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KANSAS FARMER.

Established in 1863.

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The effect of alkali and of salt in water used for irrigation has constituted one of the serious obstacles to the use of available waters for this purpose in many portions of the arid and semi-arid regions. In a paper published in the August number of Forestry and Irrigation, Mr. Thomas H. Means, engineer of soils, U. S. Reclamation Survey, shows that the evil effects of these waters may in many

cases be overcome by the use of gypsum on the land. Under-draining is also useful in carrying away the harmful minerals.

Just north of Hutchinson, on the Rock Island Railroad, is a plantation that will be watched with interest by people who know about it. It consists of 800 acres of catalpa-trees, 550 acres of which have been growing for two years. This ranch is the property of

riotous strikers. It is a principle of law that those who seek its protection must come with "clean hands," that is, they must not be guilty of infractions of the law they invoke. The packers are in poor position to avail themselves of this protection if half that is said about them be true.

The Santa Fe Railroad made free and effective use of the law to prevent interference with the operation of its shops on the occasion of its machin-

now seeks, as a slight promotion and recognition of the qualities of a good man and of past work well done.

A NEW DEPARTURE IN DAIRYING.

The third anniversary announcement of the Blue Valley Creamery, of St. Joseph, Mo., which appears on page 828 in the KANSAS FARMER this week, suggests an important and significant as well as a radical new departure in the system of marketing cream. The general adoption of the system inaugurated by the Blue Valley Creamery will tend, to a certain degree, to revolutionize old methods, and will do more to promote and perpetuate the dairy industry than any one thing that has happened during recent years. It means the putting of butter-fat on the cash list where it belongs. It is an up-to-date and modern business method in the marketing of dairy products.

One reason why the dairy branch of agricultural industry has not kept pace with other lines of agricultural industry, is because of the old systems of marketing the product. When the farmer sends his grain, live stock, hay, etc., to market he receives cash for it. And there seems no business reason why cream should not be cash as well as grain or live stock.

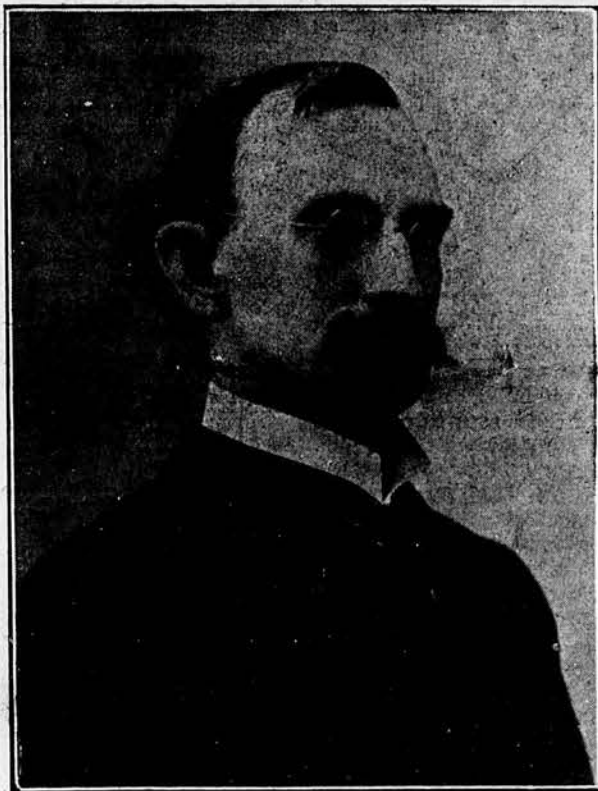
A great many farmers, who do not now sell cream and butter, will be encouraged to do so under the spot-cash system. And since one of the largest creameries in the world has adopted this common-sense system, it really seems surprising that it had not been in vogue for lo! these many years. It is quite evident that had this system been adopted years ago, the development of the dairy industry would not have been so slow in the West. While the dairy business of Kansas now amounts to about ten million dollars annually, there is no reason why it should not at the present time amount to twenty-five million dollars annually.

The Blue Valley Creamery Company are to be congratulated on this advance movement in originating the spot-cash system for cream, which goes into effect in their establishment on next Monday, August 22, 1904. It will certainly mark another epoch in the history of Western dairying.

That right business methods win and make business grow, is well demonstrated by the phenomenal success achieved by the Blue Valley Creamery Company, during the short space of three years. At the beginning of their business career they were perhaps one of the smallest creameries in the West. Three years ago they started in business with fourteen patrons and paid for cream the first month \$179.34. To-day they have over 5,000 individual shippers, that are increasing at the rate of a hundred per month, and their monthly pay-roll amounts to \$75,000.

When this establishment began business, butter-fat was selling in this part of the country at 13 cents, while the New York quotations were 21 cents. At the present time this creamery is paying 16 cents for butter-fat and the same product in New York is only worth 17½ cents. Again, under the old system, the skim-milk

(Continued on page 828.)



GEO. F. THOMPSON, of Kansas, for Assistant Secretary of Agriculture.

Mr. James Viles, of Chicago, whose purpose is to raise fence-posts, telephone-poles, and railroad ties. He thinks he can raise fence-posts in eight years, but that it will require about fifteen years in which to develop telephone-poles and twenty years for ties. The trees are planted in rows at the proper width, with corn rows between so that all can be cultivated.

The excellent paper on "The Improvement of Our Public Highways and the Duty of the Government to Aid in Their Construction," which was printed on page 979 of the KANSAS FARMER of last week, was prepared and read by Doctor A. L. Hitchins, of Burlington, Kans. As Doctor Hitchins is one of the most progressive citizens of Coffey County and president of the Burlington Improvement Association, it was unfortunate that his name appeared in the KANSAS FARMER as Doctor A. L. Hitchcock. Realizing that apologies can not correct errors we make this statement simply in order that proper credit may be given for the authorship of the paper.

Some surprise has been expressed at the reluctance of the packing trust to use the law to prevent interference with their industry at the hands of

ists' strike. Perhaps the packers may find it profitable to wash their hands of the pollution of conspiracy.

FOR ASSISTANT SECRETARY OF AGRICULTURE.

We herewith give a portrait of Mr. Geo. F. Thompson, editor of the Bureau of Animal Industry, Department of Agriculture, Washington, who is Kansas' candidate for the Assistant-Secretaryship of the Department of Agriculture, lately made vacant by the death of Colonel J. H. Brigham. Mr. Thompson is just in the prime of life, an indefatigable worker and a man whose ability has been demonstrated by years of active service in governmental work. Because of these facts and because of the more important fact that Mr. Thompson's interests lie with the live stock of the country, Kansas takes pleasure in urging his appointment to this important position. While his appointment to this office would in some sense be a recognition of his abilities and his past services, it would be vastly more important because of the direct influence it would have upon the live-stock industry of the West, which is America's greatest interest. Mr. Thompson is fitted for a more important office than this, but the KANSAS FARMER would be glad to see him receive the one he

Agriculture

COMING EVENTS.

Will secretaries and those having the management of coming events, oblige the Kansas Farmer by sending dates?

- September 1, Shawnee County Horticultural Society at Berryton, O. F. Whitney, Topeka.
- October 17-22, 1904—American Royal Live-Stock Show and Sales, Kansas City, Mo.
- November 26-December 3, 1904—International Live-Stock Exposition, Chicago, Ill.

Farmers' Institutes.

- August 18, Burlingame Farmers' Institute—Prof. A. M. TenEyck.
- August 18, Farmers' Institute, New Lancaster, Miami County, F. B. Conner, secretary. J. T. Willard and Miss Margaret Minis.
- August 20, Farmers' Institute, Dole's Park, McPherson County, B. F. Dole, Prof. H. F. Roberts and Miss Margaret Minis.
- August 25, Farmers' Institute, Riley County, W. Fryholder, president. Professors H. F. Roberts and J. D. Walters.
- August 25, Farmers' Institute, Highland Station, Doniphan County, Mrs. Levi Kunkel, secretary. E. A. Popenoe.
- August 31, Farmers' Institute, Summerfield, Marshall County, S. Baringer, secretary. Prof. H. F. Roberts and Mrs. Calvin.
- August 31, Richmond Farmers' Institute, J. A. Hargrave, secretary. Professors A. M. TenEyck and J. T. Willard.
- September 3, Farmers' Institute, Garrison, Riley County, Carl Thompson, secretary. Prof. A. TenEyck and Henrietta W. Calvin.
- September 15 and 16, Farmers' Institute, Denison, Jackson County, A. M. Shaw, secretary. V. M. Shoemith.
- November 18 and 19, Farmers' Institute, Altamont, Labette County, C. E. Hildreth, secretary.

Alfalfa for the Kansas Farmer.

WALLACE N. BIRCH, KANSAS AGRICULTURAL COLLEGE.
(Concluded from last week.)

PASTURING, HARVESTING, AND STORING.

Pasturing is undoubtedly the easiest method of harvesting, but it is not always the most economical. Even when alfalfa is pastured it should be mowed regularly; otherwise many plants will be allowed to bloom and produce seed, which is a great tax upon the vitality of the plant. As a hog- and colt-pasture alfalfa is a success. Alfalfa under 2 years old should not be pastured with any kind of stock. Hogs should not be allowed on the field in winter or at any time when the growth is short, for if feed is scarce above ground, they do not hesitate to dig the plants out by the roots, thus injuring the stand.

As a cattle- and sheep-pasture alfalfa is not entirely a success, owing to the danger from bloat. Often the animals die, and the losses perhaps overbalance any profits that may come from the pasturing. Many farmers pasture it with success but the risk is always great. The writer has seen cows pastured on alfalfa for months with no apparent injury, and then suddenly bloat almost to the point of death. Early cutting is desirable in order to secure a good quality of hay, as well as for the preservation of the vigor of the plants. When the first crop is cut early the later crops yield well. At the Kansas Station a strip was cut through the field at the first cutting when about one-tenth of the plants were in bloom, and another when the plants were past full bloom. The early-cut strip made three good crops and a small fourth cutting, while the late cut plot produced only two cuttings, both of smaller yields than the corresponding crops from the plot which was cut early. The reason for the small yields of the first crop was that the leaves largely dropped off, leaving only the stems for hay. The light growth of the second crop seemed to be due to a lack of vigor in the plants.

TABLE V.
Protein in Alfalfa.

Stage of cutting	Kansas. Per cent.	Colorado. Per cent.
Coming in bloom.....	18.5	18.5
One-tenth in bloom.....	18.5	14.6
Half in bloom.....	17.2	14.4
In full bloom.....	14.4	12.9

Table V shows the protein content of alfalfa cut at different stages, data taken from analyses made at the Kansas and Colorado Stations.

TABLE VI.
Beef Production by Alfalfa Hay.

Stage of cutting.	Hay per acre, tons.	Beef per acre, pounds.
In first bloom.....	5.35	708
In full bloom.....	4.90	582
Half blooms fallen	4.55	490

Table VI shows the results of five years' experiments at the Utah Station in cutting alfalfa at different stages and using the crop for the production of beef. The average production per year per acre is given in the table.

Table V shows that a ton of early-cut hay contains 4 per cent more protein than a ton of late-cut hay.

Table VI shows that the early cutting produced 0.8 ton more hay and 216 pounds more beef per acre than the late cutting. The production of beef per ton of alfalfa hay at the Utah Station is given as follows:

TABLE VII.
Beef produced per 1 ton alfalfa hay, pounds.

Stage of cutting.	
In first bloom.....	132
In full bloom.....	115
When half of blooms had fallen.	108

From the experiments at the Utah Station we learn that early cutting produces not only more hay on each acre, but that each ton of early-cut hay will produce more beef than a ton of late-cut hay. From the Kansas and Colorado Stations we have proof that each ton of early-cut hay contains more of the expensive element of Kansas feeds, protein, than a ton of the late-cut hay. Since more tons are secured by the early cutting, and each ton is more valuable than if cut later, there seems to be no good reason for cutting late.

The leaves begin to drop as the blooms come on and if the plants are in full bloom a large part of the leaves are lost in cutting. Since the leaves contain about four times as much protein as the stems, it is plain what makes the difference in protein content shown in Table V. In curing alfalfa the object is to dry it with as many of the leaves retained as possible. The alfalfa should be cured with as many of the leaves shaded as possible. When this is done, the leaves help to draw the moisture from the stems. Where the leaves are exposed to the direct sunlight they soon die, hence cease to aid in drying out the stems. The stems should be exposed to the air as much as possible without giving the leaves too much sunshine. The hay should be handled no more than is absolutely necessary, as the more it is handled the more leaves will be shattered off. Professor William P. Headden, at the Colorado Station, estimated that with the most careful handling the loss from falling leaves was between 15 and 20 per cent, while with careless work the loss might be as high as 60 or 65 per cent.

If the hay is left in the swath too long it is easily possible to dry the leaves so they will break, while the stems still contain enough moisture to cause heating in the stack even to the point of combustion. There is little danger of fire if care is taken to dry the leaves slowly so that the stems are well cured. A little heating will do the hay no damage. Cattle will eat with a relish hay that is brown from heating. The writer once placed before a herd of forty cows, alfalfa of the second crop just ready to stack, and some of the first crop which was a dark brown color from heating. As the cows had been eating the old hay for two weeks it would be reasonable to expect them to desire a change and choose the new-mown hay. Not so; only one or two tasted the new hay before they had eaten all the old hay they could reach.

Some alfalfa-growers mix dry straw or hay with the first crop of alfalfa to absorb the moisture and prevent heating. This is successful where the material is available. Others scatter a bucketful of salt or lime over each load of hay and report excellent results.

Stacking alfalfa out of doors with no protection for the stack, can scarcely be called a success in Kansas. The alfalfa allows water to enter the stack and in a wet season it is sure to be spoiled to a considerable depth. When alfalfa must be stacked outside, the

top of the stack should be of prairie hay, sorghum, cane or some such material that will turn water. If alfalfa is put into a barn, special care should be taken to have it thoroughly cured, to guard against loss by burning. If the barn is not large enough to contain all the alfalfa, it is safer to stack the first crop outside and put the other crops in the barn. The later crops are usually cured in dry weather and they seldom heat and perhaps never burn.

Some farmers are afraid to stack alfalfa in large stacks, fearing that this is one cause of spontaneous combustion. Professor Cottrell investigated this and could find no evidence to prove that their fear was well founded. The writer knows one farmer who has over forty acres in alfalfa, who makes one stack for each crop, and never has any trouble from spontaneous combustion. The larger the stacks the smaller is the portion exposed as top, bottom and sides, so from that point of view the large stacks are preferable.

CAUSES OF FAILURE IN GROWING ALFALFA.

The most common cause of failure is the careless or too-hasty preparation of the seed-bed, or lack of patience in waiting for the proper condition of soil-moisture. Kansans are always in a hurry, but it will not pay to hurry too much in starting alfalfa. Take time to prepare the seed-bed well, and wait until there is plenty of moisture in the soil before seeding. Often the farmer does not have time to plow his oat- or wheat-stubble immediately after harvest. He waits a month or more, letting the moisture evaporate and the weeds grow. Then he plows, harrows and seeds his ground. The soil which is turned with the plow is separated from that beneath by a layer of weeds. No time is given for the trash to decay or for the soil to settle. If care had been taken, the ground would have been plowed before the weeds grew too large. As a result of late plowing, soil is either dry or cloddy at the time of seeding or becomes loose and dry soon after seeding, in either case a failure to get a catch is the result.

In Eastern Kansas, where clover is common, a common cause of failure is late cutting. The successful clover-grower wants to let his alfalfa go to the stage at which he would cut his clover. The result is a small yield of inferior hay.

Heavy pasturing or pasturing when the plants are too young, or failure to cut the weeds off a new field may be mentioned as among the common causes of failure to grow alfalfa profitably.

COMPARISON OF VALUE OF ALFALFA AND OTHER CROPS.

When we compare the value of a crop of alfalfa with that of another crop which will grow on the same land, we become surprised that there is not more land devoted to the growth of alfalfa. Even if it were as hard on land as wheat or corn, there would be more profit in it than in either of them. Three dollars is a common estimate of the cost of putting an acre of corn in the crib. When four crops of alfalfa are harvested the expense will vary from \$4.50 to \$7 per acre, according to the amount of disking done and the facilities for stacking. Thirty bushels of corn at 33½ cents per bushel, which is an average yield and at least a fair price, will bring only \$10, leaving a profit of \$7. If we take the low yield of three tons of alfalfa at a price of \$4 per ton, we have a total income of \$12 per acre, and can spend \$5 for harvesting the crop and have as much profit as the corn will give. But land that will produce thirty bushels of corn will produce four or five tons of alfalfa, and the price is almost sure to be more than \$4 per ton, at least when corn is 33½ cents per bushel. Fifteen bushels of wheat at 50 cents gives \$7.50 per acre for a crop of wheat. That is an average crop and a good price. The wheat can be raised for about \$2.50 per acre, which leaves a profit of \$5. In the above estimates on cost of production, labor only was considered, as interest, taxes, rent, etc.,

WHAT DO YOU SAY?
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would be the same in all three cases.

But the Kansas farmer does not need to market his alfalfa as hay. There is a home market for it and one which will pay better than selling hay. An experiment at the Kansas Station with eighty head of steers, fed corn and alfalfa hay, showed that it required an average of 747 pounds of corn and 385 pounds of hay to make 100 pounds of beef worth \$5.15. If we consider the hay worth \$5 per ton and the corn 30 cents per bushel, we have the cost of the grain, \$3.90, and the hay nearly \$1, which gives us a good market for our produce and a profit of 25 cents per hundred with which to pay for labor. When we consider the gain in price on the weight of steers when put in the lot, and the value of the pork from the hogs which follow, there is a fair profit in feeding the steers.

There is more profit in feeding baby beef. The Kansas Station made 500 pounds of hay and 500 pounds of grain put as much gain on calves as 750 pounds of grain and 400 pounds of hay put on the steers and the prices when the animals were fat were equal. Another good market for alfalfa is the hog. At the Kansas Station at bunch of hogs was divided into two lots as evenly as possible. Each lot was fed all the dry Kafir-corn-meal the hogs would eat and one lot was given all the alfalfa hay the animals would consume. In nine weeks the hogs getting the alfalfa hay had gained 90.9 pounds each and were ready for market, while those getting grain only had gained only 52.4 pounds each. The alfalfa-fed hogs had eaten more grain, but had made a gain of 10.88 pounds for each bushel of grain and the 7.83 pounds of hay eaten with it, while the other lot had made only 7.48 pounds of gain for each bushel of grain. Of course the feeding-value alone of the hay did not produce 3.4 pounds of pork from 7.83 pounds of hay. But the addition of hay to the ration gave variety and had its influence in causing the grain to be more thoroughly digested. If the farmer is feeding hogs on grain only, here is a market for his alfalfa. These hogs gave a gain of 868 pounds of pork for each ton of hay fed. At 3 cents per pound for pork the hay brought \$26 per ton. Of course it is impossible to provide a market of this kind for any large quantity of hay, but it shows where to put hay when hogs are fattening. Pigs pastured on alfalfa and given a light feed of corn, at the Kansas Station, gave, after deducting the probable gains from the corn, a gain per acre of alfalfa, of 776 pounds of pork, or over \$23 per acre with no expense for harvesting. The writer has seen brood sows wintered on alfalfa hay come out in the spring in thrifty condition and with fine litters of pigs.

For dairy cows, alfalfa is unequalled as forage. Protein is the expensive constituent of our feeds and alfalfa is nearly equal to bran in the amount of protein contained, and is always a cheaper source of protein than bran. The Kansas dairyman can not afford to be without it. Not only is alfalfa necessary to produce milk and butter economically, but growing stock of all kinds should have it. The writer has seen a herd of forty cows in all stages of the period of lactation averaging over twenty pounds of milk, testing over 4 per cent butter-fat, when they were being fed a daily ration of three pounds of bran and alfalfa hay and green alfalfa cut and fed in racks. This herd would be called "scrub"

cows, although several showed Hereford breeding, and a few others had some Jersey blood.

When alfalfa is cut for green feed it may be cut younger than if cut for hay and the yield is increased by so doing. It is almost impossible to cure into hay alfalfa that has not some blossom on it.

In the dairy mentioned above, calves were weaned from milk as soon as they were eating grain well, always before they were a month old. They were allowed to pasture alfalfa and eat what bran and cornmeal they would. They made thrifty calves with this treatment. None of them bloated, though there is always danger on alfalfa pasture.

At the Kansas Station alfalfa was found to be a valuable hay for calves when fed in connection with grain and skim-milk or buttermilk. If they are fed alfalfa from the time they first begin to eat, and the grain is not too loosening, there will be no trouble from scours. We found difficulty in feeding alfalfa to calves under two months of age if they had been fed prairie hay. It was almost impossible to make the change from prairie hay to alfalfa slowly enough to avoid all trouble from scours, when the calves were getting skim-milk. It is probable that the change could be more easily made if buttermilk was fed. Buttermilk is not so loosening as skim-milk.

Where alfalfa is fed to calves with skim-milk it is well to have at least a part of the grain ration consist of Kafir-corn-meal. This will balance the loosening effect of the alfalfa and skim-milk. One bunch of calves fed at the Kansas Station gained over two pounds per head per day, on a grain ration of one-half shelled corn and Kafir-corn-meal fed with skim-milk and alfalfa hay.

ALFALFA BACTERIA.

An examination of the smaller roots of a thrifty alfalfa plant will show many small tubercles attached to the roots. The tubercles are swellings made on the roots by bacteria. When the bacteria come in contact with a root, they attach themselves to it, and, wounding it, cause the root to form a growth in which they make their home. The bacteria take the free nitrogen from the air and combine it into forms available for plant-food, thus supplying the plants with the most essential element of plant-food. Alfalfa contains a large amount of protein, which is a compound of nitrogen. If it were not for the help of the bacteria, the production of so much protein would soon exhaust the soil of its nitrogen. The bacteria enable the alfalfa to grow and yield heavily on land too deficient in nitrogen to produce other crops profitably. Alfalfa in starting should have a fair amount of available nitrogen near the surface, but after the plants are well started, and the bacteria have become well established, the crop will secure plenty of nitrogen from the air.

Where there are none of these bacteria in the soil the alfalfa uses the supply of nitrogen already in the soil. This proves to be too heavy a drain on the soil nitrogen and in a year or two the alfalfa begins to die and soon becomes unproductive. Where some patches die out and others thrive, the indication is that the bacteria are not well distributed. The treatment for this is given under the head of "Crops to grow before alfalfa." If there are none of these bacteria present in the soil, the treatment is to secure soil from land that has grown alfalfa successfully, and spread it over the land while preparing the seed-bed, or scatter it with the seed. The bacteria must be present or the alfalfa will be a failure. Not only will it refuse to produce profitable crops, but it will exhaust the supply of nitrogen in the soil.

EFFECT OF ALFALFA ON THE SOIL.

As shown above, alfalfa as a crop will yield the farmer more profit per acre than wheat or corn. The extent to which wheat or corn drain the land of its available fertility has been discussed but nothing has been said of the fertilizing effect of alfalfa upon

the land. Here is one of the strongest points in favor of alfalfa-growing. While it is producing such profitable crops, it is also enriching the soil for the crops to follow, instead of impoverishing it as wheat and corn do. Alfalfa sends its roots deep into the soil, breaking up its compact condition, and obtaining its mineral plant-food and water largely from the deeper subsoil. This plant-food is taken to the surface and made into hay or roots. Much of the hay is taken off, but many leaves, 15 per cent or more, shatter off and are left on the field. This amounts to nearly a ton per acre annually that is left on the soil for fertilizer. Returning alfalfa to the soil differs from returning wheat straw or corn stalks to it. With the latter crops there is little nitrogen to give to the land, and what little there is has just been drawn from the land together with phosphoric acid and potash, so we are only returning what was borrowed. But when alfalfa is returned to the land, the surface soil is made richer in nitrogen, phosphoric acid and potash and the supply of humus is increased, thus improving the texture of the soil. The alfalfa draws much of its phosphoric acid and potash from depths to which corn, wheat, and barley never reach, and obtains its nitrogen from the air. So if we grew alfalfa on land and refused to return any of it, as we would if we could, the upper soil would be just as rich in plant-food available to corn as if nothing had grown on it. When alfalfa is allowed to decay upon the land, a supply of all three elements of plant-food is added. This is paying back more than was borrowed. When we remember that with the most careful hay-making there is nearly a ton of alfalfa added to each acre annually, we can readily understand why land which has grown alfalfa for a few years gives large yields of wheat, corn, potatoes, etc. Nitrogen is the element the soil is in most need of and alfalfa adds it rapidly.

