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Prof. W. H. Olin, a graduate of the Kansas State Agricultural College, later an assistant in the agricultural department, and still later assistant agronomist at the Iowa Agricultural College, has resigned at the Iowa institution, and has accepted the chair of agronomy at the Colorado Agricultural College. Professor Olin is a vigorous

worker, possessed of that contagious enthusiasm which makes him at once a power and an inspiration to those with whom he comes in contact. Colorado is congratulated on securing his services.

The Republican National convention is in session this week at Chicago. President Roosevelt will have been renominated by acclamation before this paper reaches its readers. His election seems almost equally assured. Many who are members of other parties will vote for him. His popularity is an endorsement of the sterling manhood, clean character, and attention to the country's interests, which have characterized his administration. It is said that in Missouri Mr. Roosevelt will receive a large Democratic vote, while that other specimen of strenuous honesty in office, Joseph Folk, Democratic candidate for Governor of Missouri, will receive a great vote from the Republicans. Such endorsements making it profitable to be honest, faithful, and vigorous in office should become the rule rather than the exception and will have a mighty influence in keeping officials in the paths of rectitude.

Washburn College, at Topeka, last week closed the most successful year of its existence. The attendance showed a large increase over any previous year, this increase being especially noticeable in the departments of the college proper. But the notable feature of growth is in the vastly enlarged facilities. The new astronomical observatory and physics building was brought into use; the medical department was acquired, the law department was inaugurated, and the music department was expanded into the beginning of a great academy of music under the direction of a dean of large

ambition, backed by the necessary capacity and enthusiasm to achieve his purposes. A new library building has been arranged for, the gift of Andrew Carnegie, and the groundwork has been laid for endowment, the growth of which will presently be adequate for the support of an educational institution suited to the wants of those whose preference is for the atmosphere and influence which characterize this institution and its environments. The future for Washburn needs no other assurance than the continued executive and financial direction of its present president, Dr. Norman Plass.

COMMENCEMENT AT THE AGRICULTURAL COLLEGE.

The commencement of 1904, at the Kansas State Agricultural College, was a notable one in many ways. It marked the close of the most successful year in the history of that great institution. With a total enrollment of 1,605 students for the year just closed, Kansas has a right to claim that her agricultural college is the largest in the world. This commencement was notable, also, because of the graduation of 99 students, the largest class ever graduated by this college. Commencement week was the occasion of the new regent, Hon. Geo. S. Murphey, taking his seat as a member of the governing body. It also showed the nearly completed and much-needed auditorium with a seating capacity of 3,000 and of the new home of the animal husbandry department. Most important, however, were the evidences of good work that is being done in all departments. The writer first became acquainted with this college in 1879 when its total enrollment of 240 was looked upon with much satisfaction by its friends, who thought that the limit of growth had nearly been attained.

Three years later, the Governor of Kansas attended the commencement exercises and made the prediction that before his death, he would see 1,000 students enrolled here. He was laughed at for his prediction, but it has long since been realized and the Governor still lives to feel the pride taken by every good Kansan in this greatest of all agricultural colleges.

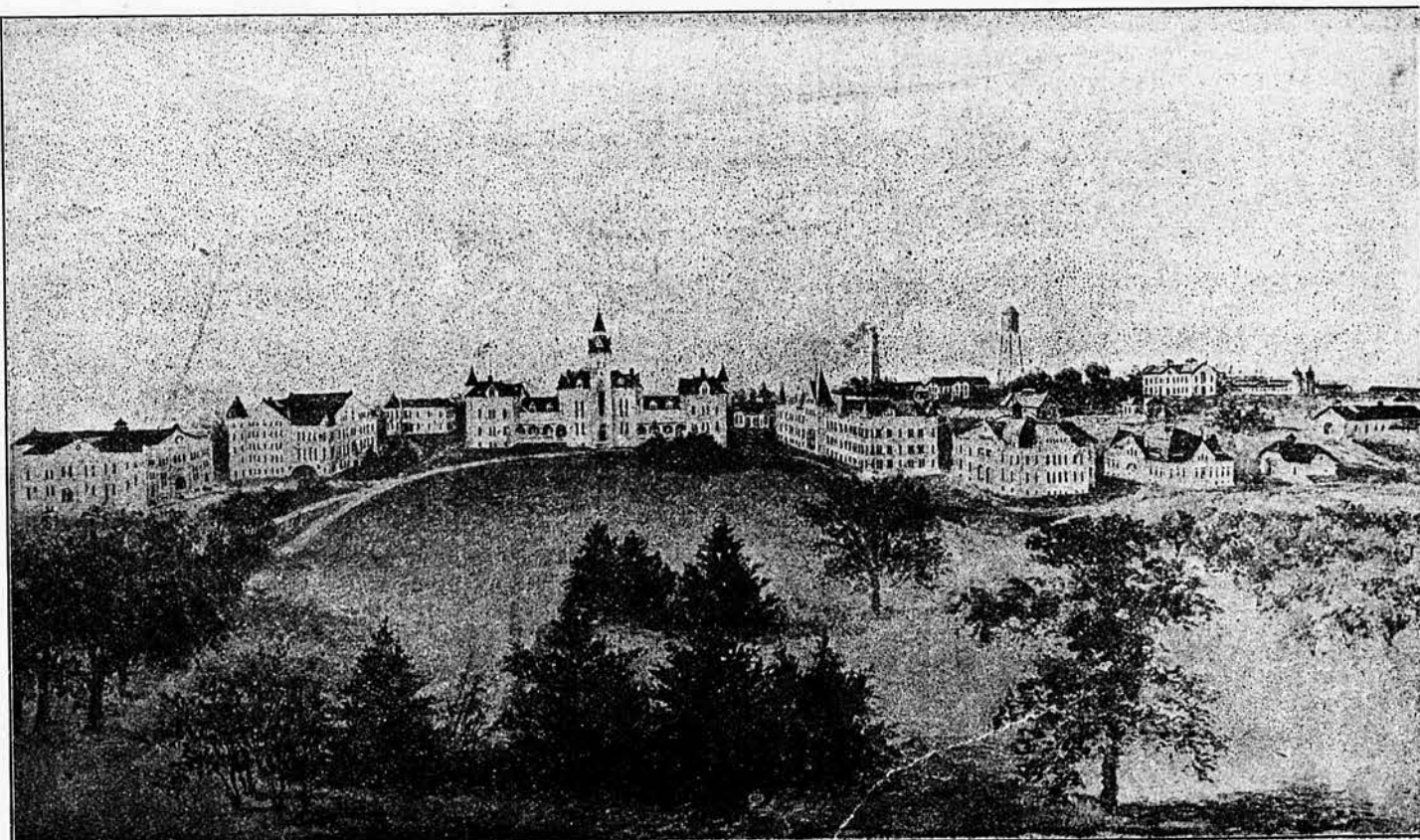
Not only is this college great in numbers but it is great in attainment as well. Its graduates occupy positions of trust and honor in the several communities to which they have gone, and the army of former students who have not graduated have made their influence felt for good as men among men and good citizens all.

While the members of its faculty are employed primarily to give instruction to the students, they have found time to make notable progress in scientific research as well, and their investigations in agriculture alone have been of immense value to the State and Nation. The Kansas Agricultural College was the first to generally introduce alfalfa to this State, and this one accomplishment has more than paid for all the expense that has been incurred in its behalf on the part of the State.

The investigations in the sciences and arts that have been made here have resulted in an immense saving from loss by the people of Kansas. Even the experiments which result in failure here are of great value in showing what can not be done in Kansas agriculture.

Statistics show that a college education increases a man's efficiency at least 200 per cent. In other words, with a college training a man has 200 more chances for marked success in life than he would have without it. Here, then, is a great institution, magnificent.

(Continued on page 660.)



KANSAS STATE AGRICULTURAL COLLEGE.

Agriculture

COMING EVENTS.

August 2, 1904—Kansas Good-Roads Association, Topeka, Kans.; Grant Billbe, president, Iola; I. D. Graham, secretary, Topeka.
October 17-22, 1904—American Royal Live-Stock Show and Sales, Kansas City, Mo.
November 28-December 3, 1904—International Live-Stock Exposition, Chicago, Ill.

Thesis on Wheat.

C. C. CUNNINGHAM.

(Concluded from last week.)

WHEAT FLOUR AS A FOOD.

Wheat flour, after it is made by the baker into its various edible forms, is the most universally used food; and not only is it now known almost everywhere, but as far back as history records some form or other of this article of diet has been the principal food of many peoples. The reason why bread is and has been the most important of foods is that it will support life and strength better than any other single food except milk. Bread made from wheat flour will support life alone as it contains all the necessary ingredients, although not in the proportions best adapted for ordinary use. By virtue of the gluten, which all wheat flours contain, dough formed in the process of bread-making can be made to expand, through the agency of yeast ferment and vaporization of water, into a light, porous, spongy mass that gives a loose, open texture when the dough is baked and makes it especially desirable as a food. The extent of such expansive ability depends greatly on the amount and quality of gluten in the flour. Thus, flours are classified as strong or weak, depending on their ability to produce light, porous bread. The more gluten a flour holds the more water it can be made to take up in dough and the greater will be the yield in bread from a given amount of flour. Gluten is also of great nutritive value as it is an easily digested protied. Wheats containing a higher per cent of gluten, therefore, make the best and most nutritious bread, and consequently varieties, such as the hard red Russian ones, or macaroni wheats, that are high in this particular constituent, are more desirable for bread-making purposes than the softer varieties that are comparatively low in gluten.

Compared with certain other forms of food wheat-flour is one of the cheapest. For two cents invested in flour, as much nutriment, heat and force to do work and sustain life can be obtained as would cost four cents if spent for milk, or eighteen cents if invested in sirloin steak. Reasoning along the same line, Prof. W. O. Atwater says: "A quart of milk, three-quarters of a pound of moderately fat beef—sirloin steak for instance—and five ounces of wheat-flour, all contain about the same amount of nutritive material, but we pay different prices for them, and they have different values for nutriment."

For growing people, milk is the most perfect of any single food, but for grown and hard-working persons wheat flour in the form of bread is the best of all single foods. Wheat is also used in making other food preparations now sold and used extensively, such as breakfast foods, macaroni, etc.

THE FEEDING VALUE OF WHEAT.

Wheat, until most recent times, has been used very little as a feed for live stock. Formerly, almost all the wheat produced was required to keep the wants of man supplied, but during the last ten years, the enormous yield of this grain has so lowered its price that many feeders have found it advisable to feed wheat as a substitute for other grains, especially that portion of the crop that will not command highest prices, on account of its condition not being up to the standard. In the years 1893-94, Kansas farmers fed 12,500,000 bushels of wheat to their live stock. The disposal of this enormous amount of wheat in this way was largely due to the vast production of this grain and an unusual shortage of corn and other feeds. The difference in cost of pro-

ducing equivalent amounts of wheat and corn is such that wheat will never become a common feed for animals, but when conditions are such that the price of a bushel of wheat is the same or less than its equivalent of standard feeds, then wheat can be fed with advantage.

Comparing wheat with corn we find that it contains a higher percentage of starch, less fat and oil and more protein. Thus it comes nearer to being a balanced ration than corn and therefore meets the requirements of growing stock with better results. As a variety of feeds usually gives more satisfactory results than one alone, wheat is of great value in this capacity, and when fed in connection with other grains, greater gains can be obtained than could be made from either alone. When fed alone wheat is objectionable in that during the process of mastication it forms a sticky, pasty mass, that adheres to the gums, making it difficult to eat. However, this can be prevented by mixing with corn or some other similar substance.

Wheat when mixed with oats, corn, or bran is superior to either alone for work horses, but when fed alone it is not a satisfactory feed. It is not adapted for fattening animals but small amounts of it fed with other grains give edge to the appetite. In a dairy ration it is equal to corn. Growing animals do better on wheat alone than on corn alone, but a combination of both is more satisfactory. Sheep seem to be an exception to the rule and do exceptionally well on wheat alone. It can be fed to them whole with just as good results as otherwise, but for all other animals it needs some form of preparation, either grinding or soaking.

From experiments that have been conducted it would appear the value of wheat as a food depends largely upon the way in which it is fed and the food with which it is combined. When properly used and combined with other grains wheat is of considerable value as an animal food.

Wheat by-products are of more economic importance as feed for live stock than the grain itself. From the vast amount of wheat that is ground into flour every year, 25 per cent of it is put on the market in form of bran and shorts or middlings. Bran, though composed largely of crude fiber, is rich in protein, and in addition carries some starch and considerable ash. It makes a good horse feed and is extensively used for this purpose. Many horsemen feed bran only once or twice a week and then in the form of "bran mash" made by scalding bran with water. In this use it acts as a mild laxative and is very beneficial. It is too bulky to feed in large amounts to hard working horses as more concentrated feeds are needed for such purposes. The large amounts of protein and mineral matter bran contains make it especially adapted for growing horses and brood-mares, its bulk not being objectionable with these animals.

For fattening steers bran is of value in adding bulk to the concentrates that are necessarily fed, while it furnishes in itself, a considerable amount of nutriment. A corn ration with one-third bran makes better gains and keeps animals in better condition than corn alone.

In a dairy ration it is one of the most desirable of feeds. It furnishes the necessary bulk which is so important in this case and also the large amount of protein and ash that are needed in maintaining a flow of milk. Mixed with cornmeal it makes a dairy feed that can not be excelled. Bran is altogether too bulky to be a profitable food for pigs though it is of value when fed to sows in form of "bran mash" at farrowing time. Pigs, however, do exceptionally well on middlings or shorts when this by-product is fed complementary with cornmeal or skim-milk. This mixture is especially adapted in serving to promote growth and in building healthy muscular bodies. Mixed with corn or oats, middlings are to be preferred to a similar mixture with bran for horses, especially the ones that are doing more or less work. Fed alone it is too heavy a food and will likely produce colic.

When Should Rye Be Sown?

Please tell me when it will be safe to sow rye in cornfield, for winter pasture, and to let make a crop next year, or turn under for corn next spring as manure. If sown too early, will it not joint and the first freeze kill it? September 1 in Iowa was about the right date to sow, but the season is much longer here, and it may be that date would be too early. Could turn stock on about October 20, would like to sow in August. M. L. THOMPSON.

Chautauqua County.

I have had little experience in sowing rye in corn. In a trial at this station last season we sowed rye in corn on July 21, a few weeks after the corn was laid by. The rye was sown by the means of a one-horse shoe-drill. The rye did not make much of a growth until quite late in the season, in fact not until after the corn was cut. It came on in October and made considerable growth. The rye did not winter-kill and came up nicely in the spring, making a good growth, although it was not a very good stand.

It would appear, from this experiment, that rye might be seeded in the corn in August with little danger of its making so rank a growth that it would winter-kill, at least there would be no danger of this if the rye was pastured in the fall. If the purpose were to grow a crop of rye the succeeding year, rather than to secure fall and winter pasture, I believe it will be advisable not to sow too early, say in September rather than in August, but if your purpose is to gain as much fall pasture as possible, with the idea of plowing the rye down in early spring, seeding it in August, provided the soil is not too dry, would in my judgment be preferable to later seeding. If the ground is dry and hard in August, it will be best not to sow until September, or until rain falls and the soil is sufficiently moist to germinate the seed. A. M. TENEYCK.

Grasses for Flood Lands.

As the Neosho Valley is again flooded and our crops all destroyed, I have determined to try to convert the land into grazing property, and I would be glad if you would kindly advise me what grasses would be the most advantageous to plant. That means, what grasses would be the most likely to stand inundation.

W. E. BARKER, M. D.

Neosho County.

In your part of the State, on lands which are inclined to overflow, and remain wet for a large part of the season, I would recommend to sow the following combination of grasses and clover for pasture: English blue-grass, 10 pounds; redtop, 10 pounds; Alsike clover, 2 or 3 pounds per acre. On bottom-land which is well drained, a combination of 10 pounds each of orchard-grass, English blue-grass, and Bromus inermis, with 2 or 3 pounds of red clover per acre, ought to give a good pasture. There is no better grass for lowlands than redtop, and Alsike clover is best adapted of all the clovers for growing on wet lands. Kentucky blue-grass is better adapted for permanent pasture and it would be well in seeding the combination of grasses, to include a little Kentucky blue-grass and white clover if the purpose is to continue the land in grasses.

For meadow, in your part of the State, I believe that timothy and clover will do well, or a combination of timothy, English blue-grass and Alsike clover or Mammoth red clover will make an excellent hay crop. Also Bromus inermis and common red clover or alfalfa will make good pasture or meadow. For a more detailed discussion of grasses for Kansas, I refer you to a paper which I read at the Improved Stock-Breeders' annual meeting, published in the report of the Kansas State Board of Agriculture, for the quarter ending March, 1904, also published in the KANSAS FARMER, February 11, 1904. A. M. TENEYCK.

Wants Information About Alfalfa.

I have a bottom farm in Chautauqua County, Kansas, which I am desirous of setting to alfalfa. I would like to

get as much information in regard to that plant as possible, so I may make no mistake. If you will kindly put me in communication with the right persons, or if you have any printed matter in regard to the subject, I will appreciate it. H. S. OWEN.

Kansas City, Mo.

I have asked Professor Willard, director of the Experiment Station, to mail you a copy of Bulletin No. 114, giving information regarding alfalfa. It will be a good plan to secure a copy of Secretary Coburn's book on alfalfa, which I think you can do by writing to the Kansas Farmer Company, Topeka, Kans.

In your part of the country fall seeding should be successful. It would be best to plow the grain ground soon after harvest, and by the use of the harrow and disk put it in good tilth, and sow the alfalfa about the first part of September. Millet taken off for hay makes a good crop with which to precede alfalfa, or cultivated crops which have been well cultivated and kept free from weeds, taken off early, leave the ground in good condition to seed alfalfa when thoroughly disked and harrowed. The general rule should be to prepare the ground early but wait until the soil is moist enough to germinate the seed before sowing the alfalfa. The same rule is applicable to spring seeding also. Alfalfa should not be seeded in a deep, loose, mellow seed-bed, but rather the surface should be fine and mellow, with rather a compact firm subsurface. On very heavy land it may be best to loosen the ground previous to seeding it down to alfalfa, but the deep loosening should precede the sowing, probably at least a year, in order that the ground may settle and firm up before the alfalfa is planted. It is best not to seed alfalfa on foul or weedy land but rather the land should be cleared of weeds by thorough cultivation for a year or two previous to seeding. On weedy land, fall seeding is preferable to spring seeding, because the start which the alfalfa gets in the fall will enable it to get ahead of the weeds the next spring, while with spring seeding on foul land the weeds usually get ahead of the alfalfa and in an unfavorable season are apt to smother it out, or by the excessive drying of the ground due to weed growth, the young plants are destroyed. Seeded in the spring the field will require two or three mowings during the season in order to keep down the weeds. Fall seeding will require no mowing the year of seeding and the next seeding, if a good stand is secured, the alfalfa will furnish two or three cuttings of hay. Twenty pounds is about the usual amount to sow per acre, but on a well-prepared seed-bed in a favorable season, much less seed will make a good stand. Some extensive growers in this State do not sow more than ten to twelve pounds of good seed per acre. At this station we have had good success in seeding broadcast with the little wheelbarrow seeder and covering with the harrow. The usual method of seeding is to use the grain-drill, but care should be taken not to plant the seed too deep; covered with an inch to an inch and a half of mellow soil is sufficient. When the grain-drill is used it is difficult to sow so small an amount of seed as ten pounds per acre, and this can only be done by mixing the seed with some coarser material, such as ground feed, bran, fine sawdust, etc. A. M. TENEYCK.

Thin Alfalfa.

I wrote F. D. Coburn a short time ago asking him for pamphlets on alfalfa. He told me to write you as you may be able to supply me with some helpful publications. I would be much pleased to get them as I have some alfalfa that is too thin. I want a crop of seed this year. Is the first or second crop best for seed? What time should it be cut for seed, and will it injure the plants to disk after cutting the first crop? I would also like information as to curing and stacking alfalfa. A. S. COMBS.

Meade County.

Professor Willard has mailed you a copy of Bulletin No. 114, in which you

will find much information regarding the culture of alfalfa.

In regard to thickening up the stand on an old field, the surest and best way will doubtless be to plow up the alfalfa this fall and reseed next spring. As a rule, little success has attended the method of reseeding the old field, when the old plants are allowed to continue their growth. Unless the old plants are very thin they will dry out the soil and shade the young plants to such an extent that the new plants will all be destroyed. It has been usual to reseed the old field early in the spring, when this is attempted without the plowing. But some farmers have had good success by reseeding early in the fall, just after cutting the third crop, when by pasturing the alfalfa, the growth may be kept down enough so that the young plants are able to get a start. In your part of the State fall seeding will not be so practicable as in the counties farther east.

It is usual to save the second or third crop of alfalfa for seed, the third crop often produces the best seed when the moisture supply is sufficient to secure a full crop. In the average season it is safer to save the second crop for seed. The first crop seldom produces a good crop of seed. This is probably due to unfavorable weather conditions during the early part of the season, and also perhaps partly to the fact that bees and insects which are instrumental in fertilizing the flowers are not so numerous in the earlier part of the season as they are later. Alfalfa should be cut for seed when most of the pods have turned brown but before any large per cent of them have dropped off.

At this station we usually disk the alfalfa early in the spring before it starts up much. Disking has also been practiced after each cutting. If the alfalfa has been disked in the spring it will usually not be necessary to disk after the first cutting, but if the ground becomes hard and compact on account of excessive rains, it may be disked with benefit immediately after the first cutting or after any cutting during the season. In the experiments carried on this spring it was observed that the best results were obtained by cross disk, setting the disk rather straight and weighting it. The disk may be followed with the harrow in order to level the loose earth and leave a more uniform mulch.

There are perhaps two general methods of curing and stacking alfalfa. One is to allow the hay to cure in the swath and in the windrow until it is dry enough to stack, which may be determined by the judgment of those handling the hay. Alfalfa should not be stacked when it is so green that water that can be forced out of the stems by twisting a handful of the stalks. Another method is to allow the alfalfa to become well wilted, then rake and put at once into cocks, allowing it to stand in this manner for perhaps a week or more, or until the hay is cured and fit to stack. The last method mentioned gives the best quality of hay if the weather is favorable, because it retains the leaves better and there is less danger that the hay will be stacked too green. It is a slower method, however, and many who put up large amounts of alfalfa stack directly from the windrow.

A. M. TENEYCK.

Crops for Worn-Out Lands.

The farm to which I have recently come is an old one, long rented, rather run down. It is largely upland, four miles west of Eldorado. There is some hard gumbo, but largely in patches and along slopes. What would you recommend as to kind of crops and treatment? I am planting it to cane and Kafir-corn mostly this year, but have a few acres in millet, expecting to sow alfalfa there this fall after cutting the millet. This is on low ground, rather wet this spring, and very foul with cockleburrs and wild sunflowers last year. Will it be safe to sow alfalfa?

Butler County. H. L. MARSH.

Professor Willard has referred your letter to me for further answer. Millet will make a good crop with which to precede fall seeding of alfalfa. Plow

the millet ground as soon after harvest as possible, and cultivate occasionally until about the middle of September, when the alfalfa should be sown. The weediness of the ground will not have so bad an effect on alfalfa by fall seeding as by spring seeding. If you get a good catch of alfalfa this fall the weeds will not bother much in the succeeding crop.

If you have stable manure, or can get it without too great expense, I recommend that you give the gumbo spots a good coat of manure this fall, and plow deep. The land may be planted to cultivated crops, such as corn or Kafir-corn the following season. If the first treatment of manure is not sufficient to give a favorable condition of the soil, the manuring may be repeated a second year, being sure to plow deep, and preferably in the fall.

In your part of the State you should be able to profitably grow all the common crops, such as corn, wheat, Kafir-corn, cane, barley, etc. Possibly you may find the new crop, emmer, a profitable crop to grow in your locality. I suggest that you get a small quantity of seed and sow a few acres of this grain next spring. If your land is old and farmed out, a part of it had best be laid down to grass and alfalfa. Two of the best grasses adapted for growing in your part of the State are English blue-grass and *Bromus inermis*. *Bromus inermis* is best adapted for upland. I would recommend to seed these grasses with alfalfa or clover; sow about ten pounds of each grass, with two or three pounds of red clover or four or five pounds of alfalfa per acre. A good seed-bed for fall seeding of grasses may be prepared as already described for alfalfa, or for spring seeding good clean corn or Kafir-corn ground, well disked and cultivated, makes an excellent seed-bed. The seeding of the land down to grass will tend to subdue the weeds, but in general the best method of clearing the land of weeds, is thorough cultivation. The land may be cleared of cockleburrs by growing cultivated crops for several years and allowing no weeds to go to seed. Another method is to cultivate a part of the season and grow such crops as millet, cane, or other forage crops which tend to smother out the cockleburrs. Such crops can be removed before the cockleburrs can seed and the ground may be plowed and cultivated in order to germinate the seed which remains in the ground and destroy the weeds. Keeping up such a treatment for a couple of years will very materially reduce the cockleburrs in any field. With this weed as with all foul weeds, it requires much effort to thoroughly clear the land of the pest.

A. M. TENEYCK.

Selecting Seed-Corn.

Please inform me if it is advisable to shell off the grains on the ends of the corn ears in picking out seed-corn. Will the ears be more filled out if all the grains on the ear are planted?

When planting potatoes, should the potato be cut into pieces, or should the whole potato be planted?

CLARENCE W. SANDERS.

Osage County.

The general practice of corn-breeders in preparing their seed-corn for breeding, is to discard the tip and butt kernels of the ear. Prof. P. G. Holden, of Iowa, the pioneer in this movement and an authority on corn-breeding, recommends to discard the tip and butt kernels. In experiments which Professor Holden carried on, he showed that the tip and butt kernels had less vitality than the full matured kernels of the middle part of the ear, giving a less percentage of germination and a more feeble plant than the perfectly developed kernels. Such germination tests as were made at this station last winter, gave similar results. Another reason for discarding the tip and butt kernels, is that being irregular in shape and size it is practically impossible to drop such kernels evenly with any planter. In other words, to get a perfect stand of corn demands the use of kernels of uniform shape and size. Theoretically, each viable kernel on the ear is capable of producing a fully de-

veloped ear, and in practice the discarding of tip and butt kernels, as far as records show, has not resulted in giving a less perfect ear but rather the opposite.

Those maintaining that it is necessary to plant the kernels of the whole ear in order to produce fully developed ears, base their statements upon these facts: that the tip kernels mature ears a little earlier than the middle kernels, and the butt kernels a little later than the middle kernels, thus lengthening the time of pollenization; in other words, the pollen from the tassels which grow on the stalks of the tip kernels falls on the silks and fertilizes the butt kernels of the ears in the new crop, while the pollen from the tassels produced from the butt kernels mature later and fertilize the tip kernels of the new ears, thus producing fully developed ears. I do not find that experiments have been undertaken to prove or disprove this theory, but it is the purpose of corn-breeders to produce more perfect ears, and without doubt improvement has been made along this line, but as stated above the breeders invariably discard tipp and butt, as well as all other uniform kernels, in selecting seed for breeding work.

Professor Holden's idea is, that in order to produce the largest number of well-developed ears it is necessary that all the stalks and ears in a field of corn reach an equal stage of maturity at practically the same date, that is, all of the pollen should mature at nearly the same time and the silks should be ready to receive the pollen at that time. Hence, in selecting seed-corn one of the objects sought is to select ears which mature at the same date.

A great many experiments have been made at the different stations in cutting potatoes for seed. Without going into the details of these experiments, I think I may safely affirm that it is not necessary to plant whole potatoes, unless very small potatoes are used. It is a waste of potatoes to plant a large or medium-sized whole potato. On land of ordinary fertility, seed cut so as to have from two to four eyes to the piece will usually give as good results as the planting of whole potatoes, and at a less expense for seed. T. B. Terry, of Ohio, one of the greatest potato-raisers in the United States, practices the one-eye system of cutting seed potatoes, but he grows potatoes on very fertile soil, and the general experience seems to be that on average land the seed pieces should be cut larger and with more eyes, averaging about three eyes to the piece. The number of eyes, however, is not the only point to be considered in cutting seed-potatoes, rather the size of the potato should determine how many eyes should be cut to the piece. With a large potato less eyes may be cut to the piece than a small potato, since with the same number of eyes cut from a large potato the pieces will be much larger than those cut from a small potato, and it seems necessary to furnish a certain amount of the potato pulp for giving a good start to the young sprouts.

A. M. TENEYCK.

The St. Louis Line Is Open.

The new Rock Island line to St. Louis, the best new railroad ever built in the West, is operating service daily Kansas City to St. Louis, commencing Sunday, June 5, at 7.50 p. m. This is the only line offering passengers a view of the entire World's Fair grounds before stopping at the main gate to discharge passengers. For full information address, Jas. A. Stewart, General Agent, Kansas City.

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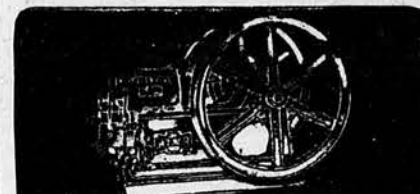
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"ARE YOU BLUE?" weak, nervous or sleepless? If you would quickly regain the vigor and strong nerves of certain health, use **BLUE PILLS**—they never fail. Price \$1. Samples and details free. Address **BLUE CHEMICAL CO., Agents wanted. Box 1741 Milwaukee, Wis.**

Horticulture

Some Insect Inquiries Answered.

BY E. S. TUCKER, MUSEUM ASSISTANT IN SYSTEMATIC ENTOMOLOGY, UNIVERSITY OF KANSAS.

