inches wide and 1 inch thick and by nailing a 3-foot upright at each end and in the middle, you can attach 1-inch mesh netting 2 feet wide to it, giving you a fence 3 feet high, which is ample to confine the chicks as long as necessary. A hook and staple, one at each end, completes these sections, which can be quickly placed as desired and hooked together or as quickly unhooked and removed.

They will be found very useful in confining for a few days the outdoor brooders, and the various lots of chicks when being moved to new quarters. With the \$120 remaining of your building fund construct ten-colony houses as follows: Take two 8 feet 2 by 4's and after rounding up the bottom corner at each end, so they will serve as runners, set on edge, lay a floor of matched stuff 3 feet wide and 8 feet long on them, set 2 by 4 corner studs, 3 feet high in rear, 4 feet in front and build walls and ends up on them, put a single 2 by 4 rafter in the center to hold the walls together as well as to support the roof. Put on the roof and paper and tar the paper. Cut a door 3 feet by 3 feet 6 inches in the front, first attaching cleats or strips inside to hold walls firmly. Cut a 11 by 13-inch hole at each end, close under roof, and put on cleats to take a 12 by 14 light of glass, put two roosts 2½ inches wide and 8 feet long in the house 10 inches from the floor.

These houses can be built very quickly and easily at a cost of \$8 each and are surprisingly warm in cold weather. They will safely accommodate 50 pullets until they are ready to lay, and a horse can easily drag them to a new location. With the \$40 remaining, build a yard 200 feet square of 5 feet stock-fencing to avoid expense of bottom boards. Run a fence through the center and again divide one of these halves, giving you one yard 100 by 200 and two yards 100 by 100. This fairly completes your equipment of yards and buildings. I have assumed that you would find some suitable place about your cottage or barn to run two 360-egg incubators and one good small 120-egg auxiliary and have charged off \$300 to provide equipment. If not, an incubator house can be built at a cost of \$50 or the machines may be run in your brooder house. Now buy your three incubators, your 12-foot hot water brooder, three indoor brooders and six outdoor brooders at a total cost of \$160, and be sure they are practical machines.

Most makes of machines will give reasonably good results, with adequate attention, but lots of brooders are sad disappointments. Buy atmospheric, easily cleaned and disinfected, drinking fountains small and large, a bone mill and a supply of grit and oyster shells. Now if you had the chickens the farm would be complete, and right here is the most vital spot in the equipment. Not one beginner in ten is willing to pay for first class stock. I do not advocate the purchase of 200 head of expensive stock, and few breeders could supply such a quantity, but now is the time to buy the sort of stock, that will allow you eventually to supplant all the cheap stock. When you buy 200 head of \$1 stock from a prominent breeder, you will get your good birds much cheaper by adding \$50 or \$75 to your order and asking for a male and six females that are worth the money. I have allowed \$300 for the purchase of stock, preferably in the fall of the year, and with the \$25 or \$50 balance, you can purchase enough scrub stock to fill up your yards to their capacity at from 25c to 50c a head from nearby farmers, but this is only a temporary arrangement until you can produce stock to take their places.

You have now expended your \$300 chargeable to stock account, but your equipment account still shows \$100, or if the construction of an incubator house has been necessary \$50 remains, and you have also \$600 to buy food, supplies, etc., until your farm is productive. Now your stock has arrived and you divide them among your different pens and keep them confined for a day or two to the roosting and scratching sheds, which last have a front of 2-inch mesh and burlap curtain, which rolls up in good weather, watch closely for any signs of disease and be sure the fowls have enough fresh air at night, but no draft upon them. Feed lightly for a day or two on whole clean grain and keep your grit and shell boxes supplied. All grain should be fed in some sort of litter, twelve inches or more deep, but preferably straw that covers the earth floor of your scratching sheds.

Keep the fountains in the roosting rooms on a shelf eight inches above the floor so that no litter will be scratched



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No gearing; no friction. Thousands in use. Four-burr mill grinds 60 to 80 bushels per hour; two-burr mill grinds 30 to 50 bushels per hour. We make a full line of FFFD MTL 1 & 2 burr sold, including the famous Iowa Grinders No. 2 for \$12.50. Send for free Catalogue. Manufactured and sold by the IOWA GRINDER AND STEAMER WORKS Waterloo, Iowa.

into them. After a day or two have elapsed, and the fowls are beginning to feel at home, begin a regular course of feeding for egg production. Whole grain in litter for breakfast, green food, cut green bone, or vegetables either at noon in the feed troughs or mixed into the mash at night and fed in troughs. Watch closely to avoid overfeeding, but at the same time feed enough, so that they have a surplus to convert into eggs. Vary the grains as much as possible and also the mash. A weekly bill of fare is an excellent guide to keep up a variety. Cabbages or split cow beets hung just out of reach, so the fowls must jump, are excellent exercise inducers. Tame your stock as

POULTRY BREEDERS' DIRECTORY

EGGS FOR SALE, from my pure-bred Black Langshans, \$2.00 for 15. F. H. Snow, Lawrence, Kans.

WHITE WYANDOTTE EGGS—13 for \$1.00. E. Viola Harmon, Liberal, Mo.

JAMES BOTTOM, breeder of Black Langshans, Eggs \$1.00 per setting. Onaga, Kans.

PEN OF SELECTED WINTER LAYERS—R. C. Brown Leghorns exclusively. Eggs \$1.25 per setting of 15. H. M. Johnson, Formosa, Jewell Co., Kans.

FOR SALE—Light Brahma cockerels, \$1.00 each, four for \$3.00. Wanted—White Holland turkeys. Nellie E. Stallard, Sedan, Kans.

FOR SALE—Fine Single Comb White Leghorn cockerels, pure bred, at 75c and \$1.00 each. Mrs. Albert Ray, Delavan, Kans.

BLACK MINORCA—World's greatest laying strain, beautiful in shape, color and comb; grand winter layers. Eggs \$1.50 per 15. Address George Kern, 817 Osage St., Leavenworth, Kans. Circular free.

FOR SALE—Light Brahma chickens: the first in the land; I won three first premiums one second and two third, against the best competition. I offer 10 high-scoring cockerels at \$1 each ship subject to examination at express office; if not as represented, ship back at my expense and money will be refunded. Others not so high scoring, for \$1.25 and \$3 but not on shipping guarantee. Eggs from prize winning pens \$2 for 15, from second pen \$1 for 15 or \$1.50 for 30. Correspondence solicited. Mrs. J. R. Kenworthy, Cottage Home Poultry Yards, 1102 Waco Ave., Wichita, Kans.

EGGS FOR HATCHING—From my "Superior Strain" of Banded Plymouth Rocks, noted for size and quality. Fourteen years careful exclusive breeding. 15 eggs \$1. 30 eggs \$1.50. E. J. Evans, Box 21, Fort Scott, Kans.

HIGH-CLASS POULTRY—Silver Wyandottes, White Wyandottes, and White Plymouth Rocks. Eggs for hatching, 13 for \$1. R. F. Meek, Hutchinson, Kans.

WHITE Plymouth Rock eggs for hatching, from prize-winners. Second prize cock. State show '02 at head of this year's breeding pen. Eggs, \$1 per setting of 15. W. L. Bates, 1529 Park Ave., Topeka, Kans.

FOUR young litters high bred, pedigreed. Scotch Collie pups for our orders quick. Walnut Grove Farm, Emporia, Kans.

POULTRY FARM—Breeders of Light Brahmas, Plymouth Rocks and Partridge Cochins, took first second, and third on Light Brahmas; first, second, and third on Partridge Cochins at Fort Scott show. A few good cockerels for sale. Eggs in season, \$1.50 per 15. G. W. Shuman, Fort Scott, Kans. Rural Route No. 1.

MRS. E. F. NEY—Breeder of WHITE WYANDOTTES, Bonner Springs, Kansas. Eggs for hatching, \$1 per setting.

COCKERELS—Indian Games and Black Langshans, farm-raised, price \$1 each, if taken soon. H. Baughman, Wynmore, Neb.

FOR SALE, CHEAP—Twenty-five White Plymouth Rock cockerels and 50 pullets, bred by the first office cock of the Nebraska State Poultry Show, 1902. Achenbach Bros., Washington, Kans.