But the mechanical effect of the alfalfa on the soil should also be noticed. Often it is of more importance than even the addition of plant-food. Many soils are themselves heavy and waxy, and are underlaid with a "hard-pan" subsoil. When rain falls, the water can not sink into such soil, and the land remains wet until dried by surface drainage and evaporation. This is a slow process, and often before it is complete another rain has come. All this moisture is allowed to leave the land. Then when drouth comes there is no moisture below to come to the aid of the drouth-stricken crop, and crop failure or an inferior yield is the result.

ALFALFA CHANGES THESE CONDITIONS.

It adds humus to the soil, destroying the waxy consistency of heavy soils. It forces its roots deep into the "hard-pan" subsoil, breaking it up and allowing the air and water to enter, to aid in the work of disintegration and decay. When the alfalfa is plowed up and the roots decay, the subsoil is left porous, and when the rains come, the water goes down into the subsoil where it is stored for use in time of drouth. This causes the surface soil to dry sooner after each rain, so that the farmer can cultivate the land and conserve the soil moisture.

By capillarity the soil moisture from below is drawn upward, making the surface soil more moist in dry weather, thus the growing of alfalfa will do much to keep the soil supplied with moisture for many years after the alfalfa is plowed up. The addition of the humus would prevent the land from becoming very hard in a dry time even if it had nothing to do with the conservation of soil moisture. Humus also aids in making available the mineral plant-food that was already in the soil in an unavailable form.

Accurate figures on the production of other crops after alfalfa are scarce, but many farmers assert that land which has grown alfalfa for a number of years is as rich as when the prairie sod was first broken. This seems to be rather a strong statement, but when we remember that nitrogen and humus are the constituents most lacking in Kansas soils, and consider the

amount of these that alfalfa adds, we dare not say the statement is an improbable one.

In Marion County, alfalfa was grown for three years and then plowed up, and the land sowed to wheat. The yield of the first crop was forty bushels, the second forty-one bushels per acre. Adjoining fields having similar soils which had not grown alfalfa yielded twelve to fifteen bushels per acre.

Professor Buffum at the Wyoming Station seeded half of an acre of land to alfalfa and let it grow five years, while the other half of the land grew grain crops and potatoes in rotation. At the end of the five years the whole area was planted to field crops. Table VIII shows the results

TABLE VIII.
Showing Increased Yields of Crops Grown After Alfalfa.

Kind of crop.	Yield on alfalfa land. bus.	Yield on other land. bus.	Increase of crop on alfalfa land. per ct.
Wheat.....	30	18	66 2-3
Oats.....	78	37	111
Potatoes....	81	52	56

So much for the direct effect of alfalfa upon the soil. Indirectly it will do much. Most farmers will prefer feeding their alfalfa to selling it. This leads to stock-raising, giving manure to spread on the land. In this way all the land on the farm will be kept in a better condition of tilth and fertility. Our farm products will leave the State in a concentrated form and we will have the residue with which to enrich our land. Let us begin to raise and feed alfalfa and travel the road which leads to successful farming.

Grasses for Lands Subject to Overflow.

Please forward latest bulletin on grasses suitable for bottom-lands. We want to find some grass that will stand overflows, or grasses best adapted to bottom-lands. In fact, what we need in this section of the country is something that will stand a continuous overflow.

R. N. ALLEN.
Neosho County.
Professor Willard has mailed you copies of bulletins under separate cover. We have published no bulletins that directly cover the subject upon which you desire information. I have answered several letters similar to yours recently, copies of which you will find published in the KANSAS FARMER. On low, bottom-lands in Neosho County to which you refer I know of no better grass to sow than redtop, and the best clover for low land is Alsike clover. A good combination for pasture on such land, is redtop, English blue-grass and Alsike clover sown at the rate of about ten pounds each of the grasses and two or three pounds of clover per acre. For a hay meadow, sow timothy instead of English blue-grass. On the lowest and wettest lands the redtop or a combination of redtop and Alsike clover should make a good grass meadow. There are no grasses which will stand "continuous overflow," but by frequent overflows which do not last for too long a period, redtop will not be destroyed.

I think it a good plan to seed down to grass a large part of the river bottom-lands. When once in grass the land will be protected from the wash and there is no crop which will recover so quickly after it has been flooded as will grass. The present season is probably an extreme one and we can hardly expect these wet seasons to continue for many years, yet it will be easy to break up the land in grass at any time when it can be more profitably used for other crops.

Ever since coming into this State I have been continually urging the farmers to seed more land to grass. Grass is one of our best rotation crops. It is a soil-protector, a soil-improver, and a soil-renewer. When old lands have been laid down to grass a few years the texture and tilth characteristic of virgin soil is largely restored, and larger crops of the small grains and corn may be grown when the sod is again broken than can be grown by continuous cropping with these grains. I may add that on the better drained land in your locality I would recommend to seed a combination of Bro-

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mus inermis, English blue-grass and red clover or alfalfa, sowing at the rate of ten or twelve pounds each of the grasses and three or four pounds of the clover or four to five pounds of alfalfa per acre. The above combination will make an excellent pasture or meadow. Wherever it can be done, some legume, such as clover or alfalfa, should be seeded with the perennial grasses. The effect of the legumes is to improve the texture and increase the fertility of the soil, with the result that the pasture or meadow will be more permanent and larger yields of grass or hay will be secured when the legumes are sown in combination with the grass than when the grasses are seeded alone.

A. M. TENEYCK.

Wheat from Northern Seed.

Have you ever tried sowing wheat grown in Northern States? I have a friend at Kalamazoo, Mich., who will send me twenty or thirty bushels but I do not wish to risk sowing unless I hear a favorable report from you.

H. A. BRAUNSDORF.

Labette County.

Whether the Michigan seed-wheat will produce a good crop when sown in Labette County, Kansas, will depend a great deal upon the variety of wheat. The soft red winter wheats are best adapted for growing in your part of the State, such as the Fultz, Fulcaster, Zimmerman, Red Cross, etc. The soft white wheats do not produce well in Southeastern Kansas, while this variety is grown quite extensively in Michigan. It would not be advisable to sow the Michigan seed-wheat of this variety in your locality. During the past season we grew wheat upon the station farm from seed secured from different States, Kansas, Nebraska, Iowa, Minnesota, Tennessee, and other Southern States. The wheat has just been thrashed and I observe from looking over the yields that one variety of Minnesota wheat gave a very good yield of 27.2 bushels per acre, almost equal to the yield of any variety grown on the station farm last season. We secured this variety from the Minnesota Experiment Station and it was labelled Minnesota No. 529. This was a soft, reddish colored wheat. The other varieties of wheat received from that State did not yield half so much as the variety named above. All of the varieties received from the Nebraska Station yielded fairly well. These were all hard red wheats. One of the best yielding varieties grown on the farm last season was the Defiance, a hard or semi-hard red (bearded) wheat, the seed of which was secured from Iowa.

I think it will be a little risky for you to sow any large acreage of the Michigan seed-wheat, even if it is the soft red wheat, but I should much prefer to sow the soft red wheat in your locality than the white wheat.

A. M. TENEYCK.

Fulso-Mediterranean Wheat.

Will you please give me the address of one or more farmers that have Fulso-Mediterranean wheat? I may want a few bushels soon but am not able to pay any fancy price.

Rice County. F. G. KREBAUM.

I am unable to give you the address of any farmer growing the Fulso-Mediterranean variety of wheat. You can doubtless secure the wheat from some of our Kansas seedsmen at a fair price, not to exceed \$1 per bushel. Perhaps some of the readers of the KANSAS FARMER have this variety for sale.

A. M. TENEYCK.

Leguminous Weeds.

Are any of the weeds that grow in Western and Central Kansas of the nature of legumes? They seem to flourish so well regardless of climatic conditions that possibly they have the power of extracting nitrogen from the atmosphere. I am plowing under a heavy crop of a great variety of weeds, hence the question.

Trego County. J. R. GUILBERT.

As far as scientists have learned the plants of only one family, known as the Leguminosae or pulse family, are

capable of taking their nitrogen from the air by means of the bacteria which grow upon the roots of the plants. The common cultivated species of this family are the peas, beans, vetches, clovers, and alfalfa. There are a number of wild species which grow in the prairies of Western Kansas. All of these plants resemble more or less some of the cultivated species named. Few or none of the wild species grow in cultivated fields. One of the most common plants of this family in this neighborhood is the common sweet clover (*Mellilotus alba*). The common "loco" weeds of the West, which when eaten by stock cause the disease called "loco," also belong to the pulse family, and there are several varieties of the wild clover, such as the white clover, common in Eastern and Central Kansas, and the buffalo, the running buffalo and prairie clovers found on the Western plains. Several species of lupine and wild vetch, are also found growing on the Western prairies. Some of the plants named above are weeds in the pasture lands but few of them grow in the cultivated fields. Probably none of the weeds which you are plowing under in your field have a fertilizing effect on the soil as do the plants of the pulse family. The common weeds thrive and grow because of their hardy character and adaptation to the conditions in which they are found. If these plants were not hardy and thrifty under the conditions in which they grow, they would soon disappear and would not have the name of weeds. Even the common weeds may have some fertilizing effect upon the land when they are plowed under green, but as a class they do not add anything to soil more than that which they take out. As a rule I should prefer to sow some crop and plow it under as green manure than depend on weeds for that purpose.

A. M. TENEYCK.

Tile-Draining or Damming a Ditch.

Through the columns of your valuable paper I would like some information in regard to tiling a ditch running angling through my field, a distance of 40 rods; the fall is about 10 feet in 40 rods, and the ditch drains 35 acres. What sized tiling would carry the water during ordinary rains? How can I fix it at the upper end so the trash will not clog the entrance, as the ditch runs north 60 rods farther, but is in line with the fence. How can I fix the outlet so as to prevent cutting out around the tiling during an overflow? What would be the cost of the tiling?

Brown County. CHAS. E. THUMS.

It would not be my recommendation to attempt to tile the ditch which you have described in your letter. As I understand this is the natural drainage course for thirty-five or forty acres of land, which I should judge, considering the fall of the ditch, is sloping land. During heavy rainfalls, such as we have had the present season, probably a volume of water two or three feet deep and several feet wide is carried by this ditch. It would not be practicable to attempt to put in a tile large enough to carry such a volume of water. The most practicable plan to follow in filling such a ditch is to build occasional dams which will stop the current and cause the ditch to fill up. If stone is convenient, these dams may be built of stone. We are building several stone dams across some of the draws and ditches in the fields on the college farm. In a large ditch in which the water has a considerable fall it is necessary to use large stones, else they will be washed out by the water. Below the dam a stone floor is laid to keep the water from washing out beneath the wall. The wall is not built very high at first, not over two feet, and as the ditch fills up above the dam the wall may be built higher. Such a draw or ditch should finally be seeded to grass and kept seeded.

It is possible to fill the ditch by less permanent dams than those built from stone. Brush or trash of any kind which can be weighted and held in place will serve as a stop for the water, gradually causing the ditch to

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fill above the obstruction, and when the ditch is once seeded to grass it will not wash deeper. Care should be taken, however, not to get the center of the ditch or draw too high so as to throw the water to the sides, causing it to wash the cultivated field.

A tile drain might be laid in the ditch you have described. I would not think of putting in a tile less than twelve inches in diameter and a larger tile than this would be preferable. It will be necessary also to put in several catch-basins at intervals of fifteen or twenty rods to catch the surface drainage. This may consist simply of pieces of tile which unite with T's in the main drain. It will be advisable to increase the size of the tile as the outlet is approached. To keep the catch-basins from filling up with trash they should be provided with perforated covers. The cheapest tile which you can use is the porous tile. A better tile for such work is the cheap vitrified tile or the condemned sewer tile. Such tiling, twelve inches in diameter, will cost you from ten to fifteen cents a foot. The porous tile may doubtless be secured cheaper. Thus, you see, tiling such a ditch will be expensive and it is a question whether tiling will accomplish that which you desire, viz., keeping the ditch from washing at the surface. In time of heavy rainfall, such a tile as you would put in would not carry the water and the surface would be washed away the same as it is now.

You can keep the mouth of the ditch from washing out about the tile by surrounding it with stone. In the case of the open ditch it can be kept from washing deeper at the mouth by filling with stone or building a dam of stone, such as I have described, care being taken to lay stone on the lower side of the dam for the water to fall upon so as to keep it from washing under the wall. I think it very important to seed the draw to grass and keep it seeded. In plowing, take pains to throw the plow out in crossing the draw.

A. M. TENEYCK.

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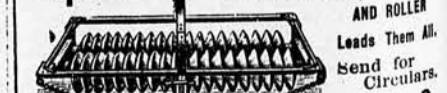
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The Stock Interest

THOROUGHBRED STOCK SALES.

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

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

September 20, 1904—A. M. Jordan, Alma, Poland-China.

September 21, 1904—American Hereford Breeders' Association sale, World's Fair Grounds, St. Louis, C. R. Thomas, Secretary.

October 1, 1904—Poland-Chinas, J. Clarence Norton, Moran, Kans.

October 6, 1904—Poland-Chinas, William Plummer, Barclay, Kans.

October 12, 1904—C. O. Hoag, Mound City, Kans., Poland-China.

October 17, 1904—Poland-Chinas, E. E. Axline, Oak Grove, Mo.

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

October 19, 1904—R. F. Norton, Clay Center, Kans., Duroc-Jerseys.

October 22, 1904—Poland-Chinas, Republic County Breeders' Combination sale at Belleville, H. B. Walter, Manager.

October 25, 1904—Duroc-Jerseys, J. B. Davis, Fairview, Kans.

October 26, 1904—Sabetha Combination Sale, Jas. P. Lahr, Manager, Sabetha, Kans.

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

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

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

November 1, 1904—John W. Jones & Co., Delphos, Kans., Duroc-Jersey swine.

November 3, 1904—H. E. Lunt, Burden, Kans., Poland-China.

November 4, 1904—Shorthorns and Duroc-Jerseys, Burden, J. F. Stodder, Manager.

November 17, 1904—Central Missouri Shorthorn Breeders Association Sale at Moberly, Mo., E. H. Hart, Secy., Clifton Hill, Mo.

November 22, 1904—Herefords, at Hope, Kans., Dickinson and Marion County breeders; Will H. Rhodes, Tampa, Kans., Manager.

November 23, 1904—Shorthorns and Poland-Chinas, Wm. Wales, Osborne, 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, Duroc-Jerseys.

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

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

February 21, 1905—John W. Jones & Co., Delphos, Kans., Duroc-Jersey bred sow sale.

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

Is Sheep-raising Profitable.

Is sheep-raising a profitable business to take up at the present prices of wool and sheep? Is it more profitable than cattle or hogs? What is the best kind of sheep to raise for all purposes, wool and mutton? What is the best dip to prevent hoof-rot, scab, ticks and lice?

HENRY FITCHER.

Pottawatomie County.

There is no doubt in my mind but that sheep would be a source of profit on many a Kansas farm. There is no domestic animal that will consume such a variety of the commoner products of the farm; many of which would otherwise go to waste, than the sheep. There is no animal which is so valuable to reduce the foul weeds on the farm. It has been estimated by Prof. Thos. Shaw that of the 600 varieties of weeds and grasses growing in the Northwest, sheep will eat not less than 576 of them, while horses consume but eight-two and cattle only fifty-six. Sheep will eat many kinds of weeds in preference to grass. They not only consume the weeds, but turn these same weeds of various kinds into nice juicy mutton, which is a source of profit. A sheep's stomach will so thoroughly digest weed seeds that they lose all power of ever germinating.

Mr. C. J. Norton of Allen County, Kansas writes as follows concerning the value of sheep as weed-exterminators: "Every farm is more or less affected with several kinds of evil weeds, especially cockle-burrs, dock and sunflowers, and there is practically only one way to keep these pests in check, and that is to have the farm fenced off into separate fields and practice a regular rotation of crops, using sheep to clean after the mower and reaper and at all times they can be used without doing damage to the crop. They will destroy all three of the above mentioned weeds and many others and turn them into mutton that is usually worth from 5 to 5½ cents per pound. Yet there are only a few sheep kept in Kansas. There are in many counties more dogs kept than sheep."

I would not advise a man inexperienced in sheep to go into the business on a large scale. It is a fault of the American farmer to want to do big things before learning how. It would

be far better to go into the business gradually, keeping a few ewes to start with and gradually increasing the flock as experience is gained in handling them. The man starting in with sheep must not get the idea that because sheep are claimed to live on weeds and brush they can be neglected with impunity, for sheep cannot live on air and shelter themselves behind a wire fence any more than other kinds of stock. It is true, however, that sheep do require a minimum of care and attention and if the right kind is given they will be a source of profit.

Sheep can be made to consume practically all the roughage on the farm and be marketed with very little grain feeding. They will practically gather their own feed for seven months and more of the year in some localities. For shelter they need a shed which will keep them perfectly dry and a place to lie down on free from moisture and mud.

Mr. Ed King, one of the largest sheep-raisers of Kansas writes as follows in the 12th Biennial Report of the Kansas State Board of Agriculture: "Only a small capital is required for any farmer to feed a few sheep. Some poles covered with hay or straw for shed, a few racks, or, if these cannot be had, some fence panels, around a haystack to give coarse feed behind, a few troughs for shelled corn when it is muddy; the rest of the time feed shock corn on the dry ground, for the sheep do not need their grain either husked, shelled or ground. They are emphatically the stock for the poor man who must start with few conveniences, and if he will stay by them they will build him a comfortable house and ample barns to shelter all the feed and stock the best farm in Kansas can produce."

As to the kind of sheep to raise, Mr. King writes as follows: "For the ewes of the farm flock I would secure the best grades I could. To get them at present, a man would have to take a mixed lot. I would breed them to a well-formed, fleecy, Merino ram until I had secured a uniform type of medium-sized, blocky, hardy ewes, with a rent-paying fleece. I would use this type of ram because I could secure a heavy neece quicker and a hardy foundation animal with a fleece dense enough to exclude dirt and storm. Density of fleece is an important point from Central Kansas west. You will notice that an open fleece is injured by the alkali dust, which penetrates it and gives it a bad, dead end. While pursuing this foundation work, I would fatten yearly the wether lambs and the ewe lambs which did not come up to the standard, which should be advanced a little higher each year. Also, fatten the ewes which did not prove to be desirable. Now, having laid the foundation deep and secured a paying fleece, if I desired to raise mutton lambs I would use the best pure-bred sire I could get of whichever mutton breed I like the best. Provide good shelter and have the lambs dropped in March. Feed a little grain in lamb creeps as soon as they will take it, wean early, feed well on grass, and sell off of grass, wintering only breeding stock."

I believe there is hardly a farm in Kansas but would support and winter sheep equal in number to the present stock of cattle and the farm be much more fertile than it is at present.

The inquiry as to the best dip to use has been referred to Dr. Mayo, whose answer follows.

G. C. WHEELER.

Hoof Rot.

Replying to that portion of your letter referred to this Department by Mr. Wheeler, would say that the prevention for hoof rot would be to keep the animals out of filthy, muddy lots, or places where they would be likely to stand for any time in mud. The cure for it would be to use peroxide of hydrogen applied with a syringe, after the feet have been trimmed out with a hoof knife.

Lime and sulfur dip, formula for which is given in inclosed bulletin, is

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\$20,000 Offered in Purses and Premiums

The Live Stock Display over the circuit of Western State Fairs this year will be greater than ever, as the exhibitors who are preparing their stables and herds for the St. Louis World's Fair will be there but ten days, and before and after exhibiting there will tour the State Fair Circuit. Topeka is on the circuit with Des Moines, Sedalia and Lincoln.

DAN PATCH, the fastest horse in the world, with a record of 1:56½, and the son of that noble Kansan, Joe Patchen, will go against his own half-mile track record on Wednesday.

KANSAS DERBY will be run for the third time on Tuesday, for a purse of \$500 and the Derby trophy cup.

TWO BANDS—Sorrentino's Banda Rossa will give a concert every night of fair week in front of the grandstand. Marshall's famous band will play every afternoon during the races.

THOMAS BASS, the champion saddle horse trainer, will exhibit his high school horses during each of the night concerts.

Unusually attractive premiums in value and numbers, are offered in the Beef Cattle, Dual Purpose Breeds, Dairy Cattle, Draft Horse, Light Horse, Swine, Sheep, Poultry, Dairying, Apiary, Agricultural and Horticultural Departments. Plenty of stalls and pens are provided in each of the live stock departments and ample space for displays in the various divisions.

One Fare for Round Trip on all Roads from all Kansas Points

Eleven Purse Races Close September 3.
Eight Stake Races Closed July 1.

A request to the Secretary brings a Premium List and full particulars for the entering of Stock and Agricultural Products in every department.

equally effective for scab, lice and ticks. If we can advise you further please write.

C. L. BARNES.

SCAB OR ITCH IN CATTLE.

Press Bulletin No. 118, Veterinary Department, Experiment Station, Kansas State Agricultural College.

Scab or Itch, sometimes called mange, of cattle is caused by a minute mite *Psoroptes communis* var. *bovis* that lives upon the surface of the skin and burrows in the epidermis. It does not attack other animals than cattle, although scab of sheep is caused by a similar parasite.

Symptoms.—Scab or Itch does not trouble cattle to a noticeable extent during the grazing season, when they are doing well on grass. Close observation is required to detect the disease in a bunch of cattle, but as soon as they are placed on dry feed, and cold weather sets in, the disease appears and, if the cattle are not doing well, in an aggravated form. Scab usually attacks young cattle, calves, yearlings, and 2-year-olds, but may attack cattle of any age if they are "out of condition." The first symptom noticed is intense itching of the skin, usually in the region of the neck or shoulders. The animals lick themselves, dig at the skin with their teeth or horns, rub against posts or barbed wire, often tearing the skin until it bleeds. The disease gradually spreads along the back, sides, and outside of legs, but does not attack the inside of the legs, thighs, or thin skin of the abdomen. In the early stages the coat looks rough; there is a scurfy condition of the skin; the scurf becomes mixed with a gummy exudate and forms crusts in the hair, sometimes one-half inch thick; the hair then comes off or is rubbed off the badly affected area, leaving bald patches of thick, calloused, wrinkled skin. These patches often show first and prominently on the top of the neck, as if the neck had been calloused from wearing a yoke. After the hair comes off the parasites leave that part and the hair grows in again. Animals suffering from scab present a dejected and debilitated appearance and fall away rapidly in flesh; they do not eat well and spend a great deal of time and energy in scratching themselves.

Scab spreads quite rapidly through a bunch of cattle, especially if the cattle are not doing well. Six or eight weeks after the disease first makes its appearance is sufficient time to disseminate the disease pretty thoroughly. Thrifty, vigorous animals resist infection longer than others, and recover more quickly under treatment than debilitated animals. The disease is spread by direct contact and by contact with infected posts, feed-racks, walls, etc., against which infected animals have rubbed. The mites will live from a week to ten days in protected

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places but are killed quickly by direct sunlight.

By scraping off some of the scabs, and especially the epidermis, from the infected part and placing the material in a clean, dry glass bottle, in a few hours minute white specks, barely visible to the naked eye, can be observed crawling on the inner surface of the bottle. By the aid of a hand lens these mites can be easily recognized.