[Inquiries about insects directed to Prof. F. H. Snow, of the department of systematic entomology, University of Kansas, Lawrence, will be welcome and they will receive as prompt attention as possible. Specimens should be submitted in every case with the inquiry. Mail insects in pastboard or pill-box separate from letter. Replies will generally be published in the KANSAS FARMER.]

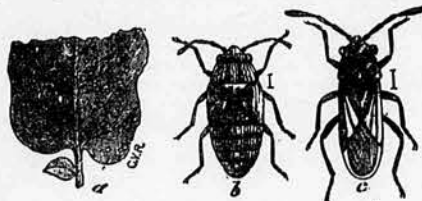
THE FALSE CHINCH-BUG (*Nysius minus*, Uhler).

Please send me some information concerning enclosed insects, also some exterminant if you know of any. They are very destructive and are taking our gardens.

Kingman, Kans., May 10, 1904.

These bugs have often been mistaken for chinch-bugs since they are about the same size and color; in fact, they belong to the same family, the Lygaeidae, order Hemiptera Heteroptera. Thus they have become known as the bogus or false chinch-bugs, and can be recognized by their uniform pale brown color, and alertness to take wing for flight. While the chinch-bug confines its injuries to cereals and grasses, this insect prefers garden plants and even the grapevine. It is widely distributed in the West, being represented in the University of Kansas collection from Arizona, New Mexico, Colorado, and Nebraska, and it occurs from May until August. In Kansas, it has been received from Phillipsburg, Phillips County, where it was mistaken for the chinch-bug; from Broderick, Pottawatomie County, where it was reported as injuring young grapes, potatoes and corn; from Ness City, Ness County; from Emporia, Lyon County, where it attacked cabbage, lettuce, cucumbers, peas and tomatoes; also in Douglas and Hamilton Counties.

In his fifth Missouri report, C. V. Riley says: "In common with all other true bugs, this insect feeds by suction; and the way in which it injures a plant is by depriving the same of its juices, and causing it to wilt. The po-



False Chinch-bug.

tato-leaves, sent me by Mr. Stone, presented the appearance of figure a, showing little, rusty, circular specks where the beak had been inserted, and little, irregular holes, which looked more as if made by some flea-beetle, one of which, the cucumber flea-beetle (*Haltica cucumeris* Harr.), is known to thus injure potato leaves.

From analogy we may infer that there are two or three broods in the course of the year, and that, as in the case of the chinch-bug, it passes the winter in the perfect state, and is difficult to combat when once infesting field or garden. Clean culture, and especially the burning of weeds and rubbish in the winter time, will doubtless prove to be the best guarantees against its injuries. The young bugs are without wings, and are of a paler color, with more or less distinct longitudinal dark lines on the head and thorax, figure b. The adult is illustrated by figure c.

A CORN BILL-BUG (*Sphenophorus* sp.).

I enclose herewith some bugs which are destroying a small field of corn for me on creek bottom. They are found mostly head downward an inch or so in the ground, with their beak inserted in the corn plant, of which they eat the heart. Sometimes the plant sends out a new shoot from the root, but this never amounts to much. I have been thinking of disking the

ground and planting to Kafir-corn. Would they hurt this the same as corn? The corn was almost a failure on this piece of ground last year on account of this pest. What kind of bug are they and what can be done to get rid of them? Please answer through the old reliable KANSAS FARMER, and greatly oblige.

Florence, Kans., May 30, 1904.



Corn Bill-bug—*Sphenophorus* sp.
Drawn from Elementary Studies in Insect Life

The figure, which is drawn twice the natural size, shows the form of the insect. Its color is almost entirely jet black.

The specimens were received in a crushed condition, which renders their identification difficult, though they plainly belong to the family of beetles known scientifically as the Calandridae, or commonly as the bill-bugs, which is a good characteristic name on account of their long, thickened snouts. Several species of these beetles are recorded as having injured growing corn, and from this fact they are generally called corn bill-bugs. All are classed in the genus *Sphenophorus*. As their injuries begin early in the spring, the hills of corn then killed can be replanted. Whether Kafir-corn is subject to their attacks, is a question to be settled by long search of reports, particularly of Kansas agriculture.

In the United States Agricultural Report for 1881-82, the life history of one kind of these bill-bugs was first published: "The beetles are first noticed in the spring after the corn is well up. Stationing themselves at the base of the stalk, and also burrowing under the earth slightly, they pierce the stalk and kill many plants outright, others living to grow up stunted and dwarfed. From an examination of a large number of injured stalks, it seems evident that the egg is laid in the stalk just at the surface of the ground, preferably and occasionally a little below. The young larvae, hatching, work usually downward, and may be found at almost any age in that part of the stalk from which the roots are given out.

ONE LUNG

May be gone and yet the remaining lung will be amply sufficient to sustain a vigorous vitality. As a general thing few people make more use of both lungs than is equivalent to a healthy use of one lung.

These facts are all in the favor of the man or woman with weak lungs, even when disease has a strong grip on them.

Many a person living in health to-day has the lungs marked by the healed scars of disease.

Dr. Pierce's Golden Medical Discovery makes weak lungs strong. It cures obstinate, deep-seated coughs, bronchitis, bleeding lungs and other conditions, which, if neglected or unskillfully treated, find a fatal termination in consumption.

"I had been troubled with lung disease and pleurisy for a number of years and the trouble had almost become chronic," writes A. S. Elam, of Howe, Ia. "Had several kinds of medicine from different physicians without much benefit. At last wrote to Dr. R. V. Pierce and got his advice, and began using his 'Golden Medical Discovery.' I have used twenty-five bottles. When I commenced taking it I had no appetite, my system was completely run-down, had no ambition to do anything. Now I feel better than I did before I got sick. Have a good appetite and am able to do my work. I sincerely recommend Dr. Pierce's Golden Medical Discovery to all who are afflicted as I was."

Those who suffer from chronic diseases are invited to consult Dr. Pierce, by letter, free. All correspondence strictly private. Address Dr. R. V. Pierce, Buffalo, N. Y.

Dr. Pierce's Pleasant Pellets assist the action of the "Discovery."

A few specimens were found which had worked upward for a few inches into the first section of the stalk above the ground, but these were all very large individuals, and I conclude that the larva only bores into the stalk proper after having consumed all available pith below ground.

"The pupae were both found in cavities opposite the first suckers, surrounded by excrement compactly pressed so as to form a sort of cell."

"Wherever the larva had reached its full size, the pith of the stalk was found completely eaten out for at least five inches. Below ground even the hard, external portions of the stalk were eaten through, and in one instance everything except the rootlets had disappeared, and the stalk had fallen to the ground.

"In a great majority of instances but a single larva was found in a stalk, but a few cases were found where two larvae were at work. In no case had an ear filled on a stalk bored by this larva. The stalk was often stunted and twisted, and the lower leaves were invariably brown and withered.

"Preventive Measures.—From the present state of our knowledge, and from the fact that the beetles issue in the fall, it seems probable that the insect hibernates, as do the other Curculionids, in the beetle state and in the stalk. Both Mr. Spiegner and his son, intelligent men and good observers, state this to be the case. The remedy, then, of cutting stalks in fall or early winter, and of plowing up the stubble and burning it, is very obvious.

"In the lowlands where the bill-bug abounds, the Lepidopterous borers are unknown, so that there will be no necessity for burning more than the stubble, which should, however, be cut high, at least six inches above ground, to insure the destruction of all.

"Mr. Spiegner turns his poultry into the cornfield in spring, but considers this a rather dangerous proceeding, on account of the 'remarkable grip' of the bill-bug; he has seen them cause chickens great distress by gripping the throat as they attempt to swallow them.

"The testimony of Mr. Spiegner, just given, relative to the hibernation of the adult beetles in the stalks, is corroborated by the experience of Mr. S. M. Robertson, as reported to the department. This gentleman stated that upon examining the stalks, during the winter time, fully 50 per cent of the stalks were found to contain the beetles in the tap-root, alive and healthy, notwithstanding the extreme severity of the winter. In one field, which was completely under water for six days during January, they were found to be as abundant and apparently as healthy as in those fields which remained above water. With regard to remedies, while the beetles are actually at work in the spring upon the young corn, the dusting with some arsenical poison, such as Paris green or London purple, mixed with some diluent in the proportions we have so often indicated, would probably be effective in destroying many beetles while in the act of gnawing their way into the stalks.

"With regard to preventives, a most perfect one will be found as already indicated, in pulling up and burning the stubble during the winter, or preferably as early as possible after harvest. With reference to this remedy Glover says: 'A very perceptible decrease of the bill-bug has been observed where the practice of burning the roots has been followed, and, if persevered in, might nearly eradicate them in the course of a few years.'"

THE COTTONY MAPLE-SCALE (*Pulvinaria innumerabilis*, Rathvon).

Under separate cover I am sending some samples of eggs that have been laid on the maple-trees. These eggs are to be found all over town, and if they mean a visitation of the maple-worm, we would like to know if there is some spray which could be used with good effect.

Independence, Kans., May 24, 1904.

Instead of eggs of the maple-worm, the specimens are female scale-insects, known as the cottony maple-scale. All scale-insects, of which this

(Continued on page 669.)

FARMS For rich farming and fruit-growing Write J. D. S. HANSON, Mart, Mich

STARK FRUIT BOOK shows in NATURAL COLORS and accurately describes 216 varieties of fruit. Send for our terms of distribution. We want more salesmen.—Stark Bros., Louisiana, Mo.

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To prove to every person afflicted with Eczema, Salt Rheum, Tetter and all obstinate Skin Diseases that **Lapodine** will cure the most obstinate, long-standing cases, we will send one box free to every sufferer. All we ask is that you send 10 cts. to cover the cost of postage, packing, etc. **EMPIRE REMEDY CO., Toledo, Kan.**

The Stock Interest

THOROUGHbred STOCK SALES.

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

July 19, 1904—L. M. Monsees & Sons, Smithton, Mo., twenty-fifth semi-annual sale of Jacks, Jennets and horses.

August 2, 1904—Harry Sneed, Smithton, Mo., Du-roc-Jerseys.

August 10, 1904—Prize-winning Poland-Chinas, F. M. Lall, Marshall, Mo.

September 7, 1904—Combination sale Aberdeen-Angus, Fergus, Ill., W. C. McGavock, Manager.

October 13, 1904—C. O. Hoag, Mound City, Kans., Poland-Chinas.

October 18, 1904—American Royal Show and Sale by American Aberdeen-Angus Breeders Association, Kansas City, Mo., W. C. McGavock, Manager.

October 28, 1904—Leon Calhoun, Potter, Kans., Poland-Chinas.

October 28, 1904—Combination sale Poland-Chinas at Clay Center, J. R. Johnson, Manager.

November 1, 1904—W. B. VanHorn & Son, Poland-Chinas, at Overbrook, Kans.

December 1, 1904—International Show and Sale by American Aberdeen-Angus Breeders Association, Chicago, Ill., W. C. McGavock, Manager.

December 6 and 7, 1904—Chas. W. Armour, Kansas City, and Jas. A. Funkhauser, Plattsburg, Mo., Herefords at Kansas City.

January 25, 1905—G. A. Munson, Maxwell, Iowa, Du-roc-Jerseys.

February 1, 2, 3, 4, 1905—Percherons, Shorthorns, Poland-Chinas, Wichita, Kans.; J. C. Robison, To-wanda, Kans., Manager.

February 16 and 17, 1905—Chas. M. Johnston, Manager, Caldwell, Kans., Combination sale of registered stock.

February 22 and 23, 1905—Shorthorns and Poland-Chinas, N. F. Shaw, Manager, Plainville, Kans.

The Present and Future Breeders and Feeders of Swine.

COL. GEO. M. MOORE, OF THE MOORE CHEMICAL CO., BEFORE THE IOWA SWINE-AND CORN-BREEDERS' ASSOCIATION, JUNE 14, 1904.

When this organization first saw the light that dawned on its birth and reflected the thought, advancement, and progress of one of the greatest industries that stands to-day without a peer, little did its founders then think how wisely and securely was the foundation laid for others to build thereon. Time, patience, energy, skill, tact, the interchange of thought, discussion and the striving for mastery make possible this assemblage.

The swine-breeder has made possible, through years of energetic toil, the realities now possessed and enjoyed by the farmers and feeders of swine, all through the corn-belt. The present thoroughbred breeder of swine, regardless of strain, puts his best effort, thought, and skill into the development of a certain type and backs his judgment by conversation, argument, or letter, and oftentimes by an advertisement in various stock journals.

There was a time, not many years ago, when men in this audience, whose heads have silvered and whose paces have slackened, decided that no good thing could come out of Egypt, and unless the babe was born and developed in the East, the rays of the Western-setting sun would fail utterly to reflect the luster of a coat that told the story of foreign parentage and birth. Unlike the brook, men will come and men will go, and the breeders of swine in the State of Iowa have not only transferred this great establishment to this State, but more and better hogs are bred and fattened in Iowa than in any other State in the Union. Are you not proud of your enviable record, and are you not doubly proud of the creature of your care, as well as the reputation you bear for upright dealing in all the States of the Union?

While you have pursued your way which has been fraught with days of fear, nights of gloom, mornings of sadness and evenings of disappointment, and while you have developed so magnificent an animal, you have developed freaks of swine and men. I mean men engaged in thoroughbred swine culture. Were it not for the freak and counterfeited in man and beast, you would fail to appreciate and enjoy the genuine; for wherever there is a genuine, somewhere in the howling distance there is a counterfeit. The majority of the thoroughbred breeders at the present time endeavor to produce all the hogs in their breeding establishment that the space will admit; and the only reason they do not increase the number is simply because they do not know how. Why indulge this mistaken appetite? During my long years of ardent research and study, gleaned all the information possible from the practical and successful breeder as well as feeder, and with untiring zeal having tried honestly to thoroughly familiarize my-

self with all the characteristics of the hog family, I have this message to give to-day. The hog is a machine for man's use, comfort, and enjoyment as well as his individual care and, as history repeats itself, as sure as truth is eternal, if you do not minister to the hog wisely and well, you can not hope to reap the profits in the future that seem so near and flattering. Ten years has demonstrated to the feeder that he can make a bunch of hogs weigh about so many pounds at a certain age owing entirely to care, conditions, and feed. The breeder has demonstrated along the same lines the kind of hog he ought to have at a certain age. Now, my fellow breeders, do you not agree with me that you may not only have the ideal hog to-day, but have had the ideal for some years past? Yet you have not slackened your efforts nor have you rested with folded hands and felt there were no more worlds to conquer. How often have you been misled and deceived? But if the old saying is true, "There is a knave born every minute and a fool every second," the crop of knaves and fools will always be in evidence. It is not respectable to be a knave, and you had better be called a fool ten thousand times than to be one once. I have thrown out these broad and perhaps unpolished sentences as a concrete to the finishing of the road. I will now endeavor to direct your mature thought and if my automobile runs into the ditch of uncertainty, or becomes shrouded with the dust of ego-tism or idealism, I shall call on my friend Lambing or some officer of this organization to help me right the infernal thing that we may reach the goal of our ambition.

After mature thought and unbiased judgment, I am finally convinced that the ideal in form, type, development, constitution, and money-making has been reached and is now in the possession of these gentlemen now assembled; but do not, like the man who left his home and family to seek the haven of perfect bliss among the Mormons in Utah, only to return a wiser and a poorer man, be led away from these moorings that you have constructed through years of honest, energetic and untiring toil and zeal, to chase the shadows that seem to invite to more fertile fields. Do not become entranced with 90 per cent of the rot and rubbish of borrowed ideas, that read like a romance of the ancient Gauls and Romans. Your experience and mine has been, with rare exception, that the fellow who is so efficient with the pen has never gleaned in the fields, nor understands the pitiful moans of the farrowing mother, the painful grunt of the dying pig, the inviting neigh of the useful horse, the bleat of the dog-chased sheep, nor the distressed low of the bovine calling for human aid.

Concoctions of every kind, description, and character are advertised and sold everywhere, but the merits and demerits of many of these nostrums have been ably and intelligently set forth for your enlightenment, by the agricultural colleges you so energetically support and maintain. You raise on your farms, or at least should raise, what is needed most to develop your herds, droves, and flocks and bring them to early maturity, and a market value that remunerates you for your time and labor. Every man, to be a success, must know the exact cost of production before he is competent to put a price on his product or to determine his profit. Before man or beast opened his eyes on this world of ours, the Hand that holds the destinies of nations and scattered the stars of the firmament, planted the seeds in mother earth that should germinate and bring forth their fruits in their season, for the preservation of the animal kingdom. How are you striving and what are your efforts in your sowing and reaping? Is your hand clasped in the hand of Him who moves in silent but unmistakable truth in nature, and do you not know that you can not get out of a thing more than you put into it?

Life is not in holding a good hand, but in playing a poor hand well. Success does not consist in never making blunders, but in never making the

same one twice. The world generally gives its admiration, not to the man who does what nobody else ever attempts to do, but to the man who does best what multitudes do well. There is a vast difference between wishing and winning. Many a man has failed because his wishbone was where his backbone should have been. If a man can write a better book, preach a better sermon, make a better mousetrap, raise a better hog, bull, sheep, horse, or goat, or better seed-corn than his neighbors, though he build his house in the woods, the world will make a beaten path to his door.

A few days ago I was a party to a transaction where a prominent Berkshire breeder paid \$1,000 for a male less than 2 years old. When we were within a mile of the home of the man who owned this hog, and inquired where he lived, his neighbors could not tell us, as he was unknown to them! Yet he raised the hog that brought the price. The seven ingredients in the world's deposit, if kept in fields and lots where stock can satisfy their cravings, will banish forever from the columns of stock journals these advertisements, "Ring your hogs," and "Vaccinate your cattle." You now have a common-sense process of ridding your stock of all external and internal parasites, and no power on earth could persuade you to cast it aside.

I have endeavored briefly to locate and distinguish the present thoroughbred breeder and feeder, whom I now believe has reached the zenith of breeding and feeding; but what have we to offer the boy of to-day, who is the man of to-morrow, in this broad field? No man is as capable or competent to judge the good as well as the weak points, as the man who produced the animal. No man can hope for success unless he is part and parcel of the animal developed. He must see him in the morning as well as in the evening, and oftentimes through the busy hours of the day. He must study its needs, and by experience he will learn that one hundred head properly cared for will bring greater and more lasting returns than twice that number neglected or committed to another's care.

Your land has increased in value. To-day many of you are farming \$100-per-acre land, and in order to make it pay a dividend, at its present market value, you must hustle. When you attempt to solve the labor problem a new difficulty confronts you.

Without any reflection (and no man can get an argument out of me), on the splendid and wondrous advancement in scientific production found in your agricultural colleges, and they will doubtless continue through the coming centuries, I believe common-sense farming, which is practical farming, should be taught in your district schools by teachers, professors, or instructors thoroughly versed in the nature, character, and productiveness of various soils, and seeds suitable for planting that will yield bountifully to the sower. I am of the opinion the time is coming when the farmer, breeder, or feeder and his family will see the advantages that will accrue to them, not only in the possession of an education, but in spending the morning and evening hours, as well as Saturdays and holidays, on the farm among the growing crops and herds. As the honest old farmer told the learned professor, if boys were trained to honest toil and kept busy, lawyers would have fewer clients and courts convene only occasionally.

I close with the admonition of the President: "Raise large families, and instruct the boys by example as well as precept that the farm is a more congenial place than the White House with all its surroundings; that the home on the farm holds treasures more to be admired than all the gilded reflections and uncertain promises of the city; that to vie with nature in its simplicity and encouragement is to develop and bring out all the natural, manly, truthful genius that is susceptible to development." With free rural delivery at your door, telephone connections with country, city, and village; with the most modern methods in farm equipment, making the broad acres produce more and better crops year by

Horse Owners! Use

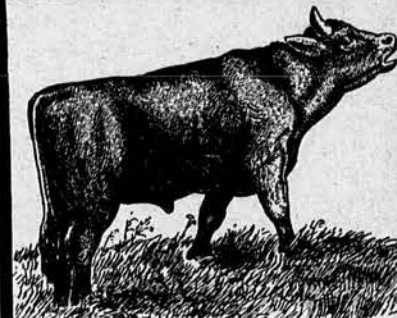
GOMBAULT'S

Caustic Balsam

A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FILING. 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. THE LAWRENCE-WILLIAMS CO., Cleveland, O.

KRESO DIP



FOR ALL LIVE STOCK

SHEEP, SWINE, CATTLE, HORSES, ETC.

PREVENTS AND CURES PARASITIC AND SKIN DISEASES

Kreso Dip is a powerful germicide and disinfectant, an unfailing tick-destroyer and lice-killer. It cures scab, mange and other parasitic diseases; kills dog-fleas and poultry-lice; prevents disease and keeps away flies. It is scientifically prepared in our own laboratories, never varies in strength, and is always reliable.

NON-CARCINOGENIC, NON-IRRITATING, NON-POISONOUS

Easily prepared—just mix it with water: 1 gallon Kreso Dip makes 100 gallons ready for use.

TRIAL LOT, \$1.25 PER GALLON CAN, at your druggist's, or direct from us (charges prepaid). Special quotations on quantities. Write for descriptive pamphlet—it's free.

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HOME OFFICES AND LABORATORIES: DETROIT, MICH.

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Spavin and Ring-bone

Once hard to cure—easy now. A 45-minute treatment does it. No other method so easy, quick and painless. No other method sure.

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Spavin and Ringbone Paste

cures even the very worst cases—none too old or bad. Money back if it ever fails. Lots of information if you write. Book about Spavin, Ringbone, Curb, Splint, Bog Spavin and other horse troubles sent free.

FLEMING BROS., Chemists, 219 Union Stock Yards, Chicago, Ill.

Pink Eye Cure

Pink Eye cured in cattle and horses by the use of Thurston's Eye Water. Any case that is not relieved by its use, money returned. Price \$1.00. Enough for ten head in each can. Sent by mail on receipt of price. Address orders to

W. O. THURSTON, Elmdale, Kansas

LUMP JAW NO CURE NO PAY

W. S. Sneed, Sedalia, Mo., cured four steers of lump jaw with one application to each steer; and J. A. Keeneman, Osborn, Mo., cured three cases with one application to each. Hundreds of similar testimonials on hand. Full particulars by mail. Write to

CHARLES E. BARTLETT, Columbus, Kans.

Gold filled 1 00. Eyes Examined Free by mail. Largest Optical Mail Order House in the West. Any style glasses for \$1. Write for free examination sheet and illustrated catalogue. Satisfaction guaranteed. R. H. Baker Co., 624 Kansas Ave., Topeka, Kans.

year; with the horse of lightning flashing by, which in a few short years will haul your produce to railroad stations or depots along the way, what of the future breeder and feeder of swine? If the father fails to instill these sturdy, manly traits now in his possession into the mind of his son, how will that son measure up to the responsibilities that lie ahead, unless he travels the same road and meets and overcomes the same obstacles that his father has met and overcome?

Educate a fool and you have an educated fool. Educate a knave and you put in his hands and brain missels that make easier his wrong-doing. Success in life is the genius of common-sense put in motion.

Teaching a Colt to Back.

To teach and train a colt properly is a science, which too few understand. Learn to understand your animal, his peculiarities and train him accordingly. Many experience difficulty in training a colt to back. There should be no serious difficulty in this if proper methods are followed. The following from Horse Sense, one of the many champions of the horse, will help:

"After the colt fully understands the legitimate use of the halter in leading is a good time to teach it to back—an important and necessary duty in its after life of usefulness—which is easily accomplished by complying with the natural law again—by pressing the extended fingers of one hand between the point of the shoulder and the breast-bone and using the other hand at the halter strap to simply keep the colt straight in line, to back in any desired direction. Don't try to force the colt backwards by 'yanking' at the halter or bit, but simply press in this sensitive chest cavity with the fingers, and the colt will naturally go backwards, provided there is nothing of any obstruction behind it. When this pressure has been made at the front and the colt has moved backward (if it is only one step) it should be rewarded for this action; then try it again. About the third time this pressure has been made it is a good time to associate the word 'back' with the pressure, and the reader will be surprised to see how soon the colt will comprehend what is wanted, and how willingly the young thing complies with our every wish as soon as it understands what is wanted."

World's Fair Special Prizes.

The final edition of the prize-list, of the live-stock department of the Universal Exposition, will soon be ready for distribution to intending exhibitors. It will be the most complete classification ever prepared for an exhibit of live-stock, and will include all breeds of domestic animals of utility to man.

The various live-stock pedigree record associations, and the leading specialty clubs, with few exceptions, have made very liberal provision in the way of special prizes, for the encouragement of exhibits of the breeds, in which the respective organizations are especially interested.

There are doubtless other organizations that will provide liberal special prizes which, if sent soon to the chief of the department, can be announced in the appendix of the prize-list of the Universal Exposition.

The following is a list of the organizations that have advised Colonel Mills, the chief of the department of live stock of the Universal Exposition, of their purpose to provide special prizes in sums ranging from various amounts to over ten thousand dollars each:

Horses.—American Percheron Horse-Breeders' and Importers' Association; Percheron Registry Company; Societe Hippique Percheronne de France; American Association of Importers and Breeders of Belgian Draft Horses; American Saddle Horse Breeders' Association; American Shetland Pony Club; English Hackney Horse Society; French Coach Horse Society of America; German Coach—by Prussian Minister of Agriculture, by Verband of the Holstein Marschen, by German Agricultural Society; National French Draft Association.

Cattle.—American Aberdeen-Angus Breeders' Association; American Galloway Breeders' Association; American Guernsey Cattle Club; Western Guernsey Breeders' Association; American Hereford Breeders' Association; American Shorthorn Breeders' Association; Ayrshire Breeders' Association; Dutch Belted Cattle Association of America; Holstein-Friesian Association of America; Red Polled Cattle Club of America; The Polled Durham Breeders' Association.

Sheep.—American Cotswold Association; American Oxford Down Sheep Record Association; Continental Dorset Club; Hampshire Down Breeders' Association of America.

Swine.—American Berkshire Association; American Duroc-Jersey Swine-Breeders' Association; American Hampshire Swine Record Association; American Yorkshire Club; National Chester White Record Association; National Duroc-Jersey Record Association; O. I. C. Swine-Breeders' Association.

Poultry.—American Plymouth Rock Club; American Buff Leghorn Club; American Buff Wyandotte Club; American Houdan Club; American Polish Club; American White Wyandotte Club; National White Wyandotte Club; Blue Andalusian Club of America; International Waterfowl Association; Lakenfelder Club of America; National Bronze Turkey Club; National Fluff Club of America; National Golden Wyandotte Club; Pea Comb Red Club; Rhode Island Red Club; Silver Laced Wyandotte Club of America; National Toulouse Goose Club.

One of the most durable woods is sycamore. A statue made from it, now in the museum of Gizeh, at Cairo, is known to be nearly 6,000 years old. Notwithstanding this great age, it is asserted that the wood itself is entirely sound and natural in appearance.

Kansas Democrats Take Wabash.

The transportation committee, appointed by the Kansas delegation to the Democratic National convention, has made arrangements with Mr. L. S. McClellan, Western passenger agent of the Wabash line, to transport the delegates and alternates and their friends to St. Louis. To afford convenient and satisfactory service to people from all parts of the State, the Wabash has arranged to run a special Kansas train, leaving Kansas City on the night of July 3, after the arrival of the trains on all the lines from the various portions of Kansas. This train leaves Kansas City approximately at midnight, and will reach St. Louis at 7:30 the next morning just in time for breakfast. The equipment of the train will be first class, consisting of standard Pullmans and comfortable chair cars. Reservation of Pullman berths may be made in advance, and an entirely comfortable trip thus insured. An ample supply of chair cars will be carried to accommodate all those who do not care for berths, and all passengers who go with the delegation on this special train, will have an enjoyable trip. From all parts of Kansas tickets will be sold at one fare plus twenty-five cents for the round trip, good fifteen days. Buy your ticket at your home station to St. Louis and return, be sure it reads over the Wabash from Kansas City to St. Louis. Those who want to go on the delegates' special train should write at once to L. S. McClellan, W. P. A., Wabash Line, No. 903 Main Street, Kansas City, who will be glad to reserve accommodations and to give any information that may be desired.

A rake is mighty useful as a garden tool but it makes a poor curry-comb for your horse. It's a worse mistake, though, using common soap to shave with. Even the best laundry or toilet soap, when used for shaving, will do for your skin just what a rake would do to your horse's hide. Williams' Shaving Soaps are made especially for shaving, by people who have been at it since 1840, and they have learned a good many things. Take advantage of their offer made elsewhere in this paper and you will reap the fruits of their sixty-five years' study.

Gossip About Stock.

Mr. J. R. Johnson, of Clay Center, the manager of the swine-breeders' combination sale at Clay Center, announces that their next annual swine sale will be held on October 28, 1904.

An opportunity to secure some choice Scotch Shorthorn bulls and heifers is now offered by our new advertiser, F. L. Hackler, Lees Summit, Mo., whose advertisement appears on page 671 this week.

Owing to the fact that the management of the Louisiana Purchase Exposition have decided that only animals entered for exhibition can be included in the sales, to be held during the live-stock weeks at St. Louis, the American Galloway Breeders' Association has decided not to hold any sale in connection with the World's Fair.

Efforts are now being made to hold an inter-collegiate stock-judging contest, in

connection with the American Royal at Kansas City, this fall. It is proposed to invite the students of the agricultural colleges of Iowa, Missouri, Nebraska, Kansas, Oklahoma, Texas, and Colorado to participate, and it is hoped that a cash prize of sufficient size will be available as a reward for the winners.

Professors Oscar Erf and J. R. Kinzer, of the Agricultural College, are planning a series of stock-judging contests for the farmers and farmers' boys of the State. Although the plans are not yet mature, it is hoped that it will be possible to hold one of these contests at the Topeka, Hutchinson, Wichita, and Ottawa Fairs at least. Whether more than this can be undertaken this year or not remains to be seen, but it is a start in the right direction.