SILVER LACED WYANDOTTES—Exclusively the American Beauties. Choice birds. Sixteen years a breeder. Eggs \$1.50 per 15. D. Tennyson, Frankfort, Kans.

B. P. ROCK EGGS—15, \$1.50; 100, \$4. Mrs. J. W. Holsinger, Cottonwood Falls, Kans.

COLLIE PUPS AND B. P. ROCK EGGS—I have combined some of the best Collie blood in America; pups bred by Scotland Bay and such dams as Handsome N-lie and Francis W and others just as good. B. P. Rock eggs from exhibition stock; none better; 15 years experience with this breed. Eggs \$1.50 per 15. Write your wants. W. B. Williams, Stella, Nebr.

SCOTCH TERRIERS—Finest bred in this country. Heather Prince the champion of Scotland, and sire of Nosegay Foxglove, out of the champion imported Romany Ringlet, best service at our kennels. G. W. BAILEY, BEATTIE, KANSAS.



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DUFF'S POULTRY. Banded Plymouth Rocks, White Plymouth Rocks, Buff Cochins, Partridge Cochins, Light Brahmas, Black Langshans, Silver Wyandottes, White Wyandottes, Silver Spangled Hamburgs, Brown Leghorns, and Belgian Hares. First-class Standard Stock of Superior Quality. Stock For Sale. Eggs in Season. Write Your Wants. Circular Free. A. H. DUFF, Larned, Kans.

much as possible, and always move quietly about the yards or houses.

Any disturbance or excitement will surely check egg production. As soon as laying is pretty well established through your flocks, go into the city that you look to for your market and interview the stewards or some clubs or managers of hotels, or if you prefer private trade go to a few of the most wealthy houses and try to arrange to supply them with absolutely fresh eggs once a week or oftener, agree to deliver eggs under 24 hours old and stamp the date on each egg with an ordinary dating stamp or something more elaborate if you desire. Such trade will pay the best prices, better than clubs or hotels, but it will require quite a number to absorb your supply. If a personal delivery is inconvenient or not desirable, arrange with some 10c express package delivery company and express your packages to them, with the various addresses attached; in this way you will save on express charges. Your egg supply keeps on increasing and at first perhaps faster than your orders. I am assuming that the season is fall, coming on to cold weather. Now set up your incubators, following carefully the directions accompanying them, see that you have mastered the regulating device and can control the temperature accurately.

Fill up with eggs a 360 and a 120 machine. On the seventh day test out all clear eggs and on the eleventh day test carefully and discard all dead germs and added eggs. You will find the 360 egg machine will hold all the good germs in both machines, possibly crowding a little. Now start the other 360 egg machine and reset the 120 also and continue to do this every eleven days, which will give a constant succession of chicks every eleven days. Although 21 days is sufficient to hatch the eggs, an extra day in the incubator puts chicks in much better shape. Do not be in too great a hurry to feed and water chicks. Nature has supplied them with an excellent luncheon to last two or three days.

Start your brooders on the 21st day, so they will be thoroughly warmed. In the afternoon of the 22d day remove the chicks to the brooders and supply them with good grit and water in small fountains. The next morning you can begin to feed by giving them a handful of rolled oats and millet seed scattered in the sand with which the brooder floor should be covered. In a day or two add chaff to the sand which gives a good litter to make them seek their food. Exercise is absolutely essential for their wellbeing, in addition to proper warmth, food and cleanliness. Decrease the oatmeal and increase millet seed, adding wheat screenings which contain a variety of weed seeds and broken kernels of wheat, vary the food as much as possible, get the chicks out of doors as soon as possible, see that green food is in reach or supply it cut. At two weeks of age begin feeding lightly a mash one meal or two a day, made of bran two-thirds, corn-meal one-third with 10 per cent beef scrap or cut bone added every day, if you feed sparingly, if not omit scrap every other day. At eight or ten weeks of age these chicks should be a good broiler size, plump and round. Now notify your egg customers that you have broilers ready to fill orders; which order should be at hand 48 hours before delivery is desired. Select your birds and place in a coop with only water for 24 hours to allow the digestion of any food in crops. Hang up with sling to each foot, and with a sharp pointed knife cut the vein in roof of mouth near the throat, passing point in deeply enough to reach the brain, which instantly kills them. Pass a weighted hook through the beak to steady them, and begin picking instantly, taking rough feathers from breast and wings first, using great care until you are expert to avoid tearing the skin. Draw up legs and pass a wide strip of cloth around legs and body, also across wings shut against sides of body. This gives the bird an attractive appearance. Chill in an ice box or cold water, until all body heat is exhausted. Pack and ship.

What stock is not used for broiler orders should be transferred to colony houses in lots of about fifty each and after a day or two of confinement may be given free range. As soon as possible divide the sexes, placing cockerels in one of the three yards, and here is the point where your extra fine stock shows itself. In marketing wasting stock from these colonies always select the least promising specimens and after a while those remaining should be birds of considerable value for fancy purposes. When you have the stock, an advertisement in a poultry journal will easily dispose of them. The market poultry man has the very best pos-

sible chance to produce extra fine specimens, as with good foundation stock he is sure to obtain at least a few birds of extra fine quality and that without extra expense.

Reserve a lot of your most promising early hatched pullets to replace your laying stock, and just when the moulting among your layers begin, ship them off to market and supply their places with fresh layers. In this way you maintain a constant supply of eggs and can accept yearly contracts if desired at a stated premium above the market or else a fixed price. With close attention to the thousand and one details that make up a poultry business, you should now be making a satisfactory income, and exciting the envy of all your city friends by your freedom from office or work shop, and you are your own master, to shape your life as you see fit. The size of your income is only limited by your own capacity for management and growth.

Poultry Notes.

N. J. SHEPHERD, ELDON, MO.

On the farm, as elsewhere, uniformity among the fowls is desirable. For this reason in a majority of cases one breed is sufficient. If more than one is kept they will mix and lose their individuality and plumage.

In poultry the symptoms of cholera are, drooping of the wings, ruffling of the feathers, the comb and wattles turn dark and sometimes black, with copious discharge from the bowels. The fowls refuse to eat and have an insatiable thirst. There is no specific; the best remedy is preventives.

One advantage with ducks over chickens hatched in an incubator and raised in a brooder is that they will not crowd together in the brooder like chickens. If the heat in the brooder begins to get low chickens will crowd together so closely as to smother more or less, but ducks will quietly squat down and remain there until morning without crowding.

Leg weakness in chickens usually results from one of these causes—rapid growth, bottom heat in brooders, and the use of sulphur. It is rarely advisable to feed or give sulphur in cold, damp weather. When caused by too rapid growth, giving bone meal in soft food and allowing plenty of opportunity for exercise will remedy.

In-breeding for a while will give many uniform points in size, color and markings, and they may be retained as long as the vitality of the breeding stock lasts. The characteristics of a breed can be intensified, but carried beyond due bounds, inevitable seeds of decay and degeneracy are planted in the offspring.

A good way to make nests for the hens is to take a piece of grass-sod about fifteen inches square, invert, and hollow out and then cover with dry straw, scattering in among it some tobacco stems or leaves as a preventive of lice. The sod will aid materially in securing a uniform temperature for the eggs.

After chickens are a few days old they can be given any kind of food that is clear, sweet and wholesome, giving a variety, and no more at any time than is readily eaten up clean. Cracked wheat can be given with benefit as soon as they are large enough to swallow it. Until they are eight or nine weeks old a ration to develop bone and muscle is better than a fattening food. Commencing, however, a few days before they are intended for market, they should have all the fattening food they will eat.

When you shake hands with some men you feel like trying to make them "take it back." The same feeling is produced when you try to advertise diamonds in a poultry journal or pure-bred live stock in a political paper.

CANCER ON THE ARM CURED BY THE COMBINATION OILS.

Emporia, Kans., October 18, 1901.
Dr. D. M. Bye Company, Indianapolis, Ind.

Dear Doctors:—Believing you would be glad to know of the recovery of your patients, I am pleased to tell you the cancer on my arm is well. It is wonderful, this rapid recovery. I do not believe things happen, but that the Lord rules in all things, and that He led me to try your wonderful cure. May the dear Father bless you in your work of healing is the earnest prayer of your grateful patient,

Mrs. A. J. Wooster.

