

# KANSAS FARMER

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## Agricultural Matters.

### WHY THE SOIL BLOWS.

Some years ago Mr. H. R. Hilton, of Topeka, delivered an instructive lecture on some of the problems of the soil, before an audience of farmers at Winfield. They have not forgotten it and when the winds seemed to be carrying the soil away recently an appeal was made to Mr. Hilton for information as to methods of prevention. The following is his reply as it appeared in the Winfield Courier:

One of the greatest difficulties to successful farming in the Southwest for several years past has been soil "blowing." Every farmer has experienced the difficulty, but few have studied intelligently the cause. In this level country until sufficient windbreaks are grown, which will require years, the spring winds will have a fair sweep at the fields, and the results, unless something is done to prevent it, will be disastrous to the fields.

It is no uncommon sight in this country after a hard windy day in the spring to see wheat-fields stripped bare to the hard ground, the surface soil packed in banks in the road or against the north fence.

The cause is plain and the cure apparent. The vegetable matter which retains the humus in the soil has been exhausted and there is nothing left to hold the particles together. But this vegetable matter serves a double purpose. It not only furnishes the necessary fiber to the soil but is also an absorbent, gathering and holding moisture.

It is a fact which will be substantiated by all old residents, when this country was new and the soil full of grass roots there was no such thing as soil blowing or crop failures known. But as the country got older and everybody went to raising wheat, the seasons became less certain and the soil less productive. Wheat stubble plowed under failed to rot, which was fatal to the next crop, and soon the custom of burning stubble became universal and the soil has been systematically robbed ever since, until a wheat crop has become a constant source of worry, doubt, and uncertainty from the time the seed is planted until the harvest is ripe. It was with the idea of securing suggestions to overcome this difficulty that the Courier requested a contribution from Mr. H. R. Hilton, of Topeka, on the subject, and in his reply it feels amply repaid. He tells why the condition exists and how it may be overcome in a way not to menace the succeeding crop. In following his suggestions it is probable that the number of acres will necessarily be curtailed, but there is no question that the same amount of labor heretofore expended if applied to smaller areas will produce greater and more satisfactory results. Read what he says, read it carefully, then file it away, and after a while read it again. It is full of meat for western farmers. Following is his contribution:

The increased tendency of soils to bake after rains and blow when dry as the years roll by is due largely to the decrease of "humus" or decaying vegetable matter in the soil.

If this is the cause, the remedy is apparent, and it is only necessary to suggest some of the methods that a farmer can employ in restoring to the soil that valuable element of which he has been so industriously robbing it since the day the prairie sod was broken.

First—Add vegetable matter to the soil by plowing under all stubble, corn-stalks and manure, six to nine inches deep. If a crop is to be planted within two months of the time of plowing, the land should be well disked before plowing and disked at least four times immediately after plowing, setting the disks at that angle at which they will sink the deepest and turn the soil the least. The object of this is to prevent the dry stubble or stalks from drying out the soil by holding it up in loose form and to insure concentration of moisture around the stalks, starting decomposition, and thus insuring a moist soil for the growing crop instead of a dry one. If wheat is not seeded in the corn-stalks, the stalks should be broken down in the fall, cut up as much as possible with a stalk-cutter and then disked. This contact with the soil all winter makes them soft and "fozy" so that if the land is plowed or listed in the spring they will soon decay and disappear, and in no event can they be nearly so troublesome as when allowed to remain standing until spring before breaking them down. Corn-stalks rightly handled are worth more than 50 cents per acre to the next crop.

Second—By growing green crops specially to be plowed under.

Corn, Kaffir, rye, or weeds will form humus, and these can be raised as catch crops following wheat or oats. But it is much better to sow cow-peas or soy-beans because these are so much richer in nitro-

gen and will add more fertility than they remove.

These green crops should be plowed under before going to seed, say in September and October, and all the ground plowed in the forenoon disked before noon, and all plowed in the afternoon disked before un-hitching for the night. Rye should be immediately sown to prevent blowing during winter and this rye will furnish enough available food to the next corn crop to pay for the seed and labor. After two green crops have been plowed under and become a part of the soil the necessity for seeding rye will not be so great, as the added humus improves the physical structure of the soil, increases its water-holding power and decreases the tendency to blow.

This season is giving many farmers in Cowley County a splendid opportunity to test this matter. There are in many wheat and oats fields spots where the grain is thin, and during these rainy days the weeds are gradually taking the crop. Select a small tract and plow under all the weeds and trash just as soon as the ground will work right. Thoroughly disk the same day as plowed and harrow two to three inches after every good rain till seeding time. Compare this with similar soil adjoining from which the wheat is removed, plowed and prepared in the customary way, and note the effect of the new treatment on fall seeded wheat.

There are a few things worth keeping in mind in connection with this subject. One is that when the surface soil blows the sub-soil is invariably dry, and it rarely happens that the top three inches of dry soil will blow when it rests on a well-pulverized moist soil beneath. This will be specially true when the soil is made rich in humus.

Another thing worth remembering is that vegetable matter can absorb water and become soft in winter but there is little decay except when the soil temperature is above 40°. The soil bacteria are practically dormant at a lower temperature and these are the agents that promote the rotting and conversion of the organic matter into the elements that make up the food of the plant.

The increase of humus and of depth of finely pulverized soil are essential to a larger water-holding capacity in the soil.

Three inches of dry soil on the surface to act as a mulch is essential to check the waste of the soil moisture. When a rain destroys it the harrow or cultivator should promptly restore the dry earth mulch.

A goodly supply of water in the soil is essential to prevent the surface soil from blowing. Why the moist soil below checks the tendency of the dry soil above to blow we do not know, but science will some day ask and receive from nature an answer to the query.

One more thought. Nearly one-half of all the rain that falls on Cowley County farms during June, July, and August evaporates into the air again from the surface of the ground within three or four days from the time it falls if the soil has been left undisturbed, and it is for this reason that Cowley County uses only one-third of its summer rain and one-fourth of its annual rain in the growth of its crops. When its crops use one-half of the summer rain, which is possible, then the average annual crop of Cowley County will be doubled.

### A Digestion Experiment With Alfalfa Hay.

Press Bulletin Kansas Experiment Station.

The chemical department of the Kansas Experiment Station has just completed the analyses upon one of a series of digestion experiments with alfalfa. In this experiment, hay was used which was cut when in full bloom and was fed to a 3-year-old grade Hereford steer. The results of the analyses show that the air-dry hay contained digestible nutrients as follows: Crude protein, 10.43 per cent (consisting of albuminoids, 7.86 per cent, amides, 2.57 per cent); fat, 0.69 per cent; crude fiber, 15.99 per cent; carbohydrates, 28.18 per cent. Total digestible nutrients, 55.29 per cent. Let us compare these last figures with those representing the total digestible nutrients contained in some of our most common feeds used for dry roughage. Millet contains 57.6 per cent; oat hay, 52.2 per cent; orchard-grass hay, 48.2 per cent; timothy hay, 48 per cent; prairie hay, 46.7 per cent; sorghum hay, 44.2 per cent; red clover hay, 43.9 per cent; oat straw, 43.9 per cent; wheat straw, 39.2 per cent, and corn-fodder, 35.8 per cent. We find that only one of the ten feeds named is equal to or exceeds alfalfa in its total content of digestible nutrients, while the larger part of them are far below it. This is not a fair measure of its feeding value, however, unless we also take into account the composition of these nutrients. As a rule it costs much more to produce feeds rich in protein than it does those rich in carbohydrates, and consequently, of two feeds containing an equal amount of digestible nutrients, the one containing the most protein is the most valuable. Comparing alfalfa in this respect with the above-named feeds, we find

that it ranks far ahead of the richest of them. One hundred pounds of alfalfa hay contains 11.13 pounds more digestible matter than the same amount of red clover hay and one and a half times as much protein. It contains only 2.3 pounds less of total digestible nutrients than the same amount of millet hay, and almost two and a half times as much digestible protein. It contains two and a half times as much digestible protein as oat hay; three times as much as prairie hay; more than four times as much as sorghum hay; five times as much as corn-fodder; six and a half times as much as oat straw and thirteen times as much as wheat straw.

In feeding value, alfalfa hay not only ranks high above all other feeds used for roughage, but it is well up among the more concentrated feeds. One hundred pounds of it contains 3.3 pounds more of total digestible nutrients than wheat bran, and almost as much protein. It is richer in digestible protein than wheat, corn, oats, rye, barley, Kaffir-corn or sorghum seed.

Its digestible nutrients have a nutritive ratio of 1 to 4.4. There are only a few feeds, such as wheat bran, linseed-meal, cottonseed-meal, and soy-beans that furnish as narrow a nutritive ratio as this. Alfalfa hay, therefore, is an ideal feed to use in balanced rations, and is especially valuable to combine with corn as a ration for fattening steers, since it furnishes all the roughage necessary and is also a cheap source of protein. It is an ideal dairy feed, furnishing almost the exact nutritive ratio required for the highest yields of milk. Its value as a feed for hogs has been shown in results previously published by this station.

### Selection of Seed Wheat.

Press Bulletin Kansas Experiment Station.

It is common among corn-raisers to maintain or improve a given variety by selection of the seed. Ears showing desirable characters are set aside, and furnish seed for the succeeding crop. Though not so convenient, this method can be applied with equal success to the selection of seed wheat. The Experiment Station of the Kansas State Agricultural College is endeavoring to breed up improved varieties of wheat. There is no reason why the simple method of selection should not be applied by the individual wheat-raiser. We would advise the following procedure: Before harvesting, the grower should go into the wheat-field and select a number of the most desirable heads. The basis of selection depends upon the wishes of the individual, but is carried on as in the case of corn. Usually it will be upon the basis of yield and quality. In this case the heads selected should be large, well-formed, and with plump, uniform grains. The grain derived from these heads should be grown upon a plot of ground under the most favorable conditions. The grain gathered from this plot furnishes the seed for the third year. But, before harvesting, a selection of suitable heads should be made from this for the next seed plot. In this way the seed is each year improved or at least maintained at its present standard. The size of the seed plot depends upon the total area of wheat to be grown. Furthermore, the seed plot may be given much more careful treatment than is applicable to the field. It is best to have the seed plot within the main field so as to be entirely surrounded by wheat. This lessens the loss from grasshoppers and other insects, and gives the plants better protection.

### A REQUEST.

The Experiment Station of the Kansas State Agricultural College wishes to develop improved varieties of wheat, and desires where possible to base the development upon varieties already found suited to Kansas conditions. For this purpose we desire samples of wheat from various localities in the State. We would, therefore request those interested in this work to send us samples for trial. We prefer to have the samples selected from the field just before harvest. A few heads will be sufficient, and can be sent by mail. The heads should be carefully selected, and enclosed in such a way that the grains will not escape. It would be desirable if each head could be wrapped separately. At the same time the person should send us information concerning the variety, especially the following: Date of gathering; name of variety; history, so far as known, (where obtained, and how long grown on owner's farm); date of sowing (at least approximately); characters which recommend it (stooling, resistance to winter, drought, chinch-bugs, or rust, uniformity of growth, etc.); characters which are unfavorable. These notes should not be enclosed with the samples unless letter postage is paid. Address Botanical Department, Experiment Station, Manhattan, Kans.

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It is equipped with  
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with stagger oval spokes, broad tires, etc.  
It has angle steel hounds front and rear. It's low down and easy to load. One man can load it; saves an extra hand in hauling corn fodder, etc. A pair of these wheels will make a new wagon out of your old one. Send for free catalogue and prices. Electric Wheel Co. Box 46, Quincy, Ill.

### Oil in Road-making.

Since oil has become an important Kansas product, the following contribution to the Country Gentleman may be of interest:

The advantages to be gained from the use of oils in their various forms are numerous and great, and seem to be constantly increasing. It has been known for many years that oil is wonderfully efficacious in calming troubled waters, and it has been used extensively for that purpose in cases of severe storms at sea. More recently a number of leading railroads have experimented with it in sprinkling their road-beds, in order to lay the dust and fine cinders, and have found it very useful in this respect, as it accomplishes the object sought, and is very lasting in its effects as well.

A few years ago an accident showed that not only could dust be effectively laid, but earth could also be so thoroughly compacted by the application of oil that it would form a firm and lasting road-bed. The discovery was made near Grand Valley, Pa., at a spot where a plug was forced out of an oil line and a quantity of oil spurted out over the road. It was in winter, and the snow was thoroughly saturated for about a rod all around, and the oil was still farther spread about four rods, by the feet of passing horses and the runners of sleighs.

The road at this place was of clay bottom, with mud from 10 to 20 inches deep on it in wet times, and in dry weather having from 3 to 6 inches of dust. But the particular stretch which had been wet by the oil seemed to have changed its character—it remained hard and firm in spite of rain, and kept free from dust during dry periods. For three seasons these conditions have remained. Mr. J. B. Winger, who noticed and described these phenomena, and who states that he has devoted his life, since the discovery of oil, to its development, says of it:

"Oil and earth have an affinity for each other, and, when united in proper proportions on a road-bed, are for a long time inseparable. The oil on a road-bed prevents the earth from rising in dust and excludes water, and hence the impossibility of mud. It looks reasonable that an oil-treated road, properly shaped, will remain mudless; when snow falls, even in small quantities, it will give good sleighing, and when the snow goes in the spring it will be ready for comfort, pleasure and business. In the employment of crude oil for good roads no change need be made in the mode of construction now in general use. The road-bed should be properly shaped with machinery, and immediately after working and forming, and while the earth is loose and best adapted for the absorption of oil, the oil should be applied, after the manner of sprinkling streets. The quantity of oil to the rod of road can only be determined by experiments and actual tests. The writer's opinion, based on observation, is that one barrel of oil to each three rods of road will suffice. This, if the writer has not erred in figures, will be oil to the depth of one-third of an inch."

The publication of these observations and conclusions led to investigation of the subject in order further to test the practicability of using oil in this way; and at the recent good-roads convention, held in St. Louis, Maj. Meigs, of Keokuk, Iowa, de-



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**5 TON WAGON SCALE**  
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SCALES SENT ON TRIAL TO RESPONSIBLE PARTIES  
CATALOGUES FREE; DROP US A POSTAL.



some of his experiments. He had a quantity of crude oil, and used it on a notoriously muddy road with very satisfactory results; it formed a sort of water-proof crust on the surface, keeping the road dry beneath it, and affording a smooth surface for travel. A barrel of oil was nearly sufficient for a road about 100 feet long and 12 feet wide. Up to the present this stretch has held out well, but longer time and the spring rains are necessary to complete the test.

At 200 feet of road was well sprinkled with 10 feet more lightly, eight barrels of oil used for the purpose. The day after the sprinkling a heavy rain fell, and the difference between the oiled and the portions was dry, and no ruts had formed in it, while the unoled part was full of ruts. Then came a hard freeze, with a temperature below zero. The oiled section was not so much affected, and gave a muffled sound when driven over, indicating that the earth beneath was dry and unfrozen, while the unoled part was in very bad shape.

In the experiments thus far made, the writer concludes that before oil is used on a road it should be smoothly and well rounded, so as readily to penetrate the earth imperfectly, and will be carried off by the wheels of the vehicle; that the surface should be rolled and oiled, in order to distribute the oil, as it has a tendency to collect in the ruts and hollows. Crude oil costs 60 cents a barrel at the wells. Its odor is disagreeable, and oil from which the naphtha and kerosene have been extracted is preferable to apply in warm weather. When cold the heavy oil becomes too stiff to be applied without heat.

Further experiments and longer tests will demonstrate the correctness of present inferences. Improved roads can be secured at a wonderfully low cost. The oil for a road 12 feet wide could be had for probably less than \$50 a mile; it would not need to be repeated very often, and the required would not be expensive.

## The Stock Interest.

### THOROUGH-BRED STOCK SALES.

Claimed only for sales which are advertised or advertised in this paper.

NOV 10—N. H. Gentry, Berkshires, Sedalia, Mo.  
NOV 27—Hamp B. Watts, Herefords, Fayette, Mo.  
NOV 17—George Bothwell, Shorthorns, Kansas City, Mo.  
NOV 18—H. C. Duncan, Shorthorns, Kansas City, Mo.  
NOV 19—Thos. W. Ragsdale, Shorthorns, Kansas City, Mo.  
NOV 20—John Burrus, Shorthorns, Kansas City, Mo.  
NOV 28—E. E. Axline, Poland-Chinas, Oak Grove, Mo.  
NOV 1—W. T. Clay, Shorthorns, Kansas City, Mo.

### FEEDING AND CARE OF HEAVY HORSES.

A year ago it was almost necessary to beg for the farmers present when advertising "Breeding and Care of Heavy Horses," even in connection with mixed farming, as the low prices for heavy horses almost driven the farmers in these counties out of the business; but this is changed, and although old prices are not realized, still the business is on a fairly good footing, and paying prices are freely given for horses weighing 1,200 upward. Perhaps in no department of farm work have farmers gone from extreme—of breeding as many horses as possible—to the other—of breeding none at all—forgetting that it takes six years to raise one has an animal fit to offer upon the market, until to-day buyers of heavy horses are scouring the country everywhere in vain effort to satisfy their customers, according to weight and quality, where from \$75 to \$150, and in some cases a good deal more; and now farmers more than regretting having parted with their best mares.

In breeding heavy mares, a pure-bred should be used, either a Clyde or a Percheron, although I think the best results are obtained from the use of the Clyde. The aim should be a high one, and the following points found in a stallion should constitute an ideal one, full of character and quality, viz: A good, broad, not too fine muzzle, good, open nostrils, full and vigorous eye, broad forehead, the ears fairly long and active. These points will to a great extent determine the head. The head well set on the neck, the neck should be strong and somewhat arched for appearance sake; shoulders somewhat sloping, giving the long, quick step; strong, broad forearm, flat, broad knee, below the knee a covering of flowing hair; feet sound and well shaped; a back too long, round ribbed, chest broad

and full; hind quarters should be broad and low set, muscular thighs, fairly broad hocks, and pasterns not too straight. The mare should have a good many of the above points and should never weigh less than 1,200 pounds, and as much more as possible. Brown, bay, and black are the favorite colors, although, as often said, a good horse can never be a bad color. By the union of such a stallion and mare as have been described, if there is any truth in the saying that "like will produce like" there can be little danger of not successfully breeding a heavy horse that will, when 5 years of age, command a good paying price.