Treatment.—As soon as the disease is discovered in a bunch of cattle the affected animals should be isolated, and the infected quarters and rubbing posts disinfected with a five per cent solution of carbolic acid. Affected animals should be well fed and cared for and be salted with a mixture of one pound of flowers of sulfur mixed with ten pounds of common salt. To cure the disease, external treatment must be applied. If a large number of cattle are affected, the most satisfactory method is to build a dipping vat, through which the animals must swim in the dip used to destroy the mites. The vat should be forty feet long. Efficient remedies used for external application are some of the coal tar products, such as Car-Sul, Chloro-naphtholeum, Zenoleum, Creolin, etc.; these are used in two and one-half per cent solutions with water; that is, one part of the medicine to forty parts of water. A very effective and cheap dip is composed of lime and sulfur in the following proportions:

Flowers of sulfur, pounds..... 21
Unslaked lime, pounds..... 16 1/2
Water, gallons..... 100

Slake the lime to form a thick paste, sift in the flowers of sulfur and stir well; put this mixture in a kettle with twenty-five or thirty gallons of water and boil for at least two hours. The chocolate-looking mass is allowed to settle, the clear liquid is drawn off and water enough is added to make one hundred gallons. All dips are more effective when used warm, from 100 to 110 degrees F. Animals should be kept in the dip about two minutes, or until the scabs are thoroughly saturated. A second dipping in two weeks will kill any mites that may have hatched from the egg after the first dipping. One dipping, if thoroughly done, is usually sufficient, however, to free a bunch of cattle from this disease.

Where only a few animals are affected, hand treatment can be resorted to, but it should be thoroughly done. The remedies can be applied with scrubbing brushes, cloths or sponges, and all scabs and crusts should be thoroughly saturated. The remedy should be applied warm, as in dipping. In dipping or hand treating, warm, sunny days should be selected for treating the animals.

Cattle scab is rather common in some parts of the Great Plains region and stockmen in purchasing cattle should be cautious about getting animals affected with this disease. While the death loss is usually not high the loss of flesh, general deterioration and annoyance resulting from this disease is considerable. Cattle that have been treated should be carefully watched for reappearance of the disease, especially when taken off of grass the next season. N. S. MAYO. Manhattan, Kans., January 12, 1903.

Color in Shorthorns.—XVIII.

EDITOR KANSAS FARMER:—The following is an account of the prize-winners in class of junior bull calves dropped since January 1, 1903, at the last American Royal. First prize, Hampton's Champion 206227 (red). His sire is dark roan and dam red. His paternal grandsire is roan; the other grandsire and both grandams are red. In the third generation, four are roan, three are red, and one is an English cow, color unknown. In the fourth generation, six are red, five are roan, and five are English cows, colors unknown.

Second, Anoka Archer 206604 (red). He is a full brother to the great roan champion Shorthorn bull of America, the renowned Ceremonious Archer 171479.

Third, Orange Chief (red). His sire and dam are red. His paternal grandsire is the celebrated roan show-bull, St. Valentine 121014. His paternal grandam is the great roan cow, Monarch's Lovely, by the great Gay Monarch 92411 (dark roan), bred by Marr of Scotland, that won second prize in class for aged bulls at the World's Fair at Chicago in 1893. His maternal grandsire is the red and white Bluebeard 114514, bred by Duthie in Scotland. His maternal grandam was a red cow whose sire was red and white and dam a roan.

Fourth, Pavonia 207316 (roan). His sire is red a little white, bred by Duthie of Scotland. His dam is an imported roan. Both grandsires are roans. His maternal grandam is red, the other grandam is English, color unknown. In the third generation the four cows are of unknown colors. One bull is red, one is white, two are roan.

Fifth, Royal Count 2d 207393 (red and white). The color of his ancestors for four generations are as follows: One red a little white, one roan, two yellow red, twenty-four red, two English, colors unknown.

Sixth, Nonpareil Champion 206646 (red). His sire is red roan. His dam is red. His paternal grandsire is roan

and paternal grandam English, color unknown. His maternal grandparents are red. Of his great grandsires, one is roan, one red a little white, two red. Of his great grandams, two are red, two are English, color unknown. In the fourth generation, five bulls are red, three are roan. One cow is roan, one red roan, six are English, colors unknown.

Seventh, Victor Lee 203378 (red.) His sire and dam are red. One grandsire is red, one is roan. His grandams are red. Three of his great grandsires are red, one is roan. Two of his great grandams are roan, one is red, one is red and white. Of the fourth generation, two are roan, one dark roan, one light roan, two red and white, nine red, one English, color unknown.

Either, Victor S 206129 (red and white). His parents and grandparents are all red. His great grandsires are all red. He has one roan great grandam, the other three are red. In the fourth generation there is one roan, one red and white, one red a little white, twelve red, one English cow, color unknown.

Ninth, Brawithier 206665 (red). All six are red in first two generations. In third generation, one is roan, one is red and white, six are red. In fourth generation, eight are red, one yellow red, one roan, two red roan, four English, colors unknown.

Tenth, Silk Coat 208508 (red). All ancestors in first two generations are red. His two grandsires are one and the same bull. In third generation, two are roan, four are red, two English cows, color unknown. In fourth generation, one is red and white, two roan, nine red, four English cows, colors unknown.

Eleventh, Lena's Prince 208253 (red). Sire and dam are red. Paternal grandsire and grandam are roan. Maternal grandsire is red and white, maternal grandam red. In third generation, two are roan, two red roan, one red a little white, two red, one English, color unknown. D. P. NORTON.

Morris County.

Overfeeding Horses.

It is perfectly safe to assert that thousands of work-horses are injured by kindness. The owner thinks that because his team is hard worked it ought to be heavily fed, but he forgets that it is not what a horse eats, but what it digests that counts. This is especially the case in summer, when there is much field-work to be done and little time in which to do it.

The horse hurries home, hot and weary, is given all he can "hog," and goes out to the watering trough, where he fills up on water, and goes on to work again. First of all, his stomach was not in fit condition for food reception. The fatigued, hot, sweaty horse can not digest food. He needs a rest first and then a drink of water, which passes through his stomach and stays in the large intestines. If he eats grain and then drinks water, the food is largely washed out by the water and passes to the small and large intestines in which such food is not digested, but decomposes, gives up gas and thus sets up more or less disturbance and distress.

Under these circumstances a horse is not properly fed with six quarts of oats, and all the hay he can gobble, in the short interim of the noon hour.

He has been fed, to be sure, but he has derived little benefit from his food. All the benefit derived comes from the portion of the food digested, and that is very small when there is not sufficient time to masticate properly and then digest normally.

In the busy season the work-horse should have small amounts of concentrated, nutritious food—just such an amount as he can masticate and digest. When corn is fed, it adds fuel to the heat of his body and does not supply the strength and vigor he most requires. That comes from oats, and time is needed for their mastication.

Hay is unnecessary and actually injurious when fed at noon. It is not digested while the horse is at work. It does not remain in the stomach, but, like water, passes through into the large intestines, where it lies inert or

decomposing until a period of rest promotes the normal process of digestion.

On general principles it will pay to cut in half the ration now being fed to work-horses, provided they are given little time to masticate and digest their food. This will be found remedial where horses are evidently doing poorly, sweating too much, panting when at work, or having a tendency to diarrhoea. They will do better on less food for the reason that they digest a greater proportion of its nutrients.

Hay in summer-time should only be fed very early in the morning and again at night, at which time the horse may have all he wants. Give the drinking-water before meals.—A. S. Alexander, V. S., in Nebraska Farmer.

Lall's Poland-China Sale.

On August 10, at Marshall, Mo., Mr. F. M. Lall held a sale of his show herd of Poland-Chinas. Considering the season of the year and the fact that farmers and breeders were so rushed with their work, the sale was a remarkably good one. The offering was exceptionally fine and had Mr. Lall been able to fix his date a more opportune time he would undoubtedly have made a record sale for the breed. There were buyers present from Kansas, Nebraska, Wisconsin, Illinois, Kentucky, and Missouri. The top of the sale was brought by the big yearling boar, Mogul 34185, who went to Nebraska for \$175. Four of the boars reached the hundred dollar mark. The top for sows was \$75 for Minerva (80819), who went to Winn & Mastin, Kansas. The Kansas buyers include Dietrich & Spaulding, Richmond; Winn & Mastin, Mastin; A. B. Dille & Son, Edgerton; D. L. Appleby, Formosa; F. A. Dawley, Waldo; J. H. Cutter, Junction City. Although the average was a good one as sales go, it was too small for the quality of stock offered and there were a good many snaps in the sale. The sale was conducted by Col. J. W. Sparks, Marshall, Mo., assisted by Colonels Carroll and McCracken, of Illinois. The sale in detail is as follows:

Table listing various horses and their prices, including Mogul 34185 (\$175), Minerva 80819 (\$75), and others.

SUMMARY.

11 boars brought.....\$ 700 av.....\$63.64
37 gilts brought..... 1,263 av..... 34.13
48 head brought..... 1,963 av..... 40.90

Publisher's Paragraphs.

The handsomest and most useful railroad folder that has come to the office of the Kansas Farmer for many days is the late one issued by the Rock Island System. It contains a very accurate map

H&R Revolvers advertisement featuring an image of a revolver and text describing its safety and accuracy.

LUMP JAW NO CURE NO PAY advertisement for Charles E. Bartlett, Columbus, Kansas.

Fistula and Poll Evil advertisement for Fleming's cure, including a list of veterinarians and their prices.

ORIGINAL HOG DIP advertisement for Moore's Hog Dip and Feed, including a list of dealers and prices.

Text describing the Union Depot to the World's Fair Grounds, including details about the terminal station and the fair grounds.

The Common Sense Rural Mail-Box advertisement, describing the features and benefits of the mail box.

The Kansas Farmer has received press ticket for the Allen County Fair, to be held at Iola, September 6-9, 1904.

Horses at the American Royal.

Exhibitors of pure-bred draft and coach horses at the American Royal Live Stock show in this city, October 17-22, will compete for the largest individual prizes ever offered in a similar show.

the prize list for the horse department of the American Royal. There are classes for Percherons, Belgian Drafts, Shires, Clydesdales and French and German Coachers.

The committee in charge of the horse department is composed of the following well-known breeders: J. W. Robison, Towanda, Kans.; A. B. Holbert, Greeley, Iowa; J. Crouch, Lafayette, Ind.; M. W. Woods, Lincoln, Neb.; and William McLaughlin, Kansas City, Mo.

PERCHERON—Special prizes given by the Percheron Registry Company.

Open to competition to members of the Percheron Registry Company. All animals entered in these classes must have been recorded in the Percheron Register at least one month prior to the opening of said show.

Table with 3 columns: Stallion age/sex, Prize amount, and H.C. status.

BELGIAN DRAFT—Special prizes given by the Belgian Draft Horse Association.

Table with 3 columns: Stallion age/sex, Prize amount, and H.C. status.

FRENCH COACH.

Table with 3 columns: Stallion age/sex, Prize amount, and H.C. status.

GERMAN COACH—Special Prizes given by J. Crouch & Son, Lafayette, Ind., and Sedalia, Mo.

Table with 3 columns: Stallion age/sex, Prize amount, and H.C. status.

SHIRE AND CLYDE.

Table with 3 columns: Stallion age/sex, Prize amount, and H.C. status.

GRAND CHAMPION STALLIONS.

Table with 3 columns: Stallion age/sex, Prize amount, and H.C. status.

of Commerce, of Kansas City, Mo., for the best Percheron stallion, any age.

MULES—Suitable cash prizes will be paid for following classes: 34—Best mule, 4 years old or over.

Gossip About Stock.

A. M. Jordan, Alma, Kans., proprietor of the Chinquapin Farm herd of thorough-bred Poland-China swine, announces that he will hold a public sale on September 20, of a very desirable lot of stock.

Our representative, L. D. Arnold, has written us to claim date of October 19, 1904, for a public sale of Duroc-Jersey swine, to be held at Clay Center, Kans., by R. F. Norton.

Wm. Wales, of Osborne, Kans., breeder of Shorthorn cattle and Poland-China swine, announces that he will hold a public sale on November 23, particulars of which appear in this paper in advance of the sale.

The Fancy Herd of Duroc-Jersey swine, the property of John W. Jones & Co., of Delphos, Kan., will provide two attractive public sales during the fall and winter. Dates claimed in the Kansas Farmer are November 1, 1904, and February 21, 1905, for a bred-sow and gilt sale.

S. Y. Thornton, owner of the Rosehill Herd of Duroc-Jerseys, Blackwater, Mo., writes that his hogs are all thriving nicely and that he is well prepared to supply choice young stock of either sex for breeders. He also has a number of good gilts due to farrow in September and October, a few fall males and an extra good lot of early spring pigs for ready sale.

Chas. R. Thomas, Secretary American Hereford Association, Kansas City, Mo., has claimed September 21, as a sale date for show Herefords, to be held at the World's Fair Grounds, St. Louis, which should be one of the most attractive sales of the season for the reason that no animals are allowed to be offered for sale except as are entered for exhibition in the live-stock department of the exposition.

The veteran Percheron-horse breeders of Wakefield, Kans., Henry Avery & Son, have entered eight head for the St. Louis World's Fair and will probably put some in the sale that takes place after the exhibit. The writer saw among the intended shipment a pair of 2-year-old mares that will be hard to beat.

Mr. L. K. Haseltine, Springfield, Mo., is a well-known breeder and importer of Red Polled cattle, Jersey Red hogs, and fancy apples. As he lives in the famous Ozark country, he is well equipped to furnish the best of each of these breeds of

animals and fruits. Lately he has been having a good many sales of young bulls but reports that he still has some nice ones from which to select. His herd-bull is Tender 5233, and his herd boar is Herbert C 21759. A letter to him will bring full information as to breeding and quality of the animals still for sale.

M. M. Keim, of Industry, Kans., is one of the newer Poland-China breeders of the State. He will soon make the acquaintance of the Kansas Farmer's readers with whom he hopes to do some business. The Kansas Farmer man can assure intending purchasers of Mr. Keim's integrity and the very high quality of his stock. An offering of 45 head at public sale will be made at Clay Center, October 18. Mr. Keim's consignment topped the combination sale last fall and he promises something attractive to breeders, both in quality and breeding.

The Epworth Hotel, adjacent to the World's Fair Grounds, St. Louis, is the principal Kansas headquarters. Chas. L. Wood, the manager, is also proprietor of the National Hotel at Topeka, and naturally caters to the Kansas trade. During the fine-stock shows at the World's Fair, he cordially invites stockmen and breeders to make the Hotel Epworth their headquarters. Those who have been guests of the Hotel Epworth have been greatly pleased at the convenience and comfort afforded by this hostelry. Full information and reservation of rooms can be arranged for by addressing Chas. L. Wood, Manager, Epworth Hotel, St. Louis, Mo.

Kansas and Nebraska Duroc-Jersey breeders will have an opportunity October 19, at Clay Center, Kans., to purchase some good stock of the highest blood lines. Mr. R. F. Norton will begin the dispersion of his well-known herd of Durocs at that time, completing it by a bred-sow sale in February. The offering consists mostly of fall boars and spring boars, and gilts. Many of these pigs were sired by Fancy Wonder 14405, he by Pilot Wonder, a noted State-fair winner, and out of sows by Improver 2d, Peter-ton Boy 2d and other noted hogs. For prolificacy and milk-giving the Durocs take the lead, Mr. Norton having one sow out of a litter of 19 of which 13 were raised.

There will be something doing from this time on in the buying and selling of Angora goats, as W. T. McIntire, of the Chicago Commission Company, Kansas City Stock Yards, Kansas City, Mo., has again taken up the work of promoting the Angora goat industry by holding at Kansas City a number of breeders' combination sales. The first sale announced

Black Leg Vaccine PASTEUR VACCINE CO. CHICAGO SAN FRANCISCO

PREVENTS BLACKLEG. Vaccination with BLACKLEGIDS is the best preventive of Blackleg—simplest, safest, surest. Each BLACKLEGID (or pill) is a dose, and you can vaccinate in one minute with our Blacklegoid Injector.

Big Combination Angora Goat Sale. To be held at Fine stock pavilion, Kansas City Stock Yards, Kansas City, Mo., Thursday, AUGUST 25th, 1904. By the Angora Goat Breeders' Combination offering of 900 ANGORA GOATS

as per advertisement in this issue, will be held at Kansas City on August 25, 1904, at which time 900 Angora goats will be offered at public auction, consisting of registered and high grade does, "brush-cleaners" and choice young registered bucks.

We desire to caution breeders who are advertising in the Kansas Farmer, to see that their cards make announcement that will not mislead the intending purchaser. Too many breeders are prone to leave the announcement standing when as a matter of fact the stock offered for sale has been sold; and it is a great inconvenience to the buyer, on visiting the place, to find the class of stock offered, to find on his arrival that the stock has been sold and his time and expense has been lost so far as that establishment is concerned.

Mr. H. R. Little, of Hope, Dickinson County, Kansas, who has made such a pronounced improvement in his herd in recent years, which has been especially marked because of the herd-headers which he always selects in person, has recently purchased a new herd-bull, Rustler 186803, sired by the Lad for Me, dam Russellia. She was the dam of Ruberta, one of the most famous show cows of the breed.

The writer had the pleasure of visiting the Silver Creek Herd of Shorthorn cattle belonging to J. F. Stodder, Burden, Kans., and came away with the conviction that the animals now under preparation for St. Louis and the American Royal, will make a whole lot of trouble for other exhibitors. This herd will be remarkable not only for its quality but for the fact that it is home-bred.

The Franklin County Fair Association is preparing for a larger fair at Forest Park, Ottawa, than they have ever held. This is one of the big fairs of the State and will be held on September 6 to 9 inclusive. The Hereford breeders of the State will be interested in knowing that this association will be exceptionally liberal in premiums for that breed. The American Hereford Cattle-Breeders' Association will give prizes in addition to those offered by the association. In the

classes the prizes range from \$15 for first, \$10 for second, and \$5 for third in aged bulls, to \$10 for first, \$5 for second, and \$3 for third in heifer under one year. In addition, the aged herd will be given \$25, \$15, and \$8 respectively for the three prizes, and the same money will be hung up for young herd and calf herd. There will be four sweepstakes prizes of \$25 each for aged and junior bull and aged and junior cow. The Hereford men will be strictly in it at Ottawa.

Harvey County, Kansas, has long been known as one of the great breeding centers for pure-bred swine, and she is undoubtedly destined to become a center for the breeding of good cattle as well. Mr. Robert Dey, of Walton, Kans., is the owner of the Mulberry Herd of Galloway cattle. This herd is small in numbers as yet, but very choice in quality. It is headed by Staley of Nashua (1897) by Harley of Goodrich 14723, out of Ettie of Nashua 11235. This fine young bull was bred by I. B. & A. M. Thompson, of Nashua, Mo. Among the females in this herd are such choice animals as Lottie 2d of Nashua (14563) by Agricola of Diamond 11148, out of Lottie of Barry 5969. Annette of Nashua (16039) by the same sire, and out of Verda of Nashua 12165, all bred by the Thompsons. Winifred of Maples 19548, bred by Brookside Farm, and Bonbon 21606, bred by W. M. Brown & Son, Carrollton, Mo. Bonbon was a prize-winner at the American Royal and stood fifth in her class. These are only given to indicate some of the choice breeding lines of the herd. There are a few young bulls for sale in this herd of this breeding that are well worth going after. As there are only two or three of them, interested parties will have to be prompt in order to secure any. See advertisement in special want column.

Minnesota Lands.

We call especial attention to the advertisement of the Southern Minnesota Land Company, at Madelia, Minn. This is one of the up-to-date, progressive realty firms of the great Northwest. They are so well equipped and so well established for this business that they can sell your property no matter where located. They also have choice improved farms as well as 80,000 acre of timber lands for sale at very attractive figures to buyers. They also announce free transportation to actual buyers. During these reeking hot days our eyes are naturally turned to the north, seeking the cool and salubrious breezes of that prosperous country, and to all thus inclined we know of no one better to refer to for desirable farms and homes than to the Southern Minnesota Valley Land Company.

Tourist Rates.

The Frisco System will issue, during the summer months, Tourist round-trip tickets to various resorts and locations—the Mountains, Lakes and Seashore, at greatly reduced rates, with ample return limit. Call on nearest agent, or address Passenger Traffic Department, St. Louis.

The ostrich is being acclimatized in Southern Europe by M. Octave Justice, whose eighty specimens from South Africa are thriving on a farm near Nice.

NO MONEY TILL CURED. 25 YEARS ESTABLISHED. PILES. 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. DR. THORNTON & MINOR, 100 Ok St., Kansas City, Mo.

The Young Folks CONDUCTED BY RUTH COWGILL.

"NO SAVEE!"

Me heap likee Melican lady, she pretty an' nice as can be, She allee same sweet like flower, but wha' for she no savee me?

One lady she talkee me plenty, an' sing for me allee same bird; She tellee me "Love one another," an' talkee 'bout Joss and His Word.

Me no savee Melican lady, she too muchee pretty an' smart; She allee same cat catches moussee; she makee me sick in my heart.

Me work velly hard at my laundly, an makee heap money, you bet! Me talkee heap smart to the ladies, but catchee no pletty wife yet.

Me no savee Melican lady, but bime by me catchee, I guess. Me welly smart man, an' me study a good way to makee say "Yess."

Tirzah's Chimney.

Five years before when Solomon Green had asked Tirzah Hitchcock to become the second Mrs. Green, she had tartly refused the honor.

Solomon had reasoned all in vain. "Why, Tirzah," he pleaded, "it ain't no ways natural fur wimmen to live alone.

"What's the use in us keepin' up two houses when one would do jest as well?"

Since that time the two had hardly exchanged a dozen words. Solomon had not married, neither had Tirzah, and now on the night before her fortieth birthday she sat looking around her orderly little home with the most desolate feeling at her heart she had known for years.

To-morrow would be her birthday. Mechanically she had gone through a few preparations for that rather dubious festival. The smallest hen from her flock was curled up ready for roasting inside the same pan in which her hens had been roasted for the last fifteen years.

Never before, at that season of the year, had Tirzah's hens been laying so well.

Her cow had never been known to give so large a yield of milk. There were three new kittens in the basket behind the kitchen stove, and her canary bird was the loudest singer in all the village.

She had heard that day that the widowed cousin, who usually kept house for Solomon Green, had unexpectedly married.

Of course, this was nothing to Tirzah, but still—here she sniffed two or three times, and then, without a particle of explanation to the astonished cat, who had come forth demanding her allowance of milk, sat down in her cane-seated rocker and burst out crying.

For five minutes she cried, and then she dropped her apron and looked guiltily about.

A thought intruded itself upon her which she considered in the light of a secret crime. Over and over again, despite herself, she rehearsed Solomon's proposal; each word as it had been spoken, until, suddenly, like the handwriting upon the wall, there stood

forth these words: "Every morning your chimby is the first thing I look at—"

Had he meant it? Did he still turn his eyes with the coming of morning light down the little hill which lay between them? Did her lonely chimney still claim his thoughtful care?

Five minutes later the dark plot was formed and Miss Tirzah was hurrying about her preparations for the night with cheeks that burned with fires she had thought long since gone out forever.

The following morning more astonished creatures there could not be than were the kittens, cat, cow, hens, and canary of Miss Tirzah Hitchcock. Something, certainly, had gone wrong.

Six o'clock came, and the stable door was not opened by the brisk mistress. Half-past six, and still no fire in the kitchen stove. Seven o'clock, and no breakfast yet for the mistress and her indignant dependents.

Loud and angry rose the protest of Brindle from her snug stall, while the old cat and canary did their best to stir things up inside.

Meanwhile, hidden by the parlor curtains, crouched Miss Tirzah, wrapped in a huge red and green shawl, her heart fluttering between shame and dread, while her eyes watched with fevered anxiety the house just up the hill.