The Combination Oil Cure was originated and perfected by Dr. D. M. Bye. He has cured many very bad cases without pain or disfigurement. Those who would like to know more about it, or who desire free books and papers, should write to the HOME OFFICE of the Originator, Dr. D. M. Bye Company, Drawer 505, Indianapolis, Ind.

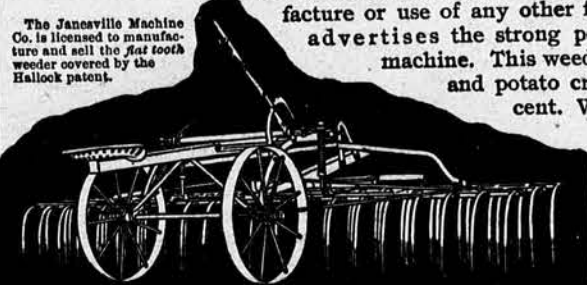
Hallock's SUCCESS Weeder

IT'S ALL IN THE TOOTH

For a number of years many farmers have known the advantages of the Hallock Weeder. Now everybody knows that the whole secret is in the flat tooth. The recent legal decision restraining the manufacture or use of any other flat tooth weeder best

advertises the strong points of the Hallock machine. This weeder will increase grain and potato crops from 25 to 50 per cent. Why and how it will do

it and why the flat tooth makes the only successful weeder is best explained by the booklet which we will send free if you write for it.



JANESVILLE MACHINE COMPANY, 15 Center St., Janesville, Wisconsin.

WHITE WONDER

SEED CORN

Handsome Booklet and Sample Free.

Grown by the world's largest growers of corn and wheat. The famous White Wonder Corn was the only good corn grown in Texas last season during the drought. Made corn in Missouri, Kansas, and Oklahoma in 1901 when all others failed. The only corn that matures so early that has such big ears. Grown exclusively by us because it outyields all others 10 to 25 bushels per acre. Price \$1.50 per bushel in two-bushel sacks, f. o. b. at Bliss, Oklahoma. Inclose stamps for postage.

Seed Corn sold by us in 26 States last season. Not a bad report from a single customer. Our sales of Seed Corn this season double that of any other firm in the U. S. to date.

What some of the growers say about White Wonder

Maple Leaf Farm, Madison, Kans.,
October 28, 1902.
101 Ranch, Bliss, O. T.
Gentlemen: The White Wonder Corn I got from you was planted on upland and is making 60 bushels per acre. It has outdone any corn in our vicinity. I was told in the spring that it would not grow successfully, by reason of getting the seed from the South, but this proved wrong. Let me take orders for seed for next spring.
Respectfully, S. F. ROCKLEY.

R. F. D. No. 3, Appleton City, Mo.,
October 29, 1902.
101 Ranch, Bliss, O. T.
Dear Sirs: The corn received from you last spring, White Wonder, has done fine. It will yield more bushels to the acre than any corn we have planted this year. It is a great fodder plant, having at least one-fourth more blades on it than other corn, is very prolific in growth and has large, well-matured ears.
Yours truly,
THOS. J. MOCK.

All orders shipped same day received. Address

J. C. Miller, Supt. 101 Ranch
Bliss, Oklahoma.

Griswold Square Mesh Field Fence.



The best of all Lawn and Field Fences. Is hog proof. Manufactured in 18, 24, 33, 39, 50 and 56 inch heights; in 20 and 40 rod rolls. The narrow widths can be supplemented to any height desired by Barbed or Plain wire, or two strand twisted Cable wire. Manufacturers of Diamond Mesh Fence, Plain, Galvanized, Barbed or Telephone Wire. Wire Nails and Hay Bale Ties. Write for illustrated catalogues and price lists. Dillon-Griswold Wire Co., Sterling, Ill.

ONE-WAY RATES

To Many Points in the State of CALIFORNIA To Many Points in OREGON AND WASHINGTON

EVERY DAY

The Union Pacific will sell One-way Colonist Tickets at the following rates

From Missouri River Terminals

\$25.00 to San Francisco, Los Angeles, and many other California points. Tickets on sale Feb. 15 to June 15, 1903.
\$20.00 to Ogden and Salt Lake City.
\$20.00 to Butte, Anaconda and Helena.
\$22.50 to Spokane & Wanchewash.
\$25.00 to Everett, Fairhaven and New Whatcom, via Huntington & Spokane.
\$25.00 to Portland, Tacoma & Seattle.
\$25.00 to Ashland, Roseburg, Eugene, Albany and Salem, via Portland.

J. C. FULTON,
Depot Agent,
'Phone 34.

F. A. LEWIS,
City Ticket Agent,
525 Kansas Ave., 'Phone 53.

The New Quarters for Our Dairy Cows.

(Continued from page 330)
ter can be run, a Shepherd aerator, and a hand separator. The other room contains the sink for washing utensils and shelves for cans, pails, and other articles. The dressing-room contains the heater mentioned above, a sink, a row of lockers, and a table. On the left-hand side of the wide central alley are arranged the bins for storing feed. Six box stalls occupy the space between the rooms and the iron stalls. The barn as now equipped is an enormous stride in advance of the basement so long used. It furnishes light, airy, and comfortable quarters for our cows and marks an important epoch in our dairy development.

Scotch and American Ayrshires.

I have recently received the report of the official milking tests of Ayrshire cows in Scotland for the year 1902, and have selected the five giving the highest record for butter, also the five giving the highest record in the home dairy test in the States for the year 1902, a comparison of which is of interest, all being official and supposed to be among the best of the breed in either country.

The natural conditions in Scotland are more favorable for a large dairy yield from the same cows than in America on account of the more uniform moisture in Scotland, and its consequent succulence of pasturage. The record in both countries shows a good degree of uniformity and a good class of dairy cows.

As the names of the individual cows in Scotland were not given, but their owners instead, I have adopted a uniform method. The report is for two consecutive milkings.

SCOTCH.

Owners.	Lbs. of milk.	Per cent butter-fat.	But-ter.
William Winter.....	60	3.87	2.73
James Littlejohn.....	52	3.50	2.11
W. C. Alexander.....	30	5.92	2.05
W. C. Alexander.....	45	4.47	2.03
A. Gemmill.....	46	3.30	1.76
Average.....	46		2.13

AMERICAN.

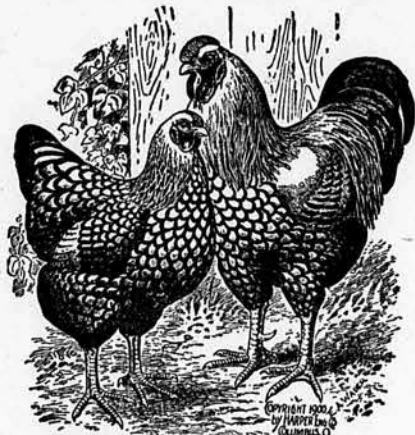
Owners.	Lbs. of milk.	Per cent butter-fat.	But-ter.
C. M. Winslow & Son.....	51	3.80	2.26
L. S. Drew.....	42	4.60	2.25
Howard Cook.....	46	4.00	2.14
Geo. H. Yeaton.....	42	4.50	2.10
W. V. Probasco.....	47	3.80	2.08
Average.....	45		2.16

C. M. WINSLOW, Secretary.
Brandon, Vt.

The Poultry Yard.

Silver-Laced Wyandottes.

The Wyandotte family is of American origin, and a variety that was produced soon after the Plymouth Rocks. There are several varieties of the Wyandottes, consisting of the Silver, the Golden, Buff, White, Black, and Partridge. The Silver is the oldest, and the White second. The Wyandottes have always figured in the special all-purpose class, this consisting of but the two varieties, the Plymouth Rocks and Wyandottes. It is a matter yet to determine, and perhaps will be for all time to come, just which of these two varieties is the best. Each variety has its staunch supporters to such an extent that an agreement can



SILVER-LACED WYANDOTTES.

not be reached. The Wyandotte is a shade lighter-weight bird than the Rocks, being one pound less according to the Standard; but plenty of first-class Wyandottes reach greater weight than given by the Standard. The Wyandotte is certainly superior to any other bird of its class in shape of body when prepared as a roast for the table, owing to its round, smooth, plump body. It has less bone to the quantity of meat than any, and the quality is not excelled. The Wyandottes have yellow skin, clean nicely, and make an excellent appearance when dressed

for market, as they are very uniform in shape and size.