The American Berkshire Association, with headquarters at Springfield, Ill., has under consideration the offering of a number of their breed of hogs in the combination public sale, to be held during the live-stock weeks of the World's Fair at St. Louis. Apparently some recent decisions of the management of the exposition relating to the sale of exhibition stock only is the difficulty that stands in the way of a number of the record associations' holding sales.

The Percheron Register Company, Columbus, Ohio, will offer special prizes in the form of gold, silver, and bronze medals for winners that are recorded in the herd-book of that association. The gold medals are valued at \$100 each, the silver medals at \$50, and the bronze at \$30, and they will be given for three stallions and three mare classes. Further information will be furnished by Secretary Chas. C. Glenn, Columbus, Ohio.

"Little Sketches of Famous Beef Cattle" is the title of a little hundred-page, cloth-bound book received from the author, Prof. C. S. Plumb, of the Animal Husbandry Department, in the Ohio State University. The book contains a series of sketches of notable animals of the various beef breeds of cattle, and gives the reason why these cattle became famous, giving all the essential information pertaining thereto. The price of this book is 60 cents, and will be sent post-paid by the Kansas Farmer Company.

Nearly every reader of the Kansas Farmer will be interested in the new advertisement of horse goods by J. M. French, of Topeka, Kans. He has the largest and most complete line of custom-made harness in the State. The work and material is guaranteed to give satisfaction. He can supply anything needed in the way of harness or saddles, of every grade and description, made out of the best stock and sold at the lowest cash prices. Every reader of the Kansas Farmer, convenient to Topeka, is invited to call and visit his enlarged establishment. Those living at a distance are invited to make their wants known and get prices. All such shipments will be delivered free to your home station or express office. Correspondence or personal inspection cordially invited.

Prof. A. M. TenEyck, of the Agricultural College, has been asked if it were possible to arrange for a series of corn- and grain-judging contests, to be held in connection with a number of the county and district fairs of the State, this fall. He is now at work, assisted by Professor Shoesmith, in developing plans whereby such contests can be had and real benefit derived from them. Unfortunately, some of the larger fairs are held at such an early date that it will be impossible to supply a sufficient amount of this year's corn to make a comprehensive test; but the large supply of pure-bred corn now in the possession of the Agricultural College may be drawn upon to furnish material for this contest. Secretaries of fairs who are interested along this line should write to Professor TenEyck at Manhattan, so that dates may be arranged without conflict.

For eighteen or twenty years Mr. Andrew Pringle, of Eskridge, Kans., has bred pure-bred Shorthorns, and in that time he has never used anything but the best Scotch bulls. We do not number among our acquaintances a man who has made a more careful study of his business than has Mr. Pringle in the care of his Shorthorns. The result of this care and effort, with the good judgment used in selecting the bulls, most of which were of Colonel Harris' importation or breeding, has produced a herd of cattle that are wonderfully even in quality and practically pure Scotch. Years of intelligent effort always bring success, and this is demonstrated to the visitor at the Sunflower Herd at Eskridge, Kans. The herd is so large that one can find almost anything he may need and its quality is good enough to please any breeder. Drop a line to Mr. Pringle and get his prices on what you want.

The great Casino (45462) 27830, who has stood so long at the head of the Percheron herd at White Water Falls Stock Farm, and who has behind him a phenomenal record as a prize-winner, has been sold to McLaughlin Bros., Kansas City, Mo., and Columbus, Ohio, to head their show herd at the World's Fair. The price received for Casino was the second highest price ever paid for a Percheron stallion in America, and his sale will prevent J. W. & J. C. Robison from making



A Well-made Well-fitting Harness

Improves the appearance of the horse and is an investment never to be regretted. I manufacture a complete line of custom-made harness. The work material guaranteed to give satisfaction. I now have a large and complete stock of harness as well as saddles of all kinds and grades. I make all my harness, and the prices range from \$12.50 to \$100. Every reader of this paper is cordially invited to inspect our stock, make their wants known and get our prices. All mail orders delivered at your home station free of charge. My stock the best, prices the lowest.

J. M. FRENCH,
718 Kansas Ave., Topeka, Kans.

Home Health Insurance

To insure the household against disease, use DIPOLENE, the disinfectant that does double duty—kills disease germs and purifies. For softening water, mopping floors, sinks, drains, toilets; it renders everything wholesome, sanitary, healthful. Dipolene is handy in a hundred ways in every-day household work. Saves time—labor. A woman's friend, a foe to filth.

Dipolene

on the farm is a money-saver. A preventive and cure for diseases of sheep, cattle, hogs, etc. The famous one-minute sheep-dip every farmer and stockman should know about. None so effective, so economical. Booklet, "Dipping for Dollars" tells the whole story. Free on request.

Marshall Oil Co.
Box 14
Marshalltown, Ia.

Dunaway Stack Anchor

Prevents the Top of the Stack Blowing Off. . . .

Screws in like a corkscrew. Cheap; economical; money and time saver. Saves its cost many times over every year. Does away with the old way of holding the tops of hay and grain stacks on by using rocks or other heavy weights.

Price per Dz. \$1.50

If your dealer hasn't it, order direct from us.

C. B. POKE MFG. CO
Manufacturers of Cowboy and Acme Animal Pokes and the Dunaway Stack Anchor.
1013 E. 18th St., KANSAS CITY, MO

an exhibit at the World's Fair according to their original plan. Casino, however, has a worthy successor in this herd in the young Tapageur 35340, which we think will be very nearly the equal of Casino if not indeed his superior. While we regret that Casino leaves Kansas we are glad to know that he has gone to one of the best homes in the United States, where his reputation will be greater than heretofore because his opportunities to compete in the show ring will be larger.

ARMOUR HEREFORDS

Imported and home-bred animals of all ages with pedigrees full of the best blood lines. Herd headed by the great bull Imp. Majestic assisted by Imp. Bell Metal, Lord Prettyface, and Imp. Gipsy King. Fine breeding matrons and young bulls for sale at all times. A number of young bulls and heifers "DOUBLE IMMUNE" to Tick-fever for sale. Farm 3 miles south of Kansas City. Write for information. Address

CHARLES. W. ARMOUR, Kansas City, Mo.

The Apiary

Conducted by A. H. Duff, Larned, Kans., to whom all inquiries concerning this department should be addressed.

The National Bee-keepers' Association.

Objects of the association: To promote and protect the interests of its members. To prevent the adulteration of honey. Annual membership fee, \$1.00. Send dues to treasurer.

Officers: W. Z. Hutchinson, Flint, Mich., president; J. U. Harris, Grand Junction, Col., vice-president; George W. York, Chicago, Ill., secretary; N. E. France, Platteville, Wis., general manager and treasurer.

The Kansas State Bee-keepers' Association.

Officers: Dr. G. Bohrer, Lyons, Kans., president; E. W. Dunham, Topeka, Kans., vice-president; O. A. Keene, Topeka, Kans., secretary; J. J. Measer, Hutchinson, Kans., treasurer. Annual membership fee, \$1.00. Send dues to treasurer. Official organ, Kansas Farmer.

The Honey Season.

The honey harvest is at hand in most localities, and the question with us just now is, what to do with our bees to get the best results. Most beekeepers prefer a good crop of surplus honey instead of a large increase of bees. If the honey harvest is a good one, and the bees are in proper shape and well handled, the returns are certain. The first thing in order, if it is a honey crop we are after, is to supply every good, strong colony with surplus boxes, to the extent of an abundance of storage capacity. In every case where weak colonies are cramped for room and confined to the brood chamber, swarming will be the rule, and all increase will be at the expense of the honey crop.

A limited amount of swarming will do no harm, providing it is done judiciously, but excessive swarming means no surplus honey and also starvation of colonies the next winter, if heavy feeding is not resorted to in the fall. Extremely strong colonies may be allowed to swarm but once if done early, but only in rare cases, and in every case the hives should be supplied with ready built out combs, or foundation comb instead. The principal honey harvest is but short in nearly all localities, and if we have a fairly good flow for from two to three weeks, the beekeeper who understands his business reaps a very good harvest, and makes his bees pay. It is generally supposed that he will reap anywhere from 50 pounds to 150 pounds per colony, and in many cases far exceed this. This applies principally to localities where white clover abounds, the alfalfa regions excepted. The alfalfa fields of the West where other honey resources are limited, is usually a feast or a famine, and depends altogether on the diligence of the farmer or alfalfa-grower, in harvesting his crop at the right time to make the best of it. If he lets it stand in bloom a long time before cutting, the beekeeper has something as good as a gold mine, but if the crop is promptly taken off just as it begins to come in bloom, then disaster follows with the beekeeper, and in many cases he must feed his bees or allow them to starve.

The best prevention of swarming is plenty of storage room, and all strong colonies should have not less than two supers to begin with, each containing twenty-four one-pound section boxes. While it is not perhaps the best plan to put both supers on the hive at the same time, the second one should follow in a day or two, if the bees have begun work in the first. This amount of surplus capacity is not to be supposed sufficient for the season by any means, but just so soon as a goodly number of the boxes are filled and completed, we should remove them and fill up with extra sections, and thus continue so long as the honey flow lasts. The finest and best comb honey we see on the market is honey that is promptly removed from the hive after it is completed, and not allowed to remain long on the same. It is a mistaken idea that many small beekeepers have, to put on surplus boxes to remain on the hives all summer.

Old queens are more bothersome

about swarming than young ones. queens reared this spring will seldom attempt to swarm, and queens reared last season are not so liable to induce swarming as those older. It is a very rare exception that a queen 2 years old or over is of any profit in the way of a honey crop, from the fact they become unprolific to such an extent that the colony is always weak in bees. These old queens should be superseded by young ones every season, as almost everything depends upon the queen.

Queen Excluders.

EDITOR KANSAS FARMER:—I am a subscriber of the KANSAS FARMER, and have read your valuable instructions on bee culture. I have thirteen colonies of bees this year, and in ordering my supplies I got some queen excluders and put in between the brood chamber and supers. The bees do not seem to be doing much good in the supers, but several hives have, however, turned off swarms, and they seem to have considerable honey. Do you think it advisable to use queen excluders? I would be greatly pleased to get an answer. A. O. PALMER.

Greenwood County.

Some beekeepers use queen excluders to some extent, but the majority do not. As for myself I consider them more of a detriment than a benefit. I judge that on account of your bees swarming they do not work in the supers. This will always follow swarming as a rule. If but one swarm has issued and the honey season, or rather the honey flow is good, this hive will not store much honey in the supers for about twenty days or more, from the fact that they do not have a laying queen until that time. As the young bees are daily hatching out of the brood combs, and the bees are storing what honey they gather in these combs below, not until the new queen begins filling the brood combs with eggs, until they are all full of bees and honey, do they again begin storing in the supers. If a laying queen can be introduced to the parent colony immediately after swarming, it will come into good service much sooner.

Planting Red Cedar Seed.

The seed of the red cedar should be gathered in the fall and winter and separated from the pulp. This can be done by rubbing the pulp through a sieve, or soaking for a few hours in strong lye water and then rubbing the seeds out with the hands. After the seeds are washed out, let them dry for a day or two and then store in moist sand in a cool place. The seeds should be kept moist, not wet. They do not sprout until the second spring and are easily killed by excessive drying during the summer. A good plan is to mix the seed with sand in a small box that can be moved from place to place. In the winter, the box of seed and sand can be set in the shade of the house or a shed, and in the summer placed in the cellar.

The seed is planted in the spring in beds about like onion seed, and the bed cared for in about the same way. If the soil is inclined to bake on top it is a good plan to shade the bed with brush or cloth. The young plants grow best in sandy or sandy loam soil. Keep out all weeds and grass and give the land frequent shallow cultivation. The young plants grow very slowly for two or three years and may be left in the seed-bed for that length of time. Transplant the same as other trees only use extra precaution to see that the roots do not become dry while exposed to the air. Cut the tops of the plants back more than is usually done with other trees when they are transplanted, as the cedar is in full leaf.

The seed may be planted the spring after it is gathered but it is more difficult to keep in good condition when so handled. The dry, hot summer is sure to destroy the vitality of most of the seed.

From what is now known of radium Dr. S. G. Tracey reaches these conclusions: The discovery may make it necessary to change our theories about matter and the conservation of energy.

ALL EMERGENCIES IN THE FAMILY OR ON THE FARM FOR MAN OR BEAST



SLOAN'S LINIMENT

KILLS PAIN KILLS GERMS

ALL DEALERS

King of the Hay Field.

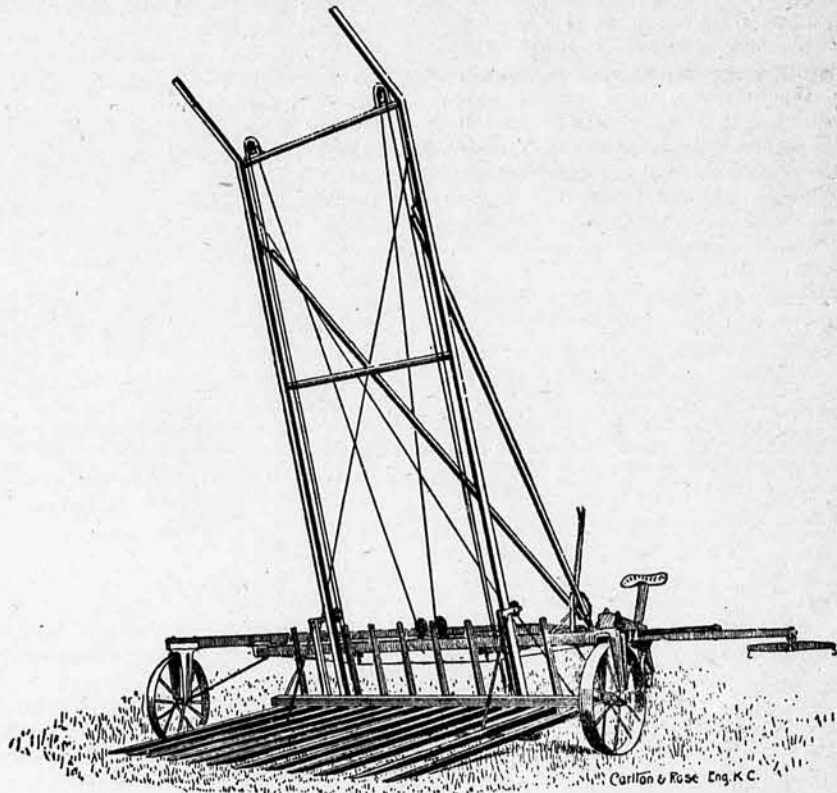
The Kansas City Hay Press Company, manufacturers of hay presses and agricultural implements, Kansas City, Mo., is now increasing its capacity by the erection of additional machine shops 60 by 150 feet and a foundry 100 by 110 feet, which will keep employed about 200 men in the various departments in the manufacture of hay presses, gasoline engines, farm scales, hay rakes and stackers, feed mills, stump-pullers, bale ties, and kindred supplies. With the enlarged capacity it is the largest manufacturer of hay presses in the world. This doubling of the capacity attests to the high merit and popularity of their line of manufacture.

Their latest creation is the "King of the Hay Field," illustrated herewith. It is a combination rake, loader and stacker. It has now been used and tested for five years so that the experimental stage is

with the old method two trips would be made from stacker without a load or any work accomplished.

This machine is very similar to a three-wheeled sweep rake with lever attachment, but slightly heavier and stronger built. The two front wheels carrying load are large and heavy. The rear wheel is in a castor, enabling the machine to be easily guided and turned in any direction.

For elevating or stacking it is provided with uprights made of angle steel. The rake performs the work of stacker teeth, being lifted by means of ropes and pulleys and guided by rollers bearing on these angles. At the top the angles incline forward, thus the load as it follows this curve is dumped on stack. After picking position for stack, two stakes are placed in the ground, thirty feet away, connected by a wire rope. When operator reaches this point with load on rake,



a thing of the past. It is exceedingly popular with farmers who have alfalfa and Kafir-corn and other heavy forage crops. It is complete in itself, no parts being removed or added in its use as a rake, stacker, or loader, enabling the general farmer to do all his own work.

The time and labor saved is easily seen. It does away with the cost and expense of keeping two machines. At the stack it does away with an extra horse or team whichever would ordinarily be used, and all the help needed is a man to adjust the hay on stack. As a loader the hay is dumped on wagon instead of stack. Windrowing is unnecessary, as hay can be taken direct from swath to stack, wagon or cock. Another point saved, and a good one, for hay in swath is not tangled up as a sulky rake leaves it, but is clean and straight, shedding water better. It will keep up with the work of two mowing machines. New advantages appear as it is put in use. For instance, start two stacks in a field, rake across to one end and dump, repeat back to the other. No time is wasted, while

he throws out a small anchor which catches on the rope. No stop is necessary, the team continues to advance, the load is elevated and dropped when the position picked out is reached. This is continued until the stack is finished or wagon loaded. If desired these stakes can be placed in two or three locations, enabling the driver to come up on any side of the stack, and not be obliged to drop load in face of wind. Or the stakes can be changed and set in a minute's time by the watch.

This machine weighs about 1,400 pounds and it is play for a team to handle. As before stated, it is not an experiment, but has been in actual use for two years, and experimented on before that.

The farm outfit is not complete without this implement. The price is so low that almost any one is able to purchase. With it the hay is quickly put in large or small stacks ready for baling. If baled the barn or shed will hold four times as much as if loose. The hay in this shape is kept choice, and is ready for market whenever the prices suit.

Radium may possibly open up the way for a cheaper and more wholesome lighting of houses by phosphorescence. It is a practical agent to differentiate genuine gems from artificial. It is a useful agent to kill bacteria. It may

be considered a valuable agent for the treatment of lupus, cancer, tuberculosis, and a possible agent to improve the eyesight and overcome blindness. Later discoveries will doubtless show service in other diseased conditions.

Miscellany

CROP EXPERIMENTS IN 1903 AT MANHATTAN.

The Kansas Experiment Station has out a valuable bulletin giving detailed accounts of the crop experiments in 1903 at this station. The unfortunate arrangement by which important publications like this are delayed for publication until their usefulness for the season is largely lost can not probably be amended while the printing has to await orders from a political board and then take its turn with other work. This printing ought to be done at the Agricultural College by the students who, while saving to the State half of the present cost, would be greatly helped in providing for their college expenses by the earnings. The next Legislature should provide for a change in the college and station printing.

The bulletin describes and discusses the year's work in the scientific yet plain way with which KANSAS FARMER readers are familiar in the writings of Prof. A. M. TenEyck. It contains numerous illustrations made from photographs illustrating the work and its results. It is a large bulletin and is, fortunately, provided with a copious index. It considers experiments with alfalfa, barley, broom-corn, corn, cow-peas, emmer, flax, millet, oats, pasture crops, penicillaria, rotation of crops, selection and breeding farm crops, silage, soil, sorghum, soy-beans, teosinte, and wheat.

A good many inquiries have been made about baling alfalfa when fresh cut or when merely wilted. The following from the bulletin under consideration is timely and seems to be conclusive:

"The baling was done July 16, with a 14 by 18 Lightning hay-press, manufactured by the Kansas City Hay-Press Company. This press has a capacity of one ton or more of prairie hay per hour. The alfalfa used was the second cutting, of a medium growth, from an old field, and was about one-fourth in bloom when cut. Fifteen bales were made from green alfalfa, which was raked and hauled to the baler immediately after being mowed. Six bales were made from alfalfa that was wilted, having been mowed in the morning and baled in the afternoon of the same day. Fourteen bales were made from alfalfa that was cut July 14 and put in cocks July 15. This alfalfa was in the 'sweat' when baled, and did not differ much in moisture content from the wilted alfalfa. Nineteen bales were made from well-cured hay in proper condition to stack.

Stage of curing when baled.	Av. wt. of bales at baling.	Av. dry wt. of bales Oct. 12.	Loss of weight.
Green.....	164	56	65.2
Wilted.....	167	92	44.9
In sweat.....	171	96	43.9
Well cured....	81	76	6.2

"Baling the green alfalfa was hard work for the men and teams, and was also a strain on the press. The cured hay handled much easier and baled faster. It will be observed from the table that the average weight per bale of the cured alfalfa, when baled, was 81 pounds, while that of the green alfalfa was 164 pounds, and the wilted, 167 pounds. The wilted alfalfa was pressed tighter than the green alfalfa. The men who did the baling were inexperienced in the work and were able to make about twenty three-foot bales in an hour from the green alfalfa. About one and one-fourth hours were required for making the same number of bales of the wilted alfalfa. The capacity of the baler was not tested in the dry alfalfa, but ten tons per day of ten hours would represent about the average capacity of the press.

"The bales of alfalfa were stored in an open shed and placed on edge in single vertical tiers, a space of six to ten inches being left between the tiers to allow a free circulation of air. The uncured alfalfa was examined at frequent intervals, and notes made on its condition of curing. It had developed considerable heat within twenty-four hours after baling, and the fermenta-

tion lasted about twenty-five days. The outsides of the bales which were exposed to the air were not at any time very warm, but the interior was very much heated. On October 12 the alfalfa bales were weighed and examined. All of the hay was found to be well dried. The bales from the green alfalfa were very light, and the wires were so loose that the bales could scarcely be handled. There was no good hay in any of these bales, and not much that would be eaten by stock. Much of the hay was covered by a white mold, and some of it seemed to be partially rotten. The hay which was baled when wilted and that baled from the cock was about the same grade, and but little better in quality than the hay which was baled when green. The heavier and more closely pressed bales contained the best hay, but none of it was salable hay, and the best of it was inferior for feeding. The hay which was baled after being cured was seemingly as good a grade of hay as when baled, and just as good as if it had been stacked. It had a good color, and the leaves were well retained. It would grade No. 1."

Following is the summary of the bulletin:

"The soil of the station farm is upland, a light-colored, rather compact loam, inclined to wash, not very fertile, and not very uniform. Except for the excessively wet weather in May, which delayed planting, the season was favorable for the growth of crops; 35.68 inches of rain fell during the growing season (March 1 to October 31). Some 240 acres, divided into 360 separate plots, ranging from one-tenth of an acre to five acres in area, were devoted to the various experiments in crop production last season.

"1. No experiments were made with winter wheat. In the trial of spring wheat varieties, the macaroni type gave the largest yield and heaviest wheat. Ordinary spring wheat was a poor crop.

"2. The six-rowed bearded type of barley ranked first in yield and quality of grain. The best yielding varieties were common barley, 33.9 bushels; Bonanza, 33 bushels; and Mandscheuri, 32 bushels per acre. Barley was not injured so badly by hot weather as was oats, and this crop may be grown successfully throughout the larger part of the State.

"3. Among twenty varieties of oats tested, the Sixty-Day oats, a new variety recently imported from Russia by the United States Department of Agriculture, gave the largest yield of grain—53.9 bushels per acre. The three varieties giving the next largest yields were: Black Beauty, 52.1 bushels; Kherson, 46.7 bushels; and Red Texas, 43 bushels per acre. The Kherson oats is another Russian variety. The early-maturing varieties yielded much better than the late varieties. Early sowing is desirable as well as earliness in maturing, in order that the crop may escape the hot weather, which is so apt to blight late oats.

"4. Emmer yielded 1,756 pounds of grain per acre, which was 44 pounds more than the largest yield of oats and 129 pounds above the yield of the best



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producing barley. This new grain is better adapted to growing in a dry climate than oats or barley, and it seems to resist diseases and unfavorable weather conditions better than the other grains. It may not take the place of barley or oats as a feed, and is better fed ground and in combination with other grains.

"5. Flax was planted rather late in the season and was a poor crop, the average yield being 6.5 bushels of seed per acre.

"6. Millet was a fair crop. German millet ranked first both in the production of hay and seed, while Siberian millet ranked second. The largest yields were 3.6 tons of hay and 25.2 bushels of seed per acre. Japanese barnyard millet was a poor crop, while hog or broom-corn millet made a total failure of crop. The foxtail varieties seem to be best adapted for growing at this station.

"7. The varieties of soy-beans yielding more than thirteen bushels of seed per acre were as follows: Yellow, Small Yellow, Ito San, Early Yellow, Green Samarow, and Early Brown. The Ito San and Yellow varieties were by far the best yielders. The Early Yellow and Ito San are both very early in maturing and much the same in type. The first-named variety is a standard sort in Kansas.

"8. Thirty-four varieties of cow-peas were planted in the field trial. The New Era variety gave the largest yield of grain—11.07 bushels per acre. Only a few of the varieties matured seed, and as a grain-producer the soy-beans are to be preferred to cow-peas for growing in this State. Cow-peas make a ranker vine growth, and are usually to be preferred to soy-beans for forage production; several of the better producing varieties yielding on an average 2.5 tons of dry fodder per acre. The Whippoorwill cowpea, a medium early variety, is well known and most extensively grown in this State.

"9. Coleman cane yielded 40.5 bushels of seed and 7.41 tons of cane stover per acre. Other good-producing varieties were Early Amber, Kansas Orange, and Kavanaugh. The Amber cane matured the earliest; the Kavanaugh was the latest maturing variety. When stacked, fifty days after harvesting, the cane stover still contained on the average 51.7 per cent of water.

"10. Yellow milo maize and Large African millet gave larger yields of fodder and much smaller yields of grain than the Kafir-corn. There was little difference in the yield of Red and White Kafir-corn. The average yield was 58.2 bushels of seed per acre and 4.25 tons of stover per acre. In the production of grain, Kafir-corn proved very much superior to cane. The Kafir stover contained fully as much water when stacked as the cane stover.

"11. In the trial of broom-corn varieties, the Extra Early Japanese appeared to be superior to the others for the manufacture of brooms, while the Genuine Dwarf ranked second. The

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first variety named also gave the largest yield of seed—29.9 bushels per acre.

"12. Penicillaria gave a total yield of 5.25 tons of fodder per acre. This plant is really the old "cat-tail" or pearl millet (*Pennisetum spicatum*), and in the average Kansas soils the sorghums are greatly to be preferred, as being a surer crop, more productive, and more valuable for forage.

"13. The yield of teosinte fodder was much less than that secured from sorghum, and as a forage crop in Kansas it is not to be compared to corn, Kafir-corn, or cane.

"14. Eighty-one varieties or strains of corn were grown in the comparative test last season. It is a remarkable fact that, in the same field and under the same conditions of culture, the yields of 'standard' varieties of corn varied from 31 to 89 bushels per acre, which indicates that the adaptation of the different varieties to different soils and climates is a subject worthy of careful study. The varieties giving yields of shelled corn above 74 bushels per acre were: Hildreth yellow dent, 89.02 bushels; Brazilian Flour, 82.01 bushels; Hammett white dent, 79.04 bushels; Mammoth white dent, 77.12 bushels; Griffing Calico, 76.64 bushels; Klondyke yellow dent, 75.7 bushels; Cocke Prolific white dent, 75.7 bushels; and Bicker's Choice yellow dent, 74.53 bushels.

"All of these were native Kansas-grown seed except Cocke Prolific and Brazilian Flour, the seed of which was Southern-grown. The five best native varieties gave an average yield of 79.5 bushels per acre; the five best imported sorts, 72 bushels per acre. Of the 33 varieties yielding over 60 bushels per acre, 18 were Kansas-grown seed. Nineteen out of the 33 were yellow dent, 10 were white dent, and 3 were the calico type of corn. The best-producing native varieties are characterized by large stalks, large ears, and medium large kernels, containing large germs. These characters seem to go with hardiness and productiveness.

"The early-maturing varieties (Northern grown seed) gave the lowest yields. The late-maturing sorts were the best producers of both grain and stover. Sixteen out of the 33 best producers were late or medium late varieties (average yield, 71.6 bushels of corn and 5,084 pounds of stover per acre), while 17 varieties matured medium early (average yield, 65.4 bushels of corn and 3,732 pounds of stover per acre). The varieties scoring highest (above 85 per cent) in points other than yield were: Forsythe's Favorite, 88.4 per

(Continued on page 665.)

The Young Folks

CONDUCTED BY RUTH COWGILL.

THE CALL OF LIBERTY.

Rise, ye Freemen, one and all,
At the call of duty.
Must the shrine of freedom fall
In this land of beauty?

Must we bear the driver's lash,
And the bondman's hopeless wall?
Must freedom cast her dying flash
Faintly on the listless gale?

Oh! no, the God of the just
Will our noble cause sustain;
We'll trample slavery in the dust
And wipe away its loathsome stain.

Was it for this that Barber died,
And Brown so ruthlessly was slain?
Is it for this their bodies lie
On Kansas' fair and fertile plain?

Better that we all should slumber
In the silent grave so low,
Than to be among the number
That would strike the fatal blow.

Loud the clarion voice is ringing
O'er the hilltop, through the glen,
Spirits of our fathers springing
Wildly gleaming through the fen.

Lo! they speak in tones of glory,
Listen to their high behest.
Must their names, divine and holy,
Now be cursed, or are they blest?

Will the son forget his sire
In his long, unbroken rest?
Or will the spark of freedom's fire
Now rekindle in his breast?

Will ye bow to vile usurpers?
Will ye kiss the tyrant's rod?
Will ye let them bind the fetters
In the sight of man and God?

No, brave hearts are up and doing
To drive the spoiler from our soil
Wives and sisters all are praying
God reward you for your toil.
—Amelia, February 25, 1853, in the Free State.

Over the Border—A Story of the Kansas Pioneers.

XIII.

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CHAPTER XVIII.—ON A MOONLIT NIGHT.