The dam may be advantageously used with light work when carrying her foal, and on no account should be pampered—rather let her have the run of the barnyard. The foaling season is one of considerable anxiety and an attendant should be on hand if at all possible. In this country and many others as well, great losses have been caused by a trouble called "colt's disease." Veterinary surgeons now know this disease to be caused by a germ entering the navel, and causing swollen joints, and sometimes even lockjaw. Prevention is better than cure any time, and by the frequent application of diluted carbolic acid to the navel during healing this serious trouble can be prevented.

The colt should be halter-broken as soon as possible, thereby saving a great deal of trouble later on. The dam's nurse should be sufficient, but if an addition is necessary a little bran and ground oats will give good results. The colt should be weaned when about 5 months old, and should be fed some clover hay, ground oats, bran, pulped carrots or turnips and cut straw, receive water regularly, and have plenty of exercise. Salt should never be forgotten. Ground flaxseed, fed say three times a week, in moderate quantities, will be found a cheap medicine to all horses with perhaps the exception of mares with foal. This course will answer for winter months, until the colts are nearly 3 years of age, and the pasture should be sufficient for summer months, but no colt should be exposed to the late fall rains or cold weather. When coming 3 years old the colt should be bitted and then broke in and used for light work during the winter months, and as spring draws near more feed should be given and the colt is ready for its life work. Grooming and plenty of it will now pay, and great attention should be given to both feet and legs; see that they are kept thoroughly clean. When ready to place him on the market, put him in the pink of condition, as flesh on the horse pays as well as flesh on the bullock, and no one can do this as cheaply as the farmer himself.

In breeding and caring for the heavy horse there will be some losses and disappointments, but with present prices, and with a firm belief that the heavy horse will always be required for town and city dray work, I think that mixed farming can not be as successfully carried on as it should be unless this particular line forms a part. —Wm. Smith, Ontario, before Farmers' Institute.

### Terms the Feeder Must Understand.

"Protein makes me tired, carbohydrates make me sick, and nitrogen is a mystery." That is what the countrymen say when they study the terms in the scientific feeding of live stock. But the day is coming when farmers will have to feed correct rations, and in order to do so they must learn the meaning of a few terms.

Farmers pick up books and they begin to read them and the first thing that happens is that they run across words they do not understand and that is the end of it. The writers do not understand their language so much as they might do, and the reader soon gets tired of trying to understand things which are not well explained.

There is not so much difficulty if one is determined to overcome it. There are not so many words as one would think that require explanation. In one of the farmers' bulletins just issued by Uncle Sam there appears a memorandum of terms used in discussing feeding-stuffs. Any one who will read them over with a determination to understand them will find the principal difficulty removed.

Ash is what is left when the combustible part of a feeding-stuff is burned away. It consists chiefly of lime, magnesia, potash, soda, iron, chlorine, and carbonic, sulphuric, and phosphoric acids, and is used largely in making bones. Part of the ash constituents of the food is stored up in the animal's body; the rest is voided in the urine and manure.

Carbohydrates.—The nitrogen-free extracts and fiber are often classed together under the name of carbohydrates. The carbohydrates form the largest part of all vegetable foods. They are either stored up as fat or burned in the body to produce heat and energy. The most common and important carbohydrates are sugar and starch.

Dry matter is the portion remaining after removing or excluding the water.

Fat, or the materials dissolved from a feeding-stuff by ether, is a substance of mixed character, and may include, besides real fats, wax, the green coloring matter of plants, etc. The fat of food is either stored up in the body as fat or burned to furnish heat and energy.

Fiber, sometimes called crude cellulose, is the framework of plants, and is, as a rule, the most indigestible constituent of feeding-stuffs. The coarse fodders, such as hay and straw, contain a much larger proportion of fiber than the grains, oil-cakes, etc.

Gluten is the name given to one of the most important of the nitrogenous substances classed together under the general term "protein." "Wheat gum," obtained by carefully chewing wheat, is a familiar example. It is the gluten of flour that gives consistency to dough.

Nitrogen-free extract includes starch, sugar, gums, and the like, and forms an important part of all feeding-stuffs, but especially of most grains.

Protein (nitrogenous matter) is the name of a group of substances containing nitrogen. Protein furnishes the materials for the lean flesh, blood, skin, muscles, tendons, nerves, hair, horns, wool, casein of milk, albumen of eggs, etc., and is one of the most important constituents of feeding-stuffs.

Water is contained in all foods and feeding-stuffs. The amount varies from 8 to 15 pounds per 100 pounds of such dry materials as hay, straw, or grain, 80 pounds in silage and 90 pounds in some roots.—Farmer and Stock Grower.

### Don't Scatter and Don't Wabble.

The introduction to the annual report of the Kansas Improved Stock Breeders' Association is by Mr. F. D. Coburn, secretary of the Kansas State Board of Agriculture.

He makes it clear that the essentials to success in breeding and feeding live stock are good judgment in selecting the breed best adapted to the use for which the animal is intended, and best adapted to the habitat in which it is to be bred and fed, and second, intelligent feeding and management for securing the largest numerical increase and the greatest vigor, and for securing the proper growth and development of each animal, and third, determination to stick to the chosen breed and persistently strive to gain a higher degree of excellence than ever before reached. The necessity for deliberation in choosing the breed, and in loyally sticking to the breed chosen, is forcibly and tersely brought out in the aphorism "Don't scatter and don't wabble."

The most prevalent form of scattering is that of the farmer who concludes that it would be a good idea to obey the stereo-

## "Pride Goeth Before a Fall."

Some proud people think they are strong, ridicule the idea of disease, neglect health, let the blood run down, and stomach, kidneys and liver become deranged. Take Hood's Sarsaparilla and you will prevent the fall and save your pride.

**Hood's Sarsaparilla**  
Never Disappoints

typed injunction to "keep a few sheep," and in getting a few he gets any that happen to come handy; and instead of keeping the sheep he lets the sheep keep themselves.

Without the exercise of good judgment in selecting the foundation stock for a profitable flock there will be little profit letting a few sheep keep themselves. It is when animals are selected for a definite purpose and bred and fed with that purpose steadily in view that they should hold a place in the farm economy.

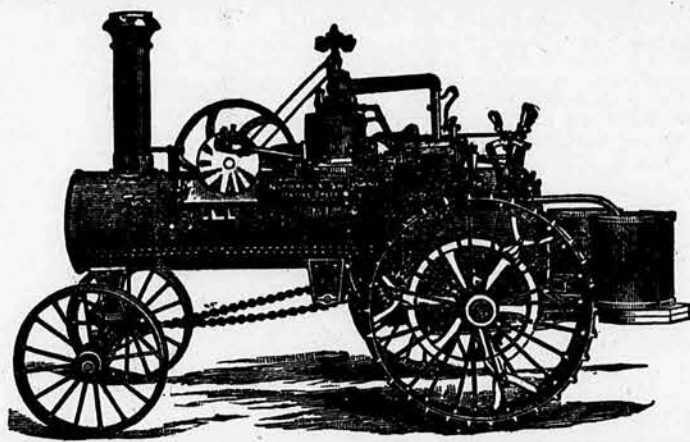
The choice of breed for foundation stock should include careful selection of the best individuals obtainable, because it costs no more to raise good ones than it does to raise poor ones. The choice once made should be adhered to. Any change should come only as an acknowledgement of an error in the first choice. In breeding sheep, as in anything else, it is only determined adherence to a fixed purpose that brings success. The wabbling flockmaster gathers no moss.

Choose with full knowledge of the requirements to be met. Use judgment and discrimination in making the choice; start right, stick right to your choice, and remember that an ill-advised departure may undo the work of many years. Choose, stick to your choice, concentrate your effort. "Don't scatter and don't wabble."—Wool Markets and Sheep.

Breeders of pure-bred sheep should not be bashful about mentioning their business in the advertising columns of the Kansas Farmer. Parties who want to buy thoroughbred rams are becoming louder in their complaints of difficulty in finding such as they want.

**A \$5 Genuine Meerschaum or French Briar Pipe for 15 Cents.**

This is no lottery, gift enterprise or scheme of any kind, but a square proposition and a chance for every pipe smoker to get a splendid pipe for a mere song. Send 2-cent stamp for particulars. B. F. Kirtland, The Pipe Man, Trade Building, Chicago.



## The Nichols-Shepard TRACTION ENGINE

Nothing that helps to make a perfect road and thrasher engine has been left out or slighted in the construction of the Nichols-Shepard Traction Engine. Everything has been done that science, skill and experience could suggest to add to its effectiveness, power, durability and safety from explosion and fire. The boiler is of the very best selected steel, thoroughly well made and provided with every approved safety appliance. The fire-box is surrounded by water—top, bottom and sides. The draft-damper is so made that sparks and ashes can't drop out, and the smoke-stack is fitted with patent bonnet and spark-arrester. Every part is strong, durable and is thoroughly tested.

Detailed descriptions and many illustrations of the Nichols-Shepard Traction Engine and of the Nichols-Shepard Separator and other threshing machinery are contained in large catalog—mailed free.

**NICHOLS & SHEPARD CO., Battle Creek, Mich.**  
Branch House at KANSAS CITY, MISSOURI,  
with full stock of machines and extras.



## Topeka Horse Show.

The Topeka Exposition Company held the first annual horse show at the Topeka fair grounds, in connection with the race meet, June 20, 21 and 22, 1899. The races and show would have continued on the 23d had not a heavy rain prevented.

Notwithstanding the loss of the grand stand on Wednesday by fire, the races and horse show were both considered a success. Many fast horses were entered in the races, and the track record was broken in the trotting class. On Thursday, the 22d, the business houses of the city closed and the attendance at the fair grounds was all that could be expected.

We have not space to write up the races, but will give a sketch of the horse show feature.

The first event was the gentlemen's drivers (trotters or pacers hitched to buggy or road wagon; style, action, and speed of horses, only, to count). The following entries were made in this class: Dick, F. E. Wear, Topeka; Dan, Harry E. Gavitt, Topeka; Velma, W. I. Miller, Topeka; Belle Harris, Geo. P. Stitt, Topeka; Pat Sherman, Geo. Burghart, Topeka; Mildred Wheeler, F. H. Foster, Topeka; Prince, C. B. Merriam, Topeka; Free Sprague, Chas. Blood Smith, Topeka; Dan McGregor, R. P. Van Hook, Topeka; Daisy A., G. D. Adams, Topeka; Alfonso, D. W. Kent, Topeka; Mack, Newton Kreipe, Topeka; Dollie Evans, M. A. Low, Topeka; Ashland W., M. A. Low, Topeka; Lynda, Geo. S. Pritchard, Topeka.

Prizes in this class were awarded to

F. E. Wear took first prize, D. W. Kent second, and M. A. Low third.

In the ladies' driving class there were several entries, but only two contestants. Mrs. F. A. Lewis took first and Mrs. D. M. Duggan second.

Class eight, best tandem to cart. F. E. Wear entered Dick and Major; M. A. Low, Jack and Princess; Lukens Brothers, Bess and Maud; O. M. Keats, Cascaria and Ashland; Garry Burton, Trainer and Hobart. Cascaria and Ashland captured first, Dick and Major second, Hobart and Trainer third.

In the doctors' race, Drs. Ellinger, Lindsay, and Lyon were the contestants. Dr. Lindsay won the first prize hands down, Dr. Ellinger second, and Dr. Lyon third.

Class thirteen, the best tandem hitch. A. E. Ashbrook was an easy winner of first; O. M. Keats took second, and F. E. Wear third.

In the lawyers' race Lit Crum, driving Cy Leland's Golden Rod, a well-trained turf horse, took the blue ribbon, D. W. Kent the red, and F. H. Foster the yellow.

The last and most hotly contested class was that of the gaited saddle horse. H. H. King, Valencia, rode Rex, a beautiful brown horse and well educated. F. E. Wear rode Larry, a fine bay horse and a very pleasant saddler. C. S. Eagle rode Frank, a beautiful black. F. L. Ewan rode Miss Bartlett, a nice little bay mare, and O. M. Keats rode Black Man, a splendid black squirrel saddler. The contest was long and fiercely fought. The horse show rules were strictly followed and the standard gaits required of each horse. The blue ribbon was

men in Canada is worth consideration, and is one of many letters received from men who are now using largely Galloway bulls. Galloway bulls always bring a good price and are always in demand for the ranges. While there has been no large amount of hustling done by Galloway breeders, they have, as a rule, found ready sale for all of their surplus stock, and the transfer record in the office of the association shows a gain of 100 per cent over last year.

FRANK B. HEARNE.

Independence, Mo.

## Gossip About Stock.

There is no State in the Union where the stock-raising and agricultural community is more progressive or quicker to take advantage of sensible ideas than in Texas, says the Drovers Journal. Farmers have learned that diversified crops pay better than one thing which is liable to failure, hence about everything is raised in Texas that is indigenous to the soil. Stockmen have learned that long horns detract from the salability of the animal, and so long horns have been tabooed. They have learned also that a 2- or 3-year-old steer will sell better than one 4 or 5 years old, and that by the infusion of better blood and a little care in feeding they can produce as good beef as ever graced a butcher's block. All these things have taken place within a comparatively few years, but the metamorphosis still continues. Kansas stockmen learned this lesson some years ago and are prepared to vouch for the Journal's statement.

Preventive vaccination for blackleg was introduced to American stockmen by the Pasteur Vaccine Company in 1895. "Pasteur Vaccine" is nowadays a household word in those parts of the country where blackleg is troublesome. The Pasteur vaccines have for the past four years been used with the greatest success and satisfaction, and the former heavy losses from blackleg have been practically eliminated by those stockmen who have been wise enough to avail themselves of Pasteur vaccine. The Pasteur Vaccine Company, always to the fore, is now furnishing its blackleg remedy in a form which is all ready for use, the only instrument required being a special needle, which is furnished with each package. No mixing, no filtering, and no hypodermic syringe with its intricate parts! This new form of blackleg vaccine has been given the name of "Blacklegine" in order to distinguish it from the powdered vaccines. The Pasteur vaccines, both of the "single" and "double" kind, as well as "Blacklegine" are furnished only by the Pasteur Vaccine Company, whose headquarters are at 52 Fifth avenue, Chicago, and we recommend our readers to write to them for further particulars on the subject.

A few days ago Dr. J. H. Snoddy, of Alton, Ill., the discoverer of the Snoddy remedy for hog cholera, received an urgent call from Gerrard & Zeigler, extensive stockmen and swine-breeders at Monroe, Platte County, Nebraska, to come at once and treat their herd of hogs. The Doctor, though a very busy man, went at once, arriving at Monroe Thursday, June 15. He found the herd in a very bad condition, dying at the rate of five and six per day. The disease first struck the home herd of over 200 head, of different sizes and ages, but principally young pigs ranging from 1 week to 2 months old and over, and for this reason will prove a most severe case. The Nebraska Farmer, speaking of this case, says: "We do not take hearsay evidence in this case, but at once dispatched one of our most experienced representatives to the scene of action, to carefully note the condition of the herd when Dr. Snoddy first took it in charge. The hogs and pigs were all more or less affected, 100 or more of them in very bad condition. Yet the Doctor says that he will save over 90 per cent of all those that eat or drink of his medicine. The outcome will be watched with considerable interest and will be faithfully reported, whether a success or failure."

## Fourth of July Excursion

over the Nickel Plate Road, at one fare for the round trip, within a radius of two hundred miles from starting point. Tickets on sale July 3d and 4th, with return limit of July 5th. Through trains daily in each direction between Chicago, Cleveland, Buffalo, New York, Boston and New England points. Every facility offered for comfort of traveling public. Fast time and low rates. Full information cheerfully given by General Agent, 111 Adams St., Chicago. (15)

Mrs. Willikins—"Did your girl bake this bread?" Mrs. Youngling (proudly)—"No, I did it myself." Mrs. Willikins—"I was going to say that if your girl did it she certainly couldn't be worth the \$4 a week you say you pay her."—Chicago Daily News.



comes so soon to this tragic end. If men would only take the most common sense precautions against the croachments of ill-health, there would be fewer houses of mourning, and women left alone almost helpless in the battle of life is half over. A liver and stomach are twin machines work together, either to make or mar. If they work wrong, they deplete poison his blood. Impure and impeded blood means sickness and death. They work right, they purify and give the blood. A man whose blood is rich, pure, and whose liver is active cannot be unhealthy. Headaches, biliousness, indigestion and costiveness, which are generally disregarded, are Nature's warning that the twin mechanism, stomach and liver, is working against, instead of for him. Dr. Pierce's Golden Medical Discovery is the best medicine to use under such circumstances. It creates appetite, rectifies all disorders of the digestion, invigorates the liver and fills the arteries with rich, red, healthy blood. As an invigorating, restorative tonic, it is far superior to all the malt extracts. It is the great maker and flesh-builder. It does not make sickly, flabby fat as cod liver oil does the firm, muscular tissues of health.

"For the last nine years," writes W. Miller, Esq., of 651 Mulberry Street, New York, "I have been very poor in health. I suffered with a running sore leg. I tried all kinds of different medicines, and doctors out of relief. Then I used three bottles of 'Golden Medical Discovery' and can say that I am cured. I can now do as good a day's work as the next man."

Unfailing—Dr. Pierce's Pleasant Pellets for constipation and biliousness.

## The Kind of Horse to Breed.

At the annual meeting of the National Horse-Breeders' Association, held at Chicago in March last, Col. F. J. Berry, president, in his annual address made the following statement in regard to the kind of horse to breed:

"The American horse-breeders have a severe lesson. It has taught them every horse should be bred for a purpose, a certain type, and of a size, with all the size, shape, and quality that the market demands. The small horse is a thing of the past. It has proved failure and an unsatisfactory investment. The grade has been raised every year for the last few years, and each successive year requires a larger horse and one of better quality to meet the demands of the market. He must be a horse of his class and be an up-to-date market horse and to be the most salable he must be decidedly one of the following classes, which are known as the export classes of horses and at the same time they are the most salable and profitable for all American markets:

- Class No. 1—Carriage and coach horse.
- Class No. 2—A cab horse.
- Class No. 3—An omnibus horse.
- Class No. 4—A draft horse.
- Class No. 5—The American trotting road horse.