The Silver-Laced variety has always been a leader, and great pains have been taken by the fancier to improve and bring it up to Standard requirements in both shape and plumage. The Silver Wyandotte, like other parti-colored birds, is harder to breed to Standard requirements than solid colors. While the White Wyandotte can be brought up high in scores, frequently ninety-five points, the Silver drops three or four points lower, and a real good Silver is scarcely expected to score much over ninety-two. This class of birds is more easily bred for shape than for color, and points in shape usually count but little as compared with others.

The Standard weight of Wyandottes is as follows: Cock 8½ pounds, cockerel 7½, hen 6½, pullet 5½. The terms here are applied as to age of the bird; for instance, a cock is a bird 1 year old or over, cockerel less than a year old, the hen and pullet the same. As above stated, the Wyandotte as a



WHITE WYANDOTTES.

distinct variety is almost objectionable in shape. The head is short and round, and rather broad. The comb is rose, lies close to the head and follows the head in shape, terminating in a small spike at the rear, dropping or curving to conform with the shape of the back part of the head. The neck is short, the back short and flat across the shoulders, and the breast deep and full, thus forming a round appearance; and not only in appearance, but in reality no other bird in chickendom can even come in close competition.

In color, no bird, perhaps, requires as many varieties of fine points as the Silver Wyandottes. The head is a silvery white, and each tiny feather has a black center or stripe running to a fine needle point at the extremity. This color continues down the neck, and as the feathers become larger, what we call the "hackle" (that part of the plumage which flows over the bird's shoulders) is, in the finest specimens, a clear silvery white with a black stripe running through the center, as above stated. The beak is dark horn in color, shading slightly to yellow, and the eyes are a bright bay. The back of the male continues silvery white, and the "saddle" (that part of the plumage covering the base of the tail) should be just the same as the hackle above described, but this part of the plumage shows the colors to the greatest perfection. The under color (the downy feathers next to the skin) is a dark slate. The breast of the Silver Wyandottes of a good type is certainly to be admired, for each and every feather has large white centers with a distinct black lacing. Right here many good specimens differ, for some have small white centers, so that the black predominates, while others have large white centers, and the white slightly predominates. Judges of poultry, when making scores on this point, seldom give either a preference, and the scores may run about the same. Some well-bred cockerels have so small a white center that the white scarcely shows at all, until the feathers are picked up from the breast, when the well-defined, small white center will show up.

The tail of all males should be solid glossy black, but it is the smaller percent of the best that do not show a little white in tail, especially the sickle feathers; this is objectionable when it comes to the show-room, and also for any purpose. The wings, also, should be black, with the lower or outer edge rimmed with white. The neck of the hen may have the same descriptions as the male in color, but her body may be the same as the description given for breast of as the description given for breast of cockerel, and her wings and tail almost the same as for cockerel. Wyandottes should have yellow legs shading to dark.

What is said of the Silver Wyandottes may be said of the White variety, but in color the White is solid white in plumage, and shows a bright yellow skin and legs, beak, etc.

A GREAT COMBINATION!



The U. S. Separator gets all the cream from the milk,
The cream makes the butter,
The skim-milk makes the calf,
All bring in the cash.

Send for Catalogue

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

dottes may be said of the White variety, but in color the White is solid white in plumage, and shows a bright yellow skin and legs, beak, etc.

Publishers' Paragraphs.

Now that spring is here the matter of suitable clothing is a question which will interest most of our readers. It costs no more to get the latest styles than something out of date. The mail order is the proper medium and the Palace Clothing Company, of Topeka, will put you next to the best proposition that we know of at the present time. Notice their advertisement and secure free catalogue with samples of goods and illustrations of the best styles for men and boys.

The hay crop of Kansas is a very important one and the proper handling and preservation of it is of the utmost value, consequently every one interested should see to it that he is supplied with the proper equipment, and the Loudon Hay-Sling handles every kind of hay, bound grain, straw, fodder or other forage. The largest and best line of hay tools for either field or barn used are made by the Loudon Machine Company, Dept. D., Fairfield, Iowa. Notice their advertisement in this issue and send for catalogue. It is a very interesting illustrated booklet of everything pertaining to equipment for handling hay and forage crops.

Statistics show that one person in every four has a weak heart, and that weak hearts are as common as weak stomachs, lungs, kidneys, etc.

While a person might have heart disease for twenty years and not know it the symptoms are plain if understood. Since the heart circulates the blood and distributes nourishment to every organ, it is not strange that the symptoms frequently seem to indicate the weakness of some organ other than the heart.

A weak heart never cures itself. It grows constantly worse. A slight extra strain upon the heart will cause it to flutter and palpitate. Soon there will be pain and tenderness in the left side and in the region of the heart; there will be shortness of breath after slight exertion, such as climbing stairs, walking, running, sweeping, singing, etc. From this condition it is but a step to smothering spells at night, the blood becomes thin, the circulation poor, the extremities become cold and often become swollen during the day time.

Neglected, a weak heart soon becomes a diseased heart. A diseased heart means fatty degeneration, dilation or enlargement of the heart. It means a chronic weakness about which hovers the awful shadow of sudden death.

If you have any of the symptoms noted above you should give Dr. Miles' Heart Cure a trial. A weak heart can not be rested, it can only be helped by outside aid, such as Dr. Miles' Heart Cure alone can give. It strengthens the nerves which control the heart's action, changing the irregular pulse to the steady beat of a healthy heart; it enriches the blood and drives out the impurities and by creating a new and sufficient supply of rich, red blood for the nourishment of the entire body and its various organs, speedily replaces the disagreeable symptoms of a weak heart with restful sleep, good appetite and digestion; the springy step, the clear brain and the tireless muscles of vigorous health. All druggists sell and guarantee it to benefit or money refunded. Send for free Book on Diseases of the Heart and Nerves.

Dr. Miles' Medical Co., Elkhart, Ind.

DO YOU imagine that I am a Real Estate Agent? I am not. I simply offer for 12 cents to furnish reliable private information concerning the production of hay, grain, fruit, dairying, poultry keeping, or any matter that may be of interest to you. Thanking you for your attention, I am,

Most sincerely yours,
JAMES H. ENDSLEY,
Ellensburg, Wash.

Cash for Your Farm

We can sell your farm, home, or business quickly for cash, no matter where located. Send description and we will show you how. Offices in 18 cities. Established 1893.
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719 Real Estate Trust Bld., Philadelphia, Pa.

End Your Butter Troubles

with a National Hand Separator and make more and better butter from same quantity of milk. The National will do it easier, quicker and pay its cost in a very short time. We don't ask you to take our word—we send the machine for

10 Days' Free Trial and let it prove its worth right in your own dairy. You take no risk—we assume it all. If it does not meet your expectations, send it back—we pay the costs. Our catalogue tells more—write for it, it's free.

National Dairy Machine Co., Newark, N. J.



BUTTER MAKERS
make better butter and more butter by using the
KNEELAND OMEGA CREAM SEPARATOR
simple, cheap, efficient. Easily cleaned. Free from repairs. Guaranteed to suit or money back. Send for Free book, "Good Butter and How to Make It." The Kneeland Omega Creamery Co., 220 Concord St., Lansing, Mich.

Special Grocery Offer.

\$7.65 Buys this assortment of High-Grade Groceries shipped freight prepaid to any railroad station within 500 miles of Kansas City: Retail Price.

20 lbs. Best Granulated Sugar.....	\$1.25
10 lbs. California Prunes.....	1.00
10 lbs. California Peaches.....	1.50
2 lbs. K. O. Baking Powder.....	.50
5 lbs. Mocha and Java Coffee (roasted).....	1.50
1 lb. Tea.....	.50
5 lbs. Dried Apples.....	.75
10 Bars Laundry Soap.....	.50
5 Two-pound packages Ivory Oats.....	.50
5 lbs. Best Rice.....	.50
2 One-pound packages Cleaned Currants.....	.30
2 One-pound packages Seeded Raisins.....	.40
2 One-pound packages Best Soda.....	.20
2 One-pound cans Choice Salmon.....	.40
3 Cakes Chocolate.....	.30
¼-pound package Shredded Coconut.....	.25

Total.....\$10.35
Our Price, Freight Prepaid.....\$7.65

A Clear Saving to You of.....\$2.70
"MONEY SAVED IS MONEY MADE."
We guarantee every item to be full weight and high-grade goods. "If you buy it from MANTER it's the BEST."