As soon as Nathan had somewhat recovered from the fatigue of that terrible night's experience, which was within a few days, he began to look about for a house in which his little family could live, and thus relieve their generous friends of the burden of their presence. He was unable to find any house available, but hastily put up a little shake cabin in the limits of the town, and as the weather thus far had been warm and springlike, he thought they could live very well under its protection. Everything they possessed had been burned, so they were almost absolutely without resource. He found employment easily as carpenter, for the business of building houses was pressed without intermission by the ambitious and progressive settlers. In this way he managed to keep the wolf from the door, though Sarah fancied she heard him howling afar off, sometimes, when the cupboard was bare, and their three meals a day were corn-bread and hot water. She always had milk for the baby, no matter how the wolf howled for her; and finally she decided it was only the prairie coyotes whose wailing bark she took for the howl of the hunger-wolf. She saw Dolman often here, who came ostensibly to talk things over with her father, and who soon fell into such terms of intimacy with them that they almost considered him one of themselves. Sarah treated him with the deference of a child toward a much-respected and beloved elder, which was both charming and aggravating to his soul. She had no suspicion of his feeling for her, and this very fact made it impossible for him to speak of it. He waited patiently for the time to come when his patient love would make her conscious of itself, and sighed when it was long and she gave no sign.

Sarah tried to make the bare, dark little cabin as homelike as possible, but it was a sorry task, for besides the barn-like uncomfortableness of the place itself, she had nothing with which to furnish it. The furniture here was even more primitive than had been that in the old house on their claim, for Nathan had little means left after the fire, and every cent he earned in his daily toil was required to feed them and clothe them in their own plain fashion. She had thought her-

self lonesome in the little shake-cabin in the country, but here, in the town, with people frequently passing and with neighbors close and friendly, she found herself longing for that place that had been home to her. She had been very happy there, she told herself, not considering whose companionship it was that had made that happiness, nor whose absence made her lonely here. She fell into the habit of gazing wistfully and searchingly at the bands of Missourians which sometimes invaded Lawrence, half-expecting to see handsome Brewster with his master among them; yet she did not think of Burk definitely, nor did she mention his name to herself. She merely lived from day to day with a blind pain at her heart which she did not understand.

Little Belle was her great comfort here, as she had been before, and amused her with her charming baby ways, besides keeping her employed in guarding her from danger of sickness or hurt, into which her mischievous spirit was constantly leading her. Sarah grew almost foolish, so it seemed to Henry and to Dolman, too, in her care for the child. Dolman assured her that Belle was both well and robust, and that so long as she threw so well in their rough way of living, she need not be anxious. Her answer to Henry's ridicule and Dolman's gentle reasoning was always, "But I love her so dearly—and I am the only mother she has—I must not let harm come to her," and so they humored her and petted Belle, yielding homage to the baby's sovereign sway.

Sarah would seldom leave Belle, but sometimes after she had put her to bed, in the evenings, and her father sat dozing wearily after a hard day's work, for Nathan did not easily recover his oldtime vigor after his treatment by the ruffians, Dolman would come by and persuade her to walk with him to Doctor Robinson's home on the hill, or to some nearer friends. Sarah enjoyed these evenings, for she made friends at once by her sweetness and her beauty.

She was returning one evening with Dolman, they having stayed rather late in their interest in the talk, which was of the growing threatening behavior of the Missourians. She thought she heard footsteps, as of some one following, but Dolman assured her there was no one, and they walked on slowly, for the night was beautifully mild, November though it was. When they reached the cabin door, Dolman said goodnight, abruptly dropping the frank hand she gave him as she thanked him for his goodness to her. She heard his footsteps dying away in the distance, but she still stood where he had left her, gazing at the great moon which was just rising golden among the silver clouds. She was thoughtfully reviewing the past few months of her life. Suddenly she started and from the shadows at her right a man stepped forth. She uttered a little note of terror, and he stepped full into the moonlight, saying, "Sarah—you do not fear me?" It was Burk.

"Oh, why is thee here? Why is thee here?" she cried, wildly.

"Because I can not stay away," he answered. "And I am glad I have come," he added, savagely. "It is high time."

"What does thee mean?" said Sarah, still shaken at his unexpected apparition.

"I shall kill him—that Dolman—"

"Thee does not mean it!" she cried, shrinking from him. "What has he done that thee hates him so?"

"Is he not one of your free-soldiers?"

"But so am I—will thee kill me also?" she asked him.

"I'll tell you why I hate him," he burst out. "It's because he loves you."

Sarah was silent for a moment, too astonished to answer. Then she laughed a low, half-amused little gurgle.

"Thee thinks because thee likes me, that everybody does," she said, a little shyly.

"Ah, my sweetheart!" he said, suddenly gentle and wistful. "I like you better than all the world besides."

There was that in his voice that for-

bade her laughing. She felt a sudden ache in her throat.

"I think of you always," he went on, in her unexpected silence. "I thought of you in the daytime when I tramped over the great plantation. I thought of you on nights like these, or stormy ones. I can not stay away from you," he repeated. "I must be here to watch over you in the dangers and perils of these troubled times."

"Forgive me if I have caused thee pain," she said, touched by his gentleness, new to her conception of him. "I will say goodnight to thee now," she went on, "and thee must not come to me again. The times are troubled, as thee has said, and we are enemies, thee and me." She slipped into the house with the words, and left him standing silently there.

It was that same white, moonlit night that she was awakened in the stillness by the sound of horses' feet clattering past, and excited voices speaking low. She crept from her bed, and looked through a square hole which had been cut for a window. She followed the men with her eyes as they hastened along the street and up the hill, until they stopped at Doctor Robinson's house. Then she wakened Henry, softly, and told him what she had seen. He followed her to the door, putting on his clothes hastily as he came.

"Where'd thee say they stopped?" he whispered.

"At Doctor Robinson's. Can't thee see that dark blot against the house? That is the men."

"I am going to find out about it," said the boy, disappearing through the door.

"I might have known he would go," she said to herself. But she had grown accustomed to the boy's impulsiveness, and took his escapades rather calmly. He always came out of them safely, and she trusted he always would.

Nevertheless she waited uneasily till morning, conjecturing what new matter was on foot. She felt sure it had something to do with the border trouble, for some new disturbance was constantly happening, and there were frequent reports of violence and bloody deeds, even murder being not so uncommon as to be greatly unexpected; and in her thought of it all came the remembrance that Howard Burk was a part of that wild band—her enemies.

Henry came back in the early morning, bursting into the room in his usual excited and impetuous way, and waking up his father and Belle by his noisy entrance.

"Gee! Great doings we've been having to-night," he cried, making himself as usual part of every occurrence.

"What was it, Henry?" entreated Sarah, eagerly.

"Oh! you know old man Branson, friend of Dow, you know, that was killed last week—well, a lot of the Missourians went to his house and burst in and took him right out of his bed, and brought him down here and was going to kill him I guess, and Sam Wood—you know Sam Wood, father—well, he got a lot of fellows and they took the old man right away from 'em." Henry said all this in one breath, and now paused to note the effect.

Nathan shook his head.

"A bad thing to do, I fear, a bad thing."

"Why, father," said Sarah, "thee wouldn't have them leave the old man to be killed!"

"It is an unfortunate affair," said Nathan, still shaking his head.

"An' you ought to have seen the mule!" went on Henry, with a chuckle.

"They had him on a mule—a bony, old mule—and Wood called out to Branson to get off and come over, and he comes, and the mule was standing there between the two lines, Free-State and Proslave. I got up there just then, and Wood he says, 'Whose mule's that, Branson?' Branson is pretty old, you know, and he was pretty badly shaken up, but he says, kind of weak—'Theirs, I guess,' and Wood just gave the old mule a kick and says, 'Get over there to your friends, you brute you!'"

"And so they saved Friend Branson

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all right, did they, Henry? And did thee know any one in the crowd?" Sarah asked this with beating heart, dreading to have the answer.

"Jones—Sheriff Jones, you know—that lives in Missouri and calls himself sheriff of Douglas County—well, he was leading them. There were about thirty or forty altogether, I guess, and not half as many of us, but we made them turn around and go home all right, and leave old Branson behind them, too. Once they lined up and you could hear their old muskets go click, click, all along the line, but we did some click-clicking, too, and they concluded they didn't want any fun with us."

"Who were the Free-State men?" asked Nathan, who looked upon this affair with much more seriousness than either Henry or Sarah.

"Oh, Dolman, and Abbot, and Wood, and a lot of good fellows—not many from Lawrence, though."

Just then there was a sound of drums outside. Henry rushed to the door. "There's going to be a meeting about it, father, thee had better come," he shouted as he slid through the door and was gone.

(To be continued.)

For the Little Ones

THE LOST CAP.

He hunted through the library,
He looked behind the door,
He searched where baby keeps his toys
Upon the nursery floor;
He asked the cook and Mary,
He called mamma to look,
He even started sister up
To leave her Christmas book.

He couldn't find it anywhere,
And knew some horrid tramp
Had walked in through the open gate
And stolen it, the scamp!
Perhaps the dog had taken it
And hidden it away;
Or else perhaps he'd chewed it up
And swallowed it in play.

And then mamma came down the stairs
Looked through the closet door,
And there it hung upon its peg,
As it had hung before.
And Tommy's cheeks turned rosy red,
Astonished was his face.
He couldn't find his cap—because
'Twas in its proper place!

—Youth's Companion.

A Voyage at Night.

The hands of the sitting-room clock were moving rapidly toward half-past seven. Carl watched them from out the corner of his eye. Sometimes he glanced cautiously at mother. She seemed to see nothing except the little coat she was sewing, but Carl knew from long experience that she never failed to notice when the minute touched the half after. He kept on playing with his soldiers, but he played very quietly.

The hand moved nearer, nearer; it touched. Mother laid down the sewing and went to the closet for Carl's night-gown.

"Oh, mother, it is as cold as Greenland up there!" he complained. "Must I go now?"

"It is Greenland," responded mother in a matter-of-fact tone.

"What?" demanded Carl, dropping his soldiers in astonishment.

"Captain Peary and his crew are just starting on a voyage there," she continued.

Carl knew all about Captain Peary; how he sailed away for the frozen north and stayed three years, searching for the north pole, which wasn't a pole at all, but just a place that no one had been able to reach because of the

snow and ice; the northernmost place in the world.

"I choose to be Captain Peary," he said, "and you're the crew. Now, let's get ready."

Captain Peary came over to the fireplace and sat on the crew's knee while she got him out of his every-day clothes and into his arctic suit.

"Haden't I better take some provisions for the voyage?" he inquired.

The crew said that was a wise thought, and got him an oyster cracker out of the pantry. Then Captain Peary was wrapped up in a large gray shawl that trailed behind, and holding the crew's hand, started out of New York harbor.

First they sailed up the Atlantic—which stupid people called the front hall—till they came to Climhup Mountain. Captain Peary's legs were short and the shawl was bothersome, but he puffed bravely up to the landing. There the crew said, "If I may be so bold, sir, I'll carry you; I've often carried young men up this mountain." And Captain Peary accepted the kind offer.

After the mountain climb came a dash across the plain to the big iceberg for which they were aiming. Captain Peary scaled this, and slid right into the middle of it.

The crew saluted respectfully. "I'll be ready to go back to New York with you at seven to-morrow morning, sir," said the crew.

Captain Peary, cuddled warmly in the middle of the iceberg, and clasping the oyster cracker in one moist little hand, giggled comfortably.—Mary Alden Hopkins, in *Youth's Companion*.

The Home Circle

CONDUCTED BY RUTH COWGILL.

A TWILIGHT LONGING.

Softly now the Western breezes
Linger o'er the fields and blow
Whispering now and murmuring sweetly
While the shadows creep below.

Distant music gently stealing
Floats upon the summer air,
Rising like a song of dreamland
Sweet and low from breezes there;

Breezes rising in the West-land
In the twilight and the sea
Where the years that pass are sweeping
Into vast eternity—

In the hazy dreamy West-land
Filled with shadows of the years—
Filled with sweetly saddened music
And with misty human tears.

O, those years, lost in the shadows
Of the great dim Western shore,
Sweeping out and on forever
Lost to me forevermore.

—Clerin Zumwalt.

Open the door of your heart, my friend,
Heedless of class or creed
When you hear the cry of a brother's
voice.

The sob of a child in need.
To the shining heaven that o'er you bends
You need no map or chart,
But only the love the Master gave.

Open the door of your heart.
—Edward Everett Hale.

The Mormons.

Converts to Mormonism come largely from Northern Europe. They are simple-minded people with scanty education and little idea of religion. They come to better their conditions. Their minds have been filled with large expectations of what may be enjoyed in this fertile land. They are not disappointed. The homes of the ranchmen are infinitely better than the common people enjoy in any foreign country. They have alfalfa and wheat and corn and sugar-beets and honey and apples, pears, peaches, plums, and all fruits in great abundance. Life is in the midst of luxury. They take religion as incidental. They are at once brought under the power of the church. Moreover, teaching is constant. The Sabbath-school, the meeting-house, and the dance hall are in every place. Every neighborhood is organized and has its bishops. It is not strange that these grateful people are easily led to speedy conformity to all doctrines and usages.

Not many of the common people ever become polygamists. They can not afford it; they are the hard-working, thrifty, healthy, strong yeomanry of the land. Once in a while they go up to Salt Lake to worship in the great

Tabernacle, with the mighty throng, listening to the grand organ and the choir of 500 voices and to the apostles who speak by divine authority. They look on the closed Temple, opened only to the elect few, and its majestic granite walls make strong appeal to the superstitious imagination. They go away with the conviction that God is constantly speaking to the apostles and leaders. It is no wonder that many devout, simple-minded women say:

"Yes, plural marriage makes us wretched; but it is the will of God and we submit."

"Do you believe it is right?" my friend said to the first wife in a plural family.

"Yes, it is the will of God."

"Does it make you happy?" She hesitated, and said with a sigh, "Our home was a paradise until my husband took a second wife."

Mormonism can never destroy the longing in the heart of woman for the joy of love's sweet privacy—the life unmolested when two hearts mingle in one which is uttered in the old refrain:

"I care not how humble, for happy 'twill be
If but one faithful heart will share it
with me."

But it is possible to appeal to woman's religious nature and by strange moral compulsion to bewilder her pure instincts and enforce the monstrous belief that God requires the sacrifice of what is dearest and most tender in her loving heart.

Not all women are bewildered. One of the most spirited and clear-headed said with sharp emphasis: "Yes, my husband wants to take another wife. Let him take one! I tell him to, and that will be the last of me."

Mormonism is a compact, rich, powerful, socialistic body. It has vast wealth. The aggregate from the tenth of every man's income is immense. It has great mercantile concerns. It controls the produce of the intermountain realm. It has churches and halls and the great Endowment House and Tabernacle and Temple, costing millions. It is a great trust. It cares for the bodies and the souls of men. The Sabbath service is often an advocacy of a sugar mill, or a woolen company, or for anything that can make for thrift and wealth or wider opportunity.

It claims the right to influence every action, public and private, which has to do with prosperous life. But its methods were never at war with other interests. The people engage in trade, agriculture, mining, alongside of the Gentile people. Let comparison be made with the oil trust, which controls every oil well in the Republic and sets a price on every lamp that burns in the poor man's home; or the coal trust that fixes the price of labor and regulates the heat of every home; or the steel trust which dominates in all industry; and listen to the whisperings of all these trusts in the ears of legislators and even in the halls of Congress and the conclusion is inevitable that the desire of Mormons to control is not out of the ordinary.

Its religion is materialistic. God is a deified man. He is the "Old Man who puts snow on the mountains." He is the gross sensual ruler in heaven who has countless wives. The Lord Christ was a polygamist.

It follows at once that revelations to men are often selfish, sensual, degrading. Ask at the bureau of information, "What do you think of polygamy?" The quick reply is, "It is of God." Listen to President Snow at the Lake speaking to the throng at the Conference. "The mission of woman is to bear children." This leads to the violation of the true ideal of marriage, the introduction of unholy polygamy and the defilement of home. The social statistics tell us of the destruction of pure instincts in children and youth, of polluted lives and the weakening of all ties of kindred and the breaking down of character.—The Home Missionary.

An American Buddhist Temple.

It is wonderful to think of the vast number of different peoples who are represented in this broad country of ours, and who have brought with them and established here many of the customs and environments of their own

countries. For instance, here is a very interesting account of some Japanese in Pennsylvania. The account is taken from the *Scientific American*:

A curious side light to the war, is the number of petitions ascending to the God of Battles. While the Russians are holding services in the various churches of their faith, in the Russian quarters of American cities, Hebrews are reported to be praying to their Messiah to bring to rout the hosts of the Czar and humble their persecutor as the enemies of the Israelites of old were humbled. But the strangest petitions of all are to be heard in the Buddhist temple at the University of Pennsylvania. Here, in a place of worship for devotees of Buddha, set up piece by piece by the late Professor Sommerville, of the chair of glyptology, who spent the greater part of his life traveling in the Orient in search of curios, the Japanese in this country find themselves in an atmosphere that is so like that of the Land of the Lotus that they easily imagine themselves transported to their island home, worshipping at the familiar shrine of their early days.

Not a single article necessary to support this idea is missing from the Buddhist temple that Professor Sommerville has built up. Buddhas of various sizes, but all with the placid face and large head of the god of the Orient, smile benevolently and eternally at the visitors to the temple; lotus plants, symbolical of the life that springs from a lowly beginning to a splendid flowering, give color to the scene around the altar; gods little and big and of various stations in the world of Japanese deities rest on their pedestals within the rail, and smile or threaten according to their mission.

In this curious temple, Japanese resident in Philadelphia and chance pilgrims to the Quaker City, gather at times during the day to pray for victory for the arms of the Mikado. At the entrance to the temple, or rather at the outer gateway, are the figures of two semi-mendicant fruit-sellers, life-size and constructed with the wonderful fidelity to nature for which the Japanese artists are noted. Were they at home the pious Japs would stop to buy from the fruit-sellers. As it is they pass the lifelike figures with their pathetic air of emaciated poverty, and walk through the outer gates of the temple to where two gigantic statues stand with great, muscular arms uplifted in an attitude suggestive of dire vengeance should any pilgrim misbehave. These are the Gods of Silence that are found at the entrance to every Buddhist temple. Their threatening attitude is to command intending worshippers to leave all levity behind when they cross the sacred portals of the temple proper.

Past these threatening figures, the pilgrim goes to the inner gate of the temple, where he is confronted in the softly lighted passageway by the rack on which are placed the towels used by all true worshippers of Buddha in the cleansing process that precedes the entrance to the house of prayer. From this place of cleansing the pilgrim passes to the temple, in the solemn silence of which he is at liberty to offer his petitions to any of the several gods within the rail. It is no new thing for the attendants at the temple to find Orientals kneeling before the altar. Since the war broke out, however, the visitors who come for prayer and not through curiosity have been steadily increasing in number. The favorite god is a great Buddha that stands on a pedestal outside the railing that surrounds the altar. Some of the gods are magnificent specimens of Oriental carving. This one is just a plain Buddha, the round face and full lips seeming to breathe peacefulness on the surroundings. He is not the kind of a god one would picture as a deity of martial characteristics. The serene face is full of gentle benevolence. But the Orientals believe their Buddha can control the destiny of Nations, and so they bow before this large-faced god and petition him to so order things that the Japanese banners will wave over the discomfited forces of the Czar, and Buddhism triumph over the Greek Church.



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Always with the explanation that he was a follower of Christ, although an admirer of many features of the Buddhist religion, Professor Sommerville lectured frequently at the Buddhist temple. At times he assumed the garb of a Buddhist priest and stood before the altar explaining the services to his audience. At these times it was not unusual for true Buddhists to attend, and, far as they were from the Orient, join in a genuine service in which their individual prayers were for the one object that stirs the heart of the Japanese—victory for the Mikado's forces in the East.

Club Department

OFFICERS OF STATE FEDERATION OF WOMEN'S CLUBS.

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Vice-President.....Mrs. Kate E. Appling, Council Grove
Corresponding Secy.....Mrs. Eunice H. Brown, Olathe
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Auditor.....Mrs. D. W. Wilder, Hiawatha
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.....Mrs. C. C. Goddard, Leavenworth.

Our Club Roll.

Mutual Improvement Club, Carbondale, Osage County (1896).
Give and Get Good Club, Berryton, Shawnee County (1902).
Woman's Literary Club, Osborne, Osborne County (1902).
Ladies' Reading Club, Darlington Township, Harvey County (1902).
Woman's Club, Logan, Phillips County (1902).
Domestic Science Club, Osage, Osage County (1888).
Ladies' Crescent Club, Tully, Rawlins County (1902).
Ladies' Social Society, No. 1, Minneapolis, Ottawa County (1888).
Ladies' Social Society, No. 2, Minneapolis, Ottawa County (1889).
Ladies' Social Society, No. 3, Minneapolis, Ottawa County (1891).
Ladies' Social Society, No. 4, Minneapolis, Ottawa County (1897).
Chalisco Club, Highland Park, Shawnee County (1902).
Cultus Club, Phillipsburg, Phillips County (1902).
Literary Club, Ford, Ford County (1903).
Saban Club, Mission Center, Shawnee County, R. No. 2 (1899).
Star Valley Woman's Club, Iola, Allen County (1902).
West Side Forestry Club, Topeka, Shawnee County, R. No. 8, (1903).
Fortnight Club, Grant Township, Reno County (1902).
Progressive Society, Rosalia, Butler County (1903).
Pleasant Hour Club, Wakarusa Township, Douglas County.
The Lady Farmers' Institute, Marysville, Marshall County (1902).
The Woman's Progressive Club, Anthony, Harper County.
[All communications for the Club Department should be directed to Miss Ruth Cowgill, Editor Club Department.]

Farmer Green's Conversion.

CLARA MOLER, OF THE DOMESTIC SCIENCE CLUB.

"I think it's a perfect imposition," said Farmer Green, "for any political party to place the negro upon a pedestal above their own wives and daughters, and every white woman in the land should consider it an insult. I'm in for woman's suffrage, I am! Why! half them black varments don't know what they're voting for. And then to see our well-educated, intelligent, refined white women snubbed at the ballot box, it's outrageous! It's taxation without representation. I tell you every white woman in America should have a vote. She should have a voice in the Nation's laws. She should be able to say how the taxes should be levied and how appropriated. Think of the poor widows, for instance, who own property. They are taxed, but they never have a voice in saying how that money shall be used, and I say it's a shame, a downright measly shame."

"Simon, I have joined the Country Club that has just been organized," said his wife, upon whom his speech had made but little impression.

"A what?" cried her husband, with both eyes and mouth agape.

"A country club for women. Mrs. Doctor Ponsonby was down to Cousin Fannie's last week, and a number of the ladies got together, and she organized them into a club. They are going to meet once every two weeks around among the members."

"And you, you dared to join the pesky thing without my consent?" roared her husband, getting purple with rage.

"Your consent? I never dreamed that it was necessary to gain your consent," was the quiet rejoinder. "You never ask my consent in any transaction you deem prudent to make."

"But you are a woman, and as such should remain subservient to your husband's wishes."

"I thought you believed in woman's

rights?" broke in his wife, sarcastically.

"And so I do, so far as they do not interfere with her home duties or her husband's interests. I think every white woman should be allowed to vote for the party and principles her husband advocates. But these clubs, they're a nuisance. It's simply a place for a lot of women to get together, and talk about the different styles of dress and millinery, or gossip about their neighbors, which is worse."

"Our constitution will provide against gossip," returned his wife, quietly.

"And so you're goin' to have a constitution, are you? Who are you goin' to git to draft it fer you, the school-master?"

"A committee of ladies has been appointed to frame a constitution. We are not going to have any men in it."

"Women don't know nothin' about framin' constitutions," said Simon, scornfully, ejecting a mouthful of tobacco juice upon the stove hearth, "but I suppose you're on the committee?"

"No, they have made me their president," said his wife, smiling.

"President! Geewhilkens! Then you are in for it; but they didn't ask my consent, and I'll teach them there women a trick or two, afore I'm done with 'em. I'll teach 'em that at least one woman is made to respect her husband's wishes. Margaret Mary Ellen Green, I positively forbid your having anything to do with that pesky club, do you understand?"

"Perfectly," said his wife, quietly.

"And you'll do as I say?"

"Not if I know it. I am your wife, Simon Green, not your slave. I shall act like a rational creature, and not like a fool. If I am capable of voting, I am capable of joining any society I choose, with or without your consent."

"And you dare to tell me this, in my own house? You openly defy my authority? Woman, have you forgotten your marriage vows? You know you promised to love, honor, and obey me, and that promise made twenty-five years ago, should be as binding now as then."

"I did not promise to be your slave, Simon Green," said his wife, spiritedly, "and what's more, I never will be. A pretty idea of a wife's duties you have, to keep your home in order, cook your meals, get up a fine dinner every day out of nothing, wait upon you, be a sort of lackey simply for your comfort and convenience. That is what you seem to consider a woman good for—that and nothing more."

"And is not that your sphere in life? A law immutable, laid down by one of the great law-givers, and would you shirk your duty?"

"God never intended that wives should be slaves, that they should be forced to give up all pleasure, all enjoyment, and breathe, think, and act only as their husbands permitted them. You have a queer idea of woman's rights, but your own are immutable. If you had to endure one-half the injustice that thousands of women do all over the land, what a hue and cry you would raise."

"But we don't have to endure, and we won't, and I'm not goin' to endure fer you to jine this club. If it was suthin' to teach you economy in your home, then I should be perfectly willin', but it's teachin' you to set up your will again your husband's, and I won't have it, that's all."

"As you will, Simon; you are just as well off after our daily jangle as you were before, and no better. I have joined the club, and further parley is useless."

"Where will you get your horse to go with, I'd like to know? You shan't have any of my critters."

"Then I'll walk, or go with some of the neighbors."

"You shan't take our Bessie with you. I'll not have her listenin' to all the scandal stories in the neighborhood."

"Scandal and gossip will not be allowed in the club. Bessie will be as safe from its taint there as in her mother's parlor. If you men were only as careful of your sons' morals as you are of your daughters', the world would grow better."

"We have to perfect our daughters, but the boys kin take keer of themselves. If your club rules can control old Aunt Phebe Watson's long tongue, they'll do better than anything has ever done yet. I don't believe she'll join if she can't talk about her neighbors. She's had them all mad at each other from Bath to Beersheba." If she gits hold of any little story, it never loses anything but generally gains more."

"You are so solicitous for Bessie's welfare, suppose you form a club of the older men of this neighborhood, and provide entertainment of a pure moral kind for the young men and boys. They need the same care and protection that our girls do, and just so long as you men as fathers, smoke, swear, gamble, play cards, and drink a little, just so long will they follow your example; and who is to blame, if they are not fit companions for our girls? From the cradle the boy is taught that he is an autocrat, that his will is law, and only too soon he breaks from his mother's controlling hand, and like the father, declares that he will not be tied to any old woman's apron string; what wonder, then, that he grows up a proud, self-willed, tyrannical man, ruling with a rod of iron over some poor broken-spirited woman, whom he calls wife. But enough of this. Goodnight, Simon." And Mrs. Green quietly left the room.

"I tell you, neighbors," said Simon Green, one bright fall day about six months after Pleasant View Club had been organized, "that there woman's club has been a godsend to this here community. Why, think of the good they've done! First they paid the minister by giving church fairs, suppers, and entertainments. Then a lot of them there women went to the school-house only last week, and decorated the walls with pretty pictures, so as to make it look more homelike. And wife has learned to make so many more good and inexpensive dishes, and she raised three times as many chickens this year as she did last, and her butter is the gilded article, I can tell you! And she learned how to remove stains from wallpaper, and make it look fresh and new. Last week she cleaned up some old straw hats and bonnets and trimmed them with some old ribbon and lace she had dyed until they looked like new, and now I won't have to paper the house or buy a new bonnet for ten long years. Hurrah! I feel like a boy just from school. We have the best garden in the county, and that recipe for killing potato-bugs beats the Jews, and wife learned it all at the club. Next year, when that club starts up again, she shall have a horse to attend every meeting, if I have to take it out of the plow! I tell you, neighbors, we men should give the women a chance."

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COMMENCEMENT AT THE AGRICULTURAL COLLEGE.

(Continued from page 649.)

nificantly equipped to furnish this training to the young men and young women of Kansas and make of them good citizens with future success assured. Here is an institution that is daily working out the unsolved problems of science for the benefit of all citizens; an institution whose Experiment Station is laboring with the questions of vital import to the farmer and whose reported failures are just as valuable as its reported successes; an institution that deals only with the practical things of life and whose training equips its students for the business of living; an institution that puts the whole boy at work and not his memory only; an institution that furnishes the most practical education at the least cost to the individual student; an institution that does its mighty work at a smaller outlay per student than any other; an institution that does all of these things as an absolutely free gift by the general government to the people of Kansas. We have sometimes heard the complaint that the burden of taxation is already heavy enough without the added expense of maintaining a great institution like the Agricultural College, and that the boys can learn to farm at home. The United States Government gave this institution to the State and endowed it with a half million dollars upon the one and only condition that the State should erect suitable buildings and properly maintain them. The boys have discovered, if their fathers have not, that they can not at home learn to farm to the best advantage, and the result has been the phenomenal growth in size and popularity of the Agricultural College which places it at the head of its kind and which now makes it necessary that the State should contribute to its financial support. But this is never a tax. It is an investment beside which the profits of all her cornfields, her cattle yards, her oil wells, her coal and salt mines are small indeed. What more profitable investment for the State than that which results in good citizens of the proficient sort?

It is not the purpose of the Agricultural College to make farmers, or horticulturists, or dairymen, or engineers. Its object and purpose is to make men and women out of the raw material furnished by Kansas farms, but in doing this it equips them so that they shall not be turned upon the world as mere stranded graduates with nothing between them and failure but a diploma.

The 99 young people who graduated here on Thursday last go forth, then, to do their work in the world with eyes that have been trained to see, ears to hear, brains to think and hands to obey. By doing things in college they are trained to do things in life and they now stand as the exemplars of the new idea in education.