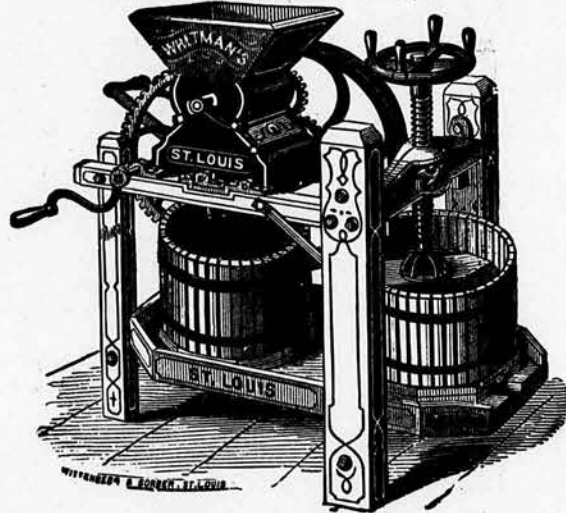
"Here is the type set for breeders to produce, as the old way of breeding with a system proved so disastrous and a great failure. A proper study of these types will enable the breeder to meet the demands of all markets."

## For Fourth of July

the Nickel Plate Road will sell tickets at one fare for the round trip within a radius of two hundred miles of starting point, July 3d and 4th, with return limit of July 5th. When going to Cleveland, Buffalo, New York, Boston or other Eastern points patronize the Nickel Plate Road. You will find sleeping cars on all trains and excellent dining-car service. For further information address General Agent, 111 Adams St., Chicago.

## Farming in Colorado and New Mexico

The Denver & Rio Grande railroad, "The Scenic Line of the World," has prepared an illustrated book upon the above subject which will be sent free to farmers desiring to change their location. This publication gives valuable information in regard to the agricultural, horticultural and stock interests of this section, and should be in the hands of everyone who desires to become acquainted with the methods of farming by irrigation. Write S. K. Hoopes, G. P. & T. A., Denver, Colo.



WHITMAN'S AMERICUS CIDER AND WINE MILLS.

The Whitman's Americus Cider and Wine Mill, shown herewith, has a national reputation. These mills are thoroughly crushing mills and not graters. The two rolls run at the same velocity, crushing the cider cells thoroughly and do not break off the apples in lumps, as grater mills do. The Americus mills are much larger than others and of greater capacity. The Senior mills all have two cranks, the Medium and Junior mills have rolls of same diameter as Senior. This arrangement enables them to grind large as well as small apples. The

Americus mills are highly finished and guaranteed in every respect superior to anything now made. The representative of this paper has seen the Whitman mills in operation and endorses this statement fully.

The Whitman Agricultural Company of St. Louis, Mo., are reliable manufacturers. They make a large line of farm machinery, including baling-presses, grain-drills, feed-mills, corn-shellers, horse-powers, etc. We would advise our readers to write them for circulars and prices, not failing to mention Kansas Farmer.

Ashland W., first; Pat Sherman, second; Dollie Evans, third.

The second event was best pony team. The awards were made as follows: Roboh and Cherry, owned by J. S. Coe, Topeka, first; Hobart, Trainer, Tip and Zip, owned by Garry Burton, Topeka, second; Spot and Bay, owned by Dr. McClintock, third. This was a very pleasing contest, as the participants were all children. Earl Culley drove Roboh and Cherry as a double team. Miss McClintock drove Spot and Bay as a tandem team and Garry Burton drove Hobart, Trainer, Zip and Tip as a four-in-hand. Little Garry Burton, only 4 years old, entered at the upper gate and came down the home stretch into the show ring with his four diminutive Shetlands under the whip and in a dead run. He took his four-in-hand midgits past the grand stand, turning them with the leaders in a run and circled in front of the grand stand with the skill of a veteran stage driver.

The third class was the merchants' half-mile dash. The entries were Jim Martin, owned by Don Duggan; Carrie W., D. W. Defenbaugh; Maggie, J. J. Green; Nettie, Lee Jones; Blanche, J. D. Sullivan. First prize was awarded to Carrie W., second to Mack, and third to Blanche.

In class four, for the best saddle pony, the awards were made as follows: J. B. Coe, Topeka, first; Alice Austin, Topeka, second; C. S. Gleed, third.

In class sixth, best pair of road horses, splendid pairs were entered by the following: H. H. King, Valencia; F. M. Reckards, Thomsonville; F. E. Wear, Topeka; C. B. Smith, Topeka; Dr. Lindsay, Topeka; D. W. Kent, Topeka; M. A. Low, Topeka.

tied on Rex, the red went to Black Man, and the yellow to Larry.

During the horse show Tom Bass, a gentleman and an artist in his line, gave daily exhibitions of his noted high school mare, Miss Rex, the world's champion. He also entertained the crowd one day by riding Red Man in a superior manner.

## About Galloways.

Editor Kansas Farmer:—There has been much discussion in the stock papers and among stockmen as to which of the beef breeds has the best rustling qualities, and while we do not claim that the Galloways are the best breed in every particular, yet we do claim that they are as good as the best, and for rustlers are not equalled by any other breed. In support of this claim I quote from a recent letter from Mr. D. H. Andrews, of Crane Lake, Northwest Territory, Canada, in which he says that his company has been breeding Galloways for eleven years. They have now about 2,500 Galloways and Galloway grades. Five hundred are kept in a bunch from which to breed range bulls. He says: "I find they do exceedingly well on the range and stand more cold than any other breed we have. (I have not tried Highland cattle.) Of course, heavy-boned, strong cattle are the best. Last year we shipped seven cars of Galloway steers in a train-load, separate from the Shorthorn and Herefords. They weighed off the cars in Winnipeg, 1,345 pounds. I find they make a splendid cross with Shorthorns. The Galloway gives the heavy coat and rustling qualities and the Shorthorn the size."

The above from one of the largest ranch-



# WEATHER-CROP BULLETIN.

Weather-Crop Bulletin of the Weather Service, for week ending June 24, 1899, prepared by T. B. Jennings, Director.

## GENERAL CONDITIONS.

Warm week; the greater part clear, in fine rains, the rains being great in the central and western counties, most needed.

## RESULTS.

### EASTERN DIVISION.

Harvest nearly finished in south-

ern counties, in full progress in central,

and beginning in northern. Oats harvest

in southern and some central

counties, and the oats are headed in the

central counties. Corn has grown very rapidly,

generally clean, has fine color, and

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Riley.—Corn making fine growth and is fairly clean; wheat about cut; some second-growth alfalfa ready to cut.

Shawnee.—Corn growing very rapidly, will soon be past cultivation; oats have improved greatly; wheat harvest progressing; flax fine; last of week wet for clover-haying; pastures good; cattle doing well.

Wilson.—Good weather for harvest, but corn is needing rain; some complaint of potatoes rotting.

Woodson.—Some corn laid by; good week for work; beginning to cut prairie hay.

Wyandotte.—A fine week; corn a good color and growing rapidly; wheat harvest progressing; late wheat badly damaged by rust; oats doing well; early potatoes good.

### MIDDLE DIVISION.

Wheat harvest is progressing in most of the counties, including Phillips; in the other extreme northern counties it is ripening rapidly. It is generally yielding better than anticipated. Oats harvest has begun in Sumner; the oat crop is good in the northern counties, and in Reno, but lighter in the southern counties. Corn has grown rapidly; it is laid by in Sumner and being laid by in Osborne, Reno, and Republic, generally clean and in good condition; it is tasseling in Sumner. The first crop of alfalfa is in the stack, or being cut; the second crop is growing finely and is nearly ready to cut. Late cherries are ripe in Ottawa and Reno, and early apples in Reno and Saline. The apple crop is good in Ottawa, apples falling in Saline.

Barber.—Good week for farm work; still replanting corn, cane, and Kafir; all growing crops doing well, prospects fine; wheat harvest progressing, very poor crop; grass and water abundant; cattle in best condition.

Barton.—Wheat harvest progressing, delayed last week by rains; pastures fine; cattle in good condition; corn growing rapidly.

Butler.—Corn growing finely but needing rain; wheat ready to cut, will make about half a crop; oats very light; apples falling badly.

Cloud.—An excellent week for all crops; rain has delayed corn-plowing and haying; weeds taking many fields of oats and thin wheat; harvest will be general coming week.

Cowley.—Wheat mostly cut, promises better south than north, some fields will be cut for feed, some not cut at all; corn doing well; oats turning.

Dickinson.—Wheat harvest begun, wheat much better south than north of river; corn

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This trade mark has been known to progressive horsemen for many years. It stands for

## Tuttle's Elixir

the most famous (and most successful) veterinary specific of the age. It WILL CURE curbs, splints, colic, lameness, shoe boils, thrush, horse ail, etc. Won't scar or change the hair. Locates lameness by remaining moist on the part affected.

Tuttle's Family Elixir cures Rheumatism, Sprains, Bruises, etc. Samples of either Elixir free for three 2-cent stamps for postage. Fifty cents buys either Elixir of any drug-gist, or it will be sent direct on receipt of price. Money refunded if not satisfactory in every way. Particulars free.

DR. S. A. TUTTLE, 27 Beverly Street, Boston, Mass.

tassel; wheat and oats harvest begun, hands scarce.

Washington.—Corn growing finely, with most fields clean; wheat ripening rapidly; pastures fine.

WESTERN DIVISION.

Wheat is improving in the central and northern counties; little or no wheat in the southern. Harvest has begun in Trego.

Hot winds on the 18th injured crops in Thomas and Decatur and on the 19th in Morton and Thomas. The rains latter part of week have revived crops and range grass generally. The alfalfa seed crop is in good condition in Finney and Kearny, but not in Gray. Corn is doing well.

Clark.—A week of good growing weather. Decatur.—Hot winds the 18th; fine rains later saved the wheat and put corn in fine condition; wheat estimated to be half a crop, nearly as good as last year; corn fine; alfalfa mostly stacked.

Finney.—Fine growing week for alfalfa and range grass; will be no small grain in the county; much alfalfa left for seed and seed conditions good; range and forage crops are fine; cattle gaining rapidly; temperature reached 107° on the 19th.

Ford.—Fine growing week; vegetation rank; range grass fine; cattle improving rapidly.

Gray.—Corn doing finely; good prospects for feed; first alfalfa seed crop blighted.

Greeley.—Grain coming up slowly; grass badly damaged by drought, not rain enough yet to make it permanently good.

Hamilton.—The rain will save some crops, but others are beyond help; much hail, which damaged gardens and fruit; the range will need more rain to materially help it.

Haskell.—Rain must come soon or crops are lost; grass is good yet; grasshoppers few.

Kearny.—Alfalfa is making a fine growth for seed crop; forage crops being largely sown since the rains; pastures good; corn growing well.

Logan.—These good showers will aid in heading grain, the best will be thin on the ground; prospect for corn is good.

Morton.—Hot winds 19th parched the grass; light showers across central part of county 21st; hay and fodder prospects not good.

Ness.—Fine growing weather; severe hail-storm Wednesday, totally destroying crops in its path; all crops doing well; farmers planting forage crops; barley ripening, but short straw; wheat will be late but quality good; grass fine; stock doing well; much fruit ruined by hail.

Norton.—The rain has done great benefit to all growing crops, trees, and grasses.

Rawlins.—Rains came too late for many fields of wheat, but corn, potatoes, and grass will be greatly benefited; first crop of alfalfa mostly cut.

Scott.—The rain has revived crops, although many had gone too far to be helped.

Thomas.—Hot winds 18-19th, doing much damage to small grains; corn is doing finely; everything benefited by the rains last week; first crop of alfalfa all in stack.

Trego.—Wheat improving rapidly; harvest begun; barley is heading nicely; grass growing rapidly; corn, though backward, is doing finely; alfalfa hay first crop cut, averaging a good yield; oats a light crop; forage crops fine.

### THRESHING MADE EASY.

Progress in Manufacture Makes Individual Ownership Profitable.

Every season, farmers are more or less concerned as to how they can best get their grain threshed. Of course, they want to save grain; and have the work done at as little expense as possible and at a time when it is most convenient. There have been many complaints of the waste and expense attached to some of the large threshing outfits that go about the country. These machines are owned by men who operate them for what there is to be made out of them, and not for the benefit of the farmer, who is often put to great inconvenience by not having his work done when he would like it done.

For a number of years, the small threshing outfit has been coming into favor. It can be taken anywhere that a wagon can be drawn, making it available many times when large machines are stalled on account of soft or hilly roads. It can be owned by the farmer and operated by a small force of men, and it saves much of the grain which is so often wasted by the large threshers which have to hurry through one job to get another.

The Columbia Thresher can be operated by 6 to 8 horse-power and larger. As most farmers now have some kind of power with which they could operate a small thresher, a machine of this kind is as practical for them to have as a harvester, especially as it has now been proved that a small thresher of large capacity is on the market. We would recommend our readers to write to the Belle City Manufactur-

ing Co., of Racine, Wis., for printed matter of their Columbia Thresher, which has been introduced most successfully in the South, as well as in the large threshing districts of the Northwest.

### July Notes.

Mulching should be done now.

Sow turnips early this month.

Cut oats before they get too ripe.

It is not too late to plant cucumbers.

Oats require more time to cure than wheat.

Late cultivation in the orchard is rarely advisable.

Stack the wheat as soon as possible after it is ready.

Let the hogs harvest the fallen fruit in the orchard.

Timothy and redtop for hay may easily be cured too much.

It will lessen the work of harvesting if the potatoes are kept clean.

Keep up the cultivation until the crop can be considered as made.

What hay must be stacked outside should be stacked in large ricks.

Leave the surface as fine and level as possible when the cultivation is finished.

There is no economy in threshing oats intended especially for feeding to the stock.

It is only in exceptional cases that it is best to fatten stock during the next two months.

When the harvest season begins is the time to commence saving up feed for next winter.

This is one of the best months to kill weeds by cutting them down before they mature seed.

As fast as the work with the different tools is finished, gather them up and store them under shelter.

The granaries should be thoroughly cleaned out and whitewashed before any new grain is put in them.

With a good evaporator there is no occasion for any fruit that is worth saving being allowed to go to waste.

As soon as the harvest work will permit start the plows for the fall-sown wheat. Early plowing is best.

Watch the pastures toward the latter part of this month. It may be necessary to commence feeding the dairy cows.

Do not market all of the early lambs. Keep a sufficient number to take the place of the ewes that have passed their prime.

Do not turn the stock into the meadows until the grass plants have made a good start to grow. Close cropping is often injurious at this time.

If stock thrive well during the next three months, it is essential that they have plenty of water, salt, and shade, as well as good pasturage. N. J. SHEPHERD, Eldon, Mo.

### A Low Wagon at a Low Price.

In order to introduce their Low Metal Wheels with Wide Tires, the Empire Manufacturing Company, Quincy, Ill., have placed upon the market a Farmer's Handy Wagon, that is only 25 inches high, fitted with 24 and 30 inch wheels with 4-inch tire.



## The Home Circle.

### THE PATHWAY OF GOLD.

In the light of the moon, by the side of the water,  
As I sit on the sand and she on my knees,  
We watch the bright billows do I and my daughter,  
My sweet little daughter Louise.  
We wonder what city the pathway of glory,  
That broadens away to the limitless West,  
Leads up to—she minds her of some pretty story,  
And says, "To the city that mortals love best."  
Then I say, "It must lead to the faraway city,  
The beautiful City of Rest."  
In the light of the moon, by the side of the water,  
Stand two in the shadow of whispering trees,  
And one loves my daughter, my beautiful daughter,  
My womanly daughter Louise.  
She steps to the boat with the touch of his fingers,  
And out on the diamond pathway they move  
The shallop is lost in the distance, it lingers,  
It waits, but I know that its coming will prove  
That it went to the walls of the wonderful city,  
The magical City of Love.

In the light of the moon, by the side of the water,  
I wait for her coming from over the seas;  
I wait but to welcome the dust of my daughter,  
To weep for my daughter Louise.  
The path, as of old, reaching out in its splendor,  
Gleams bright like a way that an angel has trod;  
I kiss the cold burden its billows surrender,  
Sweet clay to lie under the pitiful sod;  
But she rests at the end of the path, in the city  
Whose "builder and maker is God."  
—Homer Greene.

### BLUNDERING INTO MATRIMONY.

Mrs. Cramer, a wealthy young widow, lived in a style of simple elegance in a desirable quarter of the city. Her personal attendant, Susie Moore, was young, and pretty and coquettish, with half a score of lovers at her heels, so that she was at times absent-minded and giddy.

Mrs. Cramer had gone out calling and Susie was doing two things at once. She was reading for the twentieth time a declaration of love she had received that morning and dusting off a marble-top table that stood in the center of the room. An ominous crash which followed an unlucky whisk of her duster caused her to drop both the broom and the letter and exclaim:

"My goodness!"

On the carpet lay the fragments of a costly porcelain cup, a valued gift of the dear departed! Instant dismissal was the least she could expect in case of detection, and how could detection be avoided? No one else had access to the apartment and there wasn't a cat on the premises.

But Susie was a girl of resources. A bright idea struck her and she ran to the back yard, snatched up a stone and hurled it through one of the panes of a rear window. Then returning to the parlor she picked up the stone and laid it among the pieces of the broken cup.

"But will that look right?" she ejaculated. "People don't throw stones through windows for nothing, and this being a back window, why—I have it!"

Her love letter lay at her feet. It had neither address nor signature, though well she knew whence it came. Catching up the missive and the missile she hastily wrapped the one around the other, securing the parcel with a thread, and placed it amid the ruins.

Having finished her work, Susie closed the apartment and took good care not to be there when her mistress returned.