FREE—Our 1903 Catalog illustrating hundreds of articles for home and farm at wholesale prices.
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PATENTS

Send 25 cts. and we will send you the PROGRESSIVE AMERICAN (the Patent Authority of America) and

The Kansas Farmer

for a 3-months' trial subscription and if you have an idea on which you wish to secure a patent, we will, upon receipt of a description, sketch, or model of your invention, have made for you, free of charge, a guaranteed search of the Patent Office Records to ascertain whether a valid patent with broad claims can be secured by you on your idea. (The regular charge for this is \$5.00.) If you subscribe for PROGRESSIVE AMERICAN this search will cost you nothing. We make this liberal offer trusting that our efforts in your behalf will induce you to become a permanent subscriber. If we find that your idea is patentable we will get for you a Certificate of Patentability which will be of great assistance to you in raising capital. Write today. Address the PROGRESSIVE AMERICAN North 13th Street, Philadelphia, Pa.

Government Lands. Settlers located on choice timber and farm lands in Oregon. Low costs, enormous profits. Write at once for particulars. Henry J. Jory, U. S. Deputy Surveyor, La Grande, Oregon.

THE MARKETS.

Kansas City Live-Stock and Grain Market.

Kansas City, Mo., Mar. 16, 1903.
Top hogs at \$7.60 were realized here last week when J. H. Weber, of Burns, Kans., secured that price for a drove of finished porkers. This is the best price that has been reached here this year. Another bull crusade featured the hog market last week, prices averaging 10c higher at the close than prevailed when we issued our previous report. Receipts were moderate in the East and packers claim the demand for pork products continues unabated, accordingly prices firmed right up. Towards the end of the week, however, bearish influences got under the market and succeeded in undermining the same, tops selling down to \$7.52½ and the bulk of all sales ranging \$7.35 to \$7.45. Some traders think it is now a matter of only a week or two more before we will have \$8.00 hogs, while others claim they will not come until warmer weather sets in. Nowhere does the impression prevail that there will be any severe break in prices for some time to come. Hog receipts here last week amounted to 27,400 head against 39,900 the same time last year. The five markets received 239,200 head against 340,100 head a year ago.

A peculiar phase presented itself in the cattle market last week in the removal of the premium on heavy finished cattle. Packers were good buyers of 1,150- to 1,250-pound stock at prices fully steady with last week, but they bore down on 1,400- to 1,500-pound grades, such cattle declining 10¢ during the week. As an example of this is cited the fact that 1,266-pound steers sold at the high point of the week. Kansas furnished the bulk of the good beefs received, and many feeders from the State received \$5.00, the top of the week, for their steers. Among them were J. L. McCoy, of Eskridge, H. K. Eberly, of Wichita, and William Imache, of Saffordville. Cow and heifer stuff sold steady all week and 40¢ to 50¢ higher than the low point of the winter. Cattle quotations at present are as follows: Best steers \$4.75 to \$5.00, medium to fair steers, \$4.25 to \$4.65, heifers \$3.75 to \$4.75, fed cows \$3.25 to \$4.00, stockers \$3.75 to \$4.80, feeders \$4.00 to \$4.75. Cattle receipts last week aggregated 29,000 head, a gain of 28 per cent from a year ago.

There was a moderate run of sheep here last week, the total supply aggregating 18,800 head, compared with 13,500 a year ago. The supply of lambs was about one-third larger than that of muttons and for this reason the packers were inclined to bear the lamb market to a slight extent. Medium stock, 60 to 65 pounds, sold off 10¢ to 15¢ during the week, but the best grades held steady. A. Forster, of Rocky Ford, Colo., marketed a string of good lambs at \$6.85, the top price of the season. The mutton supply came mainly from feed lots of the Sunflower State. Wethers sold at a range of \$5.25 to \$5.75. C. T. Hessel, of Frankfort, Kans., marketed a bunch at the latter price, the best point reached for wethers this winter. Ewes brought \$5.00 to \$5.05 and good stock would have commanded \$5.25. Yearlings are quoted at \$5.75 to \$6.25. Advertisers from Texas say the recent storm will delay the movement of grass sheep from that section, so Kansas and other Northern feeders may rest assured they will have another month or more of good prices for fat sheep.

Plain work horses sold higher here last week than at any time in the past three years. The run was not excessive, the total supply reaching 1,800 head, and to meet these offerings were plenty of Eastern buyers. Indications are bright for a continuation of good prices for the next few weeks as the farmers are strong competitors against the city men for good chunks and this keeps an edge to prices. Drafts are bringing \$150 to \$175 for the bulk of the offerings and \$200 to \$215 for extra choice horses. But few sales, however, go that high. Topsy Southern drivers range from \$75 to \$100; and good city roadsters from \$100 to \$150; chunks are ready sale at \$100 to \$120 with choice ones bringing more. The mule trade remained unchanged all week, with receipts running high as any time this winter.

The produce markets showed no change during the week. This is the between season during which prices are held steady in anticipation of the advent of spring vegetables and small fruits. In the poultry line hens showed decided firmness, prices ruling a shade higher. Quotations are as follows: Eggs 12½ to 13c; hens 9½c; springs 12c; roosters 20 to 25c; turkeys 12½ to 13½c; ducks 12½c; geese 8c. Wheat and corn declined slightly last week, but oats about held their own. Continued reports of the fine condition of the winter wheat plant have a bearish effect on that grain. Kansas City quotations are as follows: No. 2 wheat, 69 to 72c; No. 4, 58 to 64c; No. 2 corn, 38½ to 41c; No. 4, 37 to 38½c; No. 2 oats, 33½ to 35½c; No. 4, 31 to 33c; rye 44 to 45½c; flaxseed, 75 to 78c; tame hay, \$7.00 to \$12.50; prairie hay, \$4.00 to \$9.00; alfalfa, \$8 to \$12; straw, \$4.50 to \$5.00.
H. A. POWELL.

South St. Joseph Live Stock Markets.

South St. Joseph, Mo., March 16, 1903.
Notwithstanding the upward trend of prices, the supply of cattle last week was the lightest in several weeks, which was due mainly to the bad condition of the country roads. The market ruled active and prices higher the fore part of the week, but, owing to the adverse condition of the markets east and the warmer weather checking the demand for fresh meats, the week closed with the handy weight grades showing an advance of 10 to 15c, while the heavy kinds sold at a decline of that much. Nebraska beefs topped the market at \$5.35. Cows and heifers were in light supply and prices ruled the highest of the winter, heavy grades selling up to \$4.60. Stock cattle were in moderate quota and the movement good to the country, with values at the close the highest of the winter, and choice feeders going at \$4.80.

The muddy condition of the country roads materially decreased the receipts of hogs last week, which, combined with a good strong general demand, enabled sellers to secure higher prices on nearly every day, with the week closing with price the highest since the third week in September last, the top figure being \$7.60, with the bulk of sales at \$7.35 to \$7.55. The

quality was of good average with weights averaging heavier than for some time of late. Pigs were in light supply and strong demand, with prices ranging from \$5.75 to \$6.85 at the close, according to quality.

Under moderate receipts and a strong demand from all the killers, sheep and lamb prices were at the high point of the season last week, with Colorado lambs selling at \$7; Colorado yearlings, \$6.35; native and Western wethers, \$5.75; native ewes, \$5.00. The market at the close showed an advance of 15¢ to 25¢ for the desirable qualities sheep and 10¢ to 15¢ for the same class of lambs, but the common and medium kinds, while selling with more freedom than of late, owing to the reduced supplies and not any enlarged demand for these offerings, showed no gain.

Lawrence Seed Market.

Lawrence, Kans., March 16, 1903.
We give you to-day's buying prices in our market. Outside prices are for best grade:
Alfalfa..... Per 100 lbs. \$9.00 to \$12.00
Timothy..... 2.50 to 3.00
Kafir-corn..... 50¢ to .55
Kafir-corn..... 50¢ to .55
Red clover..... 9.11 to 11.00
English blue-grass..... 2.50 to 3.50
Cane seed..... .55 to .60
Millet..... .75 to 1.00
F. BARTEDES & CO.