Oh! how pitifully foolish now looked her deep-laid scheme when faced in the broad light of day.

Of course, he had forgotten, years ago, to watch her chimney. What was it to him now, whether she had a fire or not? She would go this very minute and build it. She—

Why, what was that? Some one was coming out of Solomon's front door. Some one—why, it was Solomon himself, creeping forth as if he had just been engaged in stealing his own spoons and was now making off with them to a place of hiding.

Where was he going? The heart of Tirzah stood still for one long and nerve-destroying second, then it went on again with such a hammering and commotion beneath the red and green shawl that a less plucky woman would have fled for the camphor bottle on the instant.

Solomon was coming down the hill straight toward her tiny home. Coming, it is true, not as the conquerors come with bold and martial tread, but in a timid, slinky fashion of a man who has had his last timid advances in that direction scorned.

When it was certain past all shadow of a doubt that he was coming into the house, Tirzah, the crafty creature, betook herself to the cane-seated rocker, where, draped to the chin in the big shawl, she waited with palpitating heart for the timid knock which at length sounded on the door.

"Come in," she then called feebly, at which the door was opened cautiously, inch by inch, until the entire figure of the middle-aged lover was disclosed to view.

At the sight of Tirzah, bundled up and in the armchair, all of his hesitation vanished.

"Why, Tirzah, are you took sick?" came in the loud, cheery voice which had not sounded in the room for five years past. "An' it's cold enough in here to freeze the hair off a dog's back. Let me fix you a fire."

In a few moments a cheerful fire was roaring up the chimney. To be sure, there were more chips on the floor than Miss Tirzah would have scattered in a twelve-month, and the cat was spitting out her indignation in a remote corner over an injury done her sleek tail by the heavy boot of Miss Tirzah's new fireman.

Tirzah, however, noticed neither the chips nor the anger of her cat. Not redder than her cheeks was the blazing fire, for Solomon had taken courage and was sitting beside her, inquiring kindly when she "was took," and if he shouldn't go and "fetch the doctor?"

"You see, Tirzah," he said with a guilty laugh, "I allers look at your chimby the fust thing in the mornin'—I've kinder got into the habit. I know you don't like it, but—he—why, Tirzah, woman, whatever ails ye?"

"Solomon," cried Tirzah, and she almost screamed it in her excitement, "I—I do like it. I—oh, Solomon—I didn't build a fire a purpose."

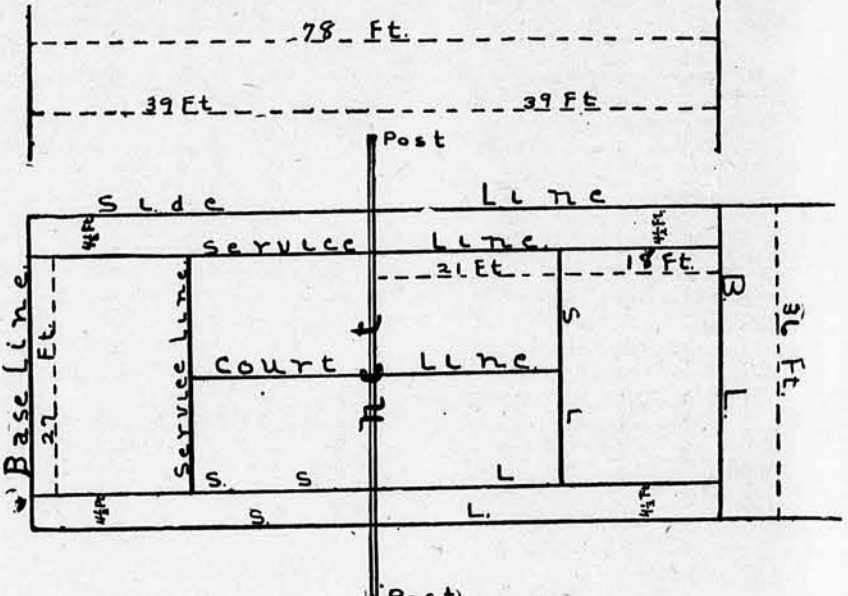
And Solomon—

He rose then and there and kissed her!—Clara Parker, in Housekeeper.

Outdoor Sports for Young People.

There are evenings, and many of them, when nothing seems so good as to sit or lie quietly and rest the weary body; and there are other times when it seems impossible to find time for any kind of recreation. But there are still other times when young minds want brightening, when young bodies feel the thrill of exuberant life; for life is not all work, thank God! and youth demands its own of pleasure and recreation.

Scattered here and there, but very few and far between, one finds the tennis court in the country. The wonder is that there are not more of them, for tennis is one of the most thoroughly enjoyable and healthful sports in the world. For the boy who has been driving the plow all day, or doing some heavy work that brings into play only a given set of muscles, or for the girl who has been sewing or doing some of the lighter but none the less monotonous work of the household, tennis ought to be a boon.



A level patch of ground should be chosen for the court. It should be scraped clear of weeds and grass, and the inner courts marked with lime. The only expense is for the net, which costs about \$3, the balls, which are 25 or 35 cents apiece, and the rackets, which can be had for varying prices from \$1 up to \$7.

Croquet is the old stand-by in the way of out-of-door sports. It is less expensive than tennis—and less fun—but it is a good game and one that requires skill in the playing.

The game of ball is one of the best from the standpoint of health. Boys are enthusiasts over the game, of course, but girls seem not to have discovered its charm. But simply to throw the ball back and forth and catch it, is an exercise that will exhilarate one. It gives one a sense of freedom, a feeling of physical power, that can only come with the expansion of the lungs and the active use of the muscles of the arms and shoulders.

These three out-of-door sports are invaluable to young people, because they tend to keep the body supple and free and the mind alert. Such sports counteract the tendency of the body to grow into cramped and ungraceful shapes and to become set and stiff. They give that ease to the movements and that ability to forget and ignore the mechanism of the body which physical instructors strive laboriously to give.

Awful Sweat Baths.

Boys who make a fuss because their parents oblige them to take frequent baths should be glad that they are not Eskimo children living on the shores of Norton Sound. In that cold

region of Alaska all the boys are obliged to take a sweat bath every week, and this bath is no joke.

A fire of driftwood is built in the center of the floor of the kashim—the one-roomed house where the men and boys of a village pass most of their time—and when the smoke has passed off and the wood is reduced to red, glowing coals, a cover is put over the smoking hole in the roof and the place becomes intensely hot.

The boys then must take off their clothes and sit about the furnace-like apartment until their skin becomes as red as the shell of a boiled lobster and seems on the point of blistering.

Owing to the intense heat the bathers are obliged to wear respirators to protect their lungs. These respirators are pads of shavings bound together, concave on the inside and convex on the outside, and large enough to cover the mouth, nose, and part of the cheeks of the wearer.

Across the inside runs a little wooden bar, which is held in the teeth to keep the respirators in place.

The boys sit there until they are dripping with perspiration. Then they rush outside into the intense cold and roll in the snow.

E. W. Nelson, who spent between four and five years in investigating for the Government the Eskimos living about Behring Strait, says: "On several occasions I saw them go from the sweat baths to holes in the ice on a

neighboring stream, and squatting there, pour ice water over their backs and shoulders with a wooden dipper, apparently experiencing the greatest pleasure from the operation."

Although the Eskimo boys seem to withstand such a bath as this all right and even to enjoy it, it would, in all probability, kill any white boy who tried it.—Chicago Inter-Ocean.

Willie's Sympathy.

The new clergyman was invited to dine with the family the other Sunday, and eight-year-old Willie, of course, make himself conspicuous during his stay. He seemed to be deeply impressed with the minister, and never let his eyes stray from him.

He manifested as much interest as his elders in what was said, but regarded the minister with a somewhat sorrowful expression, which was altogether uncalled for, as he was of a jovial disposition and greatly amused his hearers. As the minister was about to leave Willie meekly approached him and sadly asked:

"Why—why—how does it feel to be poor?"

"What do you mean, Willie?" laughingly asked the minister, turning to the parents with an amused smile.

"Why, I heard papa say to mama that you was a mighty poor preacher," was Willie's startling declaration.—William M., in July Lippincott's.

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 entrance.

For the Little Ones

THE BEDTIME TRAIN.

When we go up stairs to sleep—
Up the stairs so long and steep—
They're a mountain climbing high,
Through the clouds, up to the sky!
Through our train's not very long
Though our train's not very long
We must have two engines strong.
Harve and I the engines are,
Mamma'n' babe are each a car,
"All aboard!" now here we go!
Don't you hear the whistles blow?
Puff the engines, "choo, choo, choo,"
Blow the whistles, "toot, toot, toot!"
See us go around the bend!
There's the tunnel at the end.
Tunnel is the bedroom door,
Cause it's dark there, just before—
"Switch a car, she'll bring the light!"
Now, we'll reach the station right.
"Toot!" we're home; our journey's done,
Bed's the station—Oh, what fun!
—Maude Whitmore Madden, in Good Housekeeping.

Grandmother's End of the Ice Cream.

Grandma dropped wearily into a chair. Her sweet face was full of the little tired lines that were nearly always there on Tuesdays. She held up one slender hand with the fingers spread.

"Churning's done—thumb," she said, folding down the thumb, "Ironing's done—first finger; beds are made—thimble finger; dishes washed—ring finger."

Only the little finger was left, standing up the wobbly, little-finger way of standing up.

"The little finger stands for dinner," smiled tired grandmother. "That isn't done! Now, when one has company, I wonder what one gets for dinner—"

There was a stir across the room. The "company" with one accord scrambled to its feet and formed in line.

"Ice cream!" in chorus.

"O," said tired grandmother. Then she said, "O," again. She had not thought of ice cream! Dear, no, not ice cream! She lowered her spectacles from her pretty white hair to her nose and glanced up at the clock.

"It's after ten," she said. "It takes a good while sometimes to freeze ice cream. I don't suppose the company would like it unfrozen? There's some nice soft custard out in the pan—"

The company made a wry face—three wry faces.

"That wouldn't be ice cream, grandma," pouted Olive.

"Nothing but just custard!" pouted Terence. Terence was Olive's twin and always did the things she did. The third "company" was little Puss-in-Boots.

"I'd ruvver have I-scream a good dealer," Puss said.

Tired grandmother got up stiffly, a patient smile on her dear old face, then sat down again with a sudden twinge of rheumatism. Olive was afraid it meant no ice cream for dinner, and Olive was ice cream hungry. Weren't all three of the company ice cream hungry? Hadn't they talked about having it sure when they went to spend the day with grandma? Grandma always gave folks two saucersful—

"We s'posed we'd have it," Olive said, in an injured tone.

"Yes, we s'posed," said Terry, in exactly the same tone.

"Because we're company, that's why. We s'posed you'd give your company"—

"Ice cream," smiled tired grandmother. "Well, dears, you shall have it, but you will have to wait till supper—it's too late to freeze it for dinner. Will supper do?"

"O, yes'm, thank you," Olive said, politely, and of course Terry said, "O, yes'm," politely, too. Supper was farther away than dinner, but it would do. And custard was pretty good for dessert. The company was not greedy—just ice cream hungry. Usually it was quite a thoughtful company and noticed the tired lines in grandmother's face, but not to-day.

Grandmother got dinner and cleared it away. It seemed to her she grew tired and tired. It was lucky nap time was so near—dear, dear, she had forgotten the children's ice cream!

"If father was only at home to chop the ice!" she sighed gently. Grandfather's being away made it so much

harder—he always knew just how much salt to mix with the ice and he always turned the crank of the big freezer.

Grandmother turned it alone to-day. She made the cream and packed the ice around it, and turned—turned—turned. Something must be wrong. Why didn't the cream begin to stiffen? The tired old arms throbbed with pain. She counted one, two, three, four—she would not stop to rest till she got to a hundred. But she did stop at fifty. She got more ice and chopped it in the chopping tray—more salt and mixed it in. Then she turned again and counted. This time she counted twenty-five between rests. It was cooler out on the back porch under the vines, and she dragged the freezer and the kitchen rocking chair out there.

"Creak, creak, creak—one, two, three, four—creak, creak, five, six, seven. Still the handle went round just the same, and tired grandmother knew the cream had not yet thickened.

The company was playing house-keep out in the grape arbor. It was pleasant and rustly out there, with the leaves everywhere whispering things to each other. Olive said it was beautiful spending the day at grandmother's, wasn't it? And Terry said, wasn't it!

"And there's I-scream a-comin'!" chanted Puss-in-Boots.

"Goody!"

"I'm glad we asked for it, aren't you? Grandma might not have remembered our—our ice cream 'tooth,'" "Teeth," corrected Olive—"yours and mine and Pussy's. Yes, indeed, I'm glad we remembered!"

"I hope there'll be chockerlate in," Puss said, "and that 'minds me to wish we'd asked for two kinds."

"I wish we had!"

"Maybe we can now—come on, let's hurry like everything!"

The company was in good racing trim. There was a scurry of nimble little feet and the three little housekeepers arrived, breathless, at the back porch. Olive got there a little in advance.

"O, grandma, can't we have two kinds of ice"—then she stopped. A strange little change came over her round, brown face. For an instant she looked at tired grandmother in the kitchen rocker, then noiselessly she sped away to meet the rest of the company.

"O, sh, sh, sh!" she panted softly, "you come with me, but sh! Don't do a thing but look at grandma."

She was fast asleep in the old stuffed rocking chair. Her head had fallen back a little, sidewise, and her dear old face wore a patient look. The weary old fingers had released their hold on the crank of the big red freezer.

"Sh!" whispered Olive, but there was no need of it. All the company was sh-ing. They stole away on tip-toes back to the grape arbor.

"She's very tired," Olive said, severely. "Aren't you 'shamed of yourselves for asking for ice cream!"

"My gracious! You went and asked the first asks yourself, Olive Tripp! And if you've gone and most killed grandmother"—

"O, it was us all! We've all most killed her!" wailed Olive, in sudden remorse. "And she's the dearest, grandmotherest grandmother! We never thought of her end o' the ice-cream."

"No, we never"—groaned Terence.

"We just think of our end—O, my shole!" Puss lamented.

They lapsed into shamed, gloomy silence. It was awful to sit there in the grape arbor and feel like—like—pigs! And what made it worse, they could distinctly hear a grunting sound in the direction of grandpa's pigpen.

"They sound like relations," Olive groaned.

When grandmother woke up in the late afternoon, the first thing she saw was a jagged piece of white wrapping paper propped up conspicuously on the top of the freezer. It was covered over with great lead-pencil words. She felt in her soft white hair for her glasses and read it—not once, but twice, three times.

"We are Pigs but Puss is only a little one. We never thort of your end of the ice scream. We have gorn Home for Fear youl finnish makeing it and it would Choak us. Please dont Wake Up but keep rite on Resting. We are sorry weve most killed you, Honest. Terry and Me and Puss."

"The little dears!" rested grandmother murmured.—Annie Hamilton Donnell, in Congregationalist.

Superfluous History.

The family considered it a fine thing when young John Robinson was sent to Korea to represent the principal daily paper in his State. His relatives gave him much advice, many parting injunctions and numerous keepsakes.

Just before John started for the train his stately old grandfather said, in his deep, sonorous voice, which always made everything doubly impressive:

"My boy, remember that you are going to make history. That the words you send to your paper will go down to future generations a part of the history of this war between Russia and Japan; so weigh your words well."

All the members of the family were tearful at the moment of John's departure, but small Katherine, aged ten, wept so uproariously that the others forgot their own grief in attempting to assuage hers.

"Don't cry, dear," comforted her older sister. "John is such a cautious chap that he'll be sure to take good care of himself. It probably won't be long, either, before he's home again, simply covered with glory."

"Tisn't John I'm worried about," sobbed Katherine. "It's that horrid old history that he's gone to make. There's more history now than I can ever learn!"—N. Y. Tribune.

A New Blackbird.

I saw in the KANSAS FARMER that any one who saw a blackbird with more white than on tip of wing was to tell about it. So I thought I would. The other day while riding along I saw a blackbird with white on its tail, head and point of wings. I live in Winfield, Kans., but come out in the country in the summer.

RALPH CRAWFORD.

Judging from the white spots the bird is probably the bobolink, *Dolichonyx oryzivorus* Linn., a rare summer resident; common in migration in Kansas. It belongs to the same family as the blackbirds, or the Icteridae.

E. S. TUCKER.

University of Kansas, Lawrence, Kans.

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ALONE.

Alone! to land alone upon that shore!
With no one sight that we have seen before,
Things of a different hue,
And the sounds all new,
And fragrance so sweet the soul may faint
Alone! Oh, that first hour of being a saint!

Alone! to land alone upon that shore!
On which no wavelets lisp, no billows roar,
Perhaps no shape of ground,
Perhaps no sight or sound,
No forms of earth our fancies to arrange,
But to begin alone that mighty change!

Alone! to land alone upon that shore!
Knowing so well we can return no more;
No voice or face of friend,
None with us to attend
Our disembarking on that awful strand,
But to arrive alone in such a land!

Alone! to land upon that shore!
To begin alone to live forever more,
To have no one to teach
The manners or the speech
Of that new life, or put us at our ease;
Oh, that we might die in pairs or companies!

Alone! the God we know is on that shore!
The God of whose attractions we know more
Than of those who may appear
Nearest and dearest here;
Oh, is He not the lifelong friend we know
More privately than any friend below?

Alone! the God we trust is on that shore,
The Faithful One whom we have trusted more
In trials and in woes,
Than we have trusted those
On whom we leaned most in our earthly strife
Oh! we shall trust him more in that new life!

Alone! the God we love is on that shore,
Love not enough, yet whom we love far more,
And whom we loved all through
And with a love more true
Than other loves—yet now shall love Him more—
True love of him begins upon that shore!

So not alone we land upon that shore;
I'll be as though we had been there before;
We shall meet more we know
Than we can meet below,
And find our rest like some returning dove,
And be at home at once, with our eternal love!

—Rev. Frederick Wm. Faber.

A JAPANESE FAN.

Is it so warm in old Japan?
Do flowers flaunt out such riot glare?
Hangs that soft, golden mist so low?
Ah me, ah me, to journey there!

Inked out against the yellow glow
One sharp peak rises, blackly bare;
A stately swan steers up the sky—
Ah me, ah me, to journey there!

And see her as she furls her fan!
Was ever lady half so fair?
She beckons to me with her eyes—
Ah me, ah me, to journey there!

Were ever feet so dainty small?
Was ever coiled such shining hair?
Her hands are like curled lily buds—
Ah me, ah me, to journey there!

Fan-pictured, dear Japan, thy calm
Fills us of West with dull despair!
(The palm leaves sift the sunlight through)
Ah me, ah me, to journey there!
—Josephine Daskam, in Scribner's.

Seeing the World's Fair in a Week.
(Concluded from last week.)

The Jerusalem exhibit is one of the most interesting to be seen upon the grounds. It takes about an hour to see the whole thing, without going into the side attractions. It is said to be a faithful representation of some of the scenes in modern Jerusalem. We entered at Zion Gate, where three dusky Arabs sat with noisy drum and fife. Inside, native Arab guides were waiting to show us the city. The first sight that met our eyes was the beautiful mosque of Omar. This, as you doubtless know, was built upon the site of the Holy Temple, by the Mohammedan king, Omar, some 12 centuries ago. Our guide happened to be a very intelligent Arab, who knew thoroughly the intricate history of the Holy City. He said there are few Jews in Jerusalem. It is held by the Arab Mohammedans, who until recently, have forbidden either Jew or Christian to enter the Mosque of Omar. The interior of the Mosque at the fair, was not quite completed. Our guide informed us that when it was done, no one would be allowed to enter unless he removed his shoes, as that is the law in the real mosque. Whether they will be able to enforce it here remains to be seen. The skill-

fully painted pillars and walls give one a very fair idea of how beautiful the real marble and mosaic must be.

We walked through the Via Dolorosa, a narrow and uneven street, closely skirted by the white-walled buildings, which follows the path the Savior took as he carried the cross. At different places along the way Roman numerals mark the place of some incident which happened on that tragic journey. All along the way the Jewish tradespeople beseech your attention to their wares. They make their homes in the houses in the exhibit, and a dirtier, more unkempt looking tribe it would be hard to find. They are interesting and, from a distance, picturesque, but one does not care to meet them intimately.

One of the quaint things to be seen here is the old church, where a great many different sects and nationalities worship—but not together. Each different religion has its own separate time or place, though all are in the same building. A large and very well-executed panoramic picture shows you the beautiful mount of Olives and the dark valley of Jehoshaphat. A place of peculiar interest, not for what you see, but for what you think of, is the Wall of Walling, which represents the part of the wall about Jerusalem where the Jewish people to-day, and for many past years, have gone to weep and lament for their lost city and the woes that have fallen upon their nation.

This is a valuable and intensely interesting exhibit which is not prospering as it deserves, because it is a little out of the way, and lacks the noise and excitement that attend the Pike shows. It is, nevertheless, one of the highly educative exhibits at the exposition.

One often hears the question discussed, Does it really pay to go to the exposition? I was one who questioned it; since I have seen it, I doubt no longer. Any one who can afford it, will feel well repaid by the trip. I have made out a list of expenses for one day, which should be sufficient for any moderately careful person:

Lodging.....	\$1.00
Meals.....	1.00
Admission to grounds.....	.50
Carfare.....	.80
Incidentals.....	.50
Total.....	\$3.80

This does not include railroad fare, which will vary, of course. The railroads, however, are making very cheap excursion rates from all points. For instance, the rate for a round-trip limited to a week, from Topeka, is only \$7.60; for two weeks it is \$11.40.

Of course, this list may be added to indefinitely by Pike shows, automobile rides, etc. But these are not necessary expenses, and can be indulged in at one's own discretion. The things that one really cares to see are free after admission into the grounds.

As to dress, the simpler, the better. No one is going to look at you; they all have something more worth while. One needs only several shirt-waists, a light-weight skirt, high shoes, a simple walking hat. This is one place in the world where people do not need to bother about their appearance. So long as they are neat and comfortable they are all right.

Ice-Creams.

An ice-cream is one of the simplest dishes to prepare, providing always that one has the best kind of freezer. There is no "luck" with ice-cream, as there sometimes seems to be with steamed and baked desserts. Of course, in cooking luck is an impossibility in any case, but it is not so easy to make fatal blunders in preparing ice-creams as in some other dishes. Another advantage ice-cream has over a large number of desserts is that the most delicate invalid can generally partake of it with immunity, and often with decided benefit.

When one is living in the country, with the best of eggs and cream always at hand, it is not an especially expensive dessert. The richest and best ice-creams are made with eggs. Some good creams, however, are made without them. There are many deli-

cate creams which can nearly all be made from one general rule and differentiated by flavoring. A good rule calls for the yolks of three or four eggs (never use the whites), a pint of rich milk, a pint of cream and about a cup of sugar. The exact amount of sugar depends upon the quality of the fruit or flavoring to be added. In chocolate cream a cup and a half of sugar is used to two ounces of unsweetened chocolate and a tablespoonful of vanilla. Maple sugar ice-cream, of course, requires no extra sugar, two cups of melted maple sugar being added the last minute to this foundation. Many professional cooks add six egg yolks, but there seems to be no special advantage in using more than four in so small a rule. The use of flour, as so often recommended, is an abomination. The yolks of the eggs are the only thickening desirable.

Some housekeepers prepare their ice-cream according to Philadelphia fashion, using cream without eggs or milk. When pure cream is used without milk there is said to be difficulty in freezing it, and if the cream is very rich it may turn to butter in the process. It is, therefore, better to prepare ice-cream with half milk and half cream. Sometimes housewives whip the cream before adding it to the custard, but this is not necessary nor desirable in ice-cream. Whipping the cream gives the dessert the character of a mousse. The best French cooks never whip the cream for ice-creams.