As showing the trend of thought induced in these graduates by the previous training and environment we herewith publish the names and theses of each:

CLASS-ROLL AND THESES.

Amy Alena Allen—"The Rise and Progress of Printing."
Marian Allen—"The Sanitary Plumbing of a Modern House."
Grace Allingham—"Composition and Dietetic Value of Milk."
James George Arbutnot—"Henry Ward Beecher as an Orator."
Clinton Jesse Axtell—"The Rotary Converter."
Wallace W. Baird—"Influences Affecting the Production of Butter-Fat in Dairy Cows."
Flora Evacella Ballou—"The Kitchen—History of Development."
William Burgess Banning—"Inspiration."
Clara Florence Barnhisel—"Domestic Water Supply."
Frank Lorin Bates—"Study of the Negro Problem and the Difficulties of Its Solution."
Louis Blaine Bender—"Life and Efficiency of Incandescent Lamps."
John Jeremiah Biddison—"Modern Governments and the Politician."
P. McDonald Biddison—"The Efficiency of the Type A. T. B., Form 'D,' General Electric Alternator."
Wallace Newton Birch—"The Place Alfalfa Should Take in Kansas Farming."
Otis Neel Blair—"Efficiency Tests on Gasoline Engines."
William Armfield Boys—"Insects as Fruit Pollinators."
Viva Brenner—"Value of Fruits and Nuts in the Dietary."
Thomas Warner Buell—"Deterioration

of Native Pasture-Lands and the Remedies."

Clark Stewart Cole—"The Distinctive Idea of Modern Education."
Victor L. Cory—"Seeds and Seedlings of Brassica, with Especial Reference to B. Oleracea and B. Napus."
Jennie Pearl Cottrell—"Meats."
Ella Criss—"Dietetic Treatment of Digestive Diseases."
Wilma Greene Cross—"Infant Feeding."
Mary E. Davis—"Home Furnishing."
William DeOzro Davis—"Life and Efficiency of Incandescent Lamps."
Charles Sumner Dearborn—"Calibration of Transmission Dynamometer and Tests With Same on Engine Lathes."
Thomas E. Dial—"The Induction Motor."
Lawrence A. Doane—"An Investigation of Farm Management."
May Doane—"Ventilation of Buildings."
Roy Nathan Dorman—"The Economical Production of Pork."
Carl O. Duehn—"Bacteria in Drinking Water."
Glen Edgar Edgerton—"Tests on the Tensile and Compressive Strength of Cement."
Carl G. Elling—"Test of the Electrical Method of Soil Moisture."
Ralph B. Felton—"Crop Rotation for Central Kansas."
Ray Bonfield Felton—"New Crops for Kansas."
Elizabeth Finlayson—"Domestic Science in the Public Schools."
Jessie Lois Flitz—"The Distinctive Place of Induction in Education."
Beulah Fleming—"The Preservation of Foods."
Hattie L. Forsyth—"The Dietetic Value of Vegetables."
Louis Cloyd Foster—"The Storage Battery."
Edwin Chase Gardner—"The Conformation of Beef Animals as Shown by Measurement."
Walter Otis Gray—"Isolation, Identification, and Cultural Characteristics of Bacillus Tuberculosis."
Augusta Griffing—"John G. Whittier and His Relation to the Abolition of Slavery."
John Bernice Griffing—"Influences Affecting the Production of Butter-Fat in Dairy Cows."
Charles Alfred Groves—"Flood Damages to Agricultural Land in Wyandotte County."
Mary Elizabeth Longfellow Hall—"Dietetic Treatment of Diabetes."
Harry Vaughn Harlan—"The Development of the Agricultural Newspaper."
Mamie Magdalene Hassebrook—"Evolution of Cookery."
Arthur Hurschel Helder—"Aeschylus and His Relation to the Greek Drama."
Mamie Eva Helder—"The Color Scheme of a Home."
William A. Hendershot—"Five Acres of Forestry."
John Samuel Houser—"Spraying Against Insect Injury a Prominent Factor in Orchard Management."
Evan James—"War as a Factor in the Progress of Civilization."
John Arthur Johnson—"Influences Affecting the Production of Butter-Fat in Dairy Cows."
Helen Kernohan—"The Effects of Exercise."
Ralph Teeter Kersey—"Thought Versus Memory in Education."
Charles Franklin Kinman—"A Swarm of Bees in May."
Alice M. Loomis—"Bread-Making."
George W. Loomis—"Legumes as a Factor in Beef Production."
Sara Grace McCrone—"Relation of Art and Industry."
Vera Alta McDonald—"Bacteria in the Dust of Rooms."
Kirk P. Mason—"History of Anesthesia."
Howard David Matthews—"The Induction Motor."
Vernon Matthews—"Efficiency Tests on Gasoline Engines."
Chester Arthur Maus—"The Storage Battery."
Julia Anna Monroe—"The Specific Use of the School Library."
Helen Monsch—"Food Adulterations."
Samuel Erwin Morlan—"Test and Efficiency of a Polyphase Alternator."
Albert Marvin Nash—"Test and Efficiency of a Polyphase Alternator."
Virginia Viola Norton—"The Huguenots."
Mary Lorena O'Daniel—"Cereals and Their Economic Value."
Tom Lawrence Pittman—"The Efficiency of the Type A. T. B., Form 'D,' General Electric Alternator."
Charles A. Pyles—"Bacteria of the Skin."
Jennie Florence Ridenour—"The Weaving and Designing of Textiles."
Florence Rebecca Ritchie—"Eggs."
Flora Rose—"Dietary Studies."
Lawrence V. Sanford—"The Farmer's Fruit Garden."
James G. Savage—"Tests on the Tensile and Compressive Strength of Cement."
Nicholas Schmitz—"Test of the Electrical Method of Soil Moisture."
Robert Douglas Scott—"Soil Formation."
Roy A. Seaton—"A Test of the Efficiency of Steam Separators."
John T. Skinner—"The Rotary Converter."
Sallie Maud Smith—"Music in the Home."
Arthur S. Stauffer—"Efficiency Tests on Gasoline Engines."
K. Elizabeth Sweet—"Physical Training for the Mass of Students."
Wendell Phillips Terrell—"Efficiency Tests on Air-Compressing Plant."
Henry Thomas—"The Efficiency of the Type A. T. B., Form 'D,' General Electric Alternator."
Carl Thompson—"Lots, Houses, Feeding Places, and Fences for Hogs."
Norman Lee Towne—"Pus Organisms."
William Turnbull—"Efficiency Tests on Air-Compressing Plant."
Gertrude M. Vance—"Carbohydrates."
Orin Russell Wakefield—"Pus Organisms."
Frank Cooper Webb—"Cross Pollination of Fruits."
William Allen Webb—"Maintaining Soil Fertility."
James Halley Whipple—"A Test of the Efficiency of Steam Separators."
Orville Blaine Whipple—"Systematic Pomology."
Amelia Jennie Wiest—"History of the

Drama, Prior to and Including Shakespeare.

Robert S. Wilson—"Cottonseed-Meal as a Protein Feed."
Retta Womer—"Bread."

Notes.

Ordinarily the commencement season means very hot weather with one or more thunderstorms. This year the thunderstorm came first and the weather at Manhattan during commencement day was delightful.

Owing to the well-known fact that the college chapel is too small to accommodate a large crowd, and owing to the fact that the present liberal policy of the college authorities provides for the accommodation of the graduating class and friends, the turnout to the commencement exercises on Thursday, June 16, was not so large as it has been in some former years. This remark applies to the forenoon only, for the crowd in the afternoon during the band concert and military maneuvers was the largest we have ever seen on the grounds. This affords an opportunity to say that the new chapel will be worth a lot to the college.

We are pleased this week to publish a cut showing the grounds at the Agricultural College as they now exist since the newer buildings have been added to the equipment. The building in the center is Anderson Hall, the one immediately to the left is Kedzie Hall, the next one in order is Fairchild Hall, and the one on the extreme left is the new Auditorium. To the right of Anderson Hall and in the rear stands the old chemical laboratory which is now the girls' gymnasium. The large building in front of it is that of chemistry and physics, the next is agricultural science hall, behind which stands the new dairy building with the barns at the extreme right and the veterinary building above and near the top of the picture. In the rear of the physics building and near the water tower stands the horticultural building with greenhouse, while to the left of that is shown a portion of the extensive shops. While this is the best attempt that has ever been made to show all of the buildings in a general view, it can give one but a faint impression of the real beauty of the place.

The class of 1904 was remarkable in that it numbered as one of its members a young lady who is the ninth member of her family to graduate from this institution as well as being the ninth and last child of the family. This young lady was Miss Jennie Pearl Cottrell, of Wabaunsee, who is a sister of Prof. Henry M. Cottrell, formerly of this college and now of Odebolt, Iowa.

The class of 1904 included in its membership Mr. Charles Alfred Groves, a bright young colored man, who is the son of one of the potato kings of Kansas. His father is reported to have 1,300 acres of Kansas Valley bottom-land planted in potatoes this year near Edwardsville. He is also reported to be the largest potato-grower in the State.

President W. O. Thompson, of the Ohio State University, delivered the annual address this year, and was much praised for the quality of his address as well as for his skill in making it short enough so that his hearers would remember it.

Commencement day is the time when the military department of the college shows to best advantage, and the average small boy who lives near the college is in the seventh heaven of delight because of the sham battle and great number of empty cartridge shells which serve to double his Fourth of July sensations.

While the crowd is always large to see the sham battle we notice as the years go by that an increasing number of the visitors are present because of the band concert which immediately precedes and follows the battle. Prof. A. B. Brown shows much of the skill of a general in handling his large

band, hampered as he is, by the numerous duties of his position. In spite of all the difficulties in the way the band is better with each succeeding year.

Just prior to his visit to the Agricultural College the writer had returned from the World's Fair, where every effort that skill and money could put forth had been made to beautify the grounds with ornamental plantations, and it is well worth a trip to see the results here obtained. However, it is a matter of pride and satisfaction to know that the grounds of the State Agricultural College at Manhattan exceed in beauty anything to be found upon the World's Fair grounds. This is due both to skillful planning and to the work of time which has given development to the trees and shrubs.

The new auditorium on the college grounds will be a handsome and much needed addition. The building sets out on the point of College Hill to the south and east of Fairchild Hall and is a very prominent feature of the landscape. It will have a seating capacity of 3,000 but if the college continues to grow as it has done in the last six years this capacity will have to be doubled or the parents of the graduating classes will have to sit on the grass.

The present board of regents numbers three graduates of this institution. These are Hon. Carl E. Friend, of 1888; Hon. James W. Berry, 1883; and Hon. J. O. Tulloss, 1899. This is the largest number of graduates that has ever been in service on the board of regents except during the early part of this year, which Hon. R. J. Brock, 1891, was a member.

The present board of regents of the Agricultural College has been strengthened by the addition of Hon. Geo. S. Murphey, president of the First National Bank of Manhattan, to its membership. Mr. Murphey has been a citizen of Manhattan for many years and has been instrumental in building up what is now one of the strongest financial institutions in the State of Kansas. His familiarity with financial problems and the shrewd business ability which has enabled him to establish and build up the First National Bank will make him a valuable member of a board whose chief responsibility lies in the proper handling of the finances of a great institution.

H. W. CHENEY.

In the death of H. W. Cheney, of North Topeka, last week, the Kansas Improved Stock-Breeders' Association loses one of its most active members; the Kansas Swine-Breeders' Association loses one of its organizers and its ex-secretary, and the County of Shawnee and the State of Kansas, a highly respected citizen. Mr. Cheney was born at Xenia, Ohio, on June 26, 1848. He died at his city residence, 1132 North Harrison Street, on June 14, 1904, after a useful life of almost exactly 56 years. Twenty-six years ago Mr. Cheney moved to his farm, four miles north of Topeka, and began the breeding of pure-bred Poland-Chinas. He continued living upon his farm until about nine years ago, when he moved to his city residence, from which he superintended the operations of his breeding farm. During the flood of 1903 Mr. Cheney was a heavy loser financially, and the nervous and physical strain he sustained at that time in connection with the flood and the repair of its damages, caused his health to suffer. He had never recovered, and, after months of lingering illness, he passed away. Mr. Cheney was a member of the church and an active worker in its various departments. He was most widely known for his work as a breeder of pure-bred stock and his constant efforts to encourage the improvement of live-stock among his neighbors. He was a frequent writer for the agricultural press, and was often before audiences of farmers where his voice was always to be heard in favor of the betterment of his kind. Always quiet, genial, and gentlemanly,

a good friend and citizen, his loss will be felt keenly by his friends who must realize that there are too few like him.

FLOOD-PREVENTION.

When last season's floods came down upon several of the fertile valleys of Kansas, destroying crops, stock, homes and people, the public arose from its wonderment to ask two questions: First, will it ever occur again? Second, can human effort avert such disaster or in any way provide against its recurrence?

Kansas history is all recent, but it was found that in 1844 there was a flood that fully equalled that of 1903. The discussions of the wisest led to the conclusion that no definite period can be assigned for such occurrences, but that, while they may be deferred for many years or possibly never recur, they may come in any year or in a succession of years.

The realization of the correctness of this conclusion made intensely important the question of a possible remedy or preventive. The recent recurrence of floods in some of the valleys and the present state of high water in the Kansas River—the chief offender of last year—should make the question a vital one until settled.

Last season there was a general turning to Congress as the only power able to meet the case. Plans were proposed for Congressional action based on the fiction of the navigability of some of the offending streams. This fiction seemed more likely to prevail in the case of the Kansas River than any other stream, both because it is the largest of the lot and because the demand for its control was backed by the powerful commercial and manufacturing interests of the cities at its confluence with the Missouri and at several points of its course.

The plans suggested for Congressional action were devious but most of them contemplated gigantic works of some kind. These great works were attractive to the speculative writers, to the prospective contractors, to the political jobbers and would-be grafters. Indeed, it is far easier to get the attention of Congress to an undertaking involving millions than to matters less spectacular.

Among the plans suggested was that of dyking the river, forgetting that this would involve dyking also the numerous tributaries of its lower course. It was also suggested to straighten the stream, in seeming forgetfulness of the fact that this would enable a great flood over its watershed to reach Kansas City far more rapidly than without the straightening and would add little or nothing to the opportunity for this water to flow away from that vicinity.

The fiction of "aid to navigation" was made to do duty in justifying Congressional appropriations to build levees to protect lands along the lower Mississippi against floods, and this fact was by many thought to justify the assumption that navigation would be aided by spending public money on the Kaw.

But all plans based on the fiction of the interests of navigation received their death blow when Congress, acting on the advice of the proper bureau officials, declined to apply the fiction to the much-bridged and much-dammed Kansas River.

During the discussions a year ago, it was modestly suggested that the construction of reservoirs in which a portion of the run-off water might be collected where it falls—many small and individually inexpensive reservoirs—could restrain a sufficient portion of the waters which produce floods so that the usual water courses would safely convey the remainder as rapidly as it reached them.

This plan is so lacking in spectacular features, in apparent chances for graft, in opportunities for large contracts, that it has received far less attention than its merits deserve. It was advocated by Senator Burton, who was soon after discredited for connection with disreputable get-rich-quick schemes in St. Louis, thus making all political promoters wary of it. But the plan has merit, and it is probable

that if ever adequate provision shall be made for preventing the destruction of increasingly valuable property by overflow, that provision will be by the reservoir method. It was shown in the KANSAS FARMER that for the prevention of the flood of 1903 the devotion of an average of five acres for each quarter-section of the region of heavy rainfall to reservoirs capable of receiving water to a depth of ten feet would have sufficed to prevent the destructive floods. By thus holding back so much of the water the natural drainage systems would be given time to dispose of all without overflow.

As before remarked this plan lacks the spectacular features of the immense projects concerning which orators like to speak and which space writers like to decorate with scare heads. In the aggregate, however, the plan is sufficiently immense and expensive.

Since the abandonment of the fiction of "aid to navigation" it may be well to remember that a precedent has been set by Congress in extending large aid to irrigation and that a fund of many millions is accumulating to be used in this manner. The restrictions placed on the use of this fund are such that it may be impossible to apply any part of it to the prevention of floods even though the rational means for such prevention would also be one of the most rational means of providing for irrigation. Possibly some bold statesman of the future may be rash enough to startle the country with a proposition to promote agriculture, protect life and property, and accelerate prosperity without the use of any subterfuge. Such man of the future will do well to study the reservoir plan.

THE NEW SECRETARY OF LIVE STOCK.

Members of the Kansas Improved Stock-Breeders Association who were present at the annual meeting held in January last, will remember the very interesting paper on "The Poor, Down-trodden Hog," presented by Mr. Fred H. Rankin, secretary of the Illinois Improved Live-Stock Association and superintendent of institutes of the State Agricultural College. Mr. Rankin has just been elected secretary of live-stock division at the World's Fair, to succeed Colonel Charles F. Mills, who in turn succeeded Hon. F. D. Coburn as chief. In the changes made necessary by the resignation of Mr. Coburn, the directorate has been very fortunate in securing good men to carry this work forward to its completion.

DESIRABLE CLUBBING OFFERS.

Every owner of live stock should have at hand a convenient authority by which to diagnose the various ailments to which animals are subject. Dr. Mayo's book entitled "The Care of Animals," is so plain in its descriptions and so modern and so sensible in its directions as to enable the stockman to do the right thing promptly, or to determine whether the case is one requiring professional skill. This book is just such as has long been needed by the owner of animals. The retail selling price of "The Care of Animals" is \$1.25. By a special arrangement with the publishers, the KANSAS FARMER is able to offer the following advantageous clubbing proposition:

One subscription for Kansas Farmer, or	
one "Block of Two".....	\$1.00
One "Care of Animals," by mail.....	1.25
Total.....	\$2.25
Club-rate for the above.....	1.90

Another book of great interest to farmers and those who contemplate becoming farmers, and to all others who like to keep up with modern methods of high-grade farming, is "The Fat of the Land." This new book is having an immense sale. With it the KANSAS FARMER is able to offer the following clubbing proposition:

One subscription for Kansas Farmer, or	
one "Block of Two".....	\$1.00
One "Fat of the Land," by mail.....	1.50
Total.....	\$2.50
Club-rate for these.....	2.25

He who would be a great soul in future, must be a great soul now.—R. W. Emerson.



separator, and have had good success with them.

Yours respectfully,

J. B. FOLEY.

BUY AN EMPIRE AND DO LIKEWISE.

Blue Valley Creamery Co.,
ST. JOSEPH, MO.

Bendena, Ks., Apr. 27, 1904.

Blue Valley Creamery Co.,

St. Joseph, Mo.

Gentlemen—In reply to yours of the 25th inst., will say that I have milked twenty cows. They are of the Short-horn, of the Young Mary and Lady Elizabeth families, and I have realized from them, from April 1, 1903, to March 31, 1904, \$1122.60. I have fed both calves and pigs on the sweet skim-milk from a hand-

BLOCKS OF TWO.

The regular subscription price of 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.

Special to Our Old Subscribers Only.

Any of our old subscribers who will send us two NEW SUBSCRIPTIONS at the introductory rate of fifty cents each, will receive any one of the following publications as the old subscribers may choose, viz., "Woman's Magazine," "Western Swine Breeder," "Vicks' Family Magazine," "Blooded Stock," "Poultry Gazette," "Dairy and Creamery," or "Wool Markets and Sheep."

Mr. E. W. Longshore, statistical clerk of the Kansas State Board of Agriculture for nearly a quarter of a century, died at his home near Tecumseh, Shawnee County, last Sunday. Mr. Longshore was one of those quiet, efficient workers of whom the world never hears. He was connected with the KANSAS FARMER just prior to his engagement with the State Board. His cordial greeting will be missed by visitors at the agricultural headquarters and his place as statistical expert will not be easily filled.

Crop Conditions June 1, 1904.

Preliminary returns to the Chief of the Bureau of Statistics, U. S. Department of Agriculture, on the acreage of spring wheat sown, indicate an area of about 17,140,800 acres, a decrease of 116,100 acres, or 0.7 per cent, from the revised estimate of the acreage sown last year.

The average condition of spring wheat on June 1 was 93.4, as compared with 95.9 at the corresponding date last

THE CHEAPEST PAINT THE BEST PAINT

for roofs, inside of poultry houses and all wood and iron under ground, is prepared coal tar paint. Write to the

GAS COMPANY, Hutchinson, Kan.
Very cheap—Very durable.

year, 95.4 on June 1, 1902, and a ten-year average of 93.8.

The average condition of winter wheat on June 1 was 77.7, as compared with 76.5 on May 1, 1904, 82.2 on June 1, 1903, 76.1 at the corresponding date in 1902, and a ten-year average of 79.8.

The total reported area in oats is about 27,646,000 acres, a reduction of 86,300 acres, or 0.3 per cent from the area sown last year.

The average condition of oats on June 1 was 89.2 against 85.5 on June 1, 1903, 90.6 at the corresponding date in 1902, and a ten-year average of 89.9.

The average reported as under barley exceeds that harvested last year by about 153,000 acres, or 3.1 per cent.

The average condition of barley is 90.5 against 91.5 on June 1, 1903, 93.6 at the corresponding date in 1902, and a ten-year average of 89.0.

The acreage under rye shows a reduction of 6 per cent from that harvested last year.

The average condition of rye is 86.3 against 90.6 on June 1, 1903, 88.1 at the corresponding date in 1902, and 89.6, the mean of the corresponding averages of the last ten years.

Publishers' Paragraphs.

Many of our readers are interested in Standard-bred horses and we are enabled to offer the Western Horseman, of Indianapolis, price \$2 a year, in connection with the Kansas Farmer one year, both papers for \$2. This offer is good until August 31, 1904.

The Topeka Daily Herald may be secured with the Kansas Farmer from now until January, 1905, for only \$1.50. This will cover the State and National campaign, and is a snap offer for any of our readers who may wish to take advantage of it. The papers can go to different addresses if desired.

Lapodine is the name of a new remedy advertised by the Empire Remedy Company, of Topeka. It is the cure for eczema, ulcers, cold-sores, and skin diseases generally. It has the endorsement of a number of well-known people, and the offer of the company to send a twenty-five cent package for ten cents, will enable the family of every one of our readers to test a valuable preparation. The company is composed of some of the best-known business men of Topeka, and is in every way a reliable concern deserving patronage.

PILES NO MONEY TILL CURED. 25 YEARS ESTABLISHED.
We send FREE and postpaid a 200 page treatise on Piles, Fistula and Diseases of the Rectum; also 100 page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
DRS. THORNTON & MINOR, 1007 Oak St., Kansas City, Mo.

The Veterinarian

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

Kansas Live-Stock Sanitary Laws.

The live-stock sanitary laws of Kansas need a thorough revising. They were adopted in 1884, I believe, at a special session of the Legislature, called for the purpose of dealing with a reported outbreak of foot-and-mouth disease. They have been changed from time to time to meet certain conditions, until in many respects they are indefinite, incomplete, and confusing.

The execution of the live-stock sanitary laws, is vested in a live-stock sanitary commission of three members, appointed by the Governor. The commission are allowed \$5 per day and expenses for time spent in live-stock sanitary work. The law also provides that when the Live-Stock Sanitary Commission shall need the services of a veterinarian they may call upon the professor of veterinary science of the State Agricultural College, and an appropriation is made for his necessary traveling expenses. The law also provides for the appointment of inspectors to examine cattle coming into the State. The inspectors are paid by the month, from a fund provided by an inspection fee of two cents per head, for cattle inspected. The main duty of the inspectors is to examine cattle coming into the State from the South, for Southern cattle ticks, as ticky cattle are the cause of Texas fever. The Live-Stock Sanitary Commission also make regulations to eradicate or prevent the spreading of contagious diseases of live-stock. Such regulations are usually made and issued by the Governor as a proclamation.

The live-stock sanitary laws do not provide for the payment for any animal mals destroyed by the Live-Stock Sanitary Commission or their agents, except contagious pleuro-pneumonia and foot-and-mouth disease, and as neither of these diseases has ever occurred in the State, no animals condemned have ever been paid for, so far as I can learn.

The question of the payment for condemned animals will be discussed later in connection with the subject of glanders.

It should be noted that the live-stock sanitary laws only deal with contagious or infectious diseases. Many people think that they can call for the State Veterinarian for any unusual case of sickness or death of live stock, but this is not true. Still, as a rule, the Live-Stock Commission usually investigate any serious loss of live stock, even when accidental poisoning is indicated.

Reports of diseases of live stock that seem to be contagious, usually come from the sheriff or other county officers, but often come from private citizens. The law should provide that all calls should come through some county officials, as it would save many needless trips. Frequently calls are received that read like this: "Come immediately. Serious disease among stock—not understood. I live ten miles south of X—," and on arrival nothing but a case of garget in a cow or indigestion in a horse is to be found. Such schemes are usually employed to secure veterinary service free or at State expense. If the calls for the Live-Stock Sanitary Commission are required to come through a responsible county official, most of the useless trips would be avoided. The present law provides that where there is evidence of a contagious disease among live stock, the sheriff shall investigate and if necessary place a temporary quarantine, and notify the Live-Stock Sanitary Commission. The Live-Stock Sanitary Commission shall proceed to the place and investigate

the disease and they may call the State Veterinarian, place a quarantine, or take such measures as are necessary to cope with the disease. As a rule, while the Live-Stock Commissioners are practical stockmen or farmers, yet they know no more about the disease than the owner of the stock, and the owner usually wants the advice of a veterinarian before any animals are condemned or quarantined. So in actual practice the Live-Stock Sanitary Commission do not go themselves, but send the veterinarian instead, and take his advice regarding the outbreak. The laws should be changed to make such a provision. At present the method of securing the services is too complex, and often causes serious delay in cases that need immediate attention.

N. S. MAYO.

Stiff Neck.—I have a 10-year-old horse that has had a stiff neck for about six weeks. The trouble seems to be near the head, and he keeps his nose sticking out at an angle of 45°. Pressure on his nose seems to cause pain. He eats and drinks all right. What can I do for him? J. W. P.

Independence, Kans.

Answer.—I think your horse has been hurt in some way, or else he has a poll evil coming. I would advise bathing the top of the neck just back of the ears with hot water, rubbing dry, and applying a good liniment, rubbing it in thoroughly. Be sure and give it lots of rubbing. This may cause the trouble to disappear or "scatter" the poll evil if one is forming. It is possible, of course, that the bone has been injured and it will take considerable time.

Persistent Urachus.—I have a horse colt 10 days old. When it voids urine a portion of it comes through the navel. Will it need treatment? If so, what? Arkansas City. SUBSCRIBER.

Answer.—Before birth the excretion of the kidneys is carried out through the navel and this sometimes fails to close at birth, as in this case. As a rule they will get over all right without treatment. Often a little tincture of iodine applied to the navel once daily for two or three days will cause it to close. If it does not you had better have a veterinarian examine and see if it is necessary to close it with a clamp or with stitches.

Influenza.—My horses are suffering with a peculiar disease. They first appear stiff in all legs and neck. Then they begin to swell some place on the neck, fore legs or breast. The swelling is very tender at first but pus does not seem to form. The bunches are not very large, either. They eat well and seem in good condition otherwise, but can not get their heads down to eat or drink. They can hardly walk.

Lone Star, Kans. SUBSCRIBER.

Answer.—This seems to be a form of influenza, and is due to infection either from other horses, or it may be caused by some local infection which they get in the food or water. I would advise you to see that the water is pure and the quality of feed good. Give the affected animals a small tablespoonful of saltpeter, for an adult, once daily, dissolved in water, as a drench. Also give them about a teaspoonful of hyposulfite of soda twice daily in their feed. I think they will get over it in time, but it will probably have to run its course.

Sweeny.—I have a 3-year-old mare which is sweenyed in both shoulders. Will they fill out without any treatment? What can I do for her? Republican City, Neb. E. N. H.

THE SOVEREIGN REMEDY.

If you raise hogs and sheep you are deeply concerned about how to avoid cholera and cure scab. There's a dependable remedy. The highest authorities, Veterinarians, Leading Breeders, Government Experiment Stations, both by preaching and practice proclaim it the sovereign remedy. It is famous

ZENOLEUM

It avoids cholera by destroying disease germs, maintains sanitary conditions, cures scab, kills lice and ticks, relieves from stomach and intestinal worms, heals sores and wounds, cures skin diseases. To insure your animal's health you need only be guided by what Government and State authorities and leading breeders say of

"The Great Coal Tar Carbolic Disinfectant Dip."

Sample gallon of Zenoleum by express, prepaid, \$1.50. Five gallons, \$6.25, freight prepaid investigate by sending for copies of free booklets, "Veterinary Adviser" and "Piggie's Troubles." ZENNER DISINFECTANT CO., 61 BATES ST., DETROIT, MICH.

Answer.—As a rule horses will recover from sweeny all right if they are not too badly sweenyed. Rubbing the shoulders with a good liniment once daily is a good treatment. Give lots of rubbing and only use the liniment enough to blister slightly. If she does not improve in two or three weeks write again.

Poisoning.—I had a sow die this morning. She had the scours very badly, the discharges being bloody. She also frothed at the mouth and vomited. I turned her out on the pasture yesterday morning and she seemed all right. Do you think the disease contagious? J. H. P.


Asherville, Kans.

Answer.—I think your sow ate something that poisoned her, possibly young cockleburrs, or something else that she got at pasture. This set up severe inflammation of the stomach and bowels and would cause the symptoms you describe.

Abscess of Throat.—I recently lost a fine bull calf. He would breathe very hard and on examining the throat I found a hard lump. He died a week from the time I found him sick. I opened his throat and found a rotten sore, or rather two, one on each side of his throat. I gave him three doses of iodide of potash, two drams at a dose. I examined the veterinary department of the KANSAS FARMER for treatment for similar cases. I found that similar swellings were caused by a weak or rundown condition, but this was not the case with my bull. What could have been done? J. A. F.