When writing advertisers please mention Kansas Farmer.

Special Want Column

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

CATTLE.

RED POLLED BULLS FOR SALE—Eight head choice young registered bulls, good flesh, different ages, price right. Come and see them. H. L. Pellet, Route 2, Eudora, Kans.

FOR SALE—Registered Angus bulls—one 2-year-old. Address R. L. Milton, Stafford, Kans.

FOR SALE—Registered Red Polled bull, 3 years old, good size, good breeder. Bought from Buskirk herd. Address B. F. Low, Elsmore, Kans.

FOR SALE OR EXCHANGE for cattle or sheep —1 stable horse, a trotter; his sire is King James Standard, No. 1274; 1 span draft colts, mares; one buggy and harness. For further particulars enquire of T. J. Kennedy, Ozawie, Kans.

FOR SALE—Pedigreed Shorthorn bull, 18 months old, weight 1200 lbs. E. A. Baker, Pauline, Kans. Address Topeka, R. 5.

FOR SALE—Bulls at farmers' prices, cows and heifers cheap, to reduce herd. Twelve registered Angus bulls from 10 to 22 months old; also my herd bull—or would exchange. Cows and heifers bred, some with calves by side. These cattle are not overfed, but in good breeding condition. A. L. Wynkoop, Bendena, Kans.

BOTTOM OUT OF PRICES—Shorthorn bull and heifer calves, red with white marks, at \$50 net, the get of British Lion. D. P. Norton, Dunlap, Kans.

FOR SALE—10 head of registered Hereford bulls, 6 to 20 months old, good individuals, and in good condition. Visitors met at trains if notified. Farm 20 miles southwest of Wichita. A. Johnson, R. F. D. 2, Clearwater, Kans.

FOR SALE—A choice herd of registered Holsteins. Six heifers coming 3 years old, and one yearling heifer from first prize cow. A 2-year-old first prize bull from M. E. Moore's unbeaten 1901 show herd. E. W. Melville, Eudora, Kans.

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LIGHT BRAHMA COCKERELS—91½ to 93½, \$1.75 to \$2.50; 15 eggs, \$1.50; 45, \$3; 100, \$5. Mrs. N. Van Buskirk, Blue Mound, Kans.

Eggs, Eggs, Eggs For hatching from my prize-winning stock of S. C. Brown and S. C. White Leghorns, \$2 for 15; \$5 for 40. H. C. SHORT, Leavenworth, Kans.

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Biggest Layers of Biggest Eggs. Eggs for hatching, \$1.50 per 15. Also at same price eggs from choice matings of Light Brahmas, Dark Brahmas, Black Langshans, White, Silver, and Golden Wyandottes, Barred and Buff Plymouth Rocks, S. C. White and Brown Leghorns, Rose Comb American Dominiques, Foudans, White Crested Black Polish, Buff Laced Polish. JAS. C. JONES, Leavenworth, Kas.

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FOR SALE OR TRADE—A black Kentucky jack, 14-3, sure foal-getter; would trade for heavy draft stallion. L. K. Hentzler, 921 Kansas Ave., Topeka, Kansas.

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90-ACRE IMPROVED FARM—Also imported stallion for sale or trade for larger farm horse; must make season 1903 on farm. Fred Alexander, Olivet, Kans.

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FOR SALE—Farms and ranches in central and western Kansas. We have some great bargains in western ranches. Write us. R. F. Meek, Hutchinson, Kans.

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FOR SALE—Tucumseh Wilkes, Poland-China boar, 11 months old. Also S. L. Wyandotte eggs. V. B. Howey, Topeka, Kans., R. 5.

A FEW EXTRA NICE Poland-China pigs for sale, farrowed September, 1903, and sired by Dewey, the show hog that won sweepstakes at Coffeyville fair two years ago; can furnish either sex. Address R. J. Conneway, Elk City, Kans.

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PLANTS—Strawberry, blackberry, raspberry, gooseberry, grape, currant, rhubarb, etc. J. C. Banta, Topeka, Kans.

FOR SALE—Pencillaria seed, 50 cents per pound. Address orders to Fred Miller, Quincy, Kans.

SEED POTATOES—New Queen, one week later than the Early Ohio, but a much better keeper round-shoulder, smooth tubers, of fine quality and great productiveness. It will pay to get the best. Price 35 cents a peck; \$1 a bushel; sacks free. Wm. C. Coleman, R. F. D. No. 4, Sabetha, Kans.

200,000 Johnson's Early and August Luther strawberry plants for sale. Write me what you want and see what I can do for you. E. M. Wheeler, Jefferson, Kans.

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ENGLISH BLUE-GRASS SEED—For English blue-grass seed write to John G. Hinsh, Eureka, Kans.

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HONEY LOCUST—300,000 plants sorted in two sizes—\$3.50 and \$2.75 per 1,000, 13 to 24 inches. The only tree for middle and western Kansas. J. E. Mellecker, Spearville, Kans.

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FOR SALE—A monthly publication for those interested in gas and gasoline engines, to be known as Gas Power, offers a full year's subscription for 20c to those subscribing in advance. Regular price 50c. First issue soon to be out. Try it for a year. Address Gas Power Publishing Co., St. Joseph, Mich.

FOR SALE—Three Scotch Collie dogs, 9 months old, and two fox terrier females, 1 year old. Harry Clark, Colony, Kans.

PITTMAN has invented a Pump that gets water cheap enough to irrigate with, and must sell his ranches on the Arkansas cheap; can't pump and ranch both; 550 acres deeded, 2 mile river front, 3½ mile back; 200 acres alfalfa bottom, 100 acres natural hay land, fine grove, improved; 450 acres, 80 good bottom, improved; 150 acres, all bottom, improved. W. S. Pittman, Pierceville, Kans.

WANTED—Three ranch managers and live assistants, Oklahoma and Texas. Address Triumph, Dallas, Texas.

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FOR SALE CHEAP—Pedigreed Scotch Collie pups. W. H. Richards, V. S., Emporia, Kans.

The Stray List.

Week Ending March 5.

Johnson County—J. G. Rudy, Clerk.
MARE—Taken up by Wm. Colson, in Gardner tp. (P. O. Gardner), Feb. 9, 1903, one brown mare, 15½ hands high, knot on right knee, about 14 years old; valued at \$25.
Greenwood Co.—C. D. Pritchard, Clerk.
Calf—Taken up by B. C. Williams, in Eureka tp. (P. O. Eureka), Feb. 10, 1903, one black steer calf, white face, white streak on top of neck.

Week Ending March 12.

Shawnee County—A. Newman, Clerk.
HORSE—Taken up by Mrs. Kate Pearl, in Williamsport tp. (P. O. Wakarusa), one light grey horse, 10 years old, under bit out right ear.
Lyon County—W. F. Eggers, Clerk.
MARE—Taken up by B. F. Hughes, in Emporia tp., December 1, 1902, one brown or bay mare.
Sumner County—W. A. Lichtenberger, Clerk.
STEER—Taken up by Will Johnson, in Falls tp. (P. O. Caldwell), February 14, 1903, one red steer, coming 2 years old in spring, tip off right ear.

Week Ending March 19.

Woodson County—J. P. Kelley, Clerk.
STEER—Taken up by J. S. Puckett, in Belmont tp., February 2, 1903, one red steer, white face, under bit in each ear; valued at \$15.
Douglas County—Geo. A. Flory, Clerk.
MARE—Taken up by C. H. Wilson, in Palmyra tp., February 20, 1903, one small black mare, about 3 years old; valued at \$15.

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ONE CAR EACH OF GALLOWAY BULLS AND HEIFERS.

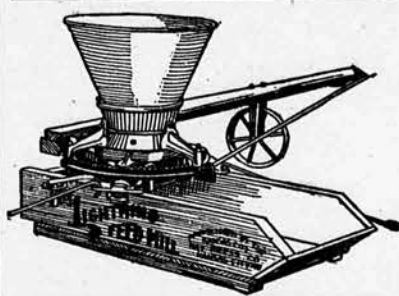
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DOUBLE TREAD BARN DOOR HANGER runs on a T. rail flexibly connected to barn. Warranted to never jump the track. Has tempered steel roller bearings. Fits close to building, and will not bind or work hard when the door or sash becomes warped. They are without doubt the "BEST ON EARTH." We also manufacture a complete line of Hay Tools and Hardware Specialties for use in field and barn. Write for Catalogue. Address Loudon Machinery Co., Dept. D, Fairfield, Iowa.