If Mrs. Cramer was vexed when she saw her broken cup and window, she was indignant when she came to investigate the cause. The contents of the parcel—the fragment of rock excepted—were of such a tender description that she could not help blushing.

"Who can have dared to take such a liberty?" she exclaimed, crumpling the paper in her hand, but she had scarcely asked the question when a dark suspicion took possession of her.

The damaged window not only overlooked her own back yard, but the garden of an adjoining proprietor, a gentleman passionately devoted to horticulture, and Mrs. Cramer had occasionally busied herself for a few minutes looking out upon his labors. The two often exchanged glances, but never the slightest token of recognition. She had thought him a very proper man, and he had sometimes lingered a little longer at his work than he probably would have done had the bright eyes of the widow been absent.

To suspect was to resolve, and instantly tying up the stone in the letter, as she had found them, she walked to the window, and, with all her might, hurled back the hated message beyond the enemy's confines and at once retreated.

The innocent and unsuspecting neighbor,

who chanced to be stooping out of sight digging weeds in the midst of the shrubbery, startled by the sound of what might be some meteoric body whizzing past in dangerous proximity to his head, raised himself just in time to catch a glimpse of the widow's receding figure.

But judge his surprise as his eyes fell on the strange object which had barely missed knocking him down. With a trembling hand he undid the parcel, and, as he read its contents, his heart fluttered worse than Susie's had done in the morning.

The fact is he had long been in love with the widow and had secretly sighed for an opportunity to tell her so, but to receive an unequivocal declaration from her—that was a little more than he had ever dared to hope. Some fastidious people might think such a proceeding indelicate, but the widow had evidently taken pity on his backwardness; besides, wasn't it leap year? True, her grammar might have been better, and her spelling was, to say the least, indifferent. But, then, he wasn't partial to literary ladies. Domesticity was what he wanted, and the widow was the very picture of that. The note said something about not forgetting 6 o'clock. No, he wouldn't forget it. And he didn't.

At 6 o'clock sharp, Elijah Rogers presented himself at Mrs. Cramer's door and was admitted by Susie.

"Tell your mistress," he said, "that a gentleman desires to see her."

"What name, sir?"

"It is probably unknown to the lady at present," returned Elijah, "but I am one of her neighbors."

"O, yes! I see."

"And I have reason to think that my call may not be entirely unexpected," declared the newcomer, assuming a confidential air.

"In any case?"

"Please walk in," invited Susie.

She showed him into the parlor, waving him to a chair, and hastened to notify her mistress of his presence.

The fair widow was prompt in making her appearance.

"Mrs. Cramer, I am Mr. Rogers—Elijah Rogers—your neighbor," said the caller, arising and introducing himself with some nervousness and a heightened color.

The widow bowed stiffly, for in Mr. Rogers, though better dressed, and of course better looking than she had ever seen him in his garden, she recognized immediately the ruthless trespasser who had broken her window, smashed her china and been guilty of other acts against her peace and dignity.

"I scarcely know, madam," Mr. Rogers began, after a painful pause, "how to preface what I am about to say, but the note—"

"That indeed requires explanation!" exclaimed the widow.

"And yet I have flattered myself that it was sufficiently explicit," returned Mr. Rogers, somewhat disconcerted.

"Sufficiently explicit, no doubt," conceded Mrs. Cramer. "But the motive?"

"Do not say it was to deceive," interposed the caller.

"And the method chosen," cried the widow; "perfectly unheard of!"

"Whatever others may think," said Mr. Rogers, "between us two it can never be misinterpreted."

And here the paltry note, of which the couple might have continued talking at cross purposes until this time, dropped luckily out of the conversation. But other and more apposite explanations came. Mr. Rogers told his love—told it so much better than the stray note could have done that the widow would have wondered how much his tongue was mightier than his pen had she been in any mood for such comparisons.

She and Mr. Rogers have been married for many years but whether they ever discovered how the broken cup first broke the ice between them is more than I can tell.

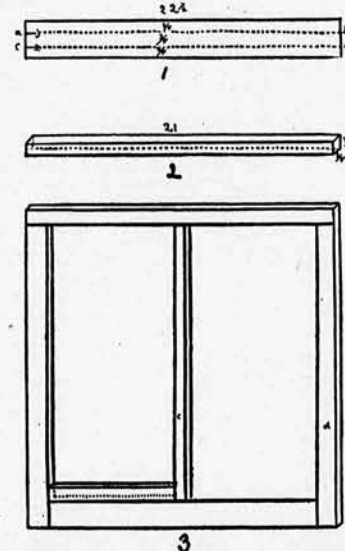
### To Rid the House of Flies.

There is no class of insects more annoying to our personal comfort than the various flies which frequent our houses, offices, creameries, etc. How to get rid of them is often a puzzling question. The department of entomology, after experimenting upon various mechanical devices for catching flies, has contrived a trap, and recommends it for trial on account of its effectiveness and cheapness. Anybody with an average amount of mechanical ingenuity can make and attach the trap with the cost of but a few cents. It is made as follows:

Take a flat strip of tin  $2\frac{1}{4}$  inches wide, and  $1\frac{1}{2}$  inches longer than the distance between the side rail or style and middle rail of the sash, as from "c" to "d," fig. 3, which in this case measured 21 inches. For this window, the strip must be  $22\frac{1}{2}$  inches in length. With the tin lying on a flat surface, bend the tin along the lines "ab" and "cd," fig. 1, which are three-quarters of an inch from their respective sides, so that the space "abdc" forms the

bottom of a box, and the lateral parts the sides. To close the ends, cut small incisions three-quarters of an inch deep at the points a, b, c, and d, as "ay" and "cx," fig. 1. Bend the flaps thus made at right angles to their respective parts. We then have a box 21 inches long, three-quarters of an inch wide, and three-quarters of an inch deep as at fig. 2. To make the box water-tight, solder the joints, or if solder is not handy, try moistened plaster of paris. When properly made the box should fit snugly between the middle and side rail or style. The corners should be square and the edges straight so as to leave no passage-ways between the box and the glass. The box should rest on top of the bottom rail, and can be held in place by two or three tacks or pins thrust into the rail from the back side. When the pane is very large, it is well to attach another trap halfway between the top and the bottom.

After the traps have been attached some substance should be put into them that



will either kill the insect upon falling into it, or on account of its sticky nature, will hold the insect so that it cannot escape. For the first, kerosene, kerosene emulsion, soap-suds and pyrethrum are the best, and for the second molasses or a mixture of castor-oil and resin. For general use the soap-suds are to be recommended. When using the liquids, fill the traps two-thirds full.

Kerosene is most fatal to the flies, but should be used with care, as it is very liable to soil the sash. In using it, fill the trap half full of water and then add enough kerosene to form a film.

Kerosene emulsion is made as follows: Two quarts of kerosene, two pints of water, one-fourth pound of soap. Dissolve the soap in boiling water; while the suds are still boiling hot, add the kerosene, and churn the mixture for a few minutes till it becomes a butter-like mass. Dilute the emulsion from five to six times with water before filling the traps.

Soap-suds.—Make strong suds from the ordinary common washing soap. This is very easy to prepare and very effective.

Pyrethrum is an insect powder, which can be purchased from druggists. Do not buy that which is stale or adulterated. When fresh and pure, it is very effective when mixed with two times its bulk of flour. The mixture should be kept in an air-tight can twenty-four hours before using. Take enough to form a good layer in the bottom of the trap. It acts very rapidly upon flies.

Molasses.—Enough cheap molasses or sorghum should be used to form a thick layer in the bottom of the trap.

Castor-oil and Resin.—Take three parts of powdered resin to two parts of castor-oil. Mix them together and boil till the resin dissolves. If too thick add more castor-oil.

There should be one trap for every pane of glass of at least one window in the house. For instance, when the sash contains two panes of glass, as in the cut, there should be two traps, one at the base of each pane. When the sash contains four panes, there should be four traps, two on the bottom rail, and two on the cross-bars or munting. It is not necessary to apply traps to all the windows. Attach traps to one or two windows in the sunny part of the house, and pull down the blinds of the remaining windows. The flies will seek the lighted rooms and especially the windows.

When the traps are full of flies, remove them from their fastenings, empty out their contents and fill them with fresh material.

A temporary trap can be made of flexible card-board, following the same directions as for those made of tin. Use glue or pins to fasten the ends. To render the trap water-proof, paint the inside with melted paraffin. This will hold any of the above remedies except the pure kerosene.

PERCY J. PARROTT.  
Kansas State Agricultural College.

### Tested Recipes.

**Surprise Cake.**—One cup sugar, one beat together; three cups flour, one sweet cream, two tablespoonfuls of powder mixed through the flour; with essence of lemon. This makes layers. Jelly can be used for filling.

**Fried Bread.**—Old bread preferred, three in family, beat up two eggs, add half pint of sweet milk, have your cut in slices one-half inch thick, dip in and milk, and then put it in frying Fry it in butter and lard; when brown over on other side. It must be covered frying. A little salt is an addition.

**Potato Salad.**—Wash and boil one medium-sized potatoes. When almost peel and slice thin. Also slice a very onion to mix with potatoes. For dressing one-half cup sour cream, three-fourths vinegar, salt, and pepper. Best when potatoes are new.

**Nice Light Rolls.**—Take as much dough as will make a pie-pan loaf, into it one egg, one heaping tablespoon butter and the same of sugar. Then out in little rolls three inches long half inch wide. Let rise and bake quick oven.

**Soft Ginger Bread.**—Two cups of O. molasses, one cup of sugar, one of large butter together, two teaspoonfuls of one cup of boiling water poured over soda and let dissolve. One teaspoon ginger, one of cinnamon, two eggs, flour make stiff batter. Bake in square pan.

**Nice Ginger Cookies.**—One quart of leas molasses, one cup of sugar, one egg, one pint of buttermilk, two heaping tablespoonfuls of soda, one teaspoon cinnamon, one tablespoonful of ginger, flour enough to raise nice, and bake quick oven. These are excellent.

**Coffee Cake.**—Half cup brown sugar, cup butter, half cup coffee, one cup molasses, two eggs, one cup raisins, small spoonful cinnamon, small teaspoon cloves, half of a nutmeg, half teaspoon soda, pinch of salt. Do not make very

**Watermelon Cake.**—Two cups of sugar and one cup of butter creamed together, three-fourths cup of milk, two spoonfuls of baking powder, the white six eggs, one tablespoonful of corn starch. Add three cups of flour. Beat the eggs stiff froth, then take out two cups of do add a little fruit coloring to make it a pink. Line a deep pan with the white then all the pink, just a small amount seedless raisins through the pink, and all the white dough. Bake in a mold oven. Ice when cold. This is fine properly made.

**Cream Slaw.**—To one quart of cabbage chopped very fine add salt and pepper, cup good vinegar, a cup of good cream (must be thick), half a cup of sugar and four hard boiled eggs chopped in cabbage; then beat all together.

**Cream Cabbage.**—Yolks of two eggs, cup of sugar, half cup of vinegar, a piece of butter, salt and pepper to taste. Put in sauce pan until it boils. Stir cup of cream and pour over cabbage.

**Corn Starch Pie.**—Two cups and a half of sweet milk, two tablespoonfuls of starch, yolks of three eggs. Let the milk come to a boil, then dissolve the starch in it. Bake crusts first and have ready. Fill with the custard and flavor with lemon, then beat the whites of the eggs with two spoonfuls of sugar and set in oven to brown.

**Lemon Pie (Very Rich).**—Juice of grated yellow rind of one large or two small lemons, yolks of four eggs and white of egg beaten with two cups of white sugar, one tablespoonful of melted butter, small tablespoonfuls of corn starch and cups of water. Stir all these together and cook in a granite pan on the stove, stirring all the time until done. Have ready crust that have been baked, then fill with lemon, beat the remaining whites of eggs with two tablespoonfuls white sugar, spread over top, return to oven and bake a light brown. This makes two nice pies.—Tional Stockman.

### Preserve Natural Grace and Beauty.

The Natural Body Brace, manufactured at Salina, Kans., has never failed to cure or greatly help, those who have worn properly for any variety of "female weakness." It is equally helpful to men who need it. The brace restores and preserves the natural grace and beauty of the human figure, which so many thousands of young girls and mothers lose from neglecting muscular weakness.

It is not often that the Farmer especially urges its readers to patronize a certain advertiser, but this case is an exceptional one because it is a worthy Kansas institution and one that makes an article so absolutely necessary in the homes of so many of our readers.

Inventors requiring money to develop perfect inventions, patents or ideas of value should communicate with R. G. Ruston, 195 La Salle St., Chicago, Ill.



## The Young Folks.

### A FELLOW'S MOTHER.

"A fellow's mother," said Fred, the wise, With his rosy cheeks and his merry blue eyes, "Knows what to do if a fellow gets hurt By a thump, or a bruise, or a fall in the dirt."

"A fellow's mother has bags and strings, Rags and buttons, and lots of things; No matter how busy she is, she'll stop To see how well you can spin your top."

"She does not care—not much, I mean— If a fellow's face is not quite clean; And if your trousers are torn at the knee, She can put in a patch that you'd never see."

"A fellow's mother is never mad, And only sorry if you're bad; And I'll tell you this, if you're only true, She'll always forgive you whatever you do."

"I'm sure of this," said Fred, the wise, With a manly look in his laughing eyes, "I'll mind my mother every day; A fellow's a baby that won't obey."

### PORTEUSES OF MARTINIQUE.

The Creole porteuse, or female carrier, of the West Indian island of Martinique, is certainly one of the most remarkable physical types in the world. Her erect carriage and steady, swift walk impress the observer with an idea of strength, of litheness; and the puissant shapeliness of her semi-nude torso, ruddily swart, like statue metal, her rounded limbs falling unconsciously into perfect grace of attitudes, complete the pleasure one always feels in the contemplation of feminine force and comeliness.

In Martinique nearly all the transportation of light merchandise—including meats, fruits, vegetables, and other food-stuffs—to and from the interior, is effected upon the human head. A large part of the female population are proficient carriers. Thus, at a very early age the girl who is fated to be a porteuse begins the practice of her life-work. Even as young as 5 or 6 she has learned to carry light weights upon her head; and it is a fact somewhat antagonistic to the accepted assertion of physiologists, that, far from checking the growth and curving the spine of the child, she actually improves under the treatment. At the age of 9 or 10 she can carry thus a heavy basket or tray containing a weight of from 25 to 30 pounds. She then begins to go on long peddling journeys with her mother, elder sister, or responsible female friend, walking barefoot as many as fifteen miles a day. At 18 she is vigorous and tough as a mountain pony, and, like most mountain-bred women, she is comely. She carries now upon her head a tray and burden of from 120 to 150 pounds, earning less than 30 shillings a month by traveling fifty miles a day as an itinerant seller. Forty or fifty miles a day, always bearing a burden of over 100 pounds—for stones are added as the tray is emptied of merchandise, to maintain the customary weight—and this for an income of a franc a day!

In every season, in almost every weather, the porteuse makes her trips, indifferent to rain, as her goods are protected by a waterproof covering. Though she is often wet through and chilled by the cold winds of the mountains, such is her vitality that she seldom suffers from fevers, either malarial or rheumatic. Pneumonia is her dreaded enemy, as, once it fastens upon her, she frequently succumbs after a frightful illness of not more than forty-eight hours. This susceptibility to pneumonia may be, probably is, due to the tremendous strain put upon the neck and chest by the prolonged muscular tension required to balance a heavy head-load. Generally the weight is so great, that, once loaded, no porteuse can unload herself without assistance. For her to attempt to do so would be to run the risk of bursting a blood vessel, rupturing a muscle, or wrenching a nerve asunder. To sit down is to court the danger of a broken neck. Her only safety lies in maintaining perfection of balance. When she desires to unload she asks assistance, and she does not hesitate to appeal to a rich planter or a wealthy merchant for aid which is invariably gladly rendered.

When assuming her burden, there is usually a wince and muscular shudder as the weight is placed upon her head. The load is not properly balanced, and with both hands she settles it, getting the center of gravity in direct line with her spine. A quarter of an inch any way out of absolute equilibrium, and her neck would snap. With her load in perfect equipoise, however, she moves away with a long, springy step in a walk so even that her burden never sways. At a gait that few Europeans would care to follow for more than fifteen minutes, she travels up hill and down from sunrise till sunset (eleven hours and forty-two minutes being the briefest West Indian day) over the excellent national roads, more than thirty in all, with a total length in excess of 300 miles. Magnificent highways are these; solid, broad, perfectly graded;

connecting town with town and hamlet with hamlet, winding over mountains by zigzags to heights of 2,500 feet, traversing the primeval forests of the interior, now following the edge of a dizzy precipice, now dipping into the loveliest of tropical valleys. Through all these phases of scenery the portense travels with unslackened pace, carrying her employer's wares to families in the most distant parts of the island.

Veritable Caryatides are the "girls" who carry the bread of the great bakeries of Fort-de-France and St. Pierre. They are undoubtedly the heaviest laden of les portenses, carrying baskets of prodigious size far up into the mountains before daylight, that the country families may have fresh bread for breakfast. Veterans of extraordinary physical strength are these bakers' "girls," and they receive, in addition to their pay of about 16 shillings a month, a loaf of bread per diem.

Despite the coarseness of their meagre fare and the strenuous work which they perform upon it, these portenses of the "island paradise" are singularly sweet-tempered. Their speech together is like the cooing of pigeons. "Comment ou ye, che? Comment ou kalle?" ("How art thou, dear? How goes it with thee?") is the usual salutation, and this the answer: "Touss douce, che. Et ou?" ("All sweetly, dear. And thou?"). But there is something almost pathetic in the cry, "Ah! decharge moin vite, che! moin lasse, lasse!" ("Unload me quickly, dear, for I am very weary"), with which they greet each other at the end of the day's journey.—Chambers' Journal.

### Spanish Strategy.

"The newspaper correspondents, with cameras in their hats and pencils sticking out of their pockets like quills on a porcupine, didn't get hold of everything that happened in the late war," remarked the lieutenant to the Harper's Bazar man. "There was the time the Spanish fooled the One Hundred and Twenty-seventh Volunteers, for instance."