Osawatimie, Kans.

Answer.—The trouble with your bull



BALMOLINE

exceeds all other remedies for Collar Galls, Sore Shoulders, Scratches, Wire Cuts, Cracked Heels, Sifts, Chafes, Ro's Burns, Sore Teats, Caked Udder, Old Standing Sores of all kinds, etc. Ke away the flies preventing Maggots, Sc w Worms, and Proud Flesh. Equally go for man or beast. Endorsed by the hair every time. It brings the hair every time. Sold by all druggists. Price 25c and 50c. Trial size 4c by mail. For circulars etc. write De Buy Balmoline Mfg. Co. Box 14, Abilene, Kans.

was evidently an abscess in the throat. I am not sure that any treatment would have saved him. The proper treatment, however, would have been to have opened the abscess from the outside and washed it out thoroughly with antiseptics. This would have required an expert surgeon, as there are many large blood vessels in this region. The swellings I have described in this department as caused by poverty, are not swellings of the throat but beneath the lower jaw, and were soft, flabby, and dropsical, and caused by a weak circulation. N. S. MAYO.

Yung sinner, reckolekt one thing, whatever yu git dishonestly yu hav got to divide with the devil, and he allwuss takes the lion's share.—Josh Billings.

Kansas

Democrats and Friends

To St. Louis Democratic National Convention

VIA Wabash Line

The Committee on transportation of the State of Kansas have made arrangements for a special train for Kansas Delegates and their friends over the Wabash Railroad, to leave Kansas City, 11.30 p. m., Sunday, July 3, arriving World's Fair Station 7 a. m., and Union Depot 7.15 a. m., July 4.

Trains will be composed of free reclining chair cars, and Pullman sleepers. All those desiring accommodations on the "KANSAS SPECIAL" should communicate with L. S. MCLELLAN, Western Passenger Agt., Wabash Railroad, 903 MAIN ST., KANSAS CITY, MO.

One fare plus 25 cents round trip from all points. Fifteen-day limit.

Be sure your tickets read over the Wabash, "World's Fair Route," Kansas City to St. Louis and go on the Kansas Special. Everybody cordially invited.

The arrangements for the trip unites the attendance of the National Convention, and the "World's Fair."

Ask for Tickets over the Wabash.

In the Dairy

Feeding Dairy Cows.

WILBUR J. FRASER, CHIEF IN DAIRY HUSBANDRY, ILLINOIS EXPERIMENT STATION.

1. Secure the rough fodders in the best possible condition, and use them liberally, as they are much cheaper than concentrates.

2. Feed concentrates in proportion to the milk flow.

3. Study and supply the individual needs of each cow.

Before man had control over animals, and they became domesticated, there were no highly specialized forms, and when they roved wild on the prairies or in the forests, the problem of the particular kind and character of their food supply was not an important one, for they were not expected to draw loads of several tons weight, or to produce the abnormal yields of milk that are given by the highly developed dairy cows of to-day. However, after man domesticated animals and began to develop breeds suited to special purposes, as draft, speed, beef, or milk, the question of their food supply became an all-important one, for in order to secure the best results their food must be adapted to their special needs. One fact of great importance, and which must not be lost sight of in economical feeding, is, that the amount, kind, and character of the food an animal requires depends entirely upon the use to which that animal is going to put the food. A cheap team may be kept through an idle time on a kind of feed

that would not be at all suited to the needs of a race horse during the training season, or of a valuable cow yielding 100 pounds of milk a day during an official test.

In order that a cow may produce the greatest yield of which she is capable, she must be given the right kinds of feed and the correct amount of each. There is little use in paying high prices and establishing a good dairy herd unless careful attention is to be given to the amount and character of the feed, for however well-bred and efficient the individuals they can not give in their product what they do not receive in their food.

The nutrients contained in all feeding stuffs, as well as in animal bodies and in milk, may be divided into five classes as follows: Water, ash (mineral compounds), protein (nitrogen compounds), carbohydrates (starches, sugar, etc.), fats (or oils).

While an ample supply of pure water is one of the first requisites of good stock-feeding, it is usually supplied in abundance at comparatively little cost and will not be considered further in this discussion.

Ash or mineral matter is present in all feeding stuffs in sufficient quantities so that an animal properly nourished with the other constituents is sure to receive enough mineral matter; we will, therefore, pass this group of substances also.

PROTEIN.

Protein is the name applied to the constituents of feeds which contain nitrogen, and feeding stuffs which are rich in this element are frequently called nitrogenous feeds. Among these are: Oil-meal, cottonseed-meal, gluten-meal, and the legumes, as cow-peas, alfalfa, and clover. The white of an egg, the lean part of meat, and the casein of milk are all good examples of protein.

The principal uses of protein, in the body of the cow, are to build muscles, replace their waste, and form casein in milk. There are two reasons why special attention should be given to the amount of protein contained in the different feeds: First, because it is usually deficient in feeds for dairy cows; second, because no other nutriment answers the same purpose.

CARBOHYDRATES.

Carbohydrates is the name applied to the carbonaceous group of substances such as starch, sugar, and the woody parts of plants known as crude fiber. This group forms the larger part of the food consumed by animals, as we shall see later. Carbohydrates furnish energy to perform the body functions and for the muscular activity. The heat of the body is the result of energy expended. It takes a large amount of energy to build up a product like milk. If carbohydrates are fed in excess of the demands for energy, fat may be stored up in the body. In the case of the dairy cow, carbohydrates, besides supplying the above requirements, furnish the constituents for forming milk-sugar and fat in milk.

FAT.

Every one is familiar with fat in its different forms; as tallow in the steer, lard in the hog, and butter-fat in milk. In corn there is about 4.3 per cent of fat, or oil, and in flaxseed a much larger proportion, while in most of the rough fodders there is comparatively little. Fat in the food nourishes the body in exactly the same way as do carbohydrates: namely, furnishes energy and forms fat. The chief difference between fat and carbohydrates is that the former is a more concentrated form of food, one pound being equal to 2.4 pounds of carbohydrates. It should be remembered that fat and carbohydrates are interchangeable, that is, whichever one is in excess may take the place of the other, but it must also be borne in mind that however great the excess of carbohydrates and fat in the ration, no more muscle can be formed in the body, or casein produced in the milk than there is protein in the food supplied. In other words, where protein is in excess it can take the place of carbohydrates and fat, but no amount of carbohydrates and fat can

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take the place of protein in the least degree.

DIGESTIBLE NUTRIENTS.

The digestibility of the different constituents of feeds is of great importance, as only that portion of feeding stuffs which passes into solution during the process of digestion and is absorbed into the blood is of value in nourishing the animal. This portion of the various feeds is known as the digestible nutrients.

The difference between the total nutrients and the total digestible nutrients is marked. For example, by referring to feeding tables we find that in 100 pounds of clover hay there are 12.3 pounds of protein, but of this only 6.8 pounds are digestible and can be used to nourish the animal. The digestible nutrients are, therefore, the only ones considered in making up rations.

Table 1. Digestible Nutrients Required per Day for a 1,000-Pound Cow for Maintenance and Following Yields.

	Protein, lb.	Carbohydrates, lb.	Fat, lb.	Nutritive ratio.
For maintenance.....	0.70	7.00	.10	1:10.3
10 lb. milk 3 per cent fat.....	1.10	8.81	.24	1: 8.3
10 lb. milk 4 per cent fat.....	1.17	9.16	.26	1: 8.4
10 lb. milk 5 per cent fat.....	1.24	9.51	.29	1: 8.2
20 lb. milk 3 per cent fat.....	1.49	10.62	.37	1: 7.7
20 lb. milk 4 per cent fat.....	1.63	11.32	.42	1: 7.5
20 lb. milk 5 per cent fat.....	1.77	12.02	.47	1: 7.4
30 lb. milk 3 per cent fat.....	1.89	12.43	.51	1: 7.2
30 lb. milk 4 per cent fat.....	2.10	13.48	.58	1: 7.1
30 lb. milk 5 per cent fat.....	2.31	14.53	.66	1: 7.0
40 lb. milk 3 per cent fat.....	2.29	14.24	.64	1: 6.9
40 lb. milk 4 per cent fat.....	2.57	15.64	.74	1: 6.7
40 lb. milk 5 per cent fat.....	2.85	17.04	.84	1: 6.7
50 lb. milk 3 per cent fat.....	2.68	16.05	.78	1: 6.6
50 lb. milk 4 per cent fat.....	3.03	17.80	.90	1: 6.6
50 lb. milk 5 per cent fat.....	3.38	19.55	1.03	1: 6.5
60 lb. milk 3 per cent fat.....	3.08	17.86	.92	1: 6.5
60 lb. milk 4 per cent fat.....	3.50	19.96	1.07	1: 6.4
60 lb. milk 5 per cent fat.....	3.92	22.06	1.22	1: 6.3

Much careful study and investigation has been devoted to the question of determining the amounts of digestible protein, carbohydrates, and fat needed for cows of different weights and varying yields. To Professor T. L. Haecker belongs the credit of securing the data from which Table 1 has been computed.

In all animals there is a constant breaking down of the body tissues caused by wear, and there is energy expended in keeping up the vital processes, and in maintaining the body temperature. The food used to rebuild worn-out tissues and to furnish heat and energy when the animal is at rest is called the food of maintenance. If a 1,000-pound cow is producing 30 pounds of 4 per cent milk she will require digestible nutrients about as follows:

	Protein, lb.	Carbohydrates, lb.	Fat, lb.
For maintenance.....	.70	7.00	.10
For producing 30 lb. of 4 per cent milk.....	1.40	6.48	.43
Total nutrients re- quired for mainte- nance and milk....	2.10	13.48	.58

A cow of the same weight producing 40 pounds of 4 per cent milk, will require a ration containing 2.57 pounds

protein, 15.64 pounds carbohydrates, and .74 of a pound fat. If her yield were 50 pounds of 4 per cent milk her ration should contain 3.03 pounds protein, 17.80 pounds carbohydrates, and .90 of a pound fat.

In feeding dairy cows, the fact that they should be fed according to their milk production is frequently over-

looked. A cow capable of producing 60 pounds of 4 per cent milk a day must be fed a much larger amount of digestible nutrients, if she is to produce her greatest yield, than a cow giving only 10 pounds of milk testing 3 per cent. This point should be strongly emphasized, for a cow can not give in her product what she does not receive in her food. By referring to Table 1 the nutrients required for any yield of milk may be easily determined. If the cow weighs more or less than 1,000 pounds a proportional increase or decrease in the food for maintenance should be made.

From the weight of a cow, and the amount of milk she will produce on liberal feeding, the required nutrients may be determined. The next step is to select such feeds as will best supply these nutrients. We will take, for example, a 1,000-pound cow producing 30 pounds of 4 per cent milk, and by referring to Table 1, find that she requires 2.1 pounds protein, 13.48 pounds carbohydrates, and .58 of a pound fat.

If one wishes to feed clover hay and corn-and-cob-meal he can make up a trial ration by taking 15 pounds of clover hay and 8 pounds of corn-and-cob-meal. The nutritive value of each of these feeds can then be found from Table 3, which will be published next week, which gives the amount of digestible nutrients in 100 pounds of the different feeds. We find that 100 pounds of clover hay contain 6.8 pounds protein, 35.8 pounds carbohydrates, and 1.7 pounds fat. Dividing each of these amounts by 100 we have the digestible nutrients in 1 pound; multiplying by 15 we have the digestible nutrients in 15 pounds, which are 1.02 pounds protein, 5.37 pounds carbohydrates, and .25 of a pound fat. In the same manner are found the protein, carbohydrates, and fat in 8 pounds of corn-and-cob-meal, and taking the total digestible nutrients in the given amounts of each of these substances we have the following trial ration:

RATION A.				
Digestible nutrients.				
	lb.	Pro.	Carb.	Fat
Clover hay.....	15	1.02	5.37	.25
Corn-and-cob-meal. . .	8	.35	4.80	.23
Total nutrients in ration.....	1.37	10.17	.48	
Nutrients required for a 1,000-lb. cow giving 30 lb. 4 per cent milk.....	2.10	13.48	.58	

By comparing the total nutrients in this ration with the required nutrients for a cow producing 30 pounds of 4 per cent milk, it is found that the ration is deficient in both protein and carbohydrates. To bring the nutrients up to the amount required we try adding six pounds of bran and the ration is then as follows:

RATION B.				
Digestible nutrients.				
	lb.	Pro.	Carb.	Fat
Clover hay.....	15	1.02	5.37	.25
Corn-and-cob-meal. . .	8	.35	4.80	.23
Bran.....	6	.73	2.35	.16
Total nutrients in ration.....	2.10	12.52	.64	
Nutrients required for a 1,000-lb. cow giving 30 lb. 4 per cent milk.....	2.10	13.48	.58	

The amount of protein, carbohydrates, and fat now corresponds closely enough with the nutrients required, for all practical purposes.

If one wishes to feed clover hay,

corn-silage, cornmeal, and ground oats, he can make up a trial ration by taking 8 pounds of clover hay, 40 pounds of silage, 4 pounds of cornmeal, and 4 pounds of ground oats. The nutritive value of each of these feeds can then be determined from the amount of digestible nutrients in 100 pounds, given in Table 3, which will be published next week. Taking the digestible nutrients in the given amounts of each of these substances we have the following trial ration:

RATION C. (Trial Ration.)				
Digestible nutrients				
	lb.	Pro.	Carb.	Fat
Clover hay.....	8	.54	2.86	.14
Corn-silage.....	40	.36	4.52	.28
Cornmeal.....	4	.31	2.67	.17
Ground oats.....	4	.37	1.89	.17
Total nutrients in ration.....	1.58	11.94	.76	
Nutrients required for a 1,000-lb. cow giving 30 lb. 4 per cent milk.....	2.10	13.48	.58	

By comparing the total nutrients in this ration, with the required nutrients for a cow producing 30 pounds of 4 per cent milk, it is found that the ration is deficient in both protein and carbohydrates, but needs a larger proportion of protein than of carbohydrates to bring the nutrients up to the amount required. Adding one pound each of cornmeal, ground oats, and linseed-meal, we have Ration D, which is a good economical ration and fulfills the desired requirements.

RATION D.				
Digestible nutrients				
	lb.	Pro.	Carb.	Fat
Clover hay.....	8	.54	2.86	.14
Corn-silage.....	40	.36	4.52	.28
Cornmeal.....	5	.39	3.24	.22
Ground oats.....	5	.46	2.36	.21
Linseed-meal.....	1	.29	.33	.07
Total nutrients in ration.....	2.04	13.41	.92	
Nutrients required for a 1,000-lb. cow giving 30 lb. 4 per cent milk.....	2.10	13.48	.58	

NUTRITIVE RATIO.

Since protein on the one hand, and carbohydrates and fat on the other, serve different functions in the body, the relative amount of each should be carefully considered, and the ratio of the protein to the carbohydrates, which is called the nutritive ratio, is determined in the following manner: The value of a pound of fat in feeds has been found to be 2.4 times that of a pound of carbohydrates, and as fat nourishes the body in the same way as carbohydrates, the amount of fat is multiplied by 2.4 and added to the carbohydrates; this sum divided by the amount of protein gives the ratio of the protein to the carbohydrates, and is known as the nutritive ratio.

This may be illustrated by taking the total digestible nutrients in Trial Ration C, which contains 1.58 pounds protein, 11.94 pounds carbohydrates, and .76 of a pound fat.

.76 of a pound fat $\times 2.4 = 1.82$
 11.94 pounds carbohydrates $+ 1.82 = 13.76$
 $13.76 \div 1.58$ (amount of protein) $= 8.7$

Since there are 8.7 times as much carbohydrates as protein in this ration, the ratio is 1:8.7; which is known as the nutritive ratio of this ration.

After adding one pound each of cornmeal, ground oats, and linseed-meal, we have Ration D, which contains 2.04 pounds protein, 13.41 pounds carbohydrates, and .92 of a pound fat. The nutritive ratio of this ration, found in the same manner as before, is as 1:7.6, which is nearer the ratio of the digestible nutrients required for a 1,000-pound cow giving 30 pounds of 4 per cent milk, as given in Table 1.

(To be continued.)

Butter has been found by T. E. Thorpe to be influenced by climate, fodder, breed of cow, period of lactation and idiosyncrasy of the individual cow.

Forget the peculiarities of your friends, and only remember the good points which make you fond of them.

The World's Fair.

In making your arrangements for the World's Fair at St. Louis, this summer, if you consider convenience and saving of time, you will take the Wabash Railroad, as it runs by and stops at its station at the entrance of the fair grounds, thus saving several miles' run and return, and the inevitable jam at the big Union Station. By all means consider the advantages of the Wabash.

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The Rock Island System has an immense advantage over all other western railroads, as regards the location of its terminals in Chicago.

In addition to the La Salle Street Station—in the very heart of Chicago, and the largest and finest railroad station in that city—it has a station at Englewood, seven miles out.

This latter station is used by several eastern lines, as well as by the Rock Island. Here is where its convenience comes in: Suppose your train is a few minutes late. You get off at Englewood, walk across the platform and get on the east-bound train. It is a splendid arrangement for people who are in a hurry. It enables them to make connections with trains that they would have missed if they had taken any other line. Chicago trains leave Topeka at 6:15 a. m. and 3:35 p. m., daily. For reservations, etc., see



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 CHAS. H. CHILDS & CO., Sole Manufacturers,
 18 Lafayette Street, Utica, N. Y.

Crop Experiments in 1903 at Manhattan.

(Continued from page 664.)

cent; Griffing Calico, 87.7 per cent; Nebraska White Prize, 87.1 per cent; Sander's Improved, 85.7 per cent; and Funk's Ninety Day, 85 per cent.

"The field in which the trial was made was heavily manured. Several of the varieties grown in an adjacent field which received no manure gave 18 to 25 bushels per acre less yield than was secured in the regular trial. Soil fertility is a very important factor in producing large yields.

"In order to test their adaptation for late planting, 29 varieties were planted June 16. Those varieties which matured sufficiently to make good corn, also giving largest yields, were as follows: Early Mastodon, 54.4 bushels; Pride of the North, 51.95 bushels; Early Cattle King, 50 bushels; Golden Row, 49.2 bushels; Farmers' Reliance, 48.8 bushels; and Reid's Yellow Dent, 50.8 bushels.

"15. In a trial of late forage crops, sown broadcast June 24, cane yielded 7.7 tons, Kafir-Corn, 6.12 tons, and corn, 3.93 tons of cured fodder per acre. The fodder, cut in September, was well cured when stacked, in December. Moisture determinations were made from samples of the fodder taken December 25, which gave the following results: Moisture in cane, 39.4 per cent; Kafir-corn, 36.2 per cent; corn, 27.01 per cent. Cane and Kafir-corn, sown broadcast, are excellent forage crops, giving large yields of fodder of good quality.

"16. As late pasture crops (sown broadcast), corn and soy-beans and corn and cow-peas were preferred by the cattle to the sorghums, and furnished more grazing. Much of the cane and Kafir-corn was trampled down and wasted, while soy-beans and cow-peas, planted alone, were not eaten so well by the stock as when these plants were grown in combination with corn. Soy-beans seemed to be preferred to cow-peas by the cattle, especially in the early part of the season, before the soy-beans began to mature.

"17. As silage crops, alfalfa was put in the silo at less cost per ton than any other crop. Cane and Kafir-corn gave the largest yields of any of the annual crops, and the cost per ton of silage of these crops was less than the cost of silage of corn. Corn ranked second in yield of silage and cow-peas third. Corn and cow-peas grown together in drill-rows and cultivated made good silage, and this combination will also make excellent dry forage.

"18. The experiments in baling alfalfa hay from the field have shown that it is not safe to bale the hay until it is well cured and ready to stack. The alfalfa which was baled in this condition made a good quality of hay, retaining the leaves better than is usually the case when alfalfa is baled from the stack.

"19. Two series of rotation experiments have been begun with the object of studying the effect of the different crops on corn and wheat and vice versa, when several crops are grown in rotation, with the ultimate purpose of learning what combination of crops may be grown in succession so as to give an ideal rotation of the several crops. The rotation systems also include methods of green manuring.

"20. The farm department is making a careful selection of seed of the best-producing varieties of the various crops. Those varieties which prove superior to others in point of yield and quality will be propagated in a larger way, with the purpose of distributing seed among the farmers of the State."

The bulletin ought to be in the hands of every farmer in Kansas, at least every farmer who would ask for it. When the college shall have been authorized and equipped to do its own printing it will be a simple matter to turn out such valuable documents in such numbers as the demand for them shall justify.

Wheat in India.

William E. Curtis writes to the Chicago Record-Herald, as follows: "We have been accustomed to consider India as a great wheat-producing country, and you often hear of apprehension on

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Rich Agricultural Lands

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SPLENDIDLY ADAPTED FOR FARMING, FRUIT-GROWING AND STOCK-RAISING.

The Cadillac Tract—25,000 Acres



The basis of my business is absolute and unvarying integrity.
Samuel S. Thorpe.

These lands are sold to actual settlers, no speculation. This is undoubtedly the best land proposition open to-day and is selling rapidly.

Maps showing location and farms under cultivation, towns, schools churches, rivers, lakes, railways, etc., and book fully descriptive and finely illustrated and containing all facts regarding soil, climate, timber, crops, markets, water, roads, taxes, schools, churches, fish, game, and also letters from settlers who are living on the "Cadillac Tract" will be mailed free to all who will address

S. S. THORPE, District Agent Michigan Land Association

10 Webber Building, Cadillac, Michigan.

In the Counties of Wexford and Missaukee, State of Michigan, situated from one half to six miles from the thriving city of Cadillac, with population of over 7,000. About 50 miles east of Lake Michigan and 97 miles north of the city of Grand Rapids, lie along the main line of the Grand Rapids & Indiana Railway (Pennsylvania Railway System) and the Ann Arbor Railway (Wabash Railway System). Well watered with springs, brooks, rivers and lakes of pure sparkling water. Rich soil which responds eagerly and fruitfully to cultivation.

Wheat, oats, rye, corn, peas, beans, potatoes, cabbage, onions, beets, turnips, carrots, parsnips, and sugar beets do wonderfully well while apples, peaches, pears, cherries, plums and berries grow in luxuriance and of richest flavor, invariably capturing first prizes at the regular county fairs.

Potatoes have averaged 150 bushels to the acre, and 50 cents per bushel for the past 12 years. Over \$300,000 was distributed to the farmers in the vicinity of Cadillac for potatoes the past season.

Timothy, clover, alfalfa, redtop and orchard grasses are sure and successful crops, and \$10 per ton is the lowest price.

Splendid markets all the year around.

Best shipping facilities.

The entire tract is mostly covered with a good growth of grasses furnishing an excellent natural run for stock.

Fine graveled pike roads traverse the "Cadillac Tract" from east to west and north to south.

Good schools and churches. The climate of Michigan is exceptionally fine and conducive to good health and longevity.

the part of American political economists lest the cheap labor and the enormous area of India should give our wheat-growers serious competition. But there is not the slightest ground for apprehension in this regard. While the area planted to wheat in India might be doubled, and farm labor earns but a few cents a day, the methods of cultivation are so primitive and the results of that cheap labor are comparatively so small, that they can never count seriously against our wheat farms which are tilled and harvested with machinery and intelligence.

"No article in the Indian export trade has been so irregular or has experienced greater vicissitudes than wheat. The highest figure ever reached in the value of exports was during the years 1891-92, when there was an exceptional crop, and the exports reached \$47,500,000. The average for the preceding ten years was \$25,970,000, while the average for the succeeding ten years, ending 1901-02, was only \$12,740,000. This extraordinary decrease was due to the failure of the crop year after year and the influence of the famines of 1897 and 1900. The bulk of the wheat produced in India is consumed within the districts where it is raised, and the average size of wheat farms is less than 5 acres. More than three-fourths of the India wheat crop is grown on little patches of ground only a few feet square, and sold in the local markets. The great bulk of the wheat exported comes from the large farms or is turned in to the owners of land rented to tenants for shares of the crops produced.

"The conditions of agriculture in India are peculiar and unlike those found in any other country outside of Asia. The variation of the volume of the crop is due entirely to natural causes, because the area planted is about the same every year, and the consumption of food products is regulated more by

the supply than elsewhere. Two-thirds and perhaps three-fourths of the people raise their own food, and have no means to purchase it from others if their crops fail. They are compelled to deny themselves even to the verge of starvation. They have no other alternative. And with its enormous mass of population, who live from hand to mouth, and require several people to depend for food upon every cultivated acre of ground, it is only when crops are most abundant that the poor have the amount of nourishment that their systems demand. Therefore it is scarcely necessary to discuss the probable effect of an increase in the acreage of wheat in this country.

"Most of the wheat exported from India goes to the United Kingdom; the balance to China or European ports.

"Nevertheless, wheat stands at the top of the list of exports, seeds come second, raw cotton and jute, cotton yarn and cloth, jute manufactures, hides and skins, and then opium and tea in the order named.

Cottonseed-Meal for Cattle.

EDITOR KANSAS FARMER:—Will it pay to feed cottonseed-meal at \$25 per ton, when corn costs from 30 to 33 cents per bushel? We have almost enough alfalfa hay for roughness and the balance will be cane hay. The cattle that are to be fed are coming 2-year-old heifers, weighing about 700 pounds, and I would like to feed them about seventy-five days. The corn will be ground reasonably fine, and they will be put on full feed. MARTIN J. BAUER, Clay County.

In reply to the enclosed inquiry will say that it will pay to feed approximately one pound of cottonseed-meal at the price named in the letter. A little cottonseed-meal mixed in with corn has been found advantageous for economical gain, probably from the stand-

100 LB.

SUGAR \$2.95 PER BBL.

FREIGHT PAID

WITHIN 500 MILES OF CHICAGO, IF YOU SEND THE FULL AMOUNT WITH THE ORDER \$1.00, IF YOU DO NOT FEEL LIKE SENDING CASH WITH YOUR ORDER, WE WILL SHIP TO YOUR CITY, YOU TO BE RESPONSIBLE FOR THE FREIGHT. IF YOU DO NOT FEEL LIKE SENDING CASH WITH YOUR ORDER, WE WILL SHIP TO YOUR CITY, YOU TO BE RESPONSIBLE FOR THE FREIGHT. IF YOU DO NOT FEEL LIKE SENDING CASH WITH YOUR ORDER, WE WILL SHIP TO YOUR CITY, YOU TO BE RESPONSIBLE FOR THE FREIGHT.

100 lb Bbl Best Gran Sugar, Mer. Price \$5.75 Our Price \$2.95

2 lbs Corn Starch Best Quality 20c

2 lbs Corn Meal Best Quality 20c

2 lbs Flour Best Quality 20c

2 lbs Rice Best Quality 20c

2 lbs Beans Best Quality 20c

2 lbs Lentils Best Quality 20c

2 lbs Peas Best Quality 20c

2 lbs Potatoes Best Quality 20c

2 lbs Apples Best Quality 20c

2 lbs Oranges Best Quality 20c

2 lbs Lemons Best Quality 20c

2 lbs Limes Best Quality 20c

2 lbs Pineapples Best Quality 20c

2 lbs Watermelons Best Quality 20c

2 lbs Cantaloupes Best Quality 20c

2 lbs Cucumbers Best Quality 20c

2 lbs Radishes Best Quality 20c

2 lbs Turnips Best Quality 20c

2 lbs Carrots Best Quality 20c

2 lbs Parsnips Best Quality 20c

2 lbs Sugar Beets Best Quality 20c

2 lbs Potatoes Best Quality 20c

2 lbs Apples Best Quality 20c

2 lbs Oranges Best Quality 20c

2 lbs Lemons Best Quality 20c

2 lbs Limes Best Quality 20c

2 lbs Pineapples Best Quality 20c

2 lbs Watermelons Best Quality 20c

2 lbs Cantaloupes Best Quality 20c

2 lbs Cucumbers Best Quality 20c

2 lbs Radishes Best Quality 20c

2 lbs Turnips Best Quality 20c

2 lbs Carrots Best Quality 20c

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2 lbs Watermelons Best Quality 20c

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2 lbs Turnips Best Quality 20c

2 lbs Carrots Best Quality 20c

2 lbs Parsnips Best Quality 20c

2 lbs Sugar Beets Best Quality 20c

2 lbs Potatoes Best Quality 20c

2 lbs Apples Best Quality 20c

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2 lbs Lemons Best Quality 20c

2 lbs Limes Best Quality 20c

2 lbs Pineapples Best Quality 20c

2 lbs Watermelons Best Quality 20c

2 lbs Cantaloupes Best Quality 20c

2 lbs Cucumbers Best Quality 20c

2 lbs Radishes Best Quality 20c

2 lbs Turnips Best Quality 20c

2 lbs Carrots Best Quality 20c

2 lbs Parsnips Best Quality 20c

2 lbs Sugar Beets Best Quality 20c

2 lbs Potatoes Best Quality 20c

2 lbs Apples Best Quality 20c

2 lbs Oranges Best Quality 20c

2 lbs Lemons Best Quality 20c

2 lbs Limes Best Quality 20c

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WEEKLY WEATHER CROP BULLETIN.

Weekly weather crop bulletin for the Kansas Weather Service, for the week ending June 20, 1904, prepared by T. B. Jennings, Station Director:

GENERAL CONDITIONS.

Though the temperature is still ranging slightly below normal, yet the night temperatures were much warmer than previous weeks.

The rainfall has been light in the eastern counties of the western division and the western counties of the middle division, also in the central counties of the eastern division. Good rains have fallen in the western counties of the middle division and the eastern counties of the middle, with heavy rains in the southern counties of the eastern division. Hailstorms occurred in Sherman, Phillips, Washington, Chase, and Wilson Counties.