Strawberry Ice-Cream.—One of the best rules for this cream calls for one pint of milk, the yolks of four eggs, two cups of sugar, a quart of perfectly ripe strawberries and a pint of "double" cream. Mix the yolks and one-half of the sugar together and add gradually to the milk, which should be heated until boiling hot. Stir this over the fire for about two minutes, or until it begins to grow thick, but does not curdle. Then add the cream. Turn the whole into an earthen bowl and place it where it will become thoroughly cold. Just before turning it into the freezing can add the strained juice and pulp of the berries, which should have been thoroughly mixed with the rest of the sugar.

The following cream calls for no eggs, and consists simply of cream, sugar and strawberries: Mash a quart of berries thoroughly with two large cups of sugar, and let them stand about three hours in a moderately cool place. Then add a quart of cream boiling hot. When cold, freeze, after pressing the whole through a sieve fine enough to exclude the seeds. The cream does not need to be thinned with milk, because the juice of the sweetened and mashed berries will thin it sufficiently. This is equally good with red raspberries or blackberries.

After the cream has formed scoop out a hollow place in the center, but one not deep enough to reach to the bottom of the mould. Fill in the hollow with the berries, sweetened, and turn out the mould of cream immediately on a dessert platter. The berries should be completely concealed when the mould is turned out, and the dessert served with simple slices of white cake. It is important that the fruit be added the moment before serving, so that the berries are not frozen into icy bits.—Exchange.

Absent Treatment for a Baby.

A young mother left her baby with her obliging mother-in-law, one night, in order to attend the wedding of a relative who lived in a town about a hundred miles distant. The young woman, apparently free from all family cares, spent an enjoyable evening; but just as the newly wedded couple were preparing to depart on the midnight train, an expression of acute anxiety flashed across the young mother's countenance.

"Oh, George!" she exclaimed, clutching her husband's arm: "There was one thing that I forgot to tell your mother to do for the baby, and he'll never go to sleep without it. You must go right out and send her a telegram."



Home-made bread makes American men the tallest and strongest in the world—and no wonder. The most and best of it is raised with the celebrated Yeast Foam. Such

Home-Made Bread

is light, sweet, nourishing and productive of men of size and strength. Yeast Foam is a pure vegetable yeast, made of the finest malt, hops and corn. Try it.

The secret is in the yeast.

Yeast Foam is sold by all grocers at 5c a package—enough to make 40 loaves. "How to Make Bread"—free.

NORTHWESTERN YEAST CO.,
Chicago.

"Nonsense," said George, "this isn't the first baby she's taken care of."

"But George, she'll never think of doing just the right thing, and the baby is so perfectly trained that he won't accept any substitute. I know he's crying hard this very minute."

She was right. A hundred miles away a weary grandmother was at her wit's end because she could think of nothing that would pacify a wailing infant who was most wretchedly sleepy yet utterly unable to go to sleep. She was pacing wearily back and forth in the nursery to the accompaniment of her grandson's howls when the door bell rang and her daughter-in-law's telegram arrived. Tearing it open, the tired, perplexed grandmother read:

"Lay baby on his stomach in the crib."

Two minutes later, the baby, adjusted to his liking, was sound asleep.—Leslie's Monthly.

Preparing Dried Mutton.

For preparing dried mutton for summer use there is a way which should be given more attention on the farm. It would discourage the tendency to adopt "sow-belly" as a regular diet, says the Texas Farm Journal. It is important that the hams of well fattened sheep should be used. Wipe them with a damp cloth and dry with a clean towel. Allow each ten-pound leg one-half pound of good salt, one ounce of saltpeter and one-half pound of brown sugar. Mix together, holding the vessel over a kettle of hot water. Arrange the legs on a slightly inclined board in the cellar. Rub the meat all over with this mixture and let it lie two or three days, turning and rubbing each day. This mixture is sufficient for three rubbings. Then make another mixture of one-half pound of brown sugar, the same of salt and one ounce of ground cloves. Hold this mixture over the fire a moment. Wipe the legs with a dry cloth and rub with this mixture. Put the hams in a clean tub and for two weeks turn and baste them with the liquor that forms. They may then be smoked the same as ordinary hams, put into bags and hung in a cool, dry place.

The world seldom makes a mistake when called upon to decide between what is positively false and what is positively true; abstrakt right and wrong are reached bi instinkt, and instinkt iz not only honest, but iz smart.—Billings.

Oysters are examined by X-rays for pearls by Raphael Dubois, a French investigator. The oysters are not injured, and those containing pearls too small to be of value are returned alive for further growth.

Grange Department

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

Conducted by E. W. Westgate, Manhattan, to whom all correspondence for this department should be addressed. Papers from Kansas Granges are especially solicited.

National Grange.

Master..... Aaron Jones, South Bend, Ind.
Lecturer..... N. J. Bachelder, Concord, N. H.
Secretary..... C. M. Freeman Tippecanoe City, Ohio

Kansas State Grange.

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

Executive Committee.

E. W. Westgate..... Manhattan
Geo. Black..... Olathe
J. T. Lincoln..... Madison
A. P. Reardon..... McLouth
Henry Rhoades..... Gardner

State Organizer.

W. G. Obryhim..... Overbrook

The New Assistant Secretary of Agriculture.

(We clip the following article from the last number of the Grange Bulletin. We wish every patron had the privilege of reading every number of this most excellent Grange paper.)

The Washington, D. C., and New York City dailies are apparently interested in the action of the President in the selection of a successor to Bro. J. H. Brigham. The Washington Times, under date of July 30, says:

"A committee of the National Grange, consisting of its master and two members of its executive committee, called upon the President to urge the claims of the organization to recommend a candidate for appointment to the position of Assistant Secretary of Agriculture, in succession to the late Colonel J. H. Brigham. Whether this selection had been made the members of the committee declined to say.

"The President promised to take the matter under consideration, and to give the recommendation of the committee close attention.

"The committee consisted of Aaron Jones, of Indiana, master; E. B. Norris, of New York, chairman of the executive committee; and C. J. Bell, of Vermont. Mr. Bell is the Republican candidate for Governor of his State, and is, of course, practically assured of election.

"The claims of the Grange were discussed at length. It was represented that the office belonged, of right, to the farmers of the country, and that the Executive should not go farther afield to make the appointment."

The New York Herald, in its issue of July 30, says:

"President Roosevelt has decided to allow the National Grange, the largest farmers' organization in the United States, to select the successor of the late Colonel J. H. Brigham as Assistant Secretary of Agriculture. This is what the President said to-day to a committee representing the National Grange, who called to ask the status of the appointment. The office pays \$4,500 a year."

Hon. F. A. Derthick, of Ohio, is the leading candidate. C. Howard Davison, of Dutchess County, New York, is prominently mentioned for the position.

Headquarters for Patrons.

A spacious pagoda for a National Grange headquarters is erected in the south end of the Palace of Agriculture at the World's Fair, St. Louis. It will be equipped with a reception room, ladies' retiring rooms and check rooms where parcels may be left free of charge. The Grange took charge of the pagoda August 1. Competent people will be constantly on duty to assist Patrons and the general public as well to see the fair.

A special feature will be made of keeping a list of moderate-priced rooms, so that any one may come to Grange headquarters with the full assurance of finding suitable rooms at prices within one's means.

There are respectable places where good lodging can be had for 50 cents

per night and meals 25 cents. Other places where lodging and breakfast can be had for \$1 to \$1.25. The higher priced places have advertised extensively, and the people who are not extravagant with their money have measured those prices and do not rush to the fair to be robbed.

The Inevitable Parcels Post.

Many of our readers are hardly more than half aware of the fact that the parcels post is one of the things soon to be, and that in spite of the power of the express companies. The rural mail service is making the need of parcels post more keenly felt. In the cities the express companies deliver at the doors of the people; in the country with twenty-five thousand carriers delivering mail, farmers must go or send to the express offices for their parcels, if they happen to be above the four-pound limit. Farmers must have the parcels post; later they will have the postal savings bank, with provisions for making deposits by the help of the rural mail carrier. But the parcels post is the thing to be fought for now. One thing at a time may well be our policy in making demands upon Congress. A recent issue of the New York Independent, discussing "Our Inadequate Postal Service," made the following significant utterances:

"Postal reform is in the air, and it will not do for our political managers to overlook this fact. The farmers of America are thoroughly well pleased with free mail delivery. It has worked a marvel among the agricultural communities. It is one of the factors that have brought agriculture to the front—abolishing farm isolation. But the farmer perceives very clearly that the service so far is merely tentative. He feels the need of a parcels post even more than he needed a rural service for correspondence. His demand is growing imperative."

At its last session the National Grange adopted a resolution advocating the parcels post, and directed that United States Senators and Congressmen be asked to use their influence to secure the same. It is time that every influence of the Grange and its members be brought to bear upon the men who are now candidates before the people for election as members of the House of Representatives. Already the Pennsylvania State Grange is doing valuable work. But we should all work together, subordinate, Pomona, and State Granges heartily supporting the National Grange as leader. The Bulletin is planning to do its full share in making its readers aware of the importance of the parcels post to farmers.

The parcels post is inevitable; but those who need it can do much to hasten the day when it will be at their service.

Talks With Lecturers.

D. W. W.

I have been interested for a number of years in observing the attention given to agriculture and agricultural problems by the magazines. I happen to have at hand three July magazines; two of them have important articles bearing upon the farming industry. I happen to know that two other July magazines, Scribner's and The Cosmopolitan, have the flavor of the farm. Besides, I have a back number of Scribner's from which I have clipped the following, which happens to be an editorial utterance:

"Agriculture is destined, sooner or later, to be no longer the crass, circumscribed, bucolic occupation of other days, but a liberal profession, embracing a knowledge of the physiology of the earth and of the products that grow out of it, and a philosophy of economies that understands the necessities of demand and supply by which these products are kept moving over the surface of the globe. The nervous intensity, the push and the drive, that have been developed in the life of cities will not stop entirely, as they have done in the past, at the farmer's threshold. Facilities of transportation will bridge over the gap be-

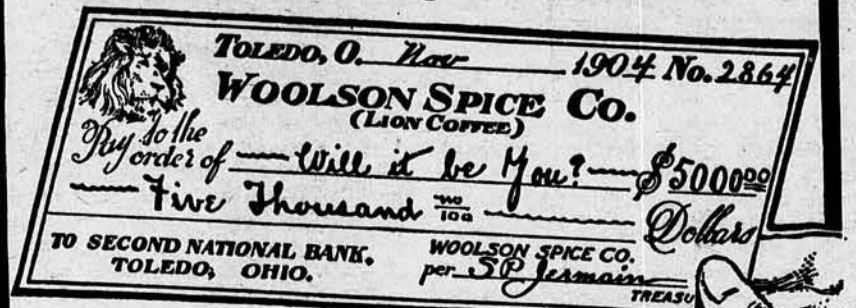
\$50,000.00

Cash Given Away

TO USERS OF

Lion Coffee

In Addition to the Regular Free Premiums



How Would You Like a Check Like This?

WE HAVE AWARDED \$20,000.00

Cash to LION COFFEE users in our great World's Fair Contest—2139 people get checks, 2139 more will get them in the

Presidential Vote Contest

Five Lion-Heads cut from Lion Coffee Packages and a 2-cent stamp entitle you (in addition to the regular free premiums) to one vote. The 2-cent stamp covers our acknowledgment to you that your estimate is recorded. You can send as many estimates as desired.

What will be the total popular vote cast for President (votes of all candidates combined) at the election November 8th, 1904? In 1900 election, 13,959,668 people voted for President. For nearest correct estimates received in Woolson Spice Company's office, Toledo, Ohio, on or before November 8, 1904, we will give first prize for the nearest correct estimate, second prize to the next nearest, etc., etc., as follows:

Grand First Prize of \$5,000.00

Will be awarded to the one who is nearest correct on both our World's Fair and Presidential Vote Contests.

We also offer \$5,000.00 Special Cash Prizes to Grocers' Clerks. (Particulars in each case of Lion Coffee.)

1 First Prize	\$2,500.00
1 Second Prize	1,000.00
2 Prizes—\$500.00 each ..	1,000.00
5 Prizes—200.00 " ..	1,000.00
10 Prizes—100.00 " ..	1,000.00
20 Prizes—50.00 " ..	1,000.00
50 Prizes—20.00 " ..	1,000.00
250 Prizes—10.00 " ..	2,500.00
1800 Prizes—5.00 " ..	9,000.00
2139 PRIZES, TOTAL,	\$20,000.00

How Would Your Name Look on One of These Checks?

Everybody uses coffee. If you will use LION COFFEE long enough to get acquainted with it you will be suited and convinced there is no other of such value for the money. Then you will take no other—and that's why we advertise. And we are using our advertising money so that both of us—you as well as we—will get a profit. Hence for your Lion Heads

WE GIVE BOTH FREE PREMIUMS and CASH PRIZES

Complete Detailed Particulars in Every Package of

LION COFFEE

WOOLSON SPICE CO. (CONTEST DEPT.) TOLEDO, OHIO.

USE THE BEST FAULTLESS STARCH FOR LAUNDRY WORK

FOR SHIRTS COLLARS CUFFS AND FINE LINEN

tween the urban and the rural existence, and other causes will bring about an ever-greater equalization of condition between the two modes of life. This is inevitable."

What I am coming at is the evident fact that the real importance of agriculture is beginning to be understood in the cities. The editors of the leading magazines do not care to buy and publish articles that are not interesting to their readers, most of whom are city dwellers. They know what appeals to the majority of their readers;

they know that agriculture is becoming increasingly interesting to the intelligent people who read other than the farm papers.

It happens that the paragraph above quoted is a good argument for the better education of country people. According to its author, agriculture is destined to be "a liberal profession," embracing a knowledge of many sciences. It is not to continue to be "the crass, circumscribed, bucolic occupation" that it used to be. Indeed, the farmer will need to have more than

the old-fashioned common-school education to understand such writing as that of the editor of Scribner's.

Really, the outlook is encouraging when the editors of the literary magazines turn their attention to the matters that belong to the farms; it is encouraging when they begin to understand that the farmer of the future must be an educated man; and it is even more encouraging when they discover the important truth that country people are making substantial progress at the present time. So I am calling attention to these matters with the thought that they can be profitably considered in Grange meetings. Practically every intelligent farmer has his agricultural paper, or several of them. Why not go outside the ordinary sources of information, and have a program considering agriculture as presented in the magazines?

A NEW DEPARTURE IN DAIRYING
(Continued from page 817.)

was sour, dirty, and a rather precarious feed; while to-day, the pure, fresh, sweet skim-milk is one of the most valuable feeds produced on the farm for the development of stock.

The Blue Valley Creamery Company, with commendable pride, make their first official announcement in the KANSAS FARMER of this new departure in the system of marketing cream, and have no hesitation in stating that the secret of their success in business is due to the fact that they have never lost sight of the very important place occupied by the man who produced the raw material and his interests, and by generally keeping in close touch with every patron. It has been their ambition to increase the profit and reduce the labor for each patron. Every cent this creamery has been able to save by reason of their system has been a cent made for the patron.

The dairy farmer of the West will watch with great interest and concern the outcome of this new departure, which is certainly bound to be a great success for the originator as well as for the producer, as it will awaken a new interest with the farmers generally which will result in increasing a more substantial development of the dairy industry, and put the same on a more permanent basis than ever before in the West.

THE WORLD'S WHEAT CROP.

England has three prominent statisticians who estimate the wheat crops. Their estimates for 1904 are in every case less than they made for the two previous years. Following are their figures for the world's crops:

Authorities.	1904. Bushels.	1903. Bushels.	1902. Bushels.
Broomhall.....	3,056,000,000	3,097,600,000	3,155,200,000
Beerhohm.....	2,917,600,000	3,087,300,000	3,029,600,000
Dornbusch.....	3,064,000,000	3,160,000,000	3,080,000,000

As usual, Allen County, Kansas, will have a fair this year. It will be held September 6, 7, 8, and 9. As usual, it will be a good one.

WAGES AND COST OF LIVING.

The Bureau of Labor of the United States Department of Commerce and Labor has issued a bulletin dealing with recent changes in wages and hours of labor on the one hand and in the cost of living on the other.

It is found that in almost every industry wages in 1903 were higher and hours of labor were fewer than ever before. The schedule of wages for farm laborers for 1903 is not given. A table of average wages per month for farm hands is given up to and including 1902:

AVERAGE WAGES OF FARM HANDS.

Year	Per month	
	Without board.	With board.
1890.....	\$18.33	\$12.45
1892.....	18.60	12.54
1893.....	19.10	13.29
1894.....	17.74	12.16
1895.....	17.69	12.02
1898.....	19.38	13.43
1899.....	20.23	14.07
1902.....	22.14	16.40

An interesting fact disclosed by the table is the narrowing of the difference between the rates with and without board in 1902. In 1899, this difference averaged \$6.16 per month, while in 1902 it dropped to \$5.74, almost as low as in 1895, when everything was

at the lowest. It is evident that to make a reasonable profit on the results of hired labor in 1902, the farmer was obliged to have better prices for his products than at any time in the preceding twelve years.

In considering the wages of all employees, the bulletin takes the average of the last decade of the last century as a basis of comparison or 100. On this basis the following figures are given:

RELATIVE TOTAL EARNINGS OF ALL EMPLOYEES.

Average	1890-1899.....	100
1890.....	95.8	
1891.....	98.1	
1892.....	100.4	
1893.....	100.4	
1894.....	91.9	
1895.....	94.8	
1896.....	97.8	
1897.....	100.1	
1898.....	106.3	
1899.....	112.1	
1900.....	120.2	
1901.....	126.1	
1902.....	135.1	
1903.....	141.9	

The compensation of all employees at labor was nearly 42 per cent larger in 1903 than the average of the last ten years of the last century. It was 54.4 per cent larger than in 1894. The great increase in the aggregate compensation in 1903 came from two sources, viz., from increase in the rate of wages and from increase in the number of laborers employed.

The increase in the rate of wages per hour in 1903 compared with the ten-year average was 16.3 per cent, and the increase in the number employed was 26.4 per cent.

The comparison of average wages paid in the United States with the wages paid in other civilized countries is interesting. No figures are given for the wages of farm laborers in foreign countries. But the comparison in other industries should make the American laborer glad that he labors in this country. Carpenters received, in 1903, in the United States, 35.94 cents per hour; in Great Britain, 20.28 cents; in Germany 13.01 cents; in France, 15.44 cents; and in Belgium 7.12 cents.

The wages of compositors (printers) shows still more favorably for the American workman. Compositors received, in 1903, in the United States, 44.67 cents per hour; in Great Britain 17.95 cents; in Germany (Nuremberg only) 14.11 cents; in France 13.02 cents, and in Belgium 9.55 cents.

General laborers also present varied rates of compensation. In the United States, in 1903, they received 16.76 cents per hour; in Great Britain 10.19 cents; in Germany 7.97 cents; in France (Paris only) 9.65 cents; and in Belgium 5.49 cents.

The hours of labor vary greatly. In the United States, in 1903, the hours

per week for carpenters averaged 49.41; in Great Britain 50.17; in Germany 55.3; in France 60; and in Belgium 64.73.

The investigation of the cost of food in the United States shows a less increase than has occurred in the rate of wages. The cost of food as generally used in the family was greater in 1902 than in any other year, the cost as compared with the ten-year average showing an advance of 10.9 per cent. For 1903 the advance was 10.3 per cent, compared with an advance in average wages amounting to 16.3 per cent as before shown.

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. Ad-

dress, 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."

Miscellany

A Landlord's Hogs.

EDITOR KANSAS FARMER:—I rented about fifty acres of ground of a neighbor which I planted to corn. I am paying grain rent. He has no fences on his place and has about sixty head of hogs. These hogs have damaged my corn more or less since it was planted. He pretends to herd them, which of course is impossible, as the weeds on the rest of his farm are six feet high. As I have never been able to see the hogs in the corn and can only see the damage they have done the night previous, I would like to know if I can drive these hogs from his place to mine and shut them up until damage is paid, or do I have to catch them in the act of trespassing? He has been notified a number of times. Any information regarding the herd law in Kansas will be appreciated. J. R. Johnson County.

This correspondent is up against a real difficulty. Hogs in a cornfield can and do make trouble with the corn and neighbors too.

There seems to be only two courses to pursue to be within the law. If the correspondent can catch the hogs on his premises he has a legal right to impound them and hold them till the damage done by them is paid for.

2. To sue the owner of the hogs for the damage done to his crop of corn, it will then be necessary to prove that his landlord's hogs did the damage.

It is not discreet or profitable to go to law if it can be avoided. Give the neighbor a friendly talk before seeing a lawyer and it may avoid further difficulty. It is "a mighty mean" man who will intentionally let his hogs destroy his neighbor's crop. If possible, he is a meaner man who lets his hogs destroy his tenant's crop. A lawsuit would probably cost more even if successful than the corn destroyed would be worth.

The largest plow in the world is owned by Richard Gird, of San Bernardino County, Cal. This immense agricultural machine stands eighteen feet high and weighs thirty-six thousand pounds. It runs by steam, is provided with twelve twelve-inch plowshares, and is capable of plowing fifty acres of land per day. It consumes from one to one and a half tons of coal per day, and usually travels at the rate of four miles an hour.

Ground-up mummy makes a brown of a certain rare color that nothing else can give. It is on account of the asphaltum in the mummy that this is so. The Egyptians wrapped their dead in garments coated with asphaltum of an incomparably fine and pure quality. This asphaltum, as the centuries passed, impregnated the tissues of the dead themselves. It turned them into the best paint material in the world. Being exceedingly expensive, it is used only by portrait painters in depicting brown hair.

No tree has ever been found larger than the Sicilian "chestnut of a hundred horses." It is no less than 304 feet in circumference.

The man who marries a woman simply for her buty haz but little more property in her than his nabors hav.—Billings.

Third

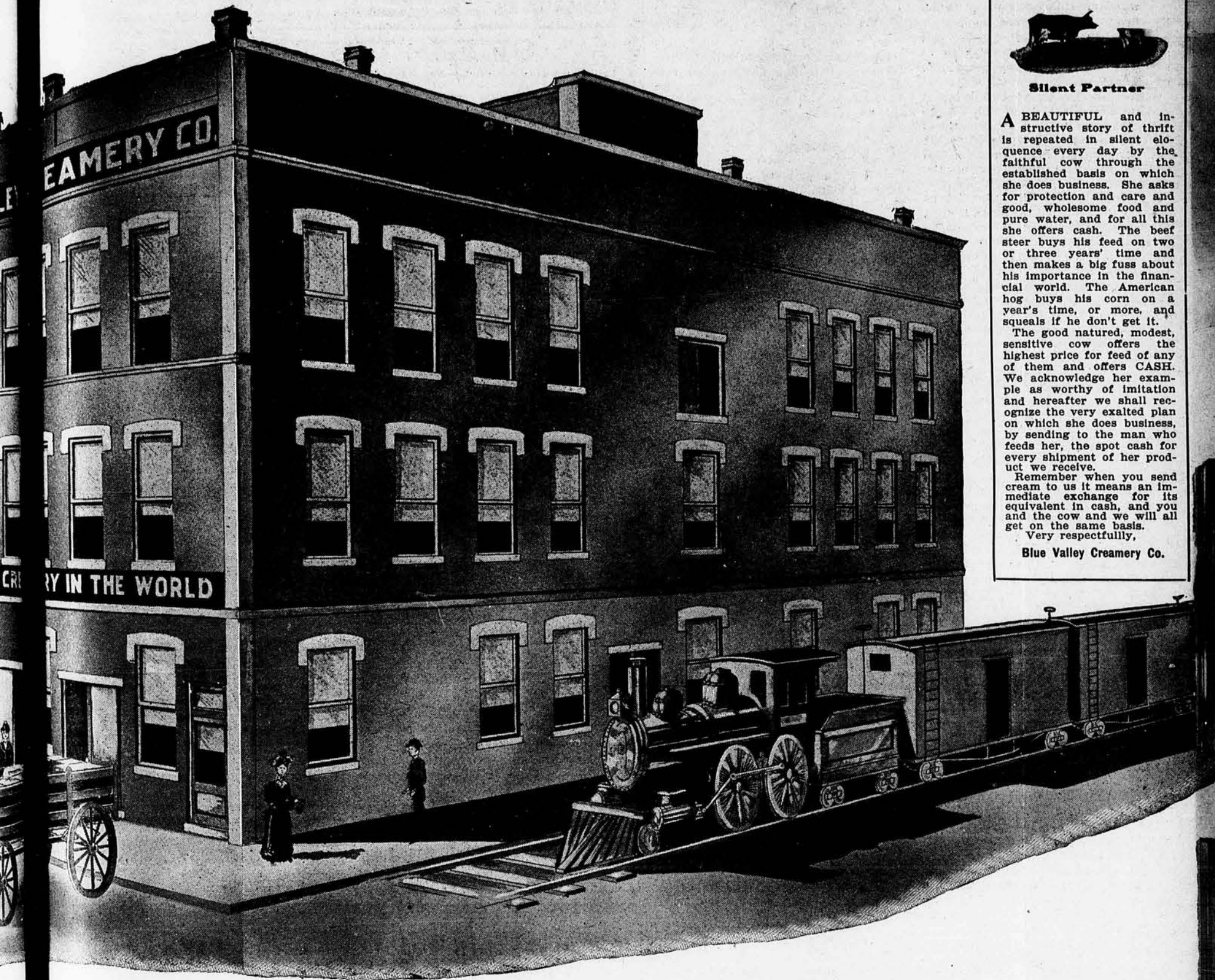
NO MORE LONG WAITS FOR YOUR MONEY. WE PAY CASH.