"How was it, lieutenant?" asked somebody.

"Why, it was the sharpest trick you ever heard of, and simple as A, B, C. You know the One Hundred and Twenty-seventh is made up of men from New York city—all heroes, of course, but still they are accustomed to the civil walks of life. And the civil walks of life, taken literally, nowadays, are peculiar paths."

"It was at San Juan. The regiment had been ordered to advance and lie down close among some low bushes. The Spaniards were only a short distance in front. The firing had ceased in that neighborhood and all was still. Our men were in a state of intense though suppressed excitement. You could never guess what those crafty Spaniards did. Suddenly they rang a bicycle bell and followed it with a cable-car gong. The One Hundred and Twenty-seventh jumped into the air as one man. The Spaniards blazed away and tried to take 'em on the wing. Of course they didn't hit a thing, because Spaniards never do; but if they had been good shots they might have bagged the whole regiment. And I wouldn't be surprised if they'd had an elevated road guard yell 'Step lively!' that they could have stamped every last man."

### Days When Cats Were Rare.

In the middle ages cats were very rare. Even with the ladies little dogs were the familiar household pets, and cats were regarded as almost a royal possession. In Wales as early as the tenth century cats were protected by the government and their value fixed by law. Before a kitten could open its eyes it was worth a penny; afterward it was worth two, and when it had caught a mouse its value rose to four pennies. These may seem small prices now, but they meant a good deal then. Both cats and pennies are within reach of any one, and the simplest little home may have as guard the cat that "once upon a time" kept watch in the king's granaries.

In Wales the prince had his storehouses thus protected, and the following story will show you how the theft of a cat was regarded: One day a small black kitten was missing. It was not very big, but it had caught a mouse, and search was made at once. It was found in a peasant's hut, and his daughter confessed that she had stolen it from the granary. The child declared that the kitten was frightened by the prince's two great wolfhounds, and had taken refuge with her, and she had not had the heart to give it up.

The steward had father and child brought, trembling with fear, before the prince, who sat on his throne, yawning and stroking his tawny hounds.

"What is the law?" he asked.

"The thief shall pay a full-grown ewe with all its fleece," said the steward.

Alas! the man was too poor to own sheep.

"Failing this, the cat shall be hung up by its tail—"

"Rather hard on the cat," said the

prince; and little Mertha's tears ran down her face.

"And the thief shall pay a heap of grain high enough to reach to the very tip of the tail," continued the steward.

"Then shall we starve," murmured the peasant. "After tolls and tithes there is so little left."

Now the black kitten was brought into court, and, seeing the dogs and its little friend, it bristled up its hair with fear and mewed piteously to Mertha for succor.

"The cat hath chosen the child," said the prince, carelessly. "I will remit the fine and give her the animal for her own."

This law is still found among the old Welsh statutes, but it is no longer enforced.—Philadelphia Times.

### Salaries of Professors.

The lists have been formally opened for candidates to the chair of physiology in the University of Edinburgh left vacant by the death of Professor Rutherford. A number of quite distinguished names have already been presented. The emoluments of the chair are officially announced at \$7,000 per annum, says the Medical Record.

Not a few of the Scotch chairs are surprisingly well paid. The chair of anatomy in Edinburgh, by dint of various "hereditary" grants and dues, which have accumulated, is reported to be worth \$20,000 per annum. Several chairs in both Edinburgh and Glasgow draw from \$8,000 to \$12,000, and even in Aberdeen, far north as it is, a number of the chairs, both scientific and medical, run about \$5,000.

In spite of our huge donations and legacies to universities and colleges, we are really falling behind in America in the matter of salaries, for, much to my surprise, I find that the class of teachers who with us are getting \$2,500 to \$4,000 (and there are few enough of any class at the latter figure) receive in England from \$4,000 to \$6,000. Even the German universities are becoming more liberal, for when in Berlin this summer several private doctors inquired as to the supposed large salaries in America, and were greatly disappointed when they learned their real figure. The leading chairs in the University of Berlin are worth from \$10,000 to \$15,000 a year, chiefly from a share in students' fees.

### A Kansas Farmer's "Square Meal."

There was a country wedding out in Ford County, Kans., the other day which was attended by 300 guests, and the following paragraph from the Dodge City Reporter gives an idea of the spread that was placed before them: "One large beef had been slaughtered and cooked, three hogs had been roasted, seventy-five pies and fifty cakes had been baked, fifteen gallons of canned peas had been prepared, ten gallons of pickles were set before the happy throng and thirty chickens were cooked, and besides there were bread, ham, and vegetables in proportion." That layout was doubtless sufficient to provide all the wedding guests with "a square meal."

Bill—That fellow looks terribly twisted.

Jill—It's no wonder.

Bill—Why?

Jill—Because I hear his wife turns him around her little finger.—Yonkers Statesman.

"For the Sake of Fun, Mischief is Done." A vast amount of mischief is done, too, because people neglect to keep their blood pure. This mischief, fortunately, may be undone by the faithful use of Hood's Sarsaparilla.

Hood's Pills cure all liver ills. Non-irritating.

"I don't believe in girls a-dressin' in stiff clothes durin' the hot weather," said the adipose elderly lady with the large diamond ear-rings and finger-rings at the boarding-house breakfast table the other morning. "I make my two daughters dress in negligent costumes all summer, no matter where they're a-goin'."

"Maw!" said her daughters, warningly, from the other side of the table; and the fox terrier pup turned a fit out in the basement vestibule.—Washington Post.

In London exists an institution called the pawnshop. She is usually a middle-aged widow and flourishes in most dismal localities where every other house is let out in furnished apartments. Many of the people living in these regions are poverty-stricken women who have seen better days and dread to enter a pawnshop. The pawnshop calls once or twice a week upon her clients, and when she departs her satchel bulges with sundry articles which she is commissioned to pledge. The business is a paying one. One pawnshop boasts a list of 200 customers.—New York Journal.

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SALT LAKE,  
SAN FRANCISCO,  
PORTLAND



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# KANSAS FARMER

ESTABLISHED IN 1863.

Published Every Thursday by the  
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H. B. Cowgill, Pres. J. B. McAfee, Vice Pres.  
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No. 116 West Sixth Avenue.

**SUBSCRIPTION PRICE: ONE DOLLAR A YEAR.**

H. B. COWGILL, Editor.  
H. A. HEATH, Advertising Manager.

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All of the military authorities except General Otis are of the opinion that a vast increase in the forces employed in the Philippines will be necessary.

The summer session of the State Normal School at Emporia is now in session. It presents to the teacher a fine opportunity for improvement by use of the vacation.

Some of the papers have suggested Secretary Coburn for President of the Kansas State Agricultural College. The Secretary has taken an early opportunity to nip the proposal in the bud.

The Twentieth Kansas regiment, which has surprised the world by its bravery and efficiency in the Philippines, has been called off from the firing line. Invalids, to the number of 200, have started for home, and the others will be sent soon. The regiment has been replaced by regulars.

The Newton Journal suggests that the admission of Kansas as a Territory should be fittingly celebrated at the fiftieth anniversary, in 1903. The Journal thinks the proposed celebration should take the form of a great exposition, and, with commendable loyalty to its own community, suggests that such exposition should be held at Newton.

Prof. Clinton D. Smith, director of the Michigan Agricultural Experiment Station, has been mentioned in connection with the presidency of the Kansas State Agricultural College. Professor Smith was in Kansas during the early part of this week looking over the situation. He is a strong man and is making a signal success of his work in Michigan. The future of the Kansas college looks very bright from Professor Smith's point of view.

Oak Grange will hold an all-day session, at its hall, at Mission Center, on Tuesday, July 18. All interested are cordially invited. This meeting will be especially interesting to farmers and horticulturalists. Hon. Aaron Jones, master of the National Grange, will be present and will deliver an address. Good music, both instrumental and vocal, will be provided. There will be a basket dinner, which is by no means an unimportant matter, especially at Oak Grange.

Readers of the Kansas Farmer have expressed great interest in the series of letters on "Plant Breeding," written for the Kansas Farmer from Cornell University, by Mr. Geo. L. Clothier. The value of these papers is such that a reprint has been made, bringing the letters together into a neat pamphlet of twenty-four pages. The Kansas Farmer Company has a limited number (400) of these which it will sell at 10 cents per copy or will send free as long as they last to each subscriber who, on renewing his subscription, requests a copy of "Plant Breeding."

The money dealers of New York view with complacency the export last week of \$3,500,000 of gold, making within a very short time an aggregate of \$7,500,000 sent from this country to Europe. Henry Clews remarks, "We could quite easily part with \$20,000,000 with no worse results than imparting a tonic effect to a flabby money market." The Kansas Farmer arises to inquire whether this tonic for the "flabby money market" will not have a contrary

effect upon the market for what the farmer has to sell? We prefer a flabby money market rather than flabby grain and live stock markets.

## ATTITUDE OF A TRUST MAGNATE.

The political deep has been greatly agitated at the declaration of H. O. Havemeyer that "the mother of all trusts is the customs tariff bill." Now, Mr. H. O. Havemeyer is the king of the sugar trust, and, since the sugar trust has been and still is a beneficiary of the customs tariff law in a large measure, estimated by the Louisiana Planter and Sugar Manufacturer at "150 per cent on his own work," he was by no means expected to make the rash statement that "the mother of all trusts is the customs tariff bill." But he made it, and nobody expects that he will go back on it. There has, however, been a lively scurrying around to discover the motives of Mr. Havemeyer for making this attack upon a bill whose passage was coincident with a rise in the prices of sugar trust stocks from \$1.09 1/2 to \$1.59 1/2 on \$36,968,000 of preferred stock and from \$1.00 1/4 to \$1.21 1/4 on \$36,968,000 of common stock.

It is stated that Mr. Havemeyer's trust refines about nine-tenths of all the sugar used in the United States. It is known that this trust has, or can have, as much capital as it wants for purposes of enlarging its business. If the sugar trust is to very much enlarge its operations, foreign markets will have to be sought for its products. Foreign refiners, at least some foreign refiners, are able to buy raw sugar in the open markets of the world and have it delivered to their refineries duty free. When Mr. Havemeyer's trust buys raw sugar in a foreign market it must pay \$1.82 1/2 tariff on every 100 pounds of pure sugar it contains. True, when they become exporters the American sugar refiners ask the Government to refund the amount of duty they have paid on the raw sugar used in the production of the export article, and it results that American refined sugar can be bought cheaper in some foreign countries than at home. But, while this refunding of the tax places the American refiner on an apparently equal footing with his foreign competitor, there is just now such an antipathy to the trusts that possibly Mr. Havemeyer expects the American consumer to demand the right to buy American refined sugar at as low a price as that at which it is offered to his English cousin or any favored people. Such a thrust would confine Mr. Havemeyer's operations to the paltry \$100,000,000 worth of sugar used in this country and that might not enable his company to pay the \$75,000 per year salary, which he is reported to receive as president of the sugar trust. If, however, the trust can be assured of an equal chance with its foreign competitors in the markets of the world by securing its supplies duty free it may see its way clear to consolidation with these competitors, or to a conquest of the world's markets such as it has had of the markets of its own country.

Whatever may be the motive, it is conceded that Mr. H. O. Havemeyer knows what he wants; that he goes after it with ability, and that he has never been accused of the fatal error of Lot's wife.

## DROUGHT IN THE EAST.

An impression has prevailed that anxiety about rain prevails only west of the ninety-fifth meridian. The recollections of even Kansans during a dry spell picture the timely showers as never-failing "back East." The following jubilant lines from the New York Farmer, of last week, published at Port Jervis, N. Y., indicate that even there the people can rejoice in the blessing of a small shower as much as they do rejoice in the short-grass country. "After a long and distressing drought, we were blessed on Thursday, the 15th, with an abundant rainfall, at least in this particular section. A very heavy shower reached us about noon; it literally poured down and citizens stood in the doors of their places of business or on their home piazzas, smiling with happiness at the sight of the drought-breaking, refreshing rain. Later in the day three more lighter showers supplemented the first and the air was cooled and made fresh and comfortable. It will put new life in the pastures and somewhat help the hay, though it is rather late in coming to be efficient in that department of agriculture. Corn will put on new life and the home garden will be brightened up at an amazing rate. The Farmer hopes that this is a precursor of a weekly visit for the remainder of the season."

Secretary William H. Barnes, of the Kansas State Horticultural Society, has arranged with the local horticulturalists of Manhattan and the professors of the agricultural college for a meeting of the State society at the college. The meeting will be held in November in connection with the

chrysanthemum display of the college and will be an important one for both the college and the society. The college takes a strong interest in horticultural matters and the horticultural society is naturally very largely interested in the college. The annual meetings of the society are always held in Topeka. This extra meeting will give the horticulturists of the State an opportunity to visit the institution, to which many of them are sending their children for their education, and it is expected that a large number will avail themselves of it.

## EDUCATOR OF TEACHERS.

The State Normal School is one of the great institutions of Kansas. The catalogue for the thirty-fifth year shows an attendance of 1,802. This includes 173 pupils in the model school. The course of study is arranged especially to meet the purposes of the school, which are defined by the act of the legislature to be, "the instruction of persons, both male and female, in the art of teaching, and in all the various branches that pertain to a good common-school education, and in the mechanic arts, and in the arts of husbandry and agricultural chemistry, and in the fundamental laws of the United States, and in what regards the rights and duties of citizens," etc. That the State Normal School has been a success in preparing teachers for their work, is shown by the roll of graduates and their occupations. The class of 1898, in the course for bachelor of pedagogy, contained 125 members; of these 108 are listed in the present catalogue as engaged in teaching. A few are pursuing their studies further; a few of the ladies have changed their names, and a few are at home. Those listed as principals of schools form a large proportion. The State Normal School has, for a long time, been under the guidance of President A. R. Taylor, who has a wide and well-deserved reputation as a teacher of teachers. Those desiring detailed information of the school and its opportunities should write for catalogues to President A. R. Taylor, Emporia, Kans.

## BAGGING GRAPES.

Editor Kansas Farmer:—I would like instruction as to the proper time to sack grapes to delay ripening.

MILTON PRATT.

New Albany, Kans.

The objects to be attained from bagging grapes are chiefly as follows: The prevention of the attack of fungous diseases, the delay of ripening, and the lengthening of the season of the fruit by protecting it from insects and birds. The time of placing the bags on the fruit should depend upon the purpose of bagging. If the object is the prevention of the attack of diseases, such as the mildew and the black rot, or the retarding of the ripening, the fruit should be enclosed while it is still small, not more than one-fourth grown.

When the fruit grows and matures in the bags it very often fails to color as well as when it grows unprotected. There is great difference in varieties in this regard, but it is notably true of the red grapes, such as Agawam and Delaware. On this account, when the purpose is only to protect the fruit from wasps, bees, and birds during the time of maturity, the bags should not be put on until the fruit begins to color or soften. When put on at this time the color of the fruit will be but slightly affected, even on varieties that are most sensitive in this regard. Many of the better varieties will retain the fruit on the vine in good condition for several weeks after being fully ripe if thus protected.

For the benefit of those interested in the subject, it may be stated that the bags ordinarily used are the 2-pound manilla paper article used in the grocery stores. They are slitted from the mouth, two inches down the sides, and when placed over the cluster of grapes the slitted portions are brought up over the cane and securely pinned together. Thus secured the bags hold on very well; it is very seldom that one is torn or blown off by the wind.

W. L. HALL.

Kansas Experiment Station.

## LUMPY-JAW.

Editor Kansas Farmer:—I have a 2-year-old heifer that will be fresh in three weeks. She has a hard lump on the left jaw. It is about the size of a hen's egg and is sore. I believe it to be the "big-jaw." I noticed it about a month ago for the first time. It may have been there before I noticed it. The disease is not hereditary, for the herd has never been bothered with it before. Can she be used for beef next fall, or can it be cured permanently? Please answer as soon as possible.

HENRY GURTLE.

Esbridge, Kans.

The veterinary editor of the Kansas Farmer is away on a vacation. In his absence we will say that your cow evidently is afflicted with actinomycosis, commonly

called "big-jaw," or "lumpy-jaw." In our issue of May 19, 1898, this disease was fully described and remedy given. It would be well for our correspondent to write Fleming Brothers, Chemists. Address them at Stock Yards, Chicago, Ill. They prepare a remedy for this disease. Notice their advertisement in this paper.

## BREEDERS' ANNUAL REPORT.

The Kansas Improved Stock Breeders' Association has just issued from the press of the Kansas Farmer its first published Annual Report in book form. It contains an introduction by Secretary Coburn, of the State Board of Agriculture, a history of the live stock organizations in Kansas by Secretary H. A. Heath, the full proceedings of the ninth annual meeting of the Kansas Improved Stock Breeders' Association, and the consolidation of the other live stock organizations of the State with it, together with the addresses, papers, and discussions as to the various branches of the animal industry of Kansas and live stock husbandry in general.

It is the first distinctive live stock report ever issued for Kansas and is a veritable live stock manual for the State. The Report also contains the Association's Kansas Breeders' Directory for 1899. As the Association receives no State aid, but is supported entirely by its membership fee of \$1 per year, it has been decided to charge a nominal price for the annual report, as follows: Single copy, 25 cents; 10 copies, \$1.50; or 100 copies, \$10. Address all orders, or applications for membership to H. A. Heath, Secretary Kansas Improved Stock Breeders' Association, Topeka, Kans.

Comparisons have recently been published as to the business of twelve leading American railroads in 1892 and in 1898. The former is considered the banner year for railroad earnings. The comparison shows that the passenger earnings of 1898 were 11 per cent and that freight earnings were 1.8 per cent less than in 1892; but the working expenses were reduced 8.2 per cent, so that the net earnings showed an increase of 5.8 per cent. It is not stated whether the reduction in working expenses resulted from reductions in wages or from improvements of appliances.