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If you want to buy feeders or any kind of cattle or a farm or ranch in Texas, see or write to me. No trouble to answer questions. References: Emporia National Bank, Emporia, Kas.; First National Bank Amarillo, Texas; Lee & Co., Bankers, Miami, Texas

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Getting Ready for the Great World's Fair.

(Continued from page 333)

and packed in berry boxes as directed for grapes.

In general, then, all these perfect fruits need the most careful selection, painstaking packing, prompt shipment, whether made in 1903 for putting up in the jar exhibit or for cold storage, or whether collected and sent in for the fresh fruit display during the ripening season of the year 1904. Remembering these cautions and these suggestions, fruits are sure to arrive in splendid condition and give a grand display.

FERTILIZERS FOR FRUITS.

No hard and fast rules can be given for fertilizing fruits, so as to secure fine specimens. The kind and the quality of fertilizer to be applied depends upon the kind and condition of soil. The following facts are important, however, in determining how to fertilize a given fruit plantation:

1. The effects of fertilizers upon orchard trees are usually more apparent in the second year than they are during the year in which the fertilizer is applied. For that reason, if it is desired to fertilize special trees, in order to secure fine fruit for the St. Louis Exposition, the fertilizers should be applied this spring to trees from which it is expected to secure fruit for 1904 as well as for 1903.

2. Nitrogen promotes wood growth, leaf growth, and general vigor of the tree itself. Potash and fosforic acid, especially the former, promote fruit production.

3. If a tree is making weak growth, if its leaves are pale and sickly and if the annual wood growth of the main limbs is less than one foot in length, it probably needs nitrogen. On the other hand, if wood growth is strong and vigorous and the leaves are of a dark, rich green color, and especially if fruit is not forming sufficiently, potash and fosforic acid are probably needed. Too much nitrogen tends to cause the tree to run to wood and leaf growth at the expense of fruit.

4. A good all-round fertilizer for trees that are normal with respect to wood growth and to fruit is, for each mature tree above 15 years old: Nitrate of soda, 2 pounds; superfosphate, 2 pounds; fine ground bone, 3 pounds; muriate of potash, 4 pounds. Apply half this quantity to each 10-year-old tree.

5. Where weak growth indicates that the tree needs nitrogen, apply a liberal dressing of well-rotted barnyard manure or 4 pounds of nitrate of soda to each mature tree.

6. If the tree is making strong wood and leaf growth, but fruit is not satisfactory, apply either of the two following to each mature tree: (a) 1 peck of unleached wood ashes, or (b) 5 pounds of muriate of potash, 3 pounds of superfosphate.

The above fertilizers should not be applied in a mass, at the trunk of the tree. They should be spread uniformly, from near the trunk, outward to just beyond the outer spread of the branches and worked into the soil.

Old trees, even if making fair growth, usually need the complete fertilizer mentioned in No. 4, but young vigorous trees usually require only the potash and fosforic acid fertilizers mentioned in No. 6.

Small fruits should be treated the same as the tree fruits with respect to fertilizers, using nitrogen when plant growth is weak, a complete fertilizer when plant growth and fruiting characteristics are normal, and potash and fosforic acid where plant and leaf growth is strong but where the plants do not fruit in satisfactory manner.

Generally speaking, potash is the most important fertilizer for fruits of all kind. For this reason wood ashes, where they can be had, are useful. If commercial fertilizers are applied the muriate of potash should be applied in excess of the others.

Where used for small fruits, about one-half of the amount mentioned in No. 4 or No. 6 can be used per square rod of plants, care being taken to not put it on the leaves but scattered on the ground not too close to the plants and that it be well hoed in.

SPECIAL.

Select vigorous plants, vines, and trees for the growing of these show fruits, so that there will be no necessity for using nitrogen or nitrate of soda for the leaf growth, but only the muriate of potash and superfosphates for the development of the fruits themselves, and results can probably be more easily obtained.

CONCLUSION.

Hear, then, the conclusion of this whole matter. Serve the State and

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obey the instructions given you. A successful show will depend wholly and entirely upon the good-will and assistance, and energy, and enthusiasm with which we take hold of the work. It will require the hearty cooperation of every fruit-grower of the State. If we will all pull together and every one do what he can there will be no question as to results. It is because of neglect or carelessness that failure comes. It is because we think that some one else will do the work that we fail to do our part and results are disastrous. It is just as important for you to send in one variety or one kind of fruit as it is for the great orchardist to send in one hundred. We are glad that our State society has been a unit in all its work during the last twenty years since we have been working together and we feel sure that this same unity will prevail in this, the greatest display, the greatest opportunity, the greatest privilege we have ever known in our history. We feel sure that you will do your best part in the work for the next two years, and all the honor and the glory, and the reward will be yours.

Directions, instructions, labels, shipping tags, where to send, when to send, and all needed information will probably be sent out as soon as arrangements are completed by the commissioners.

Catalpa Speciosa.

EDITOR KANSAS FARMER:—I notice the article on catalpas in your last issue and would like to know what kind (species) of catalpa I have growing on my farm. I send you by this mail in one package two samples, and will be glad if you will tell me what kind they are.

1st. The pod that is cut in two pieces is from a 4-year-old tree four inches in diameter at the base and 15 feet high.

2d. The pod that is doubled in the middle—broken but not cut—and all the bark is from a tree 20 inches in diameter planted in 1886—was 26 feet high and made 7 good posts besides a log 10 feet long which I had sawed into finishing stuff for a house (also two other logs). The wood is unusually tough and lumber so far does not seem inclined to check in drying. I have, I think, but the one kind as the habits, bark and appearance in every way, so far as I can see, are exactly alike, excepting one kind blossomed a week to 10 days later than the other. They are on two sides of my orchard and the young shoots start up freely from the seed. I will plant out what I have this spring—two or three thousand—in double zigzag rows along fence lines that I intend to make permanent and along lanes.

My theory is that I can grow several thousand catalpas along these several lines inside and outside of my quarter section and then be able to grow more cereals and grass on the balance than if I had not a tree on the place.

Will be glad to have G. D. J. give his treatise on catalpas in the FARMER.

HENRY COMSTOCK.

Sedgwick County.

REPLY BY GEO. W. TINCER, TOPEKA.

In reply to above letter will say, the seed, bark and twig sent by Mr. Comstock are all from Catalpa speciosa. We have three leading species of the catalpa. The most valuable and really the only one that should be considered for timber planting is Catalpa speciosa. The crooked common sort is Catalpa bignonioides, a native of the South Atlantic States. As a timber tree it is worthless. Catalpa kaempferi is a fairly good tree, but grows to a smaller size than Catalpa speciosa. The seed of this tree grows in small pods which form in close clusters containing from fifteen to twenty pods each. The color of the pod is a light brown. Seeds of Catalpa speciosa usually grow in long, dark-brown pods. They form single, in twos, and sometimes in threes. Catalpa bignonioides produces seed somewhat similar to Catalpa speciosa except the pods form in open clusters of from five to six, both seed and pods being about one-third smaller, the end hairs of the seed being drawn close together some-

what like a waxed mustache. The end hairs of Catalpa speciosa are more open. Seed may be gathered any time from November until March. With late gathering many of the pods open and much of the seed is lost. Catalpa speciosa will produce posts, poles, and lumber of an excellent quality. I see no reason why Mr. Comstock or any one else can not grow several thousand trees on each quarter section and still produce as many bushels of grain and as many head of stock as he could if there was not one tree growing on the place. Catalpa speciosa is the coming post- and pole-tree for Kansas. For additional information I will refer to Bulletin No. 108, "The Hardy Catalpa," issued by the Kansas Experiment Station, Manhattan, Kans. This bulletin is free, and contains an immense amount of information that will be especially valuable to Kansas tree-planters.



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We have reduced the price from \$1.50 per dozen to 85 cents, for immediate acceptance. Sold on the same guarantee to give satisfaction as plows, binders, and mowers are sold, or money refunded. When you find they are better than you expected them kindly send us a testimonial. Next year you will want more of them; we will reciprocate your kindness with a present.