Blue Valley
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Empire Separator
The foundation of this wonderful system that satisfies everybody. Responsible for the wonderful transformation in the dairy world.

Anniversary Announcement



Silent Partner

A BEAUTIFUL and instructive story of thrift is repeated in silent eloquence every day by the faithful cow through the established basis on which she does business. She asks for protection and care and good, wholesome food and pure water, and for all this she offers cash. The beef steer buys his feed on two or three years' time and then makes a big fuss about his importance in the financial world. The American hog buys his corn on a year's time, or more, and squeals if he don't get it.

The good natured, modest, sensitive cow offers the highest price for feed of any of them and offers CASH. We acknowledge her example as worthy of imitation and hereafter we shall recognize the very exalted plan on which she does business, by sending to the man who feeds her, the spot cash for every shipment of her product we receive.

Remember when you send cream to us it means an immediate exchange for its equivalent in cash, and you and the cow and we will all get on the same basis.

Very respectfully,
Blue Valley Creamery Co.

Blue Valley Creamery Co., Always in the Lead.

BUTTER-FAT ON THE CASH LIST WHERE IT BELONGS

Do Not Long Wait for Your Money===Cream is Cash

Anniversary Announcement of the Creamery With the Best System in the World

1904. will mark another epoch in the history of Western dairying because of the most attractive feature introduced by us through the payment of shipment of cream. During the eventful three years in which we have been engaged in the creamery business on a system that has given universal satisfaction we have never lost sight of the very important place occupied by the man who produced the raw material, and in his interest we have constantly worked to increase his profit and reduce his labor. Every cent we have been able to save has been a cent made for him. Having had this constantly in mind it gives us a matter of no small amount of pride that we are able, on our third anniversary, to announce to the Dairymen of the West that after three years we will be further subserved and your profit increased by our paying SPOT CASH for every shipment of cream. A wonderful transformation has taken place in our business in three years because of the system on which we operate. Three years ago we were the smallest creamery in the West. Today we are the largest exclusive pure creamery butter factory in the world. Three years ago we had only a few shippers. Today we have over 5,000 individual shippers and are increasing at the rate of 100 per month. Three years ago we paid for cream bought in July, a monthly payroll of \$75,000.00. Three years ago under the old system butter fat was selling for 13 cents while New York quotation for butter fat was 16 cents. Today we are paying 16 cents for butter fat and butter in New York is worth only 17½ cents. Three years ago under the old system your skim milk was almost worthless. Today the most valuable feed on the farm is the pure, fresh, sweet skim milk. And finally, three years ago you had to wait about sixty days for your money. Today we are able to gratify our most intense desire (ever since we commenced), and pay SPOT CASH for your cream without extra expense, but an actual saving of office force. With another pledge that we will continue to study your interests and if possible increase them, that we may continue to merit the hearty cooperation and loyal support we have always received, we are, Very respectfully,

Blue Valley Creamery Co., St. Joseph, Mo.



Empire Separator

Noted for its simplicity, ease of operation, durability, and satisfaction to care for. The dairymen's best friend.

Horticulture

Shelter Belts and Windbreaks.

DR. G. BOHREB, BEFORE KANSAS HORTICULTURAL SOCIETY.

The terms shelter-belts and windbreaks are synonymous when used in speaking of timber planted either in a single row or in belts or bodies of several rows, and in this paper will be considered under these two general heads. The matter of planting and cultivating both hedges and timber-belts has been omitted or neglected to an extent that is seriously hindering the development of the agricultural and horticultural resources of the State.

To prove this position true, let us note the fact, that all the small groves, short hedge-rows and timber-belts so common over the State about country residences, are universally admitted to be of inestimable worth to the inhabitants occupying them as a means of warding off the force and modifying the violence of the winds so prevalent and detrimental to every species of industry engaged in about the house and barnyard.

In fact, it is barely possible to succeed in raising poultry and garden vegetables with satisfactory success to to either quantity or quality without some sort of protection, to say nothing of the shelter they afford to all kinds of domestic animals raised and kept on the farm.

The foregoing are facts so universally admitted and their presence and value so visible on every hand, that no sort of doubt or question can be produced by way of contradiction. All this being admitted, the question very naturally presents itself as to why the same means of protecting the kitchen garden, the dwelling, the poultry-house and -yard, the barn, together with its stock-yards or corrals, will not prove equally beneficial as a means of protecting the entire farm and every species of vegetation produced upon the same. And, so soon as the matter is thought of from a really logical standpoint, the conclusion that it is quite as important or even more so, is unavoidable, for it is from the main body of the farm that the greater part of the food that affords sustenance to every living thing about the homestead is derived. Now it being an admitted fact, that hedges and timber-belts do check the speed of the winds, it also will be admitted that the slower the speed of the wind, the slower the process of evaporation goes on, it being a well-known fact that high and unobstructed wind favors and very materially increases evaporation.

To offer still more incontrovertible evidence in favor of shelter-belts and windbreaks, let us take a look at any of our older settled and populous counties, Rice County, for instance, which has been my home for more than thirty years, and is perhaps about an average county as to age and tree-growing. In 1873 there had been scarcely any kind of trees set out, and the winds swept over it entirely unobstructed; the blades were, for the most part, blown from the field-corn and lost. Now, by far the largest share of it is saved and stock get the benefit of it. Then, the rain that fell was evaporated in very much less time than now and was lost to field-crops; at night the stars would shine out with the glittering brightness of diamonds. Now you look through a haze to see them, and many that could be seen then can not now be seen at all or very seldom. Then, such a thing as an osage-hedge fence-post was not to be found growing in Rice County; now thousands of them are cut annually; besides many cords of fire-wood of superior quality. In fact, we have hundreds of miles of osage hedges and many shelter-belts and groves of timber besides many thousands of fruit-trees; all of which have contributed to such a modification of the force of the winds that it does not seem like the Rice County of thirty years ago; and what is true of Rice County is also true in regard to many

other counties. But in Rice and most others of the older settled counties there are not as many hedges and timber-belts as are needed. Many farmers are opposed to tree- and hedge-planting on the ground that hedges cost more time and labor than post and wire fences, forgetting or overlooking the fact, that horses are injured to the value of thousands of dollars yearly by being cut on wire fences; and that through the drying influence and consequent blighting effects of wind, their pastures are rendered very much less productive than they would be if sheltered by hedges and timber windbreaks.

But, says one, "Timber will not grow in Western Kansas." Now, while I do not know what amount of light our timber culture stations have afforded touching this important question, I have made observations sufficiently extensive in traveling over the State to fully warrant me in taking a brighter view of the situation, and will say without hesitation that the osage-orange tree will grow on almost any soil in Western Kansas. I will except white alkali land only, and this can be remedied by hauling soil from other lands to use for setting the plants in, and by heavily manuring the soil on either side near the hedge-row. But good cultivation will be required for several years after setting out the hedge plants on any soil. I would plant them on all section lines where trees can be planted. It may be necessary to haul water to start them after they are set out if there be not a sufficient amount of rainfall to start and keep them in good growing condition during the first season after planting. I would use the timber-culture stations to raise and furnish the plants for these hedges as well as any other kind of trees that observation and thorough test may prove to be adapted to the respective localities in the State where trees are to be planted.

As to windbreaks, I am inclined to look upon the Russian mulberry with favor as a tree adapted to most, if not all, parts of the State.

In Central Kansas I know from observation that they will succeed quite well on either bottom or high prairie land. Cottonwood seems to succeed quite well on all bottom-lands, and while it is not the best timber, it is much better than none. It is good as a windbreak, aside from furnishing fuel and timber for different purposes. Walnut and catalpa should be set out on bottom-lands not only for shade, shelter, and windbreak purposes, but for its value as timber in years to come. As a shade-tree, and for shelter-belts, I would advise the planting of elm, as it seems to be one of the very hardiest trees ever planted in Kansas soil, and seems adapted to all parts of the State, on high as well as low lands. So far, I have seen no printed reports as to what kinds of trees, shrubs, and plants are being planted and cultivated at our timber-culture stations, or the success attending their culture; and unless they are put in charge of men well versed and practically skilled in timber- and general plant-culture and at least an annual report be printed and distributed among our people, I can see but little if any real general benefit to be derived from them, and would advise that at the next session of the Legislature these stations be put under the control of either the Agricultural College or under the management of the State Horticultural Society, and that practical men be elected by the society, at their biennial elections of officers, to take charge of them and that there be a report of their management published and distributed with the society's regular report. If some such a system can not be made practical and perceptibly profitable to the people of the State, I would recommend that their report at least be made available as a means of imparting information to our people in some practical and profitable manner.

I am fully aware that men engaged exclusively in cattle-raising on our treeless prairies will not, and have not, advised general tree-planting; for,

Alfalfa Seed for Fall Seeding.

For many years we have made alfalfa seed a specialty, wholesale and retail. Seed is fresh and reliable.

MOBETH & KINNISON, Garden City, Kans.

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SEEDS

SEED WHEAT.

I have an Improved Turkey Wheat selected by cerealist specialist and imported from near Crimea in regions of Black Sea Europe, which is the greatest wheat country in the world. This wheat has been brought to a high standard of excellence by a careful system of breeding and selecting of the choicest; it is a bearded hard red winter wheat, with a stiff firm straw that will stand up on rich bottom soil; it is very hardy and in all tests made yielded double the common wheat. Will yield 40 to 55 bushels per acre. Price, in two-bushel sacks, \$1.80 per bu.; ten or more bushels, \$1.25 per bu. Catalogue and samples free.

R. M. HAMMOND, Downs, Kans.

SEED WHEAT That Pays to Sow

Change your Seed and increase your yield by sowing our improved varieties. Our Wheat is grown for Seed purposes; is thoroughly re-cleaned; free from Rye and cheat; and yields 10 to 20 bushels more than common sorts. Write for free Seed Wheat Catalogue of our New Malakoff, the grandest new variety of Wheat ever introduced; requires less Seed per acre; gives larger yields; better quality of grain; stiff straw, and Rust proof. Price \$2.00 per bushel. Turkey Red, \$1.50 per bushel; Mammoth Winter Rye, \$1.00 per bushel.

Write to-day. Ask for prices on Timothy, Clover and other seeds. Address
RATEKIN'S SEED HOUSE, - Shenandoah, Iowa.

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An opportunity for those who are not K. T.'s to visit California in first-class style, and with pleasant companions. Rate very low—only \$45.00 for round trip. Grand Canyon side-ride \$6.50 additional.

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TOPEKA, KANS.

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All trains from the West connect with the WABASH at Kansas City.

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L. S. McCLELLAN,
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R. E. EDMONSON, Live Stock Auctioneer.

Experience, earnestness, and a general, practical knowledge of the business, are my principal reasons for soliciting your patronage. Write before fixing dates.
424 Shields Bldg., Kansas City, Mo.

as a rule, they pasture over large bodies of land and do not look upon extensive hedge and timber-belt culture as a source of income and profit; but I doubt the correctness of their position; for I am of the opinion that a system of gradual hedge and timber-belt culture would lead them in a few years to view the matter in a different light. Let them put out, say one or more miles of hedge each year; plants and trees to be furnished by our timber-culture stations and at State expense; the parties who receive them to obligate themselves to properly set out, cultivate and protect them against fire, stock, or any sort of injury. Men have been known to say that if they had a farm hedge they would destroy it, as they claim it costs too much to keep it properly trimmed along the highways, especially those running east and west. For perhaps four years there would be some cash outlay required but after the hedge-trees get sufficiently large to cut fence-posts from the scales will turn the other way. Let the hedge-plants be cut back to four feet except one every ten or twelve feet, which should be permitted to grow large enough for a post; then cut it out and let another grow up. Through a system of this kind almost every section of land in Western Kansas can be made a source of actual income and profit; not only from the posts and fuel to be obtained, but the timber-belts, hedges, and groves would afford protection to stock that in their absence perishes through exposure. Aside from this, the amount of moisture they would hold that now escapes would be of incalculable benefit.

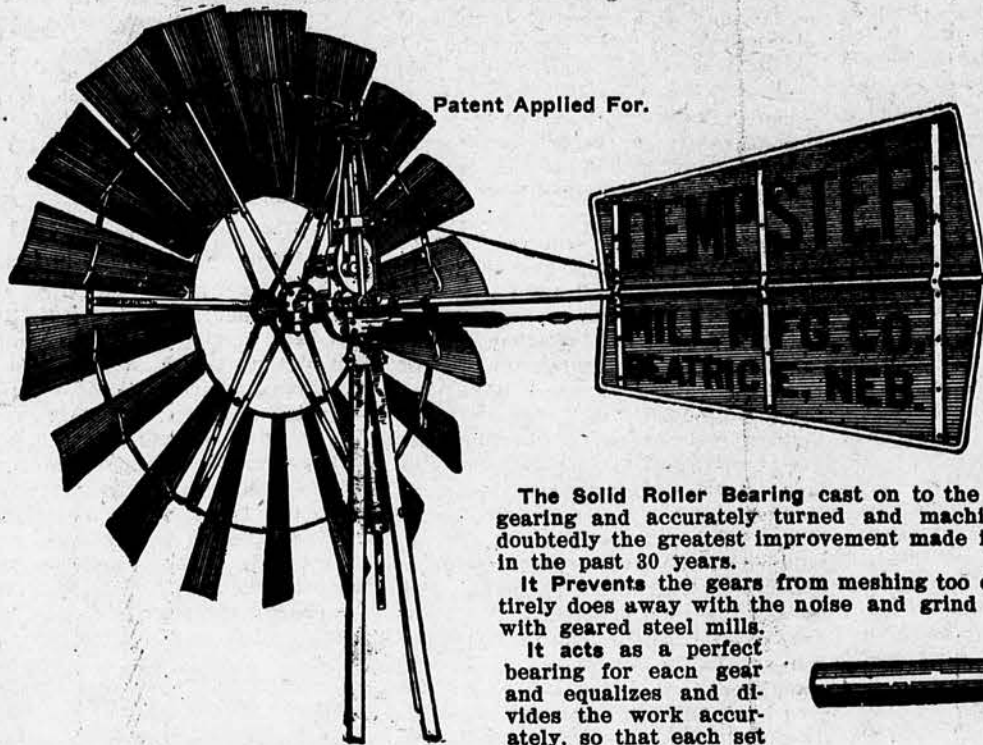
In order to bring such a system about, I believe it would be a wise step upon the part of the Legislature to not only furnish the trees for this means of protection, but a rebate on the land tax of all tracts improved as indicated should be provided for by law. This would serve as an incentive to owners of land to plant trees, and cultivate and give them all really necessary care. I have not recommended a long list of trees for the reason that with our present experience as to trees adapted to our treeless prairies in Central and Western Kansas I know of nothing that is as safe to depend upon as the orange, Russian mulberry and common red elm on high as well as bottom-lands, and cottonwood and walnut with box elder for bottom-lands. As an ornamental tree, the red cedar has few if any equals, and certainly no superiors as to hardness. The red cedars are coming up in different parts of the State from seed, no doubt carried by birds. In my orchard several hundred of them have come up during the last three years, and I make it a point to save and set out every one of them or to give them to my neighbors to set out. They should never be set nearer to each other than twelve to fourteen feet, for when eight to ten years old their limbs will meet and lap over each other and will serve as a most excellent windbreak anywhere about the farm, especially about the poultry-barn, and horse-yards of our country homes. In successful tree-planting, it is almost invariably necessary to water them through the first season after planting. And nearly all the wells are supplied by sheet water which is in most cases inexhaustible; so that with two or three barrels mounted on a sled or wagon, water can be hauled to any part of the farm and with a hose attached to the barrel near the bottom, the water can easily be let out along the hedge and about the young trees. This may look like taking more pains than will ever be profitable; but as I have passed through just such an experience and feel well repaid, I recommend the same course to others, feeling confident that inside of the next ten years, if such a course be generally adopted, all will feel tenfold, if possible, prouder of Central and Western Kansas than ever before. The country will not only be more productive and better adapted to agricultural, horticultural, and stock-growing pursuits than ever before; but will present a scene of beauty seldom equaled in any country.

Dempster Improved Steel Windmill

No. 7

With the New Roller Bearing Gears.

Great Improvement in Windmill Construction.



Patent Applied For.

In addition to making the best Steel Windmill on earth, we also make

Wood, Vaneless, and Solid Wheel Windmills, Iron and Wood Pumps, Wood and Steel Water Tanks, Well Machines, Gasoline Engines, Grain Drills, Cultivators.

A Western Factory for Western People.

The Solid Roller Bearing cast on to the face of the gearing and accurately turned and machined, is undoubtedly the greatest improvement made in windmills in the past 30 years.

It prevents the gears from meshing too deep and entirely does away with the noise and grind so common with geared steel mills.

It acts as a perfect bearing for each gear and equalizes and divides the work accurately, so that each set

of shaft boxes bear a proper share of the labor; thus promoting efficiency and durability to a marked degree.

All Shaft Boxes interchangeable. Can be quickly replaced without taking mill down.

Reservoir Oil Boxes, with wick feed; the best and most reliable kind known.

Remember the New Gears are noiseless and add many years to the life of the windmill.

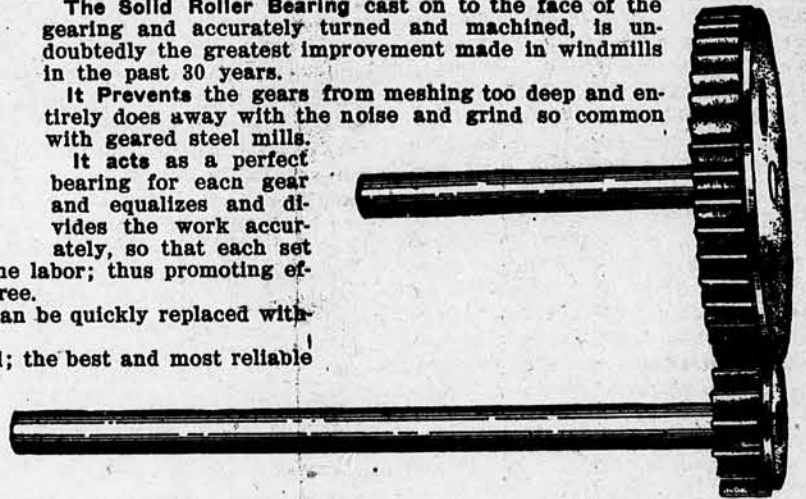
The Upper Part of Pitman bar is square and works through a long babbitted sleeve which is substantially connected to main frame and strongly braced to prevent weaving.

Band Steel Brake. The kind that always holds.

Pitman with Hard Maple Box for wrist pin, boiled in oil.

Steel Washer Bearing Turntable.

Wrist Pin can not get loose. Operation of mill tends to keep it tight.



The New Roller Bearing Gears Which Stop the Noise and add Years to the Life of the Mill.

Dempster Mill Manufacturing Company

BEATRICE, NEBRASKA.

Kansas City, Mo.

Omaha, Neb.

Sioux Falls, S. D.

Grassy Strawberry Bed.

EDITOR KANSAS FARMER:—I have a bed of strawberries (3 rows 50 feet long). The season since picking time has been so wet I did not get them cultivated. They have lots of crabgrass and weeds in them. I have, also, some dewberries in the same fix. What shall I do with them in order to get the most berries next summer? Butler County. FARMER.

Probably the best treatment for the strawberry bed in question would be to mow and remove the vines and grass as soon as possible and beginning at one side of the patch lay off the new rows with a small plow; the plants at the outside of the row are usually younger and stronger than the plants near the center and are to be preferred. It is hardly possible to have the rows as uniform as in new beds, but careful work will keep the bed in good shape. Leave only a narrow row six or eight inches wide; plow to the location of the new second row, and lay off as the first. Cultivate well until the soil is fine and then hoe out the rows, thinning the plants where they are thick. One good, thrifty plant each twelve inches will usually make a strong row during the late summer and fall, but as it is rather late the plants might be left somewhat thicker. Thorough cultivation and a little care in placing runners, to avoid their crowding, should make a good strawberry bed before time for mulching.

The dewberries should have all the old canes removed and all the new ones shortened in to about three feet and if very thick a part of the new canes should be cut out. A thick mass of canes is likely to result in poorly ripened wood, liable to winter injury

and quite certain to set a poor crop of fruit the following season.

In growing all kind of berries there is much more danger of getting too much bearing wood and too many plants than too few.

ALBERT DICKENS.

Cure for Pear-Blight.

EDITOR KANSAS FARMER:—Cut and open the bark near the ground the same as for budding, and insert calomel and tie up the same as tying in buds in budding. This seems to be a sure remedy for pear-blight. It has proved a success on the Bartlett pear with me. M. CRUMBINE.

Kleburg, Texas.

British troops in India have lately celebrated the fiftieth anniversary of being permitted to wear mustaches.

World's Fair Visitors.

The pavilion erected by the Frisco-Rock Island Systems at Main Entrance of the World's Fair is surely a place of no little interest, in fact, it is one of the many attractions.

Visitors to the World's Fair are cordially invited to inspect the Frisco-Rock Island System building. Here will be found a place of rest, courteous attention, besides, there will be distributed, free of cost, souvenirs and descriptive literature of the Great Southwest. The reader will, undoubtedly, overlook a very important attraction in case of a failure to visit the Frisco-Rock Island System pavilion.

Remember, Main Entrance World's Fair.

ROCK ISLAND SYSTEM.

Through Tourist Sleepers to California

Rock Island Tourist Sleeping Cars are fully described in our folder, "Across the Continent in a Tourist Sleeper." Ask for a copy. It tells the whole story—describes the cars in detail; names the principal points of interest en route; shows when cars leave Eastern points, and when they arrive in California. A. E. Cooper, D. P. A., Topeka, Kans.

Nerve Fag.

If You Waste Your Nerve Energy, After Awhile You Will Suffer For It.

You can waste nerve force by excess, over-work, worry, anxiety, etc.

You can weaken yourself by not eating proper food or securing sufficient rest to renew the nerve energy you use up.

The proper treatment, in addition to good phosphatic food, such as whole meal bread, prepared cereals, etc., is Dr. Miles' Restorative Nerve.

This is as truly a brain and nerve food as any food you could eat, and besides, furnishes strength and tone of its own, which goes to the weakened nerve system, and sets it to rights.