A young Kansas man, Walter T. Swingle, a graduate of the Kansas State Agricultural College, has, for some years, been in the employ of the Department of Agriculture as an explorer. A dispatch says that he has arrived in Berlin after years of exploration in southern Europe, northern Africa and the Orient, seeking new plants for introduction into the United States, of which he has secured a great variety, including date palms for Arizona, New Mexico and southern California; grape-vines and wheat for experiment in the middle latitudes of the United States, and artichokes, pistaches and St. John's bread, which will be tried in the South for cattle feed.

Thus far the State Board of Agriculture has received assessors' returns from seventy-two counties in Kansas, and it is interesting to note that fifty-seven of these report an increase over 1898 in population of 29,172, while fifteen show a decrease of 3,375, leaving a net increase for the seventy-two counties of 25,797, equal to nearly 2 per cent on the State's entire population of one year before. The largest gain is 3,421 in Cherokee County, Shawnee following closely with 3,368. Sumner County reports an increase of 1,948, Allen 1,578, Harper 1,255, Ellsworth 1,183, and Crawford 1,027, the smallest increase being 11 in Kearny County. The heaviest loss is reported from Labette County, being 901, and the smallest is 1 in Lane County.

The Kansas State Horticultural Society, through its energetic secretary, Hon. William H. Barnes, has recently published two extremely valuable reports. The first of these, "The Kansas Apple," has been freely quoted in the Kansas Farmer. This paper can offer no higher compliment to any publication than to reproduce from its pages in these columns. The second volume—just out—embraces the transactions of the society—especially at the last annual meeting. The Kansas Farmer has given large excerpts from these valuable proceedings. Readers will be glad of the opportunity to procure both books. Secretary Barnes informs us that on account of exhaustion of his appropriation for postage he is able to supply copies, before July 1, only to those applicants who accompany their requests with 5 cents for postage. The editions of these valuable books are not very large and it will be well to send in applications early. After July 1 no postage need be sent.

July 7

The Nickel Plate Road will run an excursion to Chautauqua Lake at one fare for the round trip. Write to General Agent, 111 Adams St., Chicago, for particulars. (19)



## IOWA SWINE-BREEDERS.

The annual summer meeting of the Iowa Swine Breeders' Association was held at Des Moines, June 13. There was a good attendance, although, owing to the peculiarities of the season in Iowa this year, the meeting was below the maximum in numbers. But the interest was fully up to the Iowa standard, which, every breeder knows, is up among the highest notes of the scale. The business interests of the breeder claimed a large share of attention, and were ably discussed in carefully prepared papers. The breeder's honor was recognized as one of his most essential qualities. The reputable breeders throughout the country are becoming daily more thoroughly convinced that the man who is not dependent upon the fullest talent in everything pertaining to his profession should be relegated to a separate class, while the fair-dealing breeders should recognize only men of the highest integrity as entitled to places of honor in the profession. That every honest breeder has sought to apply the principles of his art to the opportunities presented, so as to secure results of paramount value to producers, is a fact which was not lost sight of at the Iowa convention. The association of men having interest in common, and every one of them studying the problems of development and of evolution in the concrete form presented to the breeder, is an association from which not only the young breeder, but the veteran as well, reap lasting benefit.

## ADDRESS OF WELCOME.

Excerpts from address of welcome to Iowa Swine Breeders' Association by Geo. H. Van Houten:

"I shall not attempt to tell you about the business; you are supposed to be informed on things I do not know, and yet it may be within the bounds of reason and propriety to speak something about your business, a business that is represented in every county and practically every township in the great State of Iowa—an interest that is represented in no other State in this Union or in no country of the world so extensively as in Iowa. You, gentlemen, have had enough experience that you have not only in the magnitude of your business made a wonderful success, but in the individual herds you have made a wonderful success. I realize that there are times of depression in the swine-breeding business, as in every other line of industry. I realize there have been times in the State of Iowa when the losses have been so great that almost any other class of business men would have been discouraged by such enormous losses. If the bankers had lost as much as the swine-breeders have lost through cholera or plague, it would have almost broken up the banks of Iowa. There is scarcely any business that could have lost as much as the swine-breeders and yet recover so quickly. Their losses are recovered so quickly that they are almost forgotten, except by the individuals from their depleted income for perhaps several years. But it is a great business and a growing business. Your presence here shows you realize the necessity of getting together to discuss that business, to exchange views, to get acquainted with each other, and, if possible, benefit yourself in the work you have undertaken. This work is and has been successful; it must be successful in the future.

"The great agricultural State of Iowa must depend largely on the hogs and cattle and corn. These things go together, so that whoever has corn generally must have hogs, and he wants the best. If you have not the best, you come here to ascertain that fact, and go to fairs for that purpose, and when you see your neighbor and compare notes with him you get his ideas and go home and put his ideas into your business.

"Swine-breeding must be successful in Iowa. Our future success depends upon it. I have heard the remark that people do not raise hogs from the love they have for the hog. I can sympathize with a man that loves the horse, I can hardly sympathize with a man that loves a dog, and almost detest a woman that loves a dog. I can see how a man can go out and feed a well-kept hog and feel towards it almost as a man does towards a horse. While we are not raising these animals because of any feeling of love we have for them, we raise them because it enables us to get the things we desire, to have the comforts of a home, educate the children, and make home and surroundings pleasant. It is one of the profitable things of Iowa farming.

"We look upon these meetings as a kind of annual reunion. So if this organization shall continue, as it probably will continue, you continue members of it, as you probably will if you grow interested in your business and increase your holdings and the quality and value of your stock, you will look upon these meetings with more interest than you do now, not only for the value of the things represented, but because of the association and your feelings

towards those who come to the annual meeting. When you go home I hope you will go with an enlarged feeling. The man who stays close at home is liable to be narrow in his views, to think he has the best thing of all the world, and that his particular county and township is the best of all. I appreciate the man who has this feeling for home, but when he goes out and sees people who have improvements that those in his neighborhood have not attained to, that gives a broader view, a better view of his surroundings. And when we take into view one State, it is but part of the United States; and when we take the United States, it is but part of the great world, and as all people are akin we ought to have a friendly and social feeling with all the earth. We come here representing particular interests, a financial interest, so that we come here to advance that and it is no selfish motive that we drop out philanthropic ideas and look at this from an individual standpoint. That is the way to look at it. Look at it in such a way that you can go back and prosecute your business more successfully than in the past. Make your stock better, advertise your business, and come in contact with those people who want it, and get the most for it. Two men with stock equal, from the same parent stock, the one keeping his stock as well as the other, but one, because he stays at home, because he does not use printer's ink to advertise, sells his stock at low prices, while the other man, going out in the world and mingling with these people who want the same thing his neighbor has to sell, is able to sell his stock to better advantage to him and to the people who buy of him. If I were to give you an admonition I would tell you to raise the best, and when you have it raised to get into business contact with your neighbors, with your fellows, and with the world at large, by personal contact or printer's ink, that the world at large may know what you have. And those people are ready to buy and are ready to pay such prices that the papers are willing to take up and particularize as to the prices you have obtained. These are some of the things that will be thought of and discussed at your meeting.

"A gentleman said yesterday on the way up here that, owing to a mistake in date of a sale, he has been prevented from being here to-day, and he is a swine-breeder and has been a very successful one, and he wanted the subject discussed, and if discussed, he desired the papers should make mention of it, as to whether or not forced feeding, as we say, or such feeding as will bring the animals to maturity at the earliest age, and keep them at their best until they are sold—whether or not that interferes with the vitality or fecundity of the animal or its progeny. I think that is a question that can very well be discussed here. It has probably been discussed heretofore, but, if so, there are people who have not read these discussions who are now ready to read them. There is prevalent among many people the idea that the converse of this is true, that if you rush an animal at an early age you destroy its vitality, and that the offspring of that animal will lose by it. We used to have that idea in Iowa when we kept the stock on the slough-grass, before we had mowing machines, and, because we could get that grass cheaper, that was what we fed our animals on. I have heard old men say that horses wanted to be roughed through the winter; that giving them that grass and no corn would make them tough. (Laughter.) I realize there are people in this country to-day who have an idea that high feeding tends to weaken vitality of stock. My own experience has not been that. Perhaps I have never overfed or overpushed. But I always take the greatest pride in those animals that were the best kept. So far as my experience is concerned there has been no deterioration when animals have been properly kept and properly housed and managed. But I suppose there is danger in forcing the overfeeding. Then comes that question of the balanced ration. You have heard that question discussed.

"There is another thought, and that is that I believe the day has come when people have determined to use their animals in a better way than in the old times. In the old days a hog ran out, and when a man wanted pork he went with a rifle and dog. Now we kill them in a merciful way. The point I desire to make is that I believe it is the duty of every man who has a hog or calf or chicken or anything else, that he uses such animal in such a way that no one has a chance to complain. When I go through Iowa I see horses and animals misused. I see hogs kept in close pens that are never cleaned except as the rains clean them, and there is a putrefaction going on, and people wonder why hogs die. When contagion comes and spreads over the country we do not wonder, but if we are ever to have freedom from disease in Iowa we have to have freedom in judgment and take more care and renovate and keep out those foul things that

cause diseases and cause them to spread. These things will naturally come up in your meeting, so that I need not refer to them.

"Recurring to the thought that I was to bid you welcome, I speak the words as heartily as though I owned the whole city of Des Moines and could place it at your disposal. When you come to the city you are welcome.

"We trust the meeting will be highly profitable to you, that you may take home with you some thought you have gained, some knowledge you have gained, something spoken in the friendly contact with others here in the same business. Let us hope that in the general prosperity we believe is coming in the country, that you, as individuals, will benefit by it. In my own observation and view of the world I have come to this conclusion, that there is no place of all the world more prominent by reason of furnishing a world product. I know it is said when a man sells upon the markets of the world he sells at a low price, and to a certain extent that is true. We can do that in selling coffee; we can do that in tea and sugar; we find the transfer from producer to consumer has brought down these prices. When a man sells a world product he must sell it at a comparatively low price. But take the pork product and consider that from a place a short distance west of the Missouri River, and not far north of Iowa, and not very far south, and not far east of Chicago, we have the great pork-raising region of the globe, and the one place that in your day and mine will be the great pork-raising region of the globe, and when we consider there is that exchange of commodities between nations, we have only to look to statistics and we will come to the conclusion that those who have in their grasp the wonderful product you are engaged in must have a market, and let us hope that market will be a profitable one, so that in years to come the man who raises hogs will be as well off as though he were a national bank. While interest rates will have to go down, there will not be a plethora of pork and there will not be a lack of demand, and when you get the product the world demands the world will take it, and I hope at a remunerative price.

"I bid you welcome, hoping your stay will be pleasant and that you will put in practice those precepts you are hearing at this meeting, so that you will feel that your stay with us has not only been pleasant but profitable as well." (Applause.)

## Shawnee Horticulturists.

Editor Kansas Farmer: The mid-summer meeting of the Shawnee County Horticultural Society is to be held at the Reform School, near North Topeka, Thursday, July 6. A picnic lunch will be eaten by the society in the grove just north of the Reform School, and the members are requested to bring full baskets. Bring berries, cherries, early apples or other fruits, and flowers to adorn the tables. The following is the program for the afternoon: "Plant Physiology," Prof. A. S. Hitchcock; "Raising Peaches," James Purdy; "Culture of Mushrooms," N. B. Arnold; "Co-operative Marketing," A. E. Dickinson. Lunch will be served from 12 to 1:30 and the program will commence at 2 o'clock. B. B. SMYTH, Secretary.

The catalogue of the University of Kansas for 1898-9 is a book of 208 pages. It gives, in classified form, such information of this great school, as is desired by persons who are inquiring as to facilities for higher education. The total enrollment for the year is shown to be 1,087, an increase of 25 over last year. The summary presenting the growth of the university shows that for the year 1866-7 the enrollment of students was 55, and that there were then four members of the faculty. In 1884 preparatory studies began to be eliminated. The enrollment of that year was 521. The next year's enrollment was 471 and the faculty numbered 21. The growth has not been quite continuous, but since 1890-1, when the preparatory department was entirely abolished, the growth has been uninterrupted. There are now 69 members of the faculty and 674 male and 413 female students.

## Fruit Farming Along the Frisco.

An attractive illustrated and thoroughly reliable 64-page booklet, devoted to fruit culture along the Frisco Line in Missouri, Arkansas, Kansas, Oklahoma, and Indian Territory, just issued. A copy will be sent free upon application to Bryan Snyder, G. P. A., Frisco Line, St. Louis, Mo.

## The Nickel Plate Road

will sell excursion tickets to Chautauqua Lake and return on July 7, at one fare for the round trip, with return limit of August 8, 1899. Tickets good on any of our three daily trains. Cheap rates to other Eastern points. Van Buren Street Passenger Station, on the Loop. For further

information address the General Agent, 111 Adams St., Chicago. Telephone Central 2057. (20)

## Manufactured Flavor.

If any one has had the impression that manufacturers of oleomargarine do not understand their business such impression should be dispelled by reading the following account of the method by which this product is made to taste like butter:

"In certain European countries, especially in Holland, oleomargarine is made in very large quantities. The largest factories in the world are located in Rotterdam. In these factories the use of pure cultures has for some time been adopted with almost absolute uniformity. The shrewd business men who manage these factories have thoroughly learned that if they wish to obtain in their products a flavor imitating that of butter they are obliged to use bacteria to give them this flavor. They therefore buy the artificial pure cultures and inoculate them into large quantities of pasteurized milk in essentially the same way that the butter-maker inoculates them in his cream. They allow this milk to stand in a warm place for a length of time, which will produce the proper amount of souring, and then this ripened milk is mixed with the fats and the mixed oils made into margarine products. The result is that a flavor of butter which is, of course, derived from bacteriological products of the souring milk, is imparted to the margarine. All of the better grades of artificial butter are made in this way. The margarine factories use various kinds of pure cultures and experiment upon them with a good deal more care and know much more about their use than do the butter-makers. Butter-makers make comparatively small quantities of butter, while oleomargarine factories make their product in very large quantities, and their market is much more dependent upon the grade of their product than is the market for butter. Some of these oleo factories have their own bacteriological laboratories, where experiments are going on constantly and where they can obtain their own pure cultures and make use of the very best results of the most recent advances in bacteriology. The wide application of bacteria in the manufacture of oleomargarine products should be a lesson to the butter-maker."

## Publishers' Paragraphs.

"The Automobile in Common Use: What It Costs, How It Is Operated, What It Will Do,"—in short, the Automobile, or horseless vehicle, as we find it in actual service to-day, will be the subject of the opening article of McClure's Magazine for July. The article will be illustrated with pictures of all the more important types now under trial.

It is very likely that the period has been reached where there are no longer any doubts entertained that there is to be a Greater America Exposition. Even those with whom the wish was father to the thought can hardly longer give utterance to their doleful misgivings. They are not only convinced that there is going to be an exposition this year at Omaha, but that it is going to open July 1, on time to the hour and the minute, and are forced to acknowledge that it is being prepared and built on a scale of magnificence that has won confidence for the project in spite of the widely concerted opposition. It is gratifying to note that the opposition has practically vanished. The railways, upon which much of the success of the enterprise depended, have silenced the prediction that they would prove unfriendly and have shown their favor for the enterprise by granting a much better rate for the opening events than was secured during the early stages of the Trans-Mississippi. Even the Omaha jobbers, realizing the uselessness of further opposition, have recognized that the exposition is destined to be an overwhelming success and have concluded to render it every assistance.

## National Educational Association Meeting.

For the meeting of the National Educational Association at Los Angeles, Cal., July 11-14, 1899, the Union Pacific will make the greatly reduced rate of one fare, plus \$2.00, for the round trip.

The excellent service given by the Union Pacific was commented on by all who had the pleasure of using it to the convention at Washington in 1898. This year our educational friends meet in Los Angeles, and members of the Association and others from points East should by all means take the Union Pacific.

The service of the Union Pacific via Omaha or Kansas City is unexcelled and consists of Palace Sleeping-Cars, Buffet Smoking and Library-Cars, Dining-Cars, meals a-la-carte, Free Reclining-Chair Cars and Ordinary Sleeping-Cars.

The Union Pacific is the Route for summer travel.



## Horticulture.

### SOME INSECTS OF THE YEAR.

Paper by E. A. Popenoe, official entomologist, read before the last annual meeting of the Kansas State Horticultural Society.

The season past has not been greatly distinguished by the prevalence of new insect forms. Our plantations have been by no means free from pests, as every one here will bear testimony. But the season's visitors have been mainly those that we always have with us, and must have, unless we succeed, by constant precept and example, in securing, among fruit-growers everywhere, a more earnest attempt to put into practice the first principles of economic entomology as applied to fruit-growing.

My review makes no pretense to cover the ground of papers published in the previous volumes of the society's reports. I shall note briefly the insects to which my attention has been chiefly called, and more fully one or two species to which, I think, more extended notice is due by reason of the threatening character of their attack and spread. Among familiar insects,

#### THE APPLE LEAF-CRUMPLER

has seemed more abundant than in a few preceding years. The presence of this insect is visible at this time of the year by ragged knots of dead leaves protecting the case in which the half-grown larva is passing the winter, swinging from the twigs by a band of silken threads. Its presence calls for the more vigorous and general use of the arsenical spray.

**THE LESSER APPLE LEAF-FOLDER** was abundant in most nurseries and orchards during the past season. Beside the lack of vigor induced in larger trees by the destruction of the leaves, there is chargeable also to the work of this insect, where abundant in nurseries, a shortened growth in seedlings and yearling grafts, due to the riddling of a large proportion of the foliage. From the protected position of this apple-worm, living as it does within the folded and clustered leaves, many individuals will escape the poison of the arsenical spray, yet the proportion destroyed doubtless warrants the employment of this method with others. In nursery rows, a drag or brush attached to the cultivator and striking the tops of the trees is believed by many to check the insect materially.

#### THE FALL WEB-WORM

everywhere attracted attention the past autumn by its conspicuous abundance. Like the tent-caterpillar earlier in the season, the presence of this insect is shown by a prominent web or tent at the tip or in the fork of a small branch. While the injury done by this insect is greatly less than it might be, because of the lateness of its attack, coming as it does at the period of nearly complete maturity of the foliage, it is a species which we should not permit to increase, the means of its destruction being simple, and well known to every one.