We will give 200 Gold Mine Hot Beds to the person sending in the best report; 100 for second best; 50 for third; value \$28, and pay all charges to destination. Premiums paid in November. Points considered—Earliness, yield, amount of money made, with one dozen.

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Having used my herd bull on my small herd of Shorthorn cows as long as practical I offer him for sale or trade. He is out of a pure Dutchess cow and by a pure-bred Cruickshank bull. Guaranteed a breeder and all right. For particulars, address **DR. C. M. COE,** 915 Walnut St., Kansas City, Mo.

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80 head of registered ewes, bred to imported rams; 15 head of high-grade ewes, bred to a good registered ram; 6 head of English imported ewes, bred by Hardin and McIntosh; 45 head of lambs, rams, and ewes from imported sires; 40 head of 1 and 2-year-old rams; 4 head of yearling rams from imported sires and dams; also 3 head of ram lambs from same; 2 head of yearling ewes and 3 head of ewe lambs from imported sires and dams. These sheep must be sold before March 1. Write your wants at once and get bargain prices. The flock will go at a very low figure to a quick buyer.
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Visitors and buyers throng his barn and say: Hello, Bill! I'm from Illinois; I'm Iky from Missouri; Iams has the good ones; he shows us horses better than he advertises. See that 1,900-lb. 2-year-old "a hummer," I bought him at \$1,300. Couldn't duplicate him in Illinois, Ohio, or Iowa at \$2,000. See that 2,150-lb. 3-year-old, "a ripper." Say, Iky, see that 2,300-lb. 4-year-old horse howling to those Ohio men. They are the BEST I EVER SAW. Say, boys! look at this 2,100-lb. pair of beauties; they are worth going from Maine to California to see (better than the pictures). Say, Iky, you couldn't go wrong here. They are all "crackerjacks." If you open your mouth and your pocketbooks you will do business. Iams sell them. He has on hand imported and home-bred.

117-Black Percherons, Belgians, and Coachers-117

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and see what it will do if you want a Registered Percheron or Coach or a big, black, heavy-boned Mammoth Jack or Jennet. All stock guaranteed as represented.

P. S.—A few high-grade Stallions very cheap.



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Both imported and home bred.

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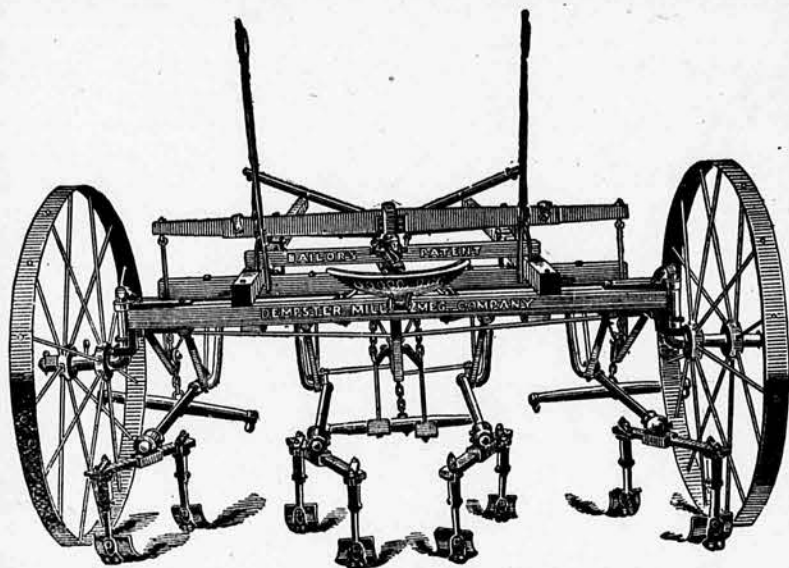


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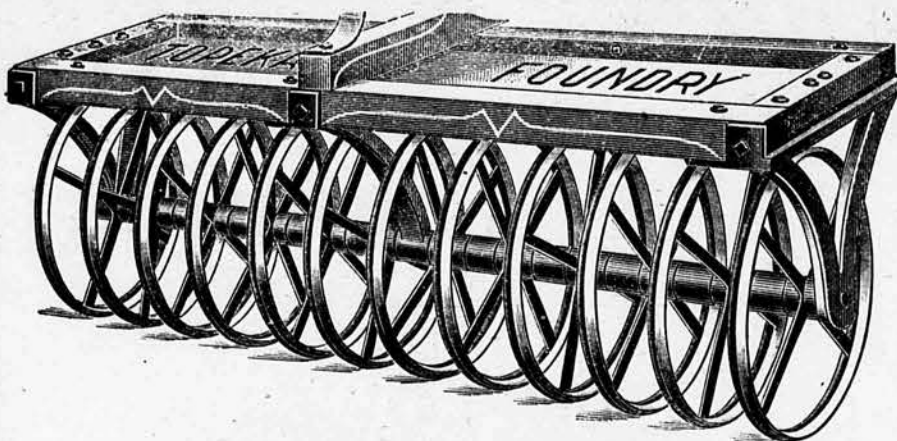
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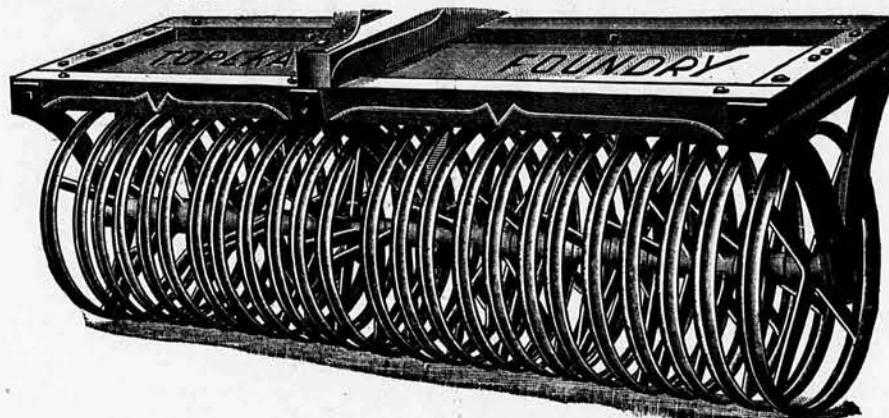
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HEREFORDS

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On Wednesday, April the 15th, 1903.

MR. D. L. TAYLOR, of Sawyer, Kansas, Owner of the SUNFLOWER HERD

Offers a draft of 23 Herefords, which consists of 19 Cows and Heifers and 4 Bulls. Thirteen of these cows and heifers are granddaughters of the great Don Carlos 33734; also Wild Tom 51592 and Corrector 48976 have daughters and granddaughters in this draft. Three of these bulls are grandsons of Don Carlos 33734 out of Anxiety dams and one bull is a son of Corrector 48976 out of an imported dam. These bulls are grand individuals and ready for immediate service.

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Offers a draft of 26 Shorthorns, which consists of 19 Cows and Heifers and 7 Bulls, representing such blood as Cruickshank and other prominent Shorthorn strains. His herd bull, Roan Duke 159499, will be in this offering and 12 of his sons and daughters. Roan Duke is nearly Cruickshank with a sprinkling of Booth and Bates of the first order. He is descended from, or traces to, the great champion of England nearly 150 times.

All cows and heifers of both breeds are safe in calf. Some have calves at foot now.
The sale pavilion will be well heated for this sale.

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\$500.00 CASH FREE



T-E-S-E-T

From the above words are omitted twelve letters, which are represented by twelve dashes, and if you are smart, energetic and a worker, you can correctly supply the missing letters and win some CASH. When the proper letters are supplied, the completed words will describe the picture on the left and form the correct solution. Surely CASH IS WORTH TRYING FOR, and brainy workers who are willing to give a little of their time, will try hard to correctly supply the missing letters. We positively guarantee to reward all who comply with our easy condition with cash. Nowadays brains and energy are winning many prizes, and we want you to try and win a reward. To start you right, we will tell you that H is the first missing letter represented by the dash, on the first line between the letters T and E. Now can you guess the other eleven letters? You have absolutely no money to pay for a guess, so do not pass by this opportunity without trying to supply them. Your right to win rests entirely with yourself, and Brains and Energy will help you. When you have found the missing letters which you think are right, send them at once, and you will hear from us by return mail.

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