Dr. Miles' Restorative Nerve is a refreshing, revitalizing tonic food-medicine for the brain and nerves. It reconstructs worn-out nerve tissue, and fills your languid brain with new life and vigor.

Dr. Miles' Nerve has made so many marvelous cures, of people so sick the doctors thought they were incurable, that it is today the standard medicine in many thousands of American homes.

The first bottle is guaranteed to help you, or druggist returns your money.

"The extreme heat, close confinement and intense mental strain incident to the banking business, has caused me to suffer with nervousness and insomnia. It gives me pleasure to say that I have used Dr. Miles' Nerve with very satisfactory results in the treatment of these affections. I am now on my fifth bottle, and eat and sleep well, in fact have almost forgotten that I possess nerves."—E. L. DALBY, Asst. Cashier, State Bank, Texarcana, Ark.

FREE Write to us for Free Trial Package of Dr. Miles' Anti-Pain Pills, the New Scientific Remedy for Pain. Also Symptom Blank. Our Specialist will diagnose your case, tell you what is wrong, and how to right it. Free. DR. MILES' MEDICAL CO., LABORATORIES, ELKHART, IND.

The Poultry Yard

CONDUCTED BY THOMAS OWEN.

Funny Things About a Hen.

She never knows her mother. Do you? Suppose one hen lays an egg and some other hen hatches a chick from that egg. Which hen is the mother? She will take up with, and seem extremely proud of, any old husband who happens to be a good fighter, and she will always run to him when he does a little scratching and calls for her, though she ought to know from long experience that when she gets there he will gobble up everything in sight and then strut around and utter complimentary remarks in a knowing manner.

This seems stupid on her part, but you would scarcely expect her to be so stupid as to try to fill a freight car with eggs, would you. She tries it, though. During the year 1899 the hens in this United States of America deposited, for sale, 1,293,818,144 dozen eggs. Now a case of eggs contains thirty dozen, hence it would require 43,127,272 cases to hold the annual output. A big refrigerator car is about forty-two and a half feet long and when loaded will carry 400 cases. A sufficient number of such cars to contain all these eggs, standing end to end, would fill a track 868 miles long, or would reach from Chicago to a point way down south of Washington, D. C., or when the engine of such a train would be pulling into Chicago, the caboose would be way out in Colorado, near Wray; or if the caboose were just leaving Denver, the engine would be pulling along just east of Monmouth, Ill.

When a man comes to "shuffle off this mortal coil" he keeps his eyes wide open and would go to "kingdom come" staring about like a blind fish, if his friends did not close them for him, but the hen gracefully slips a membrane over her optics when her time comes, whether it be a violent death, to supply a Sunday dinner, or the more peaceful ending by dropping from her perch on a cold winter night.

It is supposed she intentionally closes her eyes on a world which never fully appreciated her effort, for comparatively few people know or realize that the hen produces more wealth every year than all the gold and silver mines in the world. This may surprise you, but it is true. The value of the poultry and egg product in the United States in 1899 was greater than that of either gold or silver produced in the entire world during any previous year since the record began in 1493; she always runs the wrong way when trying to escape danger and spends lots of time and energy to "hide her nest," and then cackles loud enough to wake the dead when she deposits an egg; she is always tramping around under the horses' feet, trying to get something; she flies and scurries to get out of the way of a raised hoof and then goes right back into danger again, but she has business, right there, that needs her attention, else she couldn't produce in one year eggs valued at \$144,286,370. In Nebraska alone she laid and cackled for 41,132,140 dozen eggs, valued at \$4,068,002. An old Nebraska hen will sit in a manger in a sod stable. If you take the straw away she will continue to sit on the boards. If you remove the boards she will calmly cover the ground, and if you are cruel enough to drive pointed stakes in the ground she will cluck and growl, but will hold to her nest and sit standing. Give her half a show and she will sit steadily on a bunch of eggs for full twenty-one days, bring out a few chicks and then splutter and cluck and fight dogs and scratch up the garden and make a big fuss for a long time, and you think she is making "much ado about nothing," but that same old fussy Nebraska hen produces annually in the way of salable poultry what do you think? \$3,499,044 worth. Not so bad; she has a right to maintain her position. You know a hen in

trying to catch a little white miller will spend enough force to start a thrashing machine, but she never enters a political controversy and her product never receives one-half the political consideration as does the item of wool, yet all the wool produced in the United States in 1899 amounted to but \$45,723,793, while the value of poultry and eggs amounted to the vast sum of \$281,178,247. You see the value of wool is less than 16 per cent that of the hen product, yet wool is of such importance—politically—as to become the storm center of some campaigns. Isn't it about time for the farmers to begin to study the relative market value of the hen to their other products? Would it surprise you to know that the eggs and poultry sold by the people of the United States in 1899 was greater than the value of all animals slaughtered, or that it was far more than the entire oat crop of the Union? Would you believe that the hen produced more cash than the entire wheat crop of twenty-eight States and Territories, including Illinois, Iowa, Pennsylvania, Missouri, New Jersey, Texas, and Wisconsin? It's a fact! She produced a greater value than the corn crop of eighteen States and Territories, including California, Colorado, Massachusetts, New York, North Dakota, Washington, Oregon and Wyoming, and yet if you place her head under her wing and give her a few circular turns she will lie quietly for a number of minutes where you place her.

The value of all the poultry in the United States reserved for breeding and laying in 1900 was fixed by competent authority at \$70,000,000; the number, at 250,681,593 fowls, yet from this number of fowls, valued at \$70,000,000, was produced for the market eggs valued at \$144,286,370 and poultry worth \$136,891,877, a grand total of \$281,178,247, or over 400 per cent on the investment. Can you beat such a record by engaging in any legitimate business known to commerce? Is it not worth while for the farmers to give more serious consideration to the patriotic old hen? When it is kept in mind that the above figures apply only to poultry and eggs produced on farms, the vast amount produced in the villages of the country added to the above makes the totals far more staggering, besides the many millions slaughtered for table use through the country, which is not considered in the above report, would bring the real value of the poultry product up to an overwhelming amount.—Hastings (Neb.) Republican.

Poultry Points.

The Model Poultry Farm at the World's Fair is attracting very great attention among poultrymen. It is something never heard of before and is sure to do a great amount of good. Every poultry-breeder attending the fair should visit it and study its methods.

The Maine Agricultural Experiment Station, in Bulletin 100, on Poultry Management, gives a balanced ration that seems to be a good one. A pen of twenty-two head receives in the morning 1 pint wheat; at 9.30 ½ pint oats; at 1 p. m. ½ pint cracked corn; at 3 p. m. in the winter and 4 p. m. in the summer they are given all the mash they will eat. The mash is made up of the following mixture: 100 pounds cornmeal, 200 pounds wheat bran, 100 pounds wheat middlings, 100 pounds linseed-meal, 100 pounds gluten-meal, and 100 pounds beef scraps. To this is added one-fourth of its bulk of cut clover, steamed for four hours. Feeding the mash at night, in place of in the morning, and making them work all day long for the other parts of the ration, has been the means of overcoming the fatty tendency so prominent in the larger breeds. They say further, that cracked bone, oyster shells, charcoal and water is before them at all times, and roots are fed in winter every day. In the five years this has been followed, very few soft-shelled eggs have been laid and none eaten by the fowls. The output of eggs is more than by any other method.

Oats make one of the best of chicken foods, but is fed very sparingly by farmers, although they generally have plenty of them. They should be soaked over night to give best results, then they will not clog or irritate the crop, as they are liable to do if fed dry. Feed plenty of sharp grit when feeding oats. Wheat is also a good food, and is much better cooked or steamed than when fed dry. Cooked oats or wheat and liver cooked and chopped up and all mixed together, seasoned with salt and pepper as you would season for yourself, makes an excellent dish for growing fowls or laying fowls. Feed more oats.

Judge of the Pigeon Shows.

This office is in receipt of advice that Mr. Henry Tiemann, of Baltimore, has been appointed superintendent of the pigeon show at the World's Fair. Mr. Tiemann needs no introduction to the pigeon fanciers of this country, and as an importer and breeder he is well known in England and France, and especially in Germany, his fatherland, the home of so many of our modern varieties of pigeons.

From his boyhood he has been a fancier of homing pigeons, was one of the charter members of the Baltimore Homing Club, and is a member of the National Homing Pigeon Fanciers' Association. Mr. Tiemann deals largely in all varieties of pigeons and his city place is headquarters for pigeon fanciers, but his country place where he breeds nearly all of the leading varieties is his pride.

Twelve years ago Mr. Tiemann made his debut as a pigeon judge, at Pittsburgh. From that time he has ranked as one of the most successful and reliable pigeon judges. Nearly all of the leading specialty clubs have called upon him to place their awards at the large shows. For the past eight years he has been one of the judges at the Madison Square Garden, New York, and is thoroughly familiar with the best methods of the leading pigeon shows and has judged at all of them. He organized and carried through to a successful termination in his own city one of the largest and best pigeon shows of the past year.

Poultry Notes.

N. J. SHEPHERD, ELDON, MO.

Chickens that fatten on offal and sleep in crowded places, where the air is made impure by the accumulated droppings, can not be nourished and strengthened as those grown and fattened in pure air and on sound grain.

In order to get the greatest number of eggs, the hens must be in a healthy growing condition, neither fat nor poor. Either extreme will retard the formation of eggs.

Whatever point be desired in a stock fowl, it is to be considered that there is some one at least of the several varieties, in which that point has been particularly developed to a far greater degree than can be found in any ordinary barnyard fowl. There is some one fowl in which that quality is the leading characteristic, and which is therefore the best for the purpose desired.

Charred bone, as well as charred corn, is good for poultry, for the sake of the charcoal, which is very healthy for them, purifying the blood and aiding digestion. But this charred stuff does not possess the food value of the raw bones, on account of the animal oils contained in the latter, which are consumed in the charring process. Fresh bones, when ground, are the most valuable, being full of animal matter.

The selection of a variety is not to be governed by any rule. It is a matter for the judgment of each individual; but in the exercise of such judgment the individual should have certain things definitely in view. In other words, he should know what results he wishes to secure, for there are breeds and varieties answering every purpose. If he wishes eggs mainly, then he should select some of the breeds famous for their egg-producing qualities; if for meat or market, then one of the larger breeds, according to

POULTRY BREEDERS' DIRECTORY.

S. C. BROWN LEGHORNS. Choice young stock for sale cheap if taken early. Write your wants to J. A. Kauffman, Abilene, Kans.

NEOSHO POULTRY YARDS—Rose Comb R. I. Reds and Buff Orpingtons; this year's breeders for sale at half price, if taken soon. Also some fine young stock. Prices reasonable. J. W. Swartz, Americus, Kans.

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.

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.

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.

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.

BLACK MINORCAS—Biggest layers of biggest eggs. Fertile eggs for hatching, \$1.50 per 15; \$3 per 30; \$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, Hondans, 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.

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White Plymouth Rocks hold the record for egg laying over any other variety of fowls; eight pullets averaging 250 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

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A. H. DUFF, Larned, Kan.

the quality of meat wanted and the demands of the market intended to be supplied; if for general purposes, there are breeds combining the characteristics of all; and if for oddity or beauty, there are those which please the eye in these respects. So as between varieties answering the same purpose, the selection should be largely a matter of taste.

In the Dairy

The Influence of Milking Upon the Quantity and Quality of Milk.

M. Lepoutre, agricultural engineer and assistant to M. Roquet, professor of zootechny and animal physiology at the Agricultural Institute of Belgium, has just made a series of interesting and careful experiments at the laboratory of zootechny and hygiene of the said institute for the purpose of determining the influence exerted by milking upon the quantity of milk, upon its composition, and particularly upon the proportion of its fatty materials.

Although our knowledge as to the influence exerted by the nervous system upon the physiological tissues is very meager, the experimenter started from the innervation (nervous stimulation) of the glands in general (to the greater or less excitation of which corresponds a more or less abundant secretion), in order to try to bring about an artificial excitation of the mammary innervation for the purpose of improving the lacteal secretion.

Broadly considered, the operation of milking is a rational massage that has the effect of drawing from the udder a quantity of milk much greater than that which is contained at the outset. It is admitted that the udder of a good cow may, before the operation, contain three quarts of milk already formed, while, if the animal is well treated, the udder may yield from ten to fifteen quarts. It follows, besides, from the experiments of M. Lepoutre, that milking exerts a great influence upon the proportion of the fatty materials contained in the fluid. This influence is due, according to the experimenter, to the peripheric excitation of the nerves of secretion, which in their turn, by reflex action, bring about a greater excitation of the glandular cells. If we consider the general case of milking from two teats at once, as usual, we find that the effect produced is not the same during the entire period of the milking. The milk extracted from the first two teats is generally richer in fat than that of the two milked in the last place, and this richness will be greater if we simultaneously milk the two teats of one side, than if we simultaneously milk one teat of one side and one of the other, and then the two remaining ones—in other words, if we do the milking diagonally instead of laterally. The phenomenon is singular, if not obscure. It seems, however, explainable by the fact that

in diagonal milking the excitation extends to all of the nerves of the gland, while in lateral milking it extends only to the side on which the operation is performed, and is consequently stronger. At all events, the influence of milking upon the proportion of fat is shown by the following experiment of M. Lepoutre. The same cow was milked several times and simultaneously by two different persons, who at each operation changed sides. The milk of each side was collected separately. One of the persons performed the operation by exerting a simple alternating pressure upon the teat, while the other performed a downward massage at the same time. The milk collected by the latter person was always markedly richer in fatty matter than that collected by the former. The difference was considerable, since in the first case there was 55 per cent of the total yield, and in the second 45 per cent. The method of milking has therefore a great influence upon the quality of the milk, and this influence is not explainable unless we grant that it bears some relation to the excitation produced.

On the other hand, the milk obtained at the beginning of the operation is not so rich as that obtained at the end. Up to the present, this fact has been explained by the statement that a prolonged operation ends by detaching from the lactiferous vessels the particles of butter adhering to the walls. M. Lepoutre is not of this opinion, and remarks that the operation is performed more vigorously at the end than at the beginning. The excitation must therefore be stronger, and the reflex action be greater upon the mammary tissues, thus causing a lactiferous secretion richer in fat.

The experiments of Professor Roquet's assistant tend to condemn all milking machines, especially those based upon the use of a centrifugal pump. Up to the present it has been thought that the superiority of hand milking is shown only by the quantity of milk obtained; but now it is necessary to add the superiority from the viewpoint of richness in fatty matters.

Although these facts would show machines to be useless which, it was thought, would some day solve the problem of mechanical milking, it is probable that more highly improved ones will eventually take their place. The principles upon which these new apparatus will be based will be those of the mechanical and intensive production of nervous excitation at present effected, unconsciously as it were, by manual treatment. It is not unlikely even, and it is the logical consequence of what has just been said, that the milking machine of the future, based upon such principles, will be able to perform the operation of milking better and obtain a greater quantity of milk, richer in fatty matters, in a more uniform and more scientific manner.—Scientific American.

Lard on Cows' Teats.

Geo. D. Willard, a Manitoba dairyman, very strongly recommends the use of lard upon cows' teats at milking time. He says: It is our plan to have a small can of lard conveniently near where the milking is done, and in case of warts, ulcers, chaps or bruises, it is applied regularly to the parts affected after each milking until the trouble is removed. A slight scratch or sore may look insignificant, but be painful to the cow when grasped by the strong hand of the milkman. As the sore is so often broken open during milking, it requires a long time to heal unless given attention. It sometimes happens that large teats become hard and rough after weaning the calf; these are soon rendered soft and pliable by use of lard. Rubbing with lard will also quickly reduce inflammation of the udder. It will be no loss of time for the dairyman to attend to these teat troubles, for the cows will stand better while being milked, and there will be much less 'crying over spilt milk,' and a greater yield will accrue at the same time. A veterinarian might advise something better than lard; I have found it sufficient in

keeping the teats and udders of twenty-five cows in good condition, the important features being timeliness and persistent application."

Pumpkins as a Dairy Feed.

PROF. GEORGE C. WATSON, PENNSYLVANIA EXPERIMENT STATION.

Many farmers frequently feed pumpkins to dairy cattle with satisfactory results, while others feed them with comparatively little benefit. It has frequently been observed that pumpkins may be fed with good effect if the cows do not have good pasture. Pumpkins are frequently given to dairy cows to supplement insufficient pasture during the latter part of the season. Undoubtedly they may be fed most advantageously in connection with other foods. Nearly all of the succulent cattle foods are fed with the greatest economy with other foods, with the exception of pasture grasses and soiling crops.

The following table gives the analyses of pumpkins, carrots, and mangel wurzels, from which it will be seen that pumpkins contain somewhat more water than either of the other two, and also that the pumpkins contain the lowest percentage of the desirable fodder constituents:

	Water	Ash	Protein	Fiber	Free Ex.	Fat
Pumpkins	93.89	.67	.91	.98	8.93	.12
Carrots	88.50	1.02	1.14	1.27	7.56	.42
Mangel wurzels	90.90	1.10	1.40	.90	5.50	.20

The following table gives the fertilizer values of pumpkins, carrots, and mangel wurzels, from which it will be readily seen that the pumpkins are poorest in fertilizer ingredients with the one exception of phosphoric acid. Both carrots and mangel wurzels have a slightly lower percentage of phosphoric acid than do pumpkins:

	Nitrogen	Phosphoric acid	Potash
Pumpkins	0.11	0.16	0.09
Carrots	0.16	0.09	0.51
Mangel wurzels	0.19	0.09	0.38

From the above analyses it is readily seen that from equal yields per acre the pumpkins would remove from the soil the least plant-food. It is the custom of many farmers in Pennsylvania and New York to supplement their pastures with pumpkins during the last of the grazing season, giving the cows all they will eat.

Some experiments, made for the purpose of showing whether a good crop of pumpkins can be raised in the corn-field or not, tend to show that the crop is raised at the expense of corn production. A good crop of pumpkins can not be produced in the corn-field without some injury to the corn crop. It is a question in the minds of many farmers whether anything can be gained by raising pumpkins in the corn-field.

Farm Notes.

Stock-feeding to be profitable must be regular.

The man who expects to find all good qualities in one horse will be disappointed.

The condition of the animal has something to do with the amount of food required for a pound of gain.

No one does as well on one food as on a variety of food.

Never drive an animal with a rein so loose that you can not instantly

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command the situation, whatever happens.

An important item in providing shelter for hogs is to have it water tight.

Bleaching celery for early use may begin as soon as the stalks are a foot high or even earlier.

Whenever the hogs are confined to one feeding-place there should be a floor to feed upon.

Instead of early maturity being against the proper development of constitutional vigor it is a great step toward it.

In the good dairy cow the milk-glands and the mechanism of milk elaboration grow stronger for years.

Fruit not perfect enough for other uses may be made into cider and then into vinegar.

The older and heavier an animal is the larger must be its ration of support.

Young animals usually have more hearty appetites than grown ones but this is because the impulse of their natures is to grow.

A poor appetite in any farm animal is greatly against its doing its best, no matter where it is working, whether in the dairy or before the plow.

By allowing the hogs the run of the orchard they do a twofold work. They convert imperfect fruit into marketable pork and destroy the insect crop for the coming year.

A thrifty animal full of robust health and vigorous strength is more capable of resisting the poison of contagious diseases successfully than the unthrifty animal.

The nearer we can supply the wants of nature, keep its processes moving forward without violent or partial in-



There is just one way to make the most money out of any business. The way to make the most money out of dairying is the Empire Way. The

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Tubular Separators are regular crowbars—get right under the trouble—pry the mortgage off the farm. How? Gets all the cream—raises the quantity and quality of butter—starts a fortune for the owner. It's a modern separator. The picture shows. Write for catalogue F-165.



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terference, the more nearly shall we meet with success in profiting by its beneficence.

In selecting a dairy cow, reasonable reference must be had as to whether the milk is to be used for butter- or for cheese-making.

Not only does it cost less to make a pound of young flesh than it does a pound of mature flesh but the former is worth more in market.

The fluids in milk are absorbed from the blood, and good pure blood can only be made when the lungs are supplied with air that has no impurities.

The thriftiness of farm stock is not best promoted by very high feeding with grain, but by making the everyday feed appetizing enough to be eaten with a relish.

To pay in the highest degree as a business, the sheep industry must contemplate making the most possible out of the different products, the increase, the wool, the mutton, and the manure.

Feeding Value of Millet-Seed.

I have some millet-seed that has become heated so it will not grow. Can you give me any information about the feeding value of it? C. L. DAVIS.

Wabaunsee County. No experiments have been made at this station in feeding millet-seed to any kind of stock.

Wabaunsee County. No experiments have been made at this station in feeding millet-seed to any kind of stock. Millet-seed is at present being fed quite extensively in the Northwestern States, especially in North Dakota.

A. M. TENEYCK.

In reply to your letter, which was forwarded to me by Professor TenEyck, of your station, I desire to say that millet-seed has been used to a considerable extent in this State as a grain for fattening pigs, for which purpose it has been quite successful.

Professor Henry, of the Wisconsin Station, made a trial of feeding ground millet-seed, cooked and mixed with raw cornmeal, in the proportion of two-thirds pigeon-grass seed meal and one-third cornmeal, and secured better results from the mixture than he did from feeding pure cornmeal.

A neighbor of the Experiment Station here at Fargo, N. D., used screenings consisting almost exclusively of pigeon- or foxtail-grass seed (which is nearly like millet in its composition) as a feed for horses, with excellent results.

In feeding millet-seed or millet-seed-meal it is advisable to gradually accustom stock to it, as they are likely to give poorer returns on account of a sudden change in the feeding. The fact that millet-seed has heated is not likely to make any difference in it for feed unless it proves cathartic in its nature.

J. H. SHEPHERD, Dean and Vice Director, North Dakota Agricultural College and Experiment Station.

Market Classes of Cattle.

The exhibit of market classes and the various grades of cattle at the World's Fair will be the first display of this character ever made.

The committee representing the experiment stations are to be congratulated on the success attending this feature of the animal industry exhibit prepared for the Universal Exposition.

The management of the Universal

Exposition announces as a feature of the cattle exhibit at St. Louis during September this exhibit of the market classes and grades of cattle. The exhibit is now being prepared by the Illinois Experiment Station under the direction of Professor Herbert W. Mumford, head of the animal husbandry department in the University of Illinois.

No experiment station bulletin ever attracted more attention than Bulletin No. 78 of the Illinois Experiment Station, in which Professor Mumford illustrated and described for the first time the various market classes and grades of cattle as recognized in the large American markets.

The exposition authorities believe that they can not do anything better calculated to serve the cattle-breeders and feeders, and the students of agricultural colleges, than to accord liberal space to this exhibit. One animal of each grade will be used to illustrate that particular grade. Each stall will bear a label showing to what grade the animal belongs, accompanying a brief description together with its market value and the use to which it is put.

The exhibit will comprise some forty-eight individual animals varying greatly in quality and condition from the prime steer of show-yard merit to the inferior canner.

In the beef-cattle class, prime, choice, good, medium, and common rough steers will be shown; in the butcher stock, prime, choice, good, and medium heifers; prime, choice, good, and medium cows, and choice, good, and medium bulls; among cutters and canners the good, medium, and common cutters and the good, medium, and inferior canners and bologna bulls; in addition to the above, stockers and feeders and veal calves of the various grades will be included.

If the East Turns to Wheat.

Recent experiments and observations have satisfied the Japanese Government that rice as a bone and muscle-producer is not comparable to wheat. Accordingly, an impartial edict has been issued providing for each soldier a daily ration of wheat flour. Not only does this mean a direct increase in flour consumption, but the lead thus given may, and probably will, be followed by the mass of the people, who will probably argue that what is necessary for the upbuilding of an efficient soldier can not but be beneficial to those engaged in the ordinary avocations of life.

I notice one thing, when I have my store clothes on everybody is more polite to me.—Billings.

WEEKLY WEATHER CROP BULLETIN.