#### THE HANDMAID-MOTH

was also abundant in most localities visited by the writer. Less conspicuous by reason of the absence of a web, this species otherwise is about the same rank as an injurious insect as the preceding. As it so often occurs in the nursery, where a single colony may completely defoliate several adjoining trees, it behooves the nurseryman especially to destroy it wherever noticed.

#### TWO MULBERRY BORERS.

In some localities there exist two closely related beetles, belonging to the same family as the roundheaded apple-borer, and breeding abundantly in the white and the Russian mulberries after these have reached fruiting age, and also attacking the nearly related Osage orange. These beetles have not attracted sufficient attention to have received common names, but the larger (*Dorcaschema wildii*) may appropriately be called Wild's gazel-beetle, and the smaller (*Dorcaschema alternatum*), the mottled gazel-beetle. I found these abundantly at Manhattan, in 1897, attacking bearing trees of the two mulberries named, the trunks and larger branches being full of the holes made by the borers. The beetles, unlike the parent beetle of the apple-borer, are diurnal and may be beaten from the branches, especially during the earlier part of the day. The mottled gazel-beetle is apparently the more common species. Both attack the Osage orange in overgrown hedges.

#### THE APPLE-CURCULIO.

*Anthonomus quadrigibbus* I found in numbers the past spring, but attacking only the fruit of the red haw or common wild thorn apple. At the time of its occurrence upon these trees, I made special effort to detect it on the apple-trees of neighboring orchards as well as those in other localities, but my search was not rewarded by the discovery of a single specimen away from trees of the red haw. I have no facts bearing upon the occurrence of this beetle in

other localities than the vicinity of Topeka, but should expect to find it wherever the red haw grows as a native tree. We greatly need definite information, accompanied by specimens, of this insect as an apple pest.

#### THE NORTHERN LADYBIRD.

This plant-feeding member of the carnivorous family of ladybirds has occasionally attracted much attention in States to our eastward as an enemy to the squash and cucumber. With us it has been esteemed a rare insect and I am not aware of an instance of its destructive presence in the gardens of our State. That it does occur here, however, abundantly at times, though in limited areas, I had occasion to note during the autumn past, when I discovered an extensive colony of it upon wild plants of the squash family. The species of plant attacked were two—the star cucumber and the fetid gourd, upon both of which the beetles, accompanied by their larvae, were so numerous as to reduce the leaves to skeletons, by feeding upon the green pulp only, over the entire plant. It is difficult to account for the sudden abundance of this species where it has heretofore been rare, and it is equally difficult to say whether or not this insect is to be added to the already large list of garden pests in Kansas. The exposed position of both larvae and beetle in attack, feeding as they do in full view upon the surface of the leaf, should render this insect easy of control by arsenical spray, or by dusting with some poison or repellent adapted to the conditions.

#### THE CHERRY-SCALE.

I reported last year before this society the discovery in August of the little-known insect named by Prof. W. G. Johnson, its describer, the cherry-scale (*Aspidiotus forbesii*). I then knew of but one Kansas record for the species—my own discovery of its presence in Shawnee County. The past season, however, I found it in several other localities. I now know of its presence in four localities in Shawnee County, and one each in Jackson, Johnson, Franklin, and Labette Counties. The species was first described in a paper printed in the bulletin of the Illinois State Laboratory of Natural History, Vol. IV, page 380, where Professor Johnson, its discoverer and describer, reports it as occurring on "wild and cultivated cherry, apple, pear, plum, quince, currant, and possibly on honeylocust and mountain-ash," and says that it is common and very generally distributed over Illinois. As to its character as an injurious insect, he considers it "the most dangerous scale insect of the orchard now established in the State." Further, he says: "It attacks the trunk and branches of the cherry and is found occasionally on the leaves and fruit." He found it on the fruit also of both currant and apple.

In Kansas I have found it on apple, pear, cherry, and currant, and, as in Illinois, it is apparently more abundant on cherry. However, I have found it in several localities very abundant upon orchard trees of the apple. In an overgrown lot of apple-trees in a nursery, the trees probably 5 years old, it occurred in some abundance, many of the trees showing whitish patches, due to the number and close proximity of the scales. I have little doubt that it will be found widely distributed throughout the fruit-growing regions in Kansas. Trees thoroughly infested with this scale show its draft on their vigor in stunted growth, and the insects often cause peculiar depressions in its bark, with deadened lines down the center, such as might result from a bruise lengthwise along the trunk or branch. In such depressions they are found most thickly along the fresh outgrowth or callus next the uninjured original bark. In this place there will often be a line of the characteristic whitish young scales of the width of two or three individuals, while the older and larger ones are found more thickly and irregularly clustered upon the parts farther within the depression. I did not observe that the insect shows a preference for any side of the trunk of branches in particular, and have noticed vigorous colonies on the southwest side of small apple-trees exposed to the full blaze of the afternoon sun, as well as on the opposite side, in the shade and well protected.

To the unaided eye, the scale-infested branches show whitish or grayish patches, often indistinct and poorly defined, as though drops or streams of thin, dirty whitewash had been nearly obliterated by rain. But the use of a pocket lens of good definition will show the characteristic buttons or scales scattered or clustered, often thickly, and especially around the edges of such grayish patches.

As to its life-history, my opportunities have offered no new data, and I can do no better than to quote the account of Professor Johnson in the article before cited. He says:

"This species hibernates as a partially matured insect, and is double-brooded in the latitude of Springfield, Ill. The mature males begin to emerge about the middle of

April, and the first brood begins to appear early in May; but young and eggs of the same brood are often found as late as June 20. The mature males for the second brood begin to appear about July 10, and continue to emerge until about August 1. The young of the second brood first appear about the first week in August, and may be found until late in September. It is quite possible that there are three broods in the southern part of this State."

Professor Johnson has bred seven species of minute hymenopterous parasites from this scale, and has found a mite and the common twice-stabbed ladybird destroying the insect.

Now, we have in this scale a widely distributed form, closely related to the San Jose scale, and by good authority considered a pest even more dangerous than this much advertised species. We have good reason to believe that this cherry-scale is widely distributed throughout the fruit-growing regions of our own State. In general characteristics we may consider it like the San Jose scale, and subject to the same modes of distribution and treatment. It seems to me that we should undertake vigorous measures to destroy it wherever found and to guard against its spread. It is more likely to be introduced into young orchards, where these are not in the neighborhood of infested trees, in nursery stock, but as the great probability is that some infested trees will be found in most old orchards or cherry plantations this is not the only method of spread.

The most that we can do, then, is to become acquainted with the insect, recognize its dangerous character, and combat it vigorously by one of the proven methods of treatment adapted to the destruction of such scale insects.

One of these, and the one most easily used, is a repeated spraying, during the dormant season of the tree, with whale-oil and caustic-soda soap, two pounds to the gallon of water. As such applications are believed by the best-informed experimenters to destroy some fruit buds, especially in fall or early winter, it is best on bearing trees to defer the treatment until late winter or early spring before the fruit buds are much advanced.

Upon the use of a fine spray of pure kerosene I do not advance an opinion. I have not known of its use in a careful way in our State. But as a thoroughly successful insecticide it seems elsewhere to be gaining favor, where the application can be made by careful hands and under weather conditions favoring the most rapid evaporation of the oil. In very seriously infested orchards it is well worth a trial, but all trials should be made first in a small way, in order that the experimenter may learn the required conditions of the safe use of this medium without destroying by an overdose the trees that he wishes to protect.

#### THE FRUIT-TREE BARK-BEETLE.

My first acquaintance with this beetle (*Scolytus rugulosus*), the first notice of its presence in Kansas, was gained in 1897, during August, in the course of nursery examination. I have also found it this year and practically everywhere. In the examination of 2-year-old apple and pear, in almost every case of a blighted tree in the row, I have found this beetle at work. The first indication of its presence is a small circular opening through the bark at the base of a bud or small lateral branch, or at the scar where such branch had been pruned off. Within this opening, sometimes with the tip of the body still projecting, might be found the parent insect, gnawing farther inward and extending its burrow. The completed burrow lies along under the bark, and at intervals along the sides are laid the eggs. The grubs hatching from these eggs, each excavating a lengthy burrow for itself, thoroughly separate the bark from the wood and pack the cambium region with their sawdust-like castings. Externally, the position of both the adult and larval burrows is indicated by the lighter color of the outer bark immediately over them, the pattern being sometimes very regular and distinctly outlined.

Becoming full grown, the grub ceases to extend its burrow and transforms in the end thereof, the resulting adult boring outwardly through the bark, the exit being a small circular opening like that made by the parent at the point of entrance. As one female is the parent of many beetles, the perforations after the exit of the matured brood resemble small, clean shot holes in size and abundance. There are certainly two and perhaps more broods during the season. I have found the work of the same insect in apricot, plum, and cherry, and not only in nursery trees but in trees of full bearing age.

In general, the parent beetle seems to prefer trees in ill condition as the place for egg deposit, but I have found trees attacked that showed no such reason for their selection. It can not be doubted that this insect is to be placed among the injurious species and guarded accordingly. The act of egg deposit is most easily dis-

covered in the latter part of summer, probably because of the greater abundance of individual beetles at this season. If the infested wood be gathered and laid aside, the beetles will be found emerging in great numbers late in the fall or the following spring. If the infested trees be burned soon after they are attacked, it follows that the destruction of a great many beetles would be accomplished. This points out the danger of the accumulation of pruning blighted trees and cull stock in piles about nurseries and orchards. The prompt burning of such material will go far to reduce the numbers of the pest, and such treatment should be imperatively followed by every nurseryman and orchardist.

#### THE ENCOURAGEMENT OF INSECT PESTS.

I have been frequently impressed by the danger to orchards and nurseries arising from the conditions in which reserve rows of surplus stock, scion orchards, and similar plantations are usually kept. Such plantations are commonly allowed to go as they may. Too often they receive no attention whatever. Grown up to sprouts and weed of every kind, they become a breeding ground for every pest of the nursery and orchard. Unless the owner is willing to give such grounds reasonable care, enough to destroy the noxious insects that flock to such thickets, he should make up his mind to dispense with them altogether. In such a ground I saw the past summer an apple illustration of the best method of encouraging the handmaid-moth, an insect occurring sparingly in every orchard and nursery in the State, perhaps, but here in such numbers as to strip completely hundreds of apple-trees 4 to 5 years old. It is true that no visible injury resulted to the scion which constituted the crop for which the plantation was kept. The leaf stalks ripened and dropped off, leaving the shoot clean and apparently well filled out. But no account was made of the thousands of moths that would fly from this place next summer to stock with eggs the owner's orchards and nursery in the vicinity.

Another insect greatly multiplied by the let-alone cultivation of this and similar plantations is the apple leaf-crumpler whose ragged and telltale nests were also too frequent on 2-year-old apples this year in many nursery rows. In such grounds I also saw one of the worst cases of cherry scale that it has been my fortune to discover.

It is not to be concluded that the owners of such plantations are not otherwise good cultivators. Among them are some of the most conscientious and careful nurserymen in the State. But they have overlooked the danger. When attention has been called to the necessity of remedying such conditions, I have found them quick to appreciate and act upon the suggestions I have been able to make. And here I am offered the opportunity to say that in my experience the nurseryman seems more ready to undertake a businesslike warfare against tree pests than the average orchardist, and I can not support the contention that it is chiefly against the nurseries that our efforts at quarantine should be directed. As one expressed it, it would effectually ruin him financially if it were shown that his stock was in the least infested with a dangerous insect. But the orchardist is not open to such fear, and is of the two the more likely to relax his attention in this direction; while a thoroughly infested orchard becomes, through the carrying agency of winged insects and birds, and even by the transportation of fruit, a menace to every plantation around. What fruit-growers everywhere need is not protective legislation and certificates of inspection, but a personal awakening to the importance of some of our fruit pests, a careful study of the recommendations of practical experimenters, and vigorous action upon the deductions therefrom.

#### DISCUSSION.

President Wellhouse—Have you ever discovered the San Jose scale anywhere?

Professor Popenoe—I have seen it in Kansas.

Secretary Barnes—S. H. Bailey reports that he has found it in Bourbon County; it is also reported from Gray County, and Professor Hunter reports having found it in Wyandotte County.

President Wellhouse—In answer to the report of Professor Hunter, we wrote to him for the names of the parties, and it is possible when investigated it will be found not to be the San Jose scale. But if Professor Hunter says it is, he is probably right, as he knows what he is talking about.

A. Willis—From what locality does Professor Hunter state that it was reported?

Answer—Near Argentine, Wyandotte County.

Professor Popenoe—It has been found in Kansas. Some years ago a New Jersey nursery distributed a great deal of it throughout the West, but it is possible the scale reported near Argentine is not the



true San Jose scale. The cherry-scale is very abundant.

Vice-President Robison—Many people make a mistake about scales, and we ought to be sure it is San Jose scale before we call it that. A number of other scales have been found, and if we have the true San Jose scale we want to know it; but we don't want to herald it over the country if we have not got it.

Query—What is the remedy for San Jose scale?

Professor Popenoe—We recommend anything that is good treatment for any other scale. They are so near alike that anything that is good for the cherry or other varieties of scale would be good for this one. The treatment should be given in early spring or the late winter. A mixture of whale-oil soap and caustic soda is good. Others use pure kerosene, but there is danger to the trees in that. I think that the mixture of whale-oil and caustic soda will very materially reduce the cherry-scale.

Query—Used as a spray or a wash?

Answer—A spray, and used thickly to cover the trunk and branches thoroughly. We go over as much of the tree as possible.

A Delegate—A year ago last June I had a fine cherry-tree, about eight feet high, attacked by scale and blight, and soon the limbs were killed. I was using coal-oil on pear- and apple-trees. There were some cherries on this tree in June; with a swab I put coal-oil on the cherry-tree from top to bottom, and to-day it is one of the finest trees I have in my orchard. It killed the blight and the scale. The cherries matured, but they seemed hard; the bark on the tree seemed hard, and cracked open some.

Professor Popenoe—The places visited and examined have been somewhat limited. There is no appropriation made for such work.

## In the Dairy.

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

### Why Not Have a Dairy Picnic?

Messrs. A. L. Stewart & Co., proprietors of the Blue Grass Creamery, at Fontanelle, Iowa, have made arrangements for holding a patrons' picnic. Refreshments are to be served in the form of ice-cream and buttermilk, and it is expected to sandwich in some good helpful instruction and hints as to how to make the creamery business pay, both to the patron and to the creameryman. This is a move in the right direction and should be followed by creameries and creamery patrons all over the country. These gatherings help to knock off many of the rough corners in the creamery business and result in both pleasure and profit to the participants.

There are many farmers who do not understand the Babcock test; this would be an opportune time to explain it. Let some one thoroughly familiar with the scientific and practical application of the test perform the operation for the benefit of those who desire to see it. Samples of milk could be watered and skimmed, and the effect on the butter fat shown right before the audience. It would also be interesting to test samples of skim-milk and buttermilk secured by the gravity system and compare results with modern creamery practice.

Many farmers are unable to raise good calves on skim-milk. Why not have a calf exhibit? Induce farmers who have made a success of feeding skim-milk to bring in a specimen of their calves. It would also be an interesting contrast to have one or two of these pot-bellied, sour-consternated,

skim-milk calves that we hear so much about. Let these calves be placed before the audience and the conditions under which the two classes were raised explained. Then let some one who understands the business discuss the best method of rearing a skim-milk calf from the time it is born until weaned.

Inquiries are coming in to the Kansas Experiment Station for something to keep flies off the cow. A number of "shoo-flies" are advertised. When a patrons' or farmers' picnic has been decided upon, the program committee could write to the manufacturers of these articles and ask them if they would not send samples of their goods to the picnic free of charge, provided animals were promised upon which to try them. Any enterprising firm that has something good and cheap would find this one of the most effective ways of advertising its goods.

The feeding problem is always uppermost in the minds of the dairymen or stock-feeders and should be handled in an interesting and instructive manner. What feeds to grow, the best methods of planting, cultivation, and harvesting, the best pasture, the value of soiling crops, the silo, are all important subjects to be considered. Not all these subjects can be discussed at once, but each locality can select those in which most interested.

The last session of the legislature appropriated \$2,000 to the agricultural college for farmers' institutes. This will enable the college to do over four times as much institute work as it did the past year, and it is desired to prosecute some of this during the summer months. Any community desiring to hold a farmers' institute or picnic can doubtless secure assistance from the college. Write us at once, stating the subject you wish the college representatives to discuss and the dates you prefer.

D. H. O.

### Our Best Cow.

As very often happens, the best cow gets something wrong with her just when you expect to realize the most from her. Thus it was at the experiment station. Our best cow aborted, then she sprained one of her pastern joints and was lame for a week or more. Notwithstanding these trials and tribulations we are going to try to make a better record with her this year than she made last.

For the month of July we have placed our standard for milk yield at 1,250 pounds, and are going to try to reach that point. She is giving now, one week after aborting, 38 pounds per day, and we hope to get her up to 40 pounds by the first of July at least.

Last year she gave 383 pounds butter fat. This year we want 450 pounds. Her income last year was \$73.17, and this year we shall strive to make it \$85.

Some people may laugh at our ideas, but if you do not set your standard high you will never get high in the reality. Every dairyman who would succeed must set the standard to which he wishes to bring his herd, and then strive hard to reach that standard.

We will let the readers of the Kansas Farmer know each month what our best cow has done for that month. Watch and see how we come out. J. A. CONOVER.

### Cleanliness With Milk.

Milk forms a large portion of our diet. It is the most nearly perfect food known, being able to sustain life longer than any other single article of food. Yet how unsanitary we are apt to be in its preservation. Most farmers take no precautions whatever to prevent milk from absorbing noxious odors, and but very few take the proper precautions to keep out dirt. No matter how clean a cow may look, there are always particles of dirt, scales of cuticle, hair, or insects that will invariably drop into the open pail when such is used. An open pail leaves the milk in contact with the air, and stable smells are sure to be absorbed. Convincing evidence that farmers are not careful enough in milking may be seen at any skimming-station, by examining the bowl of a separator after a half hour's run. The inner surface of the bowl will be entirely covered by a slime, very dirty and nauseating in appearance. Examine next the bowl of a separator at home, where sanitary means are employed to keep the milk clean. The slime will be of a clean cream color, free from dirt and hairs. Would not any farmer admit that it pays to be painstaking?