RESULTS.

EASTERN DIVISION.

Wheat is in very good condition. In the extreme southern counties it is being harvested, and in Cherokee promises an unusually good yield. The early wheat has bloomed in Doniphan and is turning in Pottawatomie and Riley. Corn has grown rapidly under the influence of warmer nights, its greatest need, now, being cultivation. Oats are heading in the northern counties and beginning to ripen in the southern. Grass has grown well and meadows and pastures are fine. The first crop of alfalfa has generally been cut, but was damaged by rain in many counties. Early potatoes are being marketed and are abundant. Apples are very promising in Shawnee but are dropping badly in many of the north-

western counties. Cherries are unusually abundant in the central counties. Blackberries are being marketed in the southern counties and are turning in the central.

Atchison County.—Field work stopped by two days' rain; corn about all planted and being cultivated; oats headed; late potatoes mostly planted; but few apples left on the trees; grass making rank growth; corn growing; all kinds of berries good; early potatoes in bloom.

Bourbon.—Corn still being planted; some has been planted three times; cultivation retarded by rains; wheat in fine condition; oats making heavy growth; apples and peaches dropping some; grapes doing well; too wet for gardens.

Brown.—Wheat generally fine except where damaged by wet weather and floods; some complaint of cheat in Russian wheat; planting and replanting generally completed and cultivation in progress; some fields weedy but corn generally looks well; oats poor.

Chase.—A very wet week and but little farmwork done; hail on the 15th did considerable damage to grain crop, fruit and gardens; some corn not yet cultivated; some fields being worked the second time; corn quite weedy; alfalfa being harvested.

Chautauque.—Wheat being harvested; much damage by wet weather; corn growing rapidly but needs cultivation; much alfalfa damaged by rains; potatoes plentiful, but rotting in the ground; blackberries coming into market.

Cherokee.—Generally too wet for field work; ground soft for harvesting wheat; wheat promises a very large yield; oats also promise well.

Coffee.—Too wet for crops and farmwork except in northwest part where the corn is about all planted on upland and some flooded land replanted; early planted corn mostly cultivated; millet, cane, and Kafir-corn being sown and planted; new potatoes on market; very large crop of small fruit and berries; strawberry season over; raspberries and blackberries turning.

Crawford.—Wheat ready to cut; all crops growing rapidly; farmwork retarded by showers; pastures fine; stock doing well but flies very bad.

Doniphan.—Early wheat has bloomed and promises well, though rust has affected some fields; corn growing rapidly and being cultivated; apples have fallen very badly; signs of black rot on grapevines.

Douglas.—Corn about all planted—some for the third time; a good stand in some fields; wheat beginning to lodge badly; grass and alfalfa good but it is too wet for haying; fruit crop fairly good.

Elk.—Ground still wet; but little field work done; wheat nearly ready to cut; some complaint of rust.

Greenwood.—A good week for crops; farmwork making good progress.

Jackson.—A fine week for corn; corn all up and growing finely; upland corn fairly clean; wheat doing well; a good crop of all kinds of berries.

Jefferson.—Corn-planting completed and cultivation in progress; corn improving; alfalfa being harvested; apples a light crop; a fine crop of strawberries, gooseberries, mulberries, and cherries.

Labette.—Wheat harvest in progress; oats beginning to ripen; corn growing well but getting weedy.

Leavenworth.—Meadows growing finely; alfalfa being cut; oats growing well; wheat ripening; corn being cultivated; potatoes nearly ready for market.

Linn.—A good week for growing crops and farmwork; wheat harvest in progress; wheat, oats, and grass good; corn doing well except on flooded land.

Lyon.—A good growing week; crops doing well on upland.

Marshall.—A good crop of alfalfa being har-

vested; some has been damaged by rains; most of the corn has been cultivated once; much of it is backward and weedy and needs dry, warm weather.

Osage.—Corn about all planted; early planting being cultivated and in good condition; grass very fine; wheat in good condition.

Pottawatomie.—Corn late and needs cultivation which has been delayed by rains; wheat beginning to turn and looks well; alfalfa cut and damaged by rain; new potatoes on market; strawberries and cherries plentiful.

Riley.—Corn growing well but much has not been cultivated and is weedy; wheat filled nicely; first crop of alfalfa harvested; strawberries and cherries abundant.

Shawnee.—Corn making good growth; wheat and oats look well; first crop of alfalfa about all cut; pastures fine; apples and peaches promise large crop.

Wabasha.—A fine growing week; wheat looks well; corn late; much has been planted three times.

Wilson.—Crops very badly damaged by heavy rains and floods; corn very weedy but growing rapidly where it has been possible to cultivate; early oats fine, late oats not so good; pastures good.

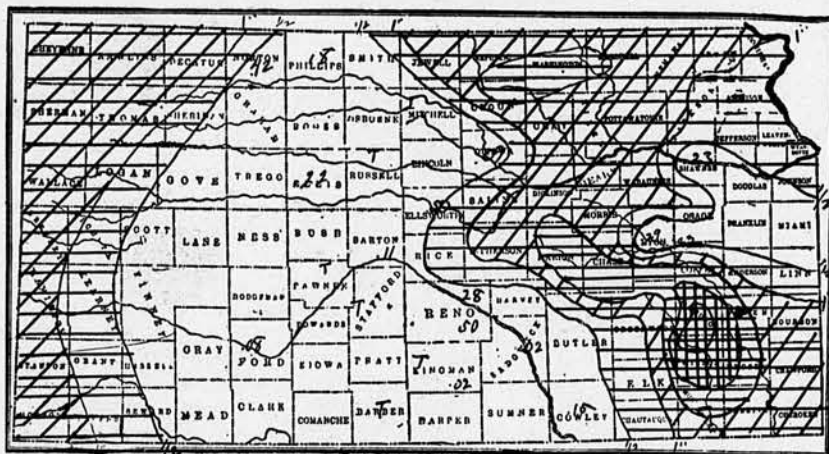
Woodson.—Corn very weedy; considerable damage by floods in the bottoms.

Wyandotte.—Corn improving slowly but some fields still weedy; oats heading; wheat beginning to turn; ground generally too wet to cultivate successfully.

MIDDLE DIVISION.

Wheat harvest has begun in the extreme southern counties. Wheat is in very good condition, except Dickinson reports it rusting, and Summer scalded in spots. Grass is very good. Rye is being cut in Clay. Oats are heading in the northern counties and beginning to ripen in the southern; the crops promise a good yield except in Pawnee.

RAINFALL FOR WEEK ENDING JUNE 18, 1904.



SCALE IN INCHES.

Less than $\frac{1}{8}$, $\frac{1}{8}$ to 1, 1 to 2, 2 to 3, Over 3, T, trace.

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IT SETS ON THE GROUND

"ECONOMY PITLESS" WAGON & STOCK SCALE

STEEL FRAME. STEEL JOIST.

Scale shipped complete except the few planks for the flooring. Cost of erecting, \$5.00 to \$6.00. Complete scale above ground, only 9 in. high. We save you cost of 700 to 900 feet of heavy timber and the expensive and troublesome pit, equivalent to \$30.00 to \$50.00. Gilt edge guarantee. Most reliable, durable, will retain its accuracy a life time. No repairs. No decay. Thousands in daily use. Visit our exhibit, World's Fair, Block 20, Agricultural Building. Write for catalogue and prices. Address: **McDONALD BROS.** P. O. BOX 724, PLEASANT HILL, MO.

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I am going on one of the Santa Fe excursions and get some of it. The cream will be ready to skim soon.

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Gen. Pass. Agt., A. T. & S. F. Ry.
Topeka.

cultivate; wheat harvest begun; ground soft yet; many spots of wheat scalded; corn growing.

Washington.—Hail did some damage to wheat, cherries and gardens; ground very wet; wheat and rye filling very well; corn weedy; much of it not yet cultivated but is generally growing well; a heavy crop of alfalfa being harvested; considerable of it damaged by rains; fruit in fair to fine condition.

WESTERN DIVISION.

Spring wheat promises a good crop, but the winter wheat does not. Oats and barley are doing well in the northern counties, not so well in the central. Corn has made a very good growth in the northern counties. Grass is very good. The first crop of alfalfa has been cut and put up in some counties and is being cut in others. Morton County is enjoying a full crop of Russian mulberries. Potatoes are being marketed in the northern counties. Cherries are turning in Sherman.

Decatur.—Corn making very rapid growth; spring grains looking fine now; new potatoes on market; alfalfa being cut, but poor weather for curing.

Ford.—Wheat good in some portions, poor in others; oats and barley better than wheat but also irregular; first crop of alfalfa harvested and rain needed to give second crop good start; forage crops benefited by warm weather.

Greeley.—Good growing weather with plenty of moisture; most people done planting. Hamilton.—We have had good rains and crops are growing rapidly; grass good; stock doing finely.

Lane.—Alfalfa being cut but work hindered by rains; crop heavy; barley and spring wheat promise a fair crop; winter wheat mostly poor with an occasional good field; rains beneficial to forage crops which are being planted.

Morton.—Frequent light showers keep grass growing and ground in fine condition for

planting; Russian mulberries, our only fruit, a full crop.
Norton.—A good week for all growing crops; corn well advanced; alfalfa in bloom and some has been cut; farmwork making good progress, but some corn is quite weedy; hail did Sherman.—A fine growing week; hail did considerable damage to barley and wheat; potatoes blooming; cherries turning.
Thomas.—Corn growing rapidly; early corn knee high; corn generally clean but some fields very weedy; spring wheat, barley, and oats doing finely; potatoes look well; pastures very good; alfalfa harvest begun.
Wallace.—Barley, oats, and rye weedy but doing well; too wet for farmwork; alfalfa partly harvested in poor condition—damaged by rain; range-grass fine; gardens doing well; fruit fine.

State Fairs and Live-Stock Shows.

Missouri State Fair, Sedalia, August 15-August 19.
Iowa State Fair, Des Moines, August 22-August 29.
Minnesota State Fair, Hamline, August 29-September 3.
Nebraska State Fair, Lincoln, August 29-September 2.
Ohio State Fair, Columbus, August 29-September 2.
Wisconsin State Fair, Milwaukee, September 5-September 9.
Kentucky State Fair, Lexington, September 5-September 10.
Pennsylvania State Fair, Bethlehem, September 6-September 9.
New York State Fair, Syracuse, September 5-September 10.
Indiana State Fair, Indianapolis, September 12-September 16.
South Dakota State Fair, Yankton, September 12-September 16.
Central Canada Exhibition, Ottawa, September 16-September 23.
West Michigan State Fair, Grand Rapids, September 19-September 23.
Interstate Fair, Trenton, N. J., September 26-September 30.
Colorado State Fair, Pueblo, September 26-September 30.
Washington State Fair, North Yakima, September 26-October 1.
Illinois State Fair, Springfield, September 29-October 7.
Louisville Horse Show, October 3-October 8.
Kansas City Horse Show, October 17-October 22.
American Royal Live Stock Show, Kansas City, October 17-October 22.
San Antonio, Texas, International Fair, October 22-November 2.
Chicago Horse Show, October 24-October 29.
St. Louis Worlds Fair—Horses, August 22-September 3; Cattle, September 12-September 24; Sheep and swine, October 3-October 15; Poultry, dogs and cats, October 24-November 5.
National Horse Show, New York, November 11-November 19.
International Live-Stock Exposition, Chicago, November 28-December 3.

* Kansas Fairs in 1904.

Following is a list of fairs to be held in Kansas in 1904, their dates, locations, and secretaries, as reported to the State Board of Agriculture and compiled by Secretary F. D. Coburn:

Allen County Agricultural Society, J. T. Tredway, secretary, LaHarpe, September 6-9.
Barton County Fair Association, W. P. Feder, secretary, Great Bend, September 13-16.
Brown County—Hiawatha Fair Association, Elliott Irvin, secretary, Hiawatha, September 6-9.
Butler County Fair Association, H. M. Balch, secretary, Eldorado, September 19-24.
Chautauqua County—Hewins Park and Fair Association, W. M. Jones, secretary, Cedar Vale, September 20-22.
Clay County Fair Association, E. E. Hoopes, secretary, Clay Center, September 6-9.
Coffee County Agricultural Fair Association, S. D. Weaver, secretary, Burlington, September 13-16.
Cowley County Agricultural and Stock Show Association, W. J. Wilson, secretary, Winfield, August 30-September 2.
Cowley County—Eastern Cowley Fair Association, J. M. Henderson, secretary, Burden, September 7-9.
Crawford County Agricultural Fair Association, Frank McKay, secretary, Pittsburg, September 6-9.
Elk County Agricultural Fair Association, J. E. Deal, secretary, Grenola, September 11-16.
Finney County Agricultural Society, A. H. Warner, secretary, Garden City, August 24-26.
Ford County Agricultural Association, J. H. Churchill, secretary, Dodge City, August 30-September 1.
Franklin County Agricultural Society, Carey M. Porter, secretary, Ottawa, September 6-10.
Greenwood County Fair Association, C. H. Waiser, secretary, Eureka, September 13-16.
Harvey County Agricultural Society, John C. Nicholson, secretary, Newton, October 3-7.
Jefferson County Agricultural and Mechanical Association, Geo. A. Patterson, secretary, Oskaloosa, September 6-9.
Jewell County Agricultural Association, Henry R. Honey, secretary, Mankato, September 6-9.
Marshall County Fair Association, E. L. Miller, secretary, Marysville, September 13-16.
Miami County Agricultural and Mechanical Fair Association, H. A. Floyd, secretary, Paola, September 27-30.
Mitchell County Agricultural Association, P. G. Chubbie, secretary, Beloit.
Morris County Exposition Company, M. F. Amrine, secretary, Council Grove.
Nemaha County Fair Association, W. H. Fitzwater, secretary, Seneca, August 31-September 2.
Neosho County Fair Association, H. Lodge, secretary, Erie, September 27-30.
Neosho County—Chanute Fair and Improvement Association, A. E. Timpane, secretary, Chanute, August 29-September 2.
Ness County Agricultural Association, I. B. Pender, secretary, Ness City, September 23-30.
Norton County Agricultural Association, L. V. Graham, secretary, Norton, August 30-September 2.
Osage County Fair Association, E. T. Price, secretary, Burlingame, September 6-12.
Reno County—Central Kansas Fair Association, A. L. Sponsler, secretary, Hutchinson, September 19-24.
Rice County Agricultural Fair and Live-Stock Association, W. T. Brown, secretary, Sterling.
Riley County Agricultural Association, R. T. Worboys, secretary, Riley, August 31-September 2.
Rooks County Fairs Association, Olmer Adams, secretary, Stockton, September 21-23.
Sedgwick County—Southern Kansas Fair and Carnival Association, H. L. Resing, secretary, Wichita, September 26-October 1.
Shawnee County—Kansas State Exposition Company, C. H. Samson, secretary, Topeka, September 12-17.
Smith County Fair Association, E. S. Rice, secretary, Smith Center, August 23-26.
Stafford County Fair Association, G. E. Moore, secretary, St. John, September 7-9.
Wilson County—Fredonia Agricultural Association, J. T. Cooper, secretary, Fredonia, August 23-26.

The Markets

Kansas City Live-Stock and Grain Markets.

Kansas City, Mo., June 20, 1904.
There were 8,000 cattle in by noon today and several loads yet to arrive. Last Monday the receipts amounted to 11,488 head. Dry-lot and butcher steers were steady with last week's close and grass stuff was 10c lower. The best grades of stockers were steady while the more common kinds were weak to lower, feeders were mostly steady. Top cattle today was \$6.20, and two good-sized bunches sold for \$6.15; most of the sales of dressed beef steers was above \$5.75. Corn-fed cows and heifers were steady. There were about 4,400 head of cattle and calves in the Texas division to-day with the best grades steady and others 10c lower. Receipts of cattle at this market last week were 35,000 head against 26,900 the previous week. The supply of good natives was about the same as the previous week, the large run of Western grass stuff swelled the receipts. The market on the most desirable dressed beef steers was steady throughout the week with some very choice stuff on the market that sold for \$5.40, the highest price since the latter part of 1902, and on Tuesday one steer sold for \$6.50. Medium to common dry-lot steers are 10c to 15c lower, while the grassy kinds have declined 15c to 25c. Good to choice corn-fed cows, heifers, and mixed lots have declined little if any, common and other kinds of she stuff has declined from 15c to 40c. Calves have declined from 50c to 75c. Shipments of stockers and feeders to the country for the week was twice as large as the previous week, being 320 cars. Stockers have declined 40c to 60c for the week, the best feeders have declined only slightly and the common kinds have declined from 15c to 20c. Receipts in the Texaco division have been large all week, and some good dry-lot stuff sold for \$5.70, the highest since the summer of 1902. Most of the grass stuff in receipts.

To-day's hog receipts were 4,000 head, a very small run, and of this 4,000, 1,300 went direct to the packers from other markets, there being only about 2,500 hogs on sale here to-day. A very large portion of the receipts was light mixed stuffs, there being no real choice hogs offered. Prices for the day advanced 5c to 10c. In some instances light hogs showed more strength than the heavier kinds, and pigs showed much more strength than usual. The top for the day was \$5.12 1/2 for six head and the top for a carload was \$5.10. Most of the sales were between \$4.90 and \$5. The market was active and a total clearance was made by 11:30 o'clock.

Hog receipts last week were 48,500, against 39,900 the previous week, a very creditable gain. The general receipts have averaged heavier than the previous week and a fair supply of choice hogs were on the market, while at the same time quite a number of "grass" hogs were noticeable. Sellers have been favored by conditions all week, and the market has been generally active. The provision market has been bullish all week and reached the highest point about the middle of the week that it has for some time. Hog prices for the week have advanced 10c to 15c as shown by the bulk of the sales for the week. The bulk of sales for the week were between \$4.80 and \$5. All grades have shared in the advance, but not to say equally. The top for the week was \$5.02 1/2. It is rather hard to tell just how the hog market is going in the next ten days; there are numerous predictions among hogmen.

Receipts of sheep show a substantial gain over the receipts of the previous week, the receipts last week were 19,700 and for the previous week 13,300. The supply of Texas sheep last week was not as large, but Colorado lambs were here in plenty. The supply of spring lambs in the week's receipts were of poor quality. The demand is for good sheep and sheep-growers are making a mistake when they send this half-fat stuff to market unless they are looking for lower prices in preference to putting their sheep in marketable condition. Good spring lambs sell around \$6.00 to \$6.75, and the others range all the way from \$4.00, choice clipped lambs from \$5.80 to \$6, and fair to good ones \$5.40 to \$5.65; fat wethers, \$5.50 to \$5.70; fat ewes \$4.60 to \$4.90; Texas sheep range as high as \$4.60. There is a good demand for feeders and the supply is very short.

The horse and mule market both were quiet here last week. The run for auction Monday was light, not much over 100 head, and included some fair offerings, but the most of them were of medium grade. Buyers were a scarce article and trade was rather draggy, most of the offerings selling lower. Best kinds were nearly steady but others ranged around \$10 lower than the previous week. For the balance of the week, trade was mostly of a retail character and was of light volume. Nearly all the "holdings" were in speculators' hands and they closed the week with nearly 40 head on hand. The mule trade was but little different from the previous week. Occasionally a buyer would drop in and buy a load or two before leaving, but even this trade was light. Dealers are carrying only about one-third their usual stock owing to the dull demand. To-day's run of horses was the lightest of the year, there being only about 60 head received for the auction. Buyers and orders would have taken care of a good supply of good horses but the offerings were common and trade was not very keen. Prices were but little changed from last week's values and a clearance was made early. The mule trade was quiet. One Eastern and one or two local buyers were looking for mules and one load of mine mules was sold during the day.

Grain receipts at Kansas City to-day were 104 cars, containing 73 cars wheat, 26 cars corn, and 5 cars oats. There was a fair trade in wheat here to-day, but the market was lower. No. 2 hard 85c, No. 3 hard 82c to 84c, No. 4 hard 75c to 78c.

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. No order accepted for less than \$1.00.

CATTLE.

FOR SALE OR TRADE—A herd of full-blood, registered, Shorthorn cattle, for a small farm in eastern Kansas or Oklahoma. D. W. Hutton, Newkirk, Okla.

RED POLLED BULLS—For sale at flood and trust prices; age 8 months to 4 years. H. L. Pellet, Eudora, Kans.

FOR SALE CHEAP—Our fine deep red Shorthorn herd bull, Prince Imperial 171709, 3 years old past, must be sold by July 1. Farm adjoins station. Call on Mitchell Bros., Perry, Kans.

FOR SALE—2 choice Hereford bulls, 22 months old; something good. Call on or address A. Johnson, Route 2, Clearwater, Sedgewick Co., Kansas.

D. P. NORTON, Dunlap, Kans., offers registered Shorthorn bull and heifer calves, crop of 1903, at \$50, get of Imp. British Lion 133692.

FOR SALE—Registered Hereford bulls, 1 and 2 years old, short legged, heavy fellows, reasonable prices. H. B. Clark, Geneseo, Kans.

FOR SALE—50 head of fifteen-sixteenths Shorthorn heifers and cows, at \$30 per head; all bred to thoroughbred Shorthorn bull. On A. T. & S. F. R. R. J. C. Surdull, Bazaar, Chase Co., Kans.

FOR SALE—A good pure-bred Shorthorn bull; 3 years old; bred by J. H. Bayers. S. F. Hanson, Route 1, Iola, Kans.

FOR SALE—3 Galloway bulls from 3 to 18 months old. Prices right. J. A. Mantey, Mound City, Kans.

FOR SALE—3 red 2-year-old Scotch bulls. J. J. Thorne, Kinsley, Kans.

HANDY HERD REGISTER—The improved Handy Herd Book for swine breeders is a record book that every breeder should have. It is perfect, simple, practical and convenient and contains 100 pages or about one cent a letter for keeping the record. The regular price of this handy herd book is \$1, but we furnish it in connection with the Kansas Farmer one year for only \$1.50.

FOR SALE—6 good Shorthorn bulls, 3 of them straight Cruickshanks; come and see me. H. W. McAfee, Topeka, Kans.

GALLOWAY CATTLE—Choice young stock of both sexes for sale. W. Guy McCandless, Cottonwood Falls, Kans.

FOR SALE—Guernsey bulls from best registered stock. J. W. Perkins, 423 Altman Building, Kansas City, Mo.

SWINE.

CHOICE young Shorthorn bulls very low prices; also open or bred gilts, Poles or Durocs. M. C. Hemenway, Hope, Kans.

A MONEY MAKER—Herd of registered Poland-Chinas and fine location for sale. Three pastures with water in troughs in each. Alfalfa, English blue-grass and best of wild grass; as well arranged 160 acres as you will find. Herd and farm is making good money, but I have not the time to attend to it. If you must work hard to make your money do not waste. One and one-half mile from county seat. Box 236, Westmoreland, Kans.

SWINE—Poland-Chinas. Choice young boars, at \$12.50 and \$15. Pigs at \$5 weaning time. Best breeding. Prompt shipments. Satisfaction guaranteed. E. L. Hull, Milford, Kans.

FARMS AND RANCHES.

I WILL SELL MY FARM RANCH, consisting of 640 acres. 320 acres under cultivation, raised 2,000 bushels grain last year, good water and range. For full description write me. G. C. Dulebohn, Kearney, Kans.

FOR SALE—320 acres in Rooks county, 2 miles from railroad. Seventy acres in alfalfa, 150 acres in cultivation. Creek running through farm. Two good springs on place. Address 1428 Santa Fe St., Atchison, Kans.

FARMS—Corn, tame grass, rain. Small payments. Buckeye Agency, Route 2, Williamsburg, Kas.

WANTED TO SELL—The best 320 acre bottom farm in Sumner County; good 7 room house, (nearly new), good outbuildings, good fences, 220 acres in cultivation, 10 acres of the best alfalfa in the county; plenty of timber, fine water; \$40 per acre, easy terms. A fine upland, well improved 160, \$35. Neal A. Pickett, Route 1, Ashton, Kans.

WANTED—To correspond with a real estate owner or agent who can trade an improved farm for a section of rice land in the famous "Katy" Texas, rice district. C. H. Standiford, 306 1/2 Main St., Houston, Texas.

LAND FOR SALE. In western part of the great wheat state. H. V. Gilbert, Wallace, Kans.

DO YOU WANT SOMETHING CHEAP? If so read this. 80 acres, 30 acres bottom, 8 acres timber, house, barn, sheds, etc. for \$1,500. 160 acres nice smooth land, small house, 75 acres cultivated, nice smooth quarter; price \$2,200. If you want something larger and better improved write us about the kind of a place that would suit. Garrison & Studebaker, Florence, Kans.

rejected hard 65c to 70c; No. 2 red 99c to \$1, No. 3 red 95c to 98c, No. 4 red 80c to 93c. Corn is weak and a little lower. No. 2 mixed 50c to 55c, No. 3 mixed 49c to 50c, No. 4 mixed 47c to 48c; No. 2 white 49c to 50c, No. 3 white 49c to 49 1/2c, No. 4 white 47c to 47 1/2c. Oats remain steady with fair demand. No. 2 mixed 40c to 41c, No. 3 mixed 39c to 40c, No. 4 mixed 38c to 39c; No. 2 white 42c to 43c, No. 3 white 40c to 41c, No. 4 white 37c to 38c. Rye is steady. No. 2 sells for 64c and No. 3, 62c to 63c. Bran is slow and lower.

H. HOWARD PETERS.

Kaukauna, Wis., February 1, 1904.
Dr. B. J. Kendall Co., Enosburg Falls, Vt.
Gentlemen:—Please send me a copy of your "Treatise on the Horse and His Diseases." We have used Kendall's Spavin Cure for the last ten years and must say it is just what you say it is for wire fence cuts and any kind of lameness as it will even take away the enlargement of any strain. We always have Kendall's remedies in our barns. Respectfully yours, J. P. WATRY.

HORSES AND MULES.

FOR SALE—An extra fine Chestnut stallion at a bargain. Dan Strathmore by Norman by Mambrino Chief. Pedigree furnished. No better breeder living. Write for particulars. A. M. Graham, 1901 West 5th Ave., Topeka, Kans.

FOR SALE—Young, black Percheron stallion Charles L. Covell, Wellington, Kans.

TO EXCHANGE—After July 10, one black Percheron stallion and jack registered. Sound and good breeders; two jennets, one jack colt by side, 38 in., extra good one, for land in Western Kansas or Colorado near foot hills. Must be near station. Give description and price in first letter. I am coming. J. E. Farris, Fayette, Mo.

FOR SALE—About 40 head of branded horse stock, Geldings and brood mares. The mares are unbroken except a few head. Geldings broken to saddle. This stock is of Clyde breeding and a good bunch of stock, in the hands of the right man. Lakin, Kans., 75 miles west of Dodge City. John O'Loughlin, owner, Lakin, Kearny County, Kans.

SEEDS AND PLANTS.

FOR SALE—Genuine Siberian millet seed—35 cents per bushel. Sacks free in lots of two bushels or more f. o. b. at Topeka. Address J. W. Ferguson, Route 1, Topeka, Kans.

ALFALFA SEED—\$3.50 per bushel. No sand, no weed-seeds. J. H. Glen, Farmer, Wallace, Kans.

MISCELLANEOUS.

WANTED—A German or Swede girl for general housework—small family—no washing. Apply 333 Greenwood Ave., Topeka, Kans.

FOR SALE—Five pedigree Scotch Collie shepherd pups, the sire and dam are very intelligent and good workers with stock. M. S. Kohl, Benton, Kans.

WANT TO KNOW the whereabouts of Joseph Dwyer, left Topeka, March 18, 1904; has not been heard of since. He is 14 years old. Mrs. Jaa. Dwyer, 300 Lawrence St., Topeka, Kans.

SITUATION WANTED—A good farmer, middle aged, single, and worthy of trust, seeks a place as farm overseer, speaks German only. Please address B. D. 100, 1467 Avenue A, New York City.

WANTED—A first class Creamery outfit, second hand if good, and the necessary equipment for a five ton ice-plant in connection. Will buy complete or in parts. Address "Odd Jobs" care Kansas Farmer.

WANTED—Man who understands milking cows, and making butter, who wants steady work for one year for \$350 and board; also another man to attend to hogs and chickens at above price. Only good, steady men need apply. Write at once, giving former experience. J. C. Miller, 101 Ranch, Route 4, Ponca, O. T.

ON ACCOUNT OF DEATH in the family a change of business is desired. A first class livery barn and stock for sale. The only one in town, good location, at a bargain. Inquire of J. W. Swartz, Americus, Kans.

WANTED—Two practical experienced men for general work on farm. \$150 for 6 months. L. C. Walbridge, Russell, Kans.

FOR SALE—Second-hand engines, all kinds and all prices; also separators for farmers own use. Address, The Geiser Mfg. Co., Kansas City, Mo.

500,000 POUNDS WOOL WANTED—Write us for prices; send sample and we will offer you the highest market price by return mail. Western Woolen Mill Co., North Topeka, Kans.

FOR SALE AND RENT—300 female cattle, 3,000 sheep, teams, and tools, for cash or short time. Will rent for cash or share of sales for any number of years, good ranch to carry all of above stock. Good buildings for the purpose; pasture, fenced in three pastures, water in each; bottom and alfalfa hay; farm land fenced separately. Or will sell whole outfit on any kind of time. Address E. H. Beyer, Meade, Kans.

WORLD'S FAIR—60 rooms for visitors, close to grounds, furnished with or without board, good neighborhood, on car line. Write for list at once. A. T. Eakin, (formerly County Treasurer of Hodgeman county, Kansas) 4612 Bell Ave., St. Louis, Mo.

PALATKA—For reliable information, booklets, and other literature, address Board of Trade, Palatka, Florida.