Weekly weather crop bulletin for the Kansas Weather Service, for the week ending August 15, 1904, prepared by T. B. Jennings, Station Director.

GENERAL CONDITIONS.

The first part of the week was a continuation of the cool weather experienced so long this season but the last days were hot. Good showers have occurred in the extreme southwestern counties, a few central counties, and the extreme northeastern; light showers have been more generally scattered over the State.

RESULTS.

EASTERN DIVISION.

Early corn is maturing in the extreme southern counties, and in Chautauqua County is about ready to cut. Corn is needing rain, and in the central and northern the early corn needs it badly. Late corn is being cultivated and is growing. Thrashing continues being nearly finished in the southern counties and progressing rapidly in the northern. Plowing for wheat sowing is progressing where the ground is not too hard. Prairie haying is being pushed and a large crop of fine hay is being put up. Potatoes are a light crop in Johnson but promise a large crop in Marshall. Sweet potatoes are doing well in Pottawatomie. Apples are almost a failure in Jefferson, while summer apples are ripe and a good crop in Shawnee. Grapes are ripening in Woodson and beginning to ripen in Shawnee. Pastures are still good but are now needing rain.

Anderson County.—Corn needs rain badly; fall plowing delayed by dry, hard ground; hay crop fine; yield of grain continues light and of low grade. Atchison.—Prairie hay making progress, a good quality and yield; corn needing rain badly; ground too dry to plow; a destructive hail-storm passed over a small area in south part on the 9th. Bourbon.—Corn doing well but needs rain; oats being thrashed, but they are light in weight; farmers busy putting up prairie hay, which is a large crop. Brown.—Thrashing and stacking in progress, also plowing for wheat; ground too dry to plow well. Chase.—Corn needing rain; ground getting too dry to plow. Chautauqua.—A fine week for haying and other farmwork; some of our best corn ready to cut; cultivation late corn being rushed. Cherokee.—A good week for farmwork; corn doing well; wheat yield ranges from light to fair, smooth wheat yielding best; oats crop light. Coffey.—A dry, warm week; corn must have rain soon or perish; surface of ground getting very dry; good weather for haying and thrashing. Elk.—All growing crops need rain; a good crop of prairie hay being put up. Franklin.—Tame hay about all put up; thrashing the order of the day; oat yield ranges from light to fair, except what was cut during the rainy season which all spoiled; blue-grass seed ranges from fair to very good; flax crop light; timothy good. Jackson.—A good week for haying but rather dry for corn. Jefferson.—A dry week; corn very much in

County, is about ready to cut in Clay, ready to cut in Barton, and is being cut in Butler County and is a good crop. Plowing for fall wheat is progressing in many counties but is retarded in some counties by the ground being too dry and hard. Apples are a good crop of good quality in the southern counties. Summer apples are ripening in the northern counties and in Phillips County are of good quality. Grapes are ripening in the southern counties and are a good crop. Melons are being marketed in Clay County. Barber.—Corn-cutting begun; corn crop very fine; second crop of alfalfa all put up except that saved for seed. Barton.—Third crop of alfalfa ready to cut; plowing becoming general; ground weedy and baked hard; apple crop poor; grapes plentiful. Butler.—A good third crop of alfalfa being cut; corn still looks well but needs rain. Clay.—Thrashing in progress; wheat yield continues rather light; considerable wheat stacked and allowed to sweat; corn needs rain, especially late planted and weedy corn; early corn in roasting-ear; some corn firing; plowing retarded by dryness of ground; third crop of alfalfa about ready to cut; pastures and prairie hay fine; home-grown watermelons and muskmelons on market. Cloud.—Thrashing continues, yield fair; corn needs rain. Cowley.—A fine week for thrashing and haying; corn crop very fine; hay crop heavy and free from weeds; early corn now being fed; late corn needs one more rain; ground getting dry; apples plentiful, other fruit scarce; stock doing finely. Dickinson.—Crops beginning to need rain; ground getting dry and hard for plowing; corn earing well; thrashing and haying making



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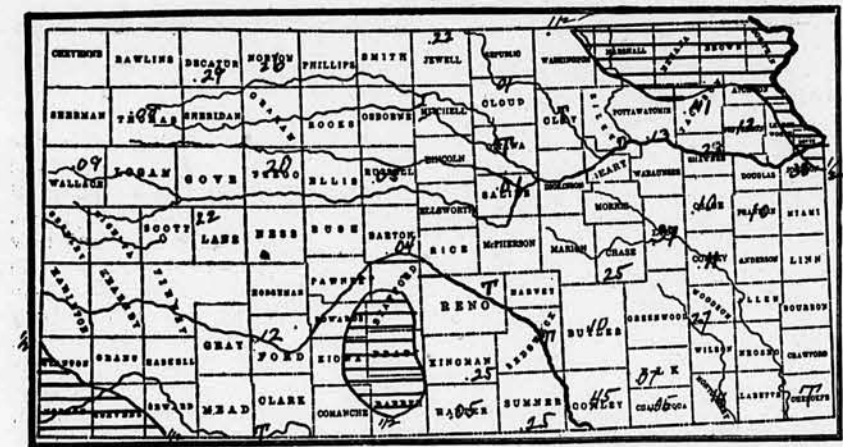
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need of rain; a good crop of hay being put up; apples almost a failure, pastures good but needing rain; gardens beginning to wilt. Johnson.—Corn would be benefited by rain; some late corn still being cultivated; plowing in progress; thrashing half done with light yield of wheat, oats, and English blue-grass; potatoes a very light crop; some buckwheat has been sown. Linn.—Corn needing rain badly; some reports of corn firing; ground getting too dry to plow; fine weather for thrashing and haying. Lyon.—Corn that has been cultivated doing well. Marshall.—Corn needing rain; a local shower benefited some corn but most of county very dry; potato crop will be large and of fine quality; pastures drying up some but there is plenty of water; good weather for haying but ground too dry and hard to plow. Montgomery.—A good week for growing crops and for plowing, and the latter half good weather for haying; thrashing nearly finished; yield generally light. Osage.—Ground baked; corn needs rain; haying in progress. Pottawatomie.—The week has been hot and dry; good time for hay-making; the pastures are still good; sweet potatoes are doing well. Riley.—Corn and late planted crops need rain but no damage has yet been done by drouth; a good week for thrashing; getting too dry to plow well; pastures showing effects of dry weather; most of the prairie hay put up—good yield and quality. Shawnee.—Early corn needing rain badly; some corn damaged by dry weather in north-west part; prairie haying in progress; fall plowing begun; ground very dry; blackberries and summer apples ripe; grapes beginning to ripen. Woodson.—A good week for haying; corn needing rain; plowing for wheat in progress; grapes ripening. MIDDLE DIVISION. Early corn is maturing in the southern counties and is a very good crop, cutting has begun in Barber and feeding in Cowley Counties. Corn, in general, is in good condition, but rain is needed now to continue it. Late corn has made good growth. Thrashing continues. Prairie haying is in progress and a fine crop is being put up. The third crop of alfalfa is in bloom in Sumner

good progress; shocked grain about all thrashed; fruit and garden truck abundant. Harper.—Getting too dry to plow for wheat in some parts; thrashing progressing rapidly; grapes ripening—fine crop. Jewell.—Thrashing in progress; early corn in roasting-ear; corn needs rain; too dry for good growth of other crops. Kingman.—Considerable plowing being done; ground getting dry; a good crop of hay being put up; thrashing continues; corn prospects encouraging; apples plentiful and of fair quality. Lincoln.—Plowing begun where the ground is not too dry; wheat yield not as good as expected; rain badly needed; subsoil moist but surface dry and hard; some corn firing. Ottawa.—Corn affected by dry weather; thrashing progressing rapidly with rather poor yield; pastures good; cattle doing well. Phillips.—Corn prospects continue very fine; wheat varies greatly, but will average a rather light crop; apples ripening and of good quality. Republic.—Corn injured by dry weather; rain badly needed; plowing almost at a standstill on account of dry ground; wheat yield rather light and of poor quality; oats a light yield but good quality; second crop of alfalfa nearly all stacked; bees doing well this season. Russell.—Wheat thrashing still in progress; plowing begun but the ground is rather dry; corn in good condition but beginning to need rain. Saline.—Warm and dry; all kinds of farm-work being rushed. Sedgwick.—Late corn looks fine but will need rain very soon; early corn made and a very fine crop. Stafford.—Corn doing nicely and promises a fair yield. Sumner.—Local showers delayed thrashing; from shock nearly finished; oats light yield and poor quality; wheat yielding fairly well; third crop of alfalfa in bloom; corn and all vegetables growing nicely. Washington.—No rain to amount to anything for a month; corn firing badly, and will be a failure in some localities; wheat and oat crops almost a failure; haying in progress. WESTERN DIVISION. Corn generally is doing well in the northern counties but has been injured by drouth in

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.

Sick Cats.—My cats are dying. They sit around a day or two and die. What is wrong with them?

Farret, Okla. Mrs. M. K.

Answer.—I give up. If you will describe symptoms fully, also open a dead cat and examine it carefully and describe the condition of the internal organs, I may be able to advise you.

Bloody Milk.—I have a brood mare that has been suckling a colt three months. This morning I noticed one side of udder was swollen and on pressure bloody milk would come from one opening. 2. A 4-months-old colt is ruptured at the navel about the size of a walnut. What can I do for it? 3. I have a jack with a sore on right hind fetlock about the size of a walnut. It has been there for a long time, but does not seem to irritate him except when he hurts the sore. He rubs it sometimes with his nose. W. H. C.

Salina, Kans.

Answer.—The mare's udder has been hurt or else some germs have gained entrance to it. An abscess may form. Bathe it with hot water and milk it dry twice daily, and apply an ointment made by dissolving an ounce of gum camphor in four ounces of fresh lard, by heating the lard.

2. A sharp blister put on over the rupture, say over a surface three inches in diameter, may cure it; but I would advise you to have it examined by a good veterinarian, as it may be necessary to operate on it.

3. For the jack, try an ointment of oil of arbor vitae (oil of Thuya) one part, vaseline six parts. Apply twice daily.

Heifer in Milk.—I have a pure-bred Shorthorn heifer, 2 years old, and pregnant four months, that is coming into milk, giving about a quart that looks like milk from a fresh cow. Is this usual, and should I milk her?

Hutchinson, Kans. W. E. V.

Answer.—It is not usual but does occur sometimes. I would not advise milking her unless the udder should be very full, and then only enough to relieve the pressure. Dry her off. Do not give succulent foods. Cut down her feed and give her dry feed.

Lame Mare—Fistulous Withers.—I have a 4-year-old mare that has been lame about four weeks. The right front fetlock is swollen but not tender to the touch. I fed her night before last and she seemed all right, but in the morning she had a lump on her withers as big as a man's fist. Is it a fistula and what will drive it away?

Carbondale, Kans. READER.

Answer.—Examine the foot carefully for a nail or other foreign body, as it will often cause swelling at the fetlock. If the trouble is at the fetlock bathe with hot water twice daily, for twenty minutes at a time, wipe dry and apply some good veterinary liniment. 2. I think a fistula of the withers is forming. They often show suddenly. Use the same treatment as for the fetlock but give it lots of thorough hand rubbing and rub it hard. If you had signed your name I would have sent you a press bulletin on fistulous withers, giving treatment.

Lame Mare.—I have a 6-year-old mare that has a swelled ankle, and is quite lame. She has been this way about one month. No wound in hoof or ankle. O. A.

Beverly, Kans.

Answer.—You do not give me information enough so that I can form an opinion. I should advise you to examine her foot very carefully for nail punctures. It is possible that she has been hurt. If so, bathe the ankle thoroughly with hot water, rubbing well and apply some extract of witch hazel,

rubbing it in well. You must hunt for the cause and, if possible, remove.

Lump on Fetlock.—I have a 7-year-old mule with a lump on the left hind leg at the fetlock joint as large as an apple. The lump is on each side and front of the joint and has been there about three months and is gradually getting larger. We opened it about a month ago but only got a thin, bloody water; the lump is soft. What can be done for it? W. G. C.

Dunlap, Kans.

Answer.—I don't know just what this condition is, but am inclined to think that it is something like a wind-puff. I would advise you to have him examined by a well-qualified veterinarian. If this enlargement is filled with joint-oil it will be dangerous to open it. The only thing I can suggest in the way of treatment is bathing it with hot water, wiping dry and applying a good liniment, rubbing it in thoroughly.

Abortion in Cows.—Will feeding millet hay cause abortion in pregnant cows? J. McG.

Hiawatha, Kans.

Answer.—No, it will not if the millet is of good quality, that is, not spoiled, and fed in reasonable amounts.

Tuberculosis.—I lost a 3-year-old Hereford heifer in June. She calved in March with much difficulty and did not do well. In May she began to cough in a dry, husky manner and would bleed from the nose and mouth occasionally. In driving her from the pasture she was taken with a hemorrhage from nose and mouth and fell dead. Do you think it was tuberculosis? Will there be danger of the other cattle taking the disease?

Newkirk, Okla. H. M. C.

Answer.—Your description indicates tuberculosis, although cattle rarely have hemorrhages. It is possible there may have been a tumor in her throat. The danger of other cattle contracting tuberculosis is not great where they are not closely stabled.

Bunch on Colt's Leg.—I have a 4-year-old colt with a lump on the hind fetlock that resulted from a kick four months ago. He is not lame but I would like to remove the lump.

Riley, Kans. J. H. W.

Answer.—Bathe with hot water for twenty minutes once daily, rubbing thoroughly. Wipe dry and rub in some good liniment well. Do not blister severely. I think it will be absorbed in time.

Abscess.—I have a young heifer that has a lump in the tissues just below the ear. It is not fast to the bone but is tender to the touch. What can I do for it?

2. At what age should male calves be castrated?

3. I have some shoats that came up with their heads twisted sideways. Sometimes they would fall flat and kick around in order to get up. The jaws of one seemed to be set. What ailed them? J. M.

Notch, Mo.

Answer.—I think your heifer has an abscess forming. It should be opened as soon as pus can be detected, and washed out well with a 5 per cent solution of carbolic acid. Keep it open until it heals from the bottom.

2. The younger calves are castrated the better, or just as soon as they can get up and about.

3. I think your pigs ate weeds or something that either poisoned them or caused acute indigestion, which would account for the symptoms.

N. S. MAYO.

Itch.—We have a 4-year-old imported Percheron stallion that has some kind of skin disease that is very itchy; it is on his legs and body. It seemed to affect his body the most at first, but now it is mostly on his legs; he is almost crazy when he gets warmed up; it started with lumps about the size of a pea to the size of a small marble; the lumps seemed to itch and he would rub and bite them until they were raw. The lumps do not seem to have any head nor does there seem to be any secretion of pus or matter; the sores are very red, and look very much like proud flesh, but heal over readily when I use carbolic salve on them and the hair started to growing



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nically. I have washed him several times with a solution of carbolic-acid water, about a 1-20 per cent; it seems to dry up the sores and they heal but it does not stop the itching. I secured some medicine from a veterinarian which was something like a chicken-louse medicine, but this does not seem to help him. He has been fed prairie hay, oats and bran mixed, until this last week when he has been feed alfalfa and oats. He got exercise twice a day until the last two weeks. He has had the run of a box-stall and yard.

Marysville, Kans.
Answer.—From the fact that you have been able to heal up the places on your horse's body and legs that were affected by lumps that caused itching, would advise you to use some lime and sulphur; the proportions and direction for using same will be mailed you under separate cover.

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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.

Catching Swarms.

EDITOR KANSAS FARMER:—Through the KANSAS FARMER I write for information about bees. I have caught three swarms in the last two weeks. The first one I put into a patent hive, and the others in just box hives, being unable to get any other. Being a new beginner, I wish information as to how to proceed, and where to get the best of hives, and if I can change them from the box hives to better ones. All light on the subject will be gladly received. H. V. WILLIAMS. Lincoln County.

Your beginning is all right, providing you start out in the right manner. You say you put the first swarm in a "patented" hive, but you do not explain just what this hive is, so that we can not tell whether or not it is a suitable hive to give you the best results. There are a number of so-called patent hives that have been discarded in years past, and so far as patents are concerned, the best hives of the present are not patented. The consumer, at least, is not required to pay a royalty on any hive, and all may be secured at actual cost of production. We have at the present time what we call the standard hive which is used by all leading beekeepers. It is a modification of the old Langstroth hive, and is usually called the "Dovetailed Hive." This hive is manufactured by all the different manufacturers of the country, and is kept on sale in every State in the Union, either at the manufactory, or at stations for distribution. Any supply dealer can supply you with them, and if you look up the advertising columns of the KANSAS FARMER you will doubtless find a supply house. The first and most important thing is to begin with the right kind of hives, and at the low price we can buy them properly made, it would be a mistake for us to undertake to make our own hives, for we could say nothing, besides we could never get up as good work as that done by scientific mechanics with expensive machinery made for the purpose.

After securing your hives, the next important thing is to also invest in plenty of comb foundation. It is the greatest blunder that any beekeeper can make to allow bees to build their own comb. Each and every frame in the hive should be filled with foundation comb, and also every section box used for comb honey must have a starter of foundation. To fill eight frames (the number used in these hives as a rule) it will cost about sixty or seventy cents in foundation, and a good swarm hived in such a hive, thus equipped, is worth more than three colonies hived upon empty frames, so that we should not hesitate in the least to use foundation freely.

You must not overlook the fact that there is also considerable in a good stock of bees. Keep only the pure Italian bees. Send to some reliable queen breeder and get a good queen, and for a season or two raise your own queens, but get fresh stock frequently. Do not keep old queens, but remove them from the hives after they are 2 years old, and introduce young queens. I would much prefer to requeen every summer or fall. Queens reared in spring are always most pro-

life, and less liable to swarm during the following honey harvest; and, as a rule, will give the best results in a good honey crop.

To transfer your bees from any kind of boxes to frame hives is very easily accomplished, and if the bees have been in the boxes but a few days, or even a week or more, you can come out ahead by putting them in a frame hive equipped with foundation comb by simply shaking them out of the boxes into the new hive, and if you can use the comb they have made in the box do so by cutting it out and fitting it in one or two of the frames, wrapping hard twine around the same to hold it in place until the bees fasten it to the frames. If not convenient to utilize these combs, let them go. Transferring is usually done early in spring, and any colony can thus be changed no matter how long they have occupied such hives. The reason we select this time of year is because there are less bees, and less honey in the hives, and a much better job can be done in getting a good fit of the combs in the frames. From the start you will need a good bee-smoker, for in this lies the secret of successful handling of bees without danger of stings. Any one with the help of a good smoker can handle bees as easily as a brood of chickens. A good smoker costs 50 cents up to \$1.50, but the highest priced are but little better. During the honey season bees are very gentle and need but little smoke at times to quiet them, but at other times when they are idle they are more irritable and it takes smoke to bring them under subjection.

The principal thing to keep in view at all times is to see that every colony has a laying queen, and a good, prolific one. We can introduce queens into queenless colonies, or we can give them brood from other colonies from which to rear a queen. A frame containing eggs, or brood just hatched from the egg should be given for this purpose, as they can not raise perfect queens from a brood of advanced stage. Brood will be found in the combs all through the year, except it may be in mid-winter months. If colonies are short of provisions in autumn to carry them over the winter, they should be fed during the warm months in the fall, as feeding can not be done in cold weather. Feeding also in early spring is of great benefit to them, even if they have a reserve store in the hive, it will add to their strength in numbers, and it is always the strong colonies that are of most importance.

Last but by no means least, get a good work on bees and study it, and thus post up on the management of bees. Send and get a copy of some good bee journal, and from this you will learn everything connected with the business. The American Bee Journal, Chicago, or Gleanings in Bee Culture, Medina, Ohio, are both good.

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 DEAR SIR:—I have used "International Stock Food" for three years and can recommend it. I mixed it in skim milk for calves (one-half measure for each calf) and they thrive as well as when fed new milk. It also prevents scours. Butchered one of my calves at six months that dressed 330 pounds. I would not feed stock without using "International Stock Food."
 T. H. ADAMS.

CURES OR PREVENTS SCOURS.

INTERNATIONAL STOCK FOOD CO., Minneapolis, Minn. WILLISTON, VERMONT.
 GENTLEMEN:—My cows had the scours when out to pasture. They fell short 200 lbs. of milk in one week. Went to feeding "International Stock Food" with the best of results. Also fed it to calves with scours. Would not be without it on my farm.
 Respectfully,
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"INTERNATIONAL STOCK FOOD" is 3 FEEDS FOR ONE CENT—won the Highest Medal at Paris Exposition in 1900 as a High-Class Medicinal Preparation, made from powdered Roots, Barks, Seeds and Herbs, to give to Horses, Cattle, Sheep, Goats, Colts, Calves, Lambs and Pigs, in small amounts as an addition to their regular grain feed to secure better digestion and assimilation so that each animal will obtain more nutrition from all grain eaten. Scientific authorities prove that the average animal digests 55 per cent. of the average kind of feeds. "International Stock Food" will cause them to digest 70 to 75 per cent. Many other kinds did not pay any war tax because they claimed to the government that they did not use medicinal ingredients and did not claim medicinal results. "International Stock Food" was a high-class medicinal preparation. You can afford to use preparations of this kind only on a medicinal basis. "International Stock Food" purifies the blood, "tones up" and permanently strengthens the entire system. It cures or prevents many forms of disease. It will save you \$10.00 per Year in the Feed of Every Horse You Work and its use will only cost you \$2.50 per year. It saves grain and 30 to 60 days' time in growing and fattening all kinds of stock and it endorses over one million farmers who have used it for fifteen years. It is absolutely harmless even if taken into the human system. Beware of the many cheap and inferior imitations and substitutes. No chemist can separate and name all of the ingredients we use. Any company or chemist claiming to do so is a Self-Confessed Ignoramus or a Paid Falsifier. Insist on having the genuine "International Stock Food."—It is sold by 100,000 Dealers on a "Spot Cash Guarantee" to Refund Your Money if it ever fails to give you satisfactory, paying results and its use only costs you 3 FEEDS FOR ONE CENT.—

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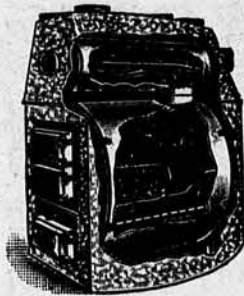
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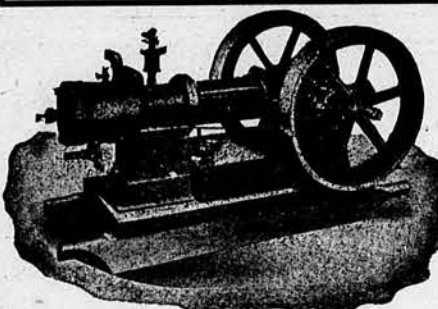
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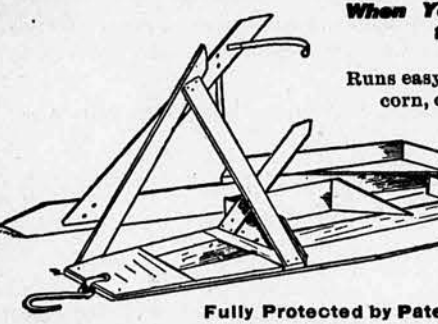
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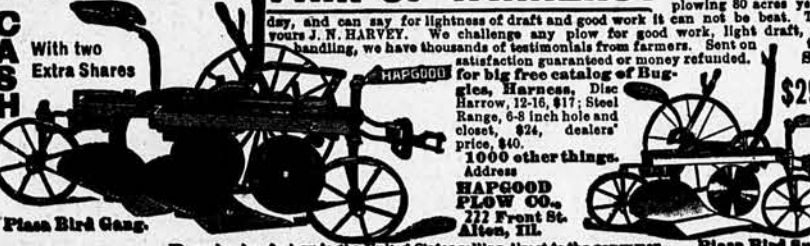


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