PATENTS.

J. A. ROSEN, PATENT ATTORNEY
418 Kansas Avenue, Topeka, Kans.

The Stray List

Week Ending June 9.

Montgomery County—Samuel McMurtry, Clerk.
PONY—Taken up by J. P. Shipley, in Parker tp., May 18, 1904, one 10-year-old dun colored mare pony, branded O L on left shoulder, valued at \$20.

Week Ending June 16.

Trego County—J. W. Phares, Clerk.
CATTLE—Taken up by E. L. Frye, in Franklin tp., Feb. 5, 1904, one red motley faced 5-year-old heifer, 1 on left side; one red 2-year-old heifer; one black 2-year-old heifer, with white face; one dark red 2-year-old white faced heifer; one red 2-year-old steer, with white forefeet, belly and breast; one red 2-year-old white spotted steer; also one red 2-year-old steer, with white forehead, breast and tail; valued at \$15 each.

Greenwood County—C. D. Pritchard, Clerk.
STEERS—Taken up by C. D. Pritchard, in Janesville tp., Nov. 15, 1903, two 2-year-old red steers, branded C O R on right hip.

Cherokee County—W. H. Shaffer, Clerk.
MARE—Taken up by J. W. Powell, in Lowell tp., June 1, 1904, one 13-year-old bay mare, white in forehead and on back; valued at \$20.

Week Ending June 23.

Sedgwick County—J. M. Chain, Clerk.
PONY—Taken up by Wm. Prewitt, in Waco tp., (P. O. Otville), one black and white spotted mare pony, between 5 and 10 years old, 2 glass eyes, white face, black ears, branded over right side thus S; valued at \$20.

Miami County—Geo. Osborn, Clerk.
MARE—Taken up by J. Bivens, in Richland tp., June 8, 1902, one 5-year-old unbroken roan mare, between 14 and 15 hands high, weight about 850 pounds, white spot in forehead and on left hind foot, branded Q on left shoulder.

LADIES My Regulator never fails. Box FREE.
DR. F. M. MAY, Box 81, Bloomington, Ill.
BED-WETTING CURED. Sample FREE.
DR. F. M. MAY, Bloomington, Ill.

The Poultry Yard

CONDUCTED BY THOMAS OWEN.

The Craze for Brown Eggs.

The craze over brown eggs has evidently hit our British cousins real hard. Editor Watmough, in the Fanciers' Gazette, handles this fad as follows:

"Everybody seems to be going crazy over brown eggs. At every breakfast table when the eggs come on there would appear to be a rush for the brown ones. If there happens to be only one brown egg, there is as much of a struggle to get hold of it as there is to obtain possession of the ball outside the pack, in a good old Rugby game of football. Epicureans, if they can not have a brown egg, will have a shop 'un. Why, oh, why, can't all hens lay brown eggs? At the last meeting of the National Poultry Organization Society, held in London, the minister of agriculture, Lord Onslow, confessed his affection for brown eggs. Moreover, he gave advice to British poultry-keepers that we would not have dared to give to fanciers, for fear of being charged with an incitation to faking and fraud. Lord Onslow advised them to meet the competition of foreign artificially brown tinted eggs by coloring white British eggs with coffee. 'There is no doubt that every one prefers brown eggs,' he said, 'and I frankly admit that when I see four or five eggs on the breakfast table, one of which is brown, I always take that one, although I know its contents are no better than the others.'"

In the cultured Beantown, Mass., there has existed for many years past a similar fondness for brown eggs. How the "brownies" may be obtained Mr. Watmough explains thus:

"It may now be taken for granted that we shall see far more brown eggs than we have done. A demand invariably creates a supply. If the British public will have brown eggs it will get them. If the hens can not meet the demand the coffee-pot will. There is nothing like having two strings to one's bow, and the fowl-house and the coffee-pot would now appear to be a very useful combination."

We doubt very much whether coloring eggs by the coffee process would find favor in the eyes of our evangelistic friend and editor, Mr. Robinson, of Farm Poultry, published in Boston, Mass. The Rhode Island Reds, Barred Rocks and Light Brahmas lay eggs that do not need the assistance of the coffee-pot to lend color to the occasion.

This being the Rooseveltian age, why draw the color line? As to eggs 'dey is eggs,' as the colored swiper of hens' nests remarked. He certainly did not draw the color line in gathering the hen-fruit. In New York there is a market that calls for white eggs at fancy prices, so there you are. Which are the best eggs, the white or the brown? This will make a nice mid-summer argument all along the line. We will turn over the discussion to our New York associate, George Eggs Howell, and he can get the warring factions to put their ideas on paper, and we will print the opinions on the subject. In order to start the ball rolling, we reprint Editor Watmough's opinion as to what is the real guide to the best eggs. He says:

"There is very probably not the slightest difference, from a nutritive point of view, between the naturally brown colored egg and the white one. The real or the artificial coloring may satisfy the eye, but the proper guide as to the worth of an egg, of course, is to be found inside. There is an important dietetic difference between the yolk of pale yellow, and that of a rich, almost reddish color, and no wonder the latter is in such request. Whether we are all so fond of the brown-tinted shell or not, we all plump for the rich, red yolk, and it is this that egg-producers ought to go for. Fowls properly fed, and kept on free ranges, have usually this desirable colored yolk, and it is generally the town-kept hens that give us the sickly yellow one. It is,

no doubt, the iron-compound in the eggs which gives color to the yolk, and, therefore, the deeper the color of the yolk, the more nutritious the egg, and the better it is for us. Eggs are, it is needless to say, one of the most perfect and complete foods we possess, and not half enough use is made of them in our dietetic table. It is lamentable, too, that farmers do not make more of their production. Egg-production ought to be an important branch of a farmer's business, and yet no part of his work is more indifferently considered or attended to."—American Fancier.

The Egg Industry in Nebraska.

The carload of eggs, shipped by the S. K. Dexter Cold Storage Company, from Norfolk to Lowell, Mass., recently, made the ninth carload lot, filled to the brim with little white eggs, that have gone from this city to the Massachusetts town since the first day of January. And a little more of the magnitude of this chicken industry for Norfolk and for Northern Nebraska—the entire section contributing the the Norfolk market—may be realized when it is stated that during the past year cash between \$233,000 and \$234,000 was handled by this one Norfolk firm in transferring the eggs that were purchased in their cold storage plant here.

For the lumber alone that was used in crating the products that went out of Norfolk, a bill between \$9,000 and \$10,000 was run up.

"You might be surprised," said Mr. Dexter, "to know that the chicken product in this country amounts to more money in a given time than any other product known. The chicken is unrivaled by the corn-crop, the wheat-crop, the gold-mine or the coal-mine, or any other agricultural product in the world. That means the poultry, meat and eggs combined. The value annually runs into the millions of dollars, and that is why the farmers are stocking up more and more on hens."—Norfolk (Neb.) News.

Poultry Notes.

During this hot weather see that the fowls have plenty of fresh water. The water vessels should be renewed at least twice a day.

Also see to it that your chickens have plenty of shade during the summer months. If they have no shade they will not pay for their keep, as they become listless and lazy. Whereas if they have a nice shady place to scratch in, they will keep themselves healthy, free from lice, and in good condition to lay eggs.

For spraying walls, fences, yards, nest-boxes and roosts, the following is a good remedy to knock out lice: Two gallons kerosene, one gallon water, one pound laundry soap, one pint crude carbolic acid. Dissolve soap in boiling water, remove from fire and while still boiling add kerosene and acid. Thereupon add six gallons of hot water to the above mixture, stirring well.

W. F. Metz rather broke the record on the egg question last week, shipping out from Jewell County four carloads, 1,600 cases, 48,000 dozen, or 576,000 eggs. Do you know that means \$6,240 paid out in this county for eggs in just one week? Do you realize that this means that the hens of the county earned 33 cents that week for every man, woman and child in the county? The hens are steady money-makers for the county.—Mankato Advance.

Hens will become broody, and how to treat them, so as to have the smallest loss in time is the question. "Breaking up" the nest is one means, but a persistent hen will sit beside it, on a bone, a stone, a stick, in fact, on nothing, and it becomes so puzzling that the owner gets out of patience and beats her, kicks her, drives her off twenty times a day, dips her in water until water-soaked and nearly drowned, dogs her, ties strings to her, and resorts to other devices which do no good, but reduce her in flesh and thus help to make her less useful than she otherwise would be. The modes which have proven the best, all things considered, are to place her, after allowing her to set four or five days, in a

strange yard with a vigorous male, giving plenty of food and water. Another is to confine her in a coop raised from the floor, with slats for a bottom and feed her well. Another is to allow her to sit a few days and then confine her in a warm and comfortable coop by herself, giving her plenty of feed and water. By these methods she will not get thin in flesh and will show symptoms of naturalness again, having ceased to cluck and will begin her singing. This mode will cause the loss of about two weeks only, while the others may result in the loss of a month or six weeks.

POULTRY BREEDERS' DIRECTORY.

TO GIVE AWAY—50 Buff Orpingtons and 50 Buff Leghorns to Shawnee county farmers. Will buy the chicks and eggs. Write me. W. H. Maxwell, 921 Topeka Ave., Topeka, Kans.

BARRED PLYMOUTH ROCK EGGS, 50 for \$2.25; 100 for \$3.75. Adam A. Weir, Clay Center, Neb.

SINGLE COMB BLACK MINORCAS. The largest and greatest laying strain in the world. Eggs \$1 per 15, \$3 per 50, \$5 per 100. Address Geo. Kern, 817 Osage St., Leavenworth, Kans.

SPECIAL SUMMER PRICES on my Superior Strain Barred Plymouth Rocks: 15 eggs, 60c; 30 eggs, \$1; 100 eggs, \$3. E. J. Evans, Box 21, Fort Scott, Kans.

PURE S. C. B. Leghorn eggs, 30 for \$1; 100, \$3. F. P. Flower, Wakefield, Kans.

FOR SALE—Eggs for hatching, from my 95 scoring Light Brahma and White Wyandotte pens at \$1 for fifteen. As I am now done setting, I have reduced the price just one-half for the balance of the season. There is no better stock anywhere. Mrs. R. Kenworthy, Cottage Home Poultry Yard, Wichita, Kans.

ROSE COMB RHODE ISLAND REDS—Superb in colors. Extra fine layers, mated for best results. Eggs \$1.50 per 15. L. F. Clarke, Mound City, Kans.

BLACK LANGSHAN eggs, \$2 per 15 from scored hens, and \$1 per 15 from unscored hens. Mrs. Geo. W. King, Solomon, Kans.

NEOSHO POULTRY YARDS, Established 1882. Breeder of Rose Comb R. I. Reds and Buff Orpingtons, scoring from 91% to 94% points, by Atherton. Eggs the balance of the season, \$1 per 15. Stock for sale after July 1. J. W. Swartz, Americus, Kans.

BLUE BARRED PLYMOUTH ROCK EGGS; 2 pens fine birds; \$1 per 15. Mrs. J. C. Leach, Carbondale, Kans.

INDIAN RUNNER DUCKS and White Wyandottes—Prize-winning stock; bred for utility; 16 eggs, \$1.50. Will exchange for turkey eggs. L. D. Arnold, Salina, Kans.

PLEASANT VIEW POULTRY FARM—White Wyandotte eggs for sale, 5 cents each. S. Bailey & Wife, Route 3, Independence, Kans.

S. C. BROWN LEGHORNS, exclusively. Eggs for sale from healthy, free-range stock. Satisfaction guaranteed. J. A. Kauffman, Abilene, Kans.

B. P. ROCK EGGS—\$1.50 per 15; \$5 per 100; free range. Collie pups. W. B. Williams, Stella, Neb.

BLACK MINORCAS—Biggest layers of biggest eggs. Fertile eggs for hatching, \$1.50 per 15; \$5 per 50; \$5 per 100. Also Light Brahmas, Black Langshans, Barred and Buff Plymouth Rocks, White, Silver and Golden Wyandottes, S. C. Rhode Island Reds, S. C. White and Brown Leghorns, American Dominiques, Houdans, White Crested Black Polish, Buff Laced Polish, Buff Cochins Bantams. Eggs from choice matings of above \$1.50 per 15. James C. Jones, Leavenworth, Kans.

FOR SALE—Eggs from Rose Comb Brown Leghorns, Silver Spangled Hamburgs, Barred Plymouth Rocks, White-faced Black Spanish, and Black Langshans. Write your wants. Charles W. Gresham, Bucklin, Kans.

RHODE ISLAND REDS—Original stock from the east, the best general purpose fowl on earth. Eggs \$1.50 per 15; \$2 per 30. Mrs. G. F. Kellerman, Vineyard Farm, Mound City, Kans.

WHITE HOLLAND GOBBLEERS—From first prize stock, \$4 each. E. W. Melville, Eudora, Kans.

SCOTCH COLLIE PUPS—Four mere litters of those high-bred Collies, from 1 to 3 weeks old, for sale. Booking orders now. Walnut Grove Farm, H. D. Nutting, Prop., Emporia, Kans.

BARRED Plymouth Rock Eggs—B. P. Rocks exclusively; won first premium on B. P. Rock capons, Kansas State Fair, 1903. Eggs \$1 per 15, \$5 per 100. S. H. Dunahugh, Route 1, Hoyt, Kans.

PURE WHITE WYANDOTTES for sale. Eggs for sale in season. \$1 per 15. Darby Fruit Co., Amoret, Mo.

MRS. GEO. L. BARBER, Saffordville, Kans., Will furnish Barred P. R. eggs from 94-point birds 15 for \$1.50.

WHITE WYANDOTTES
White ones, pure bred, and good layers, Eggs \$1 and \$1.50 per sitting.

ALVIN LONG, Lyons, Kansas.

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Stock and eggs for sale at all times; Buff Plymouth Rocks, Bronze Turkeys. Quality the very best.

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White Plymouth Rocks hold the record for egg laying over any other variety of fowls; eight pullets averaging 2300 eggs each in one year. I have some breeding stock for sale at reasonable figures. Eggs in season, \$2.00 per 15, expressage prepaid anywhere in the United States. Yards at residence, adjoining Washburn College. Address

THOMAS OWEN, Topeka, Kansas.



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All our Fine Breeders of this season, also Spring Chicks for sale after the first of June. Part-ridge Cochins, Light Brahmas, Black Langshans, Silver Wyandottes, White Wyandottes, Silver Spangled Hamburgs, Black Minorcas, S. C. Brown Leghorns, and Belgian Hares. Buy the best now at the lowest prices. Write your wants. Circulars free. Choice Breeders and Show Birds.

A. H. DUFF, Larned, Kan.

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Thanolice (lice powder).....25c
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Poultry Cure.....25c
Roup Pills.....25c
Medicated Nest-eggs.....50c
Conkey's Roup Cure.....50c
Buckeye Cholera Cure.....35c

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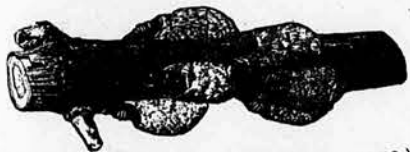
THE KANSAS CITY TRUTH,
401-402 KANSAS CITY LIFE BLDG., KANSAS CITY, MO.

Some Insect Inquiries Answered.

(Continued from page 652.)

is a common pest, belong to the family Coccidae, order Hemiptera, and subsist on plants by sucking the sap. Spraying with crude petroleum or kerosene emulsions is the most effective remedy when foliage is out, though in the dormant season the tree can be headed in or trimmed closely and then treated with an application of soap wash. The best time for spraying has been recommended for the last of May or the early part of June, while the young are hatching.

Referring to the United States Agricultural Report for 1884, the life history is given for both sexes, while much has been written about them since; but in regard to the female, this statement is worthy of notice: "The eggs are deposited at the end of the body, in a nest of waxy fibers secreted from pores. This nest is attached to the posterior ventral portion of the body, and adheres somewhat to the twig. As the eggs are protruded into the waxy mass the posterior portion of the body is gradually raised up until often it reaches an angle of 45° with the bark. The egg-laying continues until on into July, and, after one or two thousand eggs have been deposited, the female dies. It is almost always within this period of egg-laying that the insect is noticed, on account of its large size, but more particularly from the conspicuous white cushion at the end of its body. After the death of the female, her beak breaks off and her body shrivels up, but remains attached to the twig by the cottony mass for a long time, often a year or more."



Cottony Maple-scale. (Female on grape.)

The figure shows the female insects on grape, which the scale infests as well as other plants besides the maple. THE HELLGRAMMITE OR DOBSON-FLY (Corydalis cornuta, Linneus).

I take the liberty of sending to you under separate cover by same mail, an insect which we caught alive here, and which we killed by putting in wood alcohol. I am very anxious to know what the entomological name and also

the common name of this insect is. Some people here claim it is a species of scorpion. We found three of these insects under a large iron pipe which had been lying on the ground for several weeks on the bank of a creek. When the insects were captured, one of them ejected a colorless fluid to a distance of about eighteen inches and when teased by placing a stick close to the head they would bite the stick and swing their tail, evidently in an effort to sting. I have asked almost every person around here who would be likely to know, and am still in ignorance of what the insect is.

Kindly state to me whether or not they are poisonous, and if their weapon of defense is by biting or stinging. There were four killed here recently and when alive fought terribly when placed in a box.

Wichita, Kans., May 25, 1904.

The specimen received is the larva of *Corydalis cornuta*, a true Neuropterous insect of the family Sialidae, regarding which Comstock mentions in his Manual as follows: "The species that is most likely to attract attention is the Horned Corydalis. This is a magnificent insect, which has a wing expanse of from four to nearly five and



Fig. 1. Hellgrammite, adult.

a half inches. Figure 1 represents the male, which has remarkably long mandibles. The female resembles the male, except that the mandibles are comparatively short.

This species is common throughout the United States. The larvae are called Dobsons by anglers and are used by them for bait, especially for bass. Figure 2 represents a full-grown Dobson, natural size. These larvae live under stones in the beds of streams. They are most abundant where the water flows swiftly. They are carnivorous, feeding upon the nymphs of stoneflies, Mayflies, and other insects. When about 2 years and 11 months old, the larva leaves the water, and makes a cell under a stone or some other object on or near the bank of the stream.

Fig. 2 Dobson-fly. (Natural size.)

This occurs during the early part of the summer; here the larva changes to a pupa. In about a month after the larva leaves the water the adult insect appears. The eggs are then soon laid; these are attached to stones or other objects overhanging the water. They are laid in blotch-like masses, which are chalky white in color, and measure from half an inch to nearly an inch in diameter. A single mass

contains from two thousand to three thousand eggs. When the larvae hatch they at once find their way into the water, where they remain until full grown.

In answer to the inquiry, the idea that the worm is a kind of scorpion is wrong; although it may swing its tail threateningly, it has no sting, instead it has a pair of terminal hooks; its defense can only be made by biting, which is not at all poisonous. These larvae furnish fine subjects for dissection in class work instruction of insect anatomy, and numbers of them are obtained and preserved in stock for this purpose; the adults can also be used for demonstration as shown by figure 3, illustrating the nervous system. In some localities, boys make a practice of catching the worms to sell to fishermen who use them for bait as already mentioned.

As your specimens were caught on the bank of a creek away from water, they were naturally seeking a place to pupate as already mentioned, and here another reference might be given from Comstock's Introduction: "At the base of each lateral appendage, on the first seven abdominal segments, there is a tuft of hair-like tracheal gills. The larva also has spiracles; a remarkable instance of an insect provided with both organs for aquatic and aerial respiration. The spiracles are probably not used till the insect is fully grown and leaves the water to undergo its transformations." In my personal experience, a larva was once found under electric light at night on the high bridge crossing the Kansas River at this city, where it had evidently crawled from the water, and in doing so necessarily climbed a pier.

THE CHERRY- OR PLUM-APHIS (Myzus cerasi, Fabricius).

Find specimens of bugs that destroy plums. Please send name, and also name of something that will destroy them.

Atchison, Kans., June 1, 1904.

These plant-lice, order Hemiptera Homoptera, family Aphididae, attack the plum foliage almost as readily as they do the cherry, thus their common names have become interchangeable. This insect pest is treated of in Common Injurious Insects of Kansas (sent to any address for postage, 5 cents), by V. L. Kellogg, whose references are here produced:

Diagnosis.—Twigs and under surface of leaves of the cherry spotted or covered with great numbers in groups of



Aphis or Plant-lice, many times enlarged. a, winged female; b, pupa; c, wingless female.

minute, shining, black insects. Leaves wilt; growth of tree is stunted.

Description and Life-History.—This pest is one of the plant-lice or aphids, minute, soft-bodied, most of the individuals wingless, sucking insects. (For

general appearance, see illustration.) It passes the winter in the egg state, on the cherry twigs; early in spring the young aphids, hatching, gather on the bursting buds and begin sucking the juice from the unfolding leaves. In a week or ten days the plant-lice are mature, and begin giving birth to young, which, in turn, are soon fully developed. The plant-lice increase in numbers with marvelous rapidity, and if not checked by the attacks of many natural enemies would soon overrun all vegetation. The young are born alive, except in the case of the first brood of the year, which issue from eggs laid by the last brood of the preceding year. This last fall brood is composed of winged individuals, most of the other broods being wingless.

Remedies.—The natural enemies of the plant-lice, including lady-birds and their larvae, parasitic two- and four-winged flies, etc., are usually sufficient to keep the aphids in check.

Kerosene emulsion (see formula) sprayed on the lice is the most effective artificial remedy. As the lice live by sucking, poisoning the foliage is unavailing. The insecticide must be something which will destroy the insects by actual contact. Strong soap-suds or tobacco water are recommended.

Kansas Notes.—The cherry-aphis is perhaps not a formidable insect enemy to orchardists of this State, yet it undoubtedly does some annual damage in stunting the spring growth of young trees.

I have seen young cherry-trees with large portions of their fresh leaves and tender shoots fairly covered and blackened by these insects.

Formula for Kerosene Emulsion.—Kerosene is a contact poison, possessing great penetrating powers. It has long been known, used pure, as a powerful insecticide, but its strength made it as dangerous to foliage as to the insects. Prepared as an emulsion, however, it is safe as regards foliage, and yet effective as an insect-killing substance. The emulsion should be prepared by the following formula:

Hard soap, pounds..... ¼
Water, gallon..... 1
Kerosene, gallons..... 1

The soap should be dissolved in boiling hot water, and the suds poured, boiling hot, into the kerosene. The suds and kerosene should be thoroughly churned (preferably by means of a force pump) until the emulsion is well made. It should appear as a rich, creamy mass. As it cools it thickens, jelly-like. When using, this stock emulsion should be diluted with from nine to twelve times its measure of water. Thus, one gallon of stock emulsion will make ten gallons of the emulsion ready to be sprayed. The emulsion is used against insects which can not be killed by the use of arsenical poisons, such as plant-lice, scale insects, and various sucking bugs.

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.

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

A. W. GLEASON, Notary Public.
(Seal)
Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

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CHOICE PIGS FOR SALE. ADDRESS

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Edgar, Neb. B. P. Rock Fowls.

REGISTERED DUROC-JERSEYS

A fine young herd for sale; also choice young stock of both sexes. Write your wants.

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DUROC-JERSEYS J. U. HOWE,

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Farm two miles west of city on Maple Avenue.

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Two grand herd boars for sale at reasonable prices, if taken soon. Young stock all sold.

J. B. DAVIS, Fairview, Brown Co., Kans.

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We have a large number of excellent fall pigs sired by Red Duke 18663, the best son of Ohio King; and all are out of recorded sows.

BUCHANAN STOCK FARM, Sedalia, Mo.

RECORDED DUROC-JERSEYS

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OSAGE VALLEY HERD

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100 spring pig out of three noted sires. Am ready for orders now. Write for description and price.

A. G. DORR, Route 5, Osage City, Kans.

Rose Hill Herd of Duroc-Jersey Hogs

I have for sale a choice lot of boars ready for service; gilts bred or open, and a fine lot of early spring pigs, all out of large, prolific sows and sired by well-developed boars. Special prices for next 30 days.

S. Y. THORNTON, Blackwater, Cooper Co., Mo.

Rockdale Herd of Duroc-Jersey Swine.

I have at present 40 head of bred gilts I am pricing at \$20 and \$25 to close them out. Also 60 head of fall pigs I am offering very cheap. Prize-winning strains. Inspection invited. Rural Route and telephone.

J. F. CHANDLER, Frankfort, Kans.

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Duroc - Jersey Swine.

No sows nor gilts for sale, males only. Visitors always welcome. Write me.

W. F. GARRETT, Box 210, Portia, Kans.

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FOR SALE Poland-China Hogs, Hol-

stein, Friesian Cattle; either sex. Best strains represented. H. N. HOLDE-

MAN, Rural Route No. 2, Girard, Kansas.

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Poland-Chinas. Up-to-date breeding. Correspondence solicited. Inspection invited.

Wm. Plummer, Barclay, Kans.

Kansas Herd of Poland-Chinas

I now offer for sale, Prond Kansan, he by U. S. Perfection, by a son of Mischief Maker and a son of Ideal Sunshine.

F. P. MAQUIRE, HUTCHINSON, KANSAS.

Pocan Herd of Poland-Chinas

Model Tecumseh 64133, American Royal (S) 80783, and Best Perfection 81507 at head of herd. Write us your wants.

J. N. WOODS & SON, Route 1, Ottawa, Kans.

RICHLAND Poland-China Herd—Headed by

Prince Henry 86855 and Black Chief Perfection 80567; dams, Big Bone Beauty 178492, Richland J. P. Best 178498 and others of the Patchen-Perfection-I. Knew strains of best Poland-China blood; my hogs have been bred for good length and size, with extra good bone, yet true to best Poland-China type; a few bred sows and gilts for sale. Write D. C. Van Nice, Richland, Kas.

Perfection Herd of

POLAND CHINAS.

I have at present some choice boars that are good enough for the best of company; also some choice brood sows, bred to choice Perfection boars, such as Royal Perfection 32582 and Rival Perfection 33377. None but choice stock shipped.

S. H. LENHART, Hope, Kane.

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and BERKSHIRES.

I have about twenty boars ready for use and twenty-five sows bred, and some unbred, and a large number of good pigs, both breeds.

T. A. HUBBARD, (County Treas. Office), Wellington, Kans.

POLAND-CHINA SWINE.

Mains' Herd of Poland-Chinas

Up-to-date breeding. Will sell one Chief Perfection 2d herd-boar. After Dec. 1 will sell a few hard-sows and a fine lot of fall pigs. Write for what you want. **JAMES MAINS, Oskaloosa, Jefferson Co., Kans.**

Chautaugua County Poland-Chinas.

Sows of Klever's Model, G. H. Sanders' Tecumseh Chief, Look Me Over, Perfection and Black U. S. blood. Headed by Kid Klever (33079). Pigs by Kid Klever and pairs not related for sale; also 4 yearling boars cheap. **F. H. Barrington, Spring Creek, Kans.**

Clear Creek Herd Choice Poland-Chinas

Sows of Missouri's Black Chief, Ideal Sunshine, Perfection, Wilkes, and Hadley Jr. blood. Herd headed by Tecumseh Skylight 2337, Hanna's Style 30273, Sherman's Corrector 30760, and Ideal Tecumseh 32185. Five very choice serviceable boars for sale cheap. Phone at farm. **E. P. Sherman, Wilder, Ka.**

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Woodbury 33333, Highroller 33339 and Perfection's Profit 33233 at head. Sows of the most popular strains. Visitors always welcome.

F. A. DAWLEY, Waldo, Kans.

VERDIGRIS VALLEY HERD POLAND-CHINAS

Contains as good or better individuals and finer breeding than ever. I breed for large size and heavy bone combined with quality and finish and strong constitution. For Sale—10 good serviceable boars; also some extra fine sows and gilts bred for late June and early September farrow.

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Stock of all ages for sale; also White Wyandotte Chickens. Write for circular.

S. W. ARTZ, - - Larned, Kans.

20 Chester White Sows and Gilts

And 10 October Boars

For ready sale. Prices low for quick sales. Order to-day.

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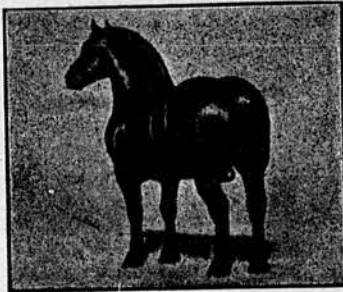
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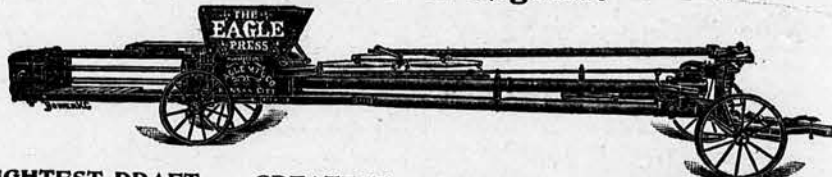
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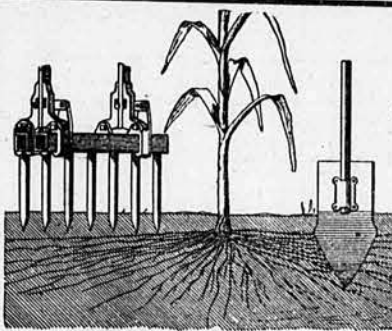


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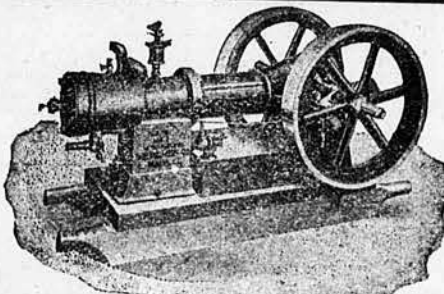
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