How is this to be accomplished? I can answer no better probably than by giving the method employed at the Kansas State Agricultural College dairy, where much care is taken for cleanliness. The cows are kept clean, provided with good food, water, and bedding. The stalls are cleaned carefully and no feeding is done immediately before milking, as it would raise more or less dust, which is to be avoided at milking time. Each milker is provided with a damp cloth, with which he thoroughly

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cleans the udder and adjacent parts before milking. The sanitary dairy pail is used, differing from an ordinary pail in that the top is also enclosed, except for a circular opening, in which fits snugly a strainer. The milk is thus strained of all coarse particles when milked. The strainer is of peculiar construction; the milk passing upward through the strainer gauze, the particles of dirt tending to settle away from the gauze instead of being washed through it, as is the case with the ordinary strainers. The milk then passes through four thicknesses of cheese-cloth and the straining is complete. The cans are kept closed at the stable, as soon as the can is full the strainer being removed and the lid adjusted at once. The milk is then taken to the dairy, where it is aerated and cooled. The farmer can readily see that little opportunity is given for the milk to absorb the odors of the stable, while the straining process is practically perfect. Full descriptions of the cans, milk-pail and strainer, with cuts to illustrate, are given in the Kansas Farmer, published November 10, 1898. It will be understood that these dishes are thoroughly scalded before each milking, so that there could be no bad smell absorbed from the can or strainer cloth. The wiping cloths, too, are thoroughly washed, then scalded with hot water before being used.

These few precautions are simple and inexpensive. And surely the milk is enough cleaner to pay for the extra time taken to wash a few more dishes.

C. D. MONTGOMERY.

Samples copies of Kansas Farmer sent free on application.

### Valueless Testing.

In spite of all the literature on the subject of the Babcock milk test, in the way of text-books and newspaper articles, there is still a great deal of misunderstanding and ignorance in regard to its use. Every now and then the creameryman runs up against a person who knows he can beat the test in various ways. Probably all have heard of the man who has watered and then skimmed his milk and always gets the same or a better test by so doing. One such is found in most every creamery territory. It is useless to argue with him and it is a waste of time to even consider his case.

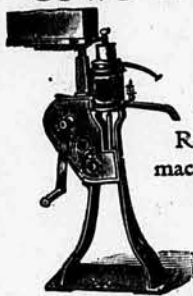
There are scores of people, however, who are willing to understand and want to know the truth in regard to some seeming inconsistencies or discrepancies.

It is quite a common occurrence for creamery patrons to bring in a sample of milk to have it tested, either for comparison with the creamery composite sample or to see what certain cows are doing. Unless the patron thoroughly understands how to take samples and is familiar enough with the subject of testing, this practice is a source of disappointment, both to the patron and the creamery manager, and often hard feelings are the result rather than any practical knowledge.

The source of this trouble lies mainly in the variation of the per cent of butter fat from milking to milking, from day to day, and from week to week, of every cow in the herd.

Much has already been written in these columns on the subject of variation. In fact, it is hardly possible at this time to

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I am glad I was not misled by the smooth tongues of other agents, but used good "horse sense," and purchased a U. S.

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## Light Running.

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more than state what has already been said, in a new way. The causes for variation are not all understood, but the fact has been demonstrated that but few consecutive milkings will test the same. The average of consecutive days will not show a great difference as the individual milkings, while the average for months will show considerable uniformity, the test gradually increasing as the period of milking advances from the time the cow is fresh.

There are some things which we know will increase the differences of test in individual milkings. Milking later than the usual time will in most cases decrease the test for that milking and increase that of the next, the difference sometimes varying from 2 per cent for the first to 5 per cent for the last, for a cow that has an average test of 3.5 per cent or 4 per cent. Changes in weather and feed will cause the same variation. In all of these composite sample will test about normal. This shows that an extremely low test for one milking will be compensated by a high test in subsequent milkings. This will serve to show the uselessness of bringing a sample to the factory, expecting it to correspond with the factory test, unless it is taken in the same manner as the composite factory sample.

Nothing less than a composite sample of eight consecutive milkings will tell what a cow or a herd is doing with any degree of accuracy whatever. Again, the factory test may not be a correct test for the herd, or most farmers need some cream for their house use and often take it from the milk sent to the factory. This will lower the test at the factory by just so much. Then the sample will not give a correct test for the herd.

There is another thing that makes such samples as the ones spoken of valueless. Just as soon as milk is drawn from the udder the cream begins to rise, and unless the milk is thoroughly stirred at the moment of taking the sample the test will be worthless. Unless one has done considerable testing he is not likely to appreciate this point, and will not think it necessary to be so particular.

All can be assured of one thing—the Babcock test will show accurately the per cent of butter fat in the sample tested. The only chance for difference when a careful man does the testing is in taking samples and then drawing wrong conclusions from the results.

Let it be said here, that every man who milks cows should have a testing outfit of his own and should know what every cow in his herd is doing.

ED. H. WEBSTER.

### EXAMINATION

Butter-Makers' Class at Kansas State Dairy Association.

Examiner—H. VanLeeuwen.  
Judge—Prof. H. M. Cottrell.

(Continued from last week.)

VIII.—What important points should be desired in purchasing a separator, and if you have any preference for one machine over another, state your reasons.

C. H. Goebel—The first and principal one is a machine that will do clean separating at the lowest temperature. I prefer the Alpha machine. I believe that the Alpha will do better and cleaner work, and at a lower temperature than any other machine.

N. H. Skourap—The separator that gets out the most cream and puts it in the best churnable condition. I prefer the Alpha separator, because it is easier to get cream in shape for churning with this machine than any other.

J. E. Musser—Supposing that the machine is all right, the best points in the machine are simplicity, durability, and cheapness. My preference is for the Alpha. It is not quite as cheap as it ought to be, but it will have to do until we can get something better.

P. G. Huffman—One that skims clean, and one that takes the least fuel to run it. I prefer the Alpha.

IX.—What are the principal causes for poor separation of milk?

C. H. Goebel—The first thing is irregular speed—speed not high enough; second, uneven temperature, and third, uneven feed.

N. H. Skourap—The principal causes are either in the milk, in the separator, or in the operation of the machine. It may be either or all three of these.

J. E. Musser—In the first place, bad milk coming in through the weigh-can, improper temperature, and, the most important of all, improper speed. The machine should also run smooth and steady.

P. G. Huffman—Not having sufficient speed; not having the milk at the desired temperature; and the third and greatest cause is that the man does not know how to run the separator.

## The Apiary.

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

### Queens, Drones, Etc.

Queens that are produced in the natural way, namely, by swarming, are superior to others, that is, a much larger per cent of them are. They are hardier, more prolific, live longer, and do better service generally. We can only secure such queens during the swarming season, while the cells are present. After a colony swarms their first swarm there are a lot of those cells in the hive, and three or four days after the swarm comes out is the proper time to secure these cells. The colony containing the cells may be divided into several nuclei, or small colonies, with one of these cells to each nucleus. Combs of bees and brood may be taken from any colony and a cell engrafted into each one, and we can use all the cells by thus forming these small colonies for them. They will soon hatch out and become fertilized and will begin to lay eggs, and are then ready to introduce to other colonies or to build up just as they are by adding more frames of brood to them, and in a short time they will be good, strong colonies. In breeding queens we should breed only from our best and choicest stock. That there is a great difference in the qualities of bees is very evident, and we can rapidly improve them by thus selecting our breeders.

During the honey season, and at the close of the same, colonies are frequently found queenless, and this is one of the principal things to look after. Queenless colonies always produce robbing, and this endangers the whole apiary. At the close of the honey season a thorough examination of every colony is proper, and if any are found queenless they should be supplied at once if queens can be obtained, and if not, they should be united with some other colony that has a queen. After the swarming season is past, and all colonies are supplied with laying queens they will likely remain so throughout the season. Colonies may have defective queens and be no better than if they had none. Some queens do not become fertile from various causes, and some of these will even lay eggs, but such eggs hatch to drones and are of no value. We can tell the kind of queen only by the brood she produces, and the appearance of drone brood in worker-comb is evidence of a drone-laying queen.

We should govern the supply of drones and an overproduction of them is sure to follow if the bees are allowed to build their own comb. In natural comb-building the bees build a large amount of drone-comb. They do not do this solely for the purpose of rearing drones, but build drone-size comb to store surplus honey in; hence a large amount of it will be found in every hive, and when the colony becomes strong during the spring the queen will fill all available drone-comb with eggs, and the result is that a large force of drones is hatched. This is easily prevented by the use of foundation comb. This is made all worker size, and when the frames are properly filled with it all drones are excluded. While it is important to have some drones to fertilize the young queens, these may be provided for by using a certain amount of drone-comb, and the beauty of this is that we can use it in any colony we wish and by this means select our breeding stock.

Those who are not well acquainted with the inside of a beehive—and this includes most of those who keep a few hives of bees as a side issue—seldom, if ever, saw a queen cell. Queen cells are quite different from the worker and drone cells. The queen cell appears to be made up of the odds and ends of the honey-comb. Queen cells are located principally about the edges of the comb, in uneven places on the surface, and at the bottom edge of comb. They are about an inch in length and resemble a peanut hull both in shape and make. The full-sized cell will only be found when there is a young queen in it or one just hatched out, for after this the bees tear down all except the base, which resembles the cup of an acorn, and in this condition it is left the year round. In this little cup the queen again lays the egg, then the bees begin to build it up, and continue building as the larva grows, and when full-grown they seal it over, when it is again full size.

### Hiving Swarms.

It is a nice little trick to know just how to hive swarms properly. There usually is but one queen with a swarm, and this one bee is by far the most important factor of the swarm, hence we must ever keep in mind the importance of handling the bees to endanger her welfare the least. It is almost impossible to have a swarm of bees without killing or injuring a few bees, and

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If one of those injured happens to be the queen, our swarm is worthless as a swarm. In whatever manner we handle the swarm, we should do it in a manner to prevent the killing of a single bee if possible, and to keep all the swarm together and allow no part of it to be left outside the hive, except the few living bees that are on the wing at the time of hiving. The queen is liable to be in any part of the swarm, and may be in a small handful of bees in the vicinity that may have become entirely separated from the principal cluster. To have a swarm right is to have all of the bees, and if the queen is there at all she is likely in the hive with the bees. When a swarm issues from the hive, or when it is issuing from the hive, the bees should not be molested in any manner whatever, but allowed to congregate at their leisure and select a place to suit themselves to cluster on, until they all, or nearly all, settle. It is not best to get in a hurry to get them in the hive, but allow them a few minutes to get settled, and then promptly hive them. A box just large enough to accommodate the swarm, filled with holes to give the bees plenty of air, may be held directly over and on top of the bees, and with a little leafy twig, or a little smoke used to start them in the swarming-box, when they will readily respond and occupy the box. They may then be carried to the hive, which should be previously arranged for them, and a portion of them brushed off at the entrance, and as near in the entrance as possible, when those finding the entrance will give the call and the whole army move in that direction if dislodged from the swarming-box in the vicinity of the entrance. Swarms should not be left any length of time after the bees have issued from the hive and clustered, as the next thing in order for them to do is to get up and leave.

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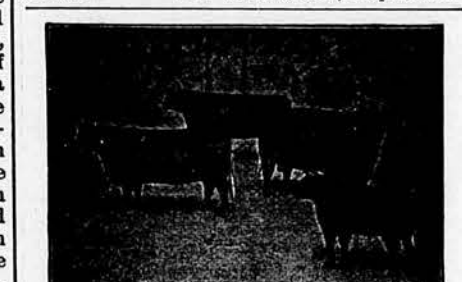
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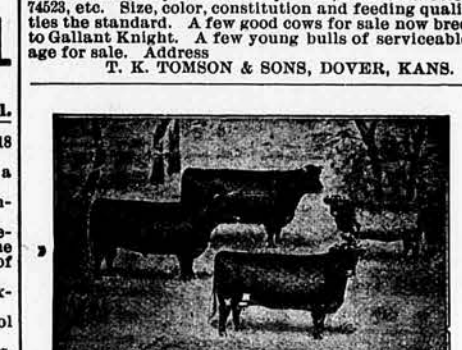
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## The Poultry Yard

### ENEMIES TO POULTRY. THE MOSQUITO.

A pest common to nearly all localities is the mosquito, and it is often the source of much annoyance to poultry. Besides the annoyance and wear on a fowl's nervous system, these pests may inoculate the fowls with some virulent contagious disease if they have been previously feasting on the blood of a diseased animal. I have several times seen cock birds so worried by the attacks of mosquitoes that they were inattentive to the hens, and spent most of their time shaking their heads and running restlessly about their yard in an attempt to get away from their tormentors, and finally taking refuge in some sheltered corner of the poultry-house. The result was infertile eggs from the hens, and loss of flesh on the part of the male. Chickens were so badly bothered about the face that the soft parts were badly swollen, and the chick barely able to see to eat. Male birds, on account of the larger comb, are easy victims. Some species, especially those which are native in the mosquito-infested neighborhood, are in fact different to the attacks of this pest; but not important a valuable bird and turn him loose in the same yard, and he may be almost ruined unless protected against attack. The best protection for fowls against this pest is to grease the comb, face, and water mules frequently with a little 1 per cent carbolized vaseline. Mosquito eggs are laid in the water and develop in still water.

The Public Health Journal recommends the following way to kill mosquitoes: "Two and one-half hours are required for a mosquito to develop from its first stage, a speck resembling cholera bacteria, to its active and venomous maturity. The first stage in all its phases may be instantly killed by contact with minute quantities of a 1 per cent solution of permanganate of potassium. It is claimed that one part of this substance in fifteen parts of water will render the development of the larvae impossible; that a handful of permanganate will oxidize a ten-acre pond, kill its embryo insects, and keep it free from organic matter for thirty days at a cost of 25 cents; that with care a whole State may be kept free of insect pests at a small cost. An efficacious method is to scatter a few crystals widely apart. A single pinch of permanganate has killed all the germs in a thousand-gallon tank."

**BUFFALO AND TURKEY GNATS.** These gnats are common in the Middle and Southern States, and appear periodically in swamps. An invading swarm of these gnats will drive sitting fowls from the nest, and often kill young birds outright. They attack by forcing their way under the wings, where it is impossible for the fowl to dislodge them, and they also attack all exposed parts of the head. They are most prevalent in the spring and early summer, and are said to abound in the valley regions of our great rivers, only invading the higher land during overflows.

**PROTECTION OF EXPOSED PARTS BY ANOINTING** them with ill-smelling oil or with 1 per cent carbolized vaseline, and the building of smudges of green wood so that the smoke will drive off the pests, is recommended as a remedy when an attacking swarm is discovered.

**PARASITIC FLIES.** Two varieties of flies are mentioned as parasitic on poultry, the *Ornithobia pallida* and the *Ornithomya avicularia*. They are said to act as carriers of other vermin from one fowl to another, and also to cause trouble by getting into the ears and nostrils and setting up a violent irritation. They are easily cleared from these cavities by sponging the openings with a solution of four ounces of asafoetida in a quart of water. Theobald mentions these flies as quite common in England, although I am not informed that they are found in any numbers on this side of the water.

**FLEAS.** Three varieties of fleas are recorded as attacking poultry. Two are quite common, and are worthy of mention separately. The common hen flea, *Pulex avium*, breeds in dirty nests, in cracks, and in the dust in dark corners of the poultry-house. It does not spend all its time on the fowl, but feeds on the blood of its victim, and then seeks a quiet spot to sleep off its gorge. They destroy the rest and peace of the fowl, and produce intense irritation of the skin. In young birds the growth may be stunted by repeated attacks of this pest.

The hen-chigoe, or flea, *Sarcopsylla galli*, is abundant in the Southern States. It breeds in dark dusty places. Instead of piercing the skin and lapping the blood of the fowl, as does the other variety, the female chigoe burrows into the skin of its victim. Here she receives the attentions of the male, until finally the irritated skin closes over her and pushes him off. It is supposed that the eggs of the chigoe hatch in her distended abdomen while she is thus buried, and the larvae push their way out and fall to the ground. If they fall in a dry shady spot they develop into adult fleas. Their favorite seat of attack is in the exposed fleshy parts about the head and face. The warty growths which form over the insect, when a number attack a fowl, sometimes render the fowl blind and unable to eat. The victim often dies, but if it does not the warty growth drops off in about a month and leaves a scar resembling that of a burn. Young chickens are often killed by chigoes. If a warty growth appears, and you suspect the presence of chigoes, open it and the presence of the insect if found is proof positive.

**Remedies.**—The free and frequent use of whitewash about the poultry-house in all cracks and corners. Carbolized lime, tobacco dust or moth balls in the nests. All dark, dusty, ily ventilated corners which serve as breeding places should be disinfected with hot whitewash or with kerosene emulsion. Tobacco dust and lime used in the dust bath, and the dust bath itself frequently renewed and kept in the sun prevents fleas breeding there. Dark, dusty places in the yards should be soused often with hot soap-suds to kill the larvae or young fleas. For application to the fowl, to afford relief from flea bites, use a little diluted alcohol or vinegar on the bites, and apply a little vaseline or lard.

**BUGS.**

The common bedbug sometimes attacks poultry, being introduced to the poultry-house in second-hand lumber which was taken from an infested tenement-house. A relative of the bedbug, known as the poultry or dove bug, is sometimes found in dirty, neglected poultry-houses. These bugs attack the sleeping fowls on the roost and suck their blood.

The only way to get rid of them is to clean up the poultry-house, remove the fowls, after thoroughly dusting them, to clean quarters, and then whitewash and thoroughly fumigate the infested house with sulphur fumes.

A bug known as the coruca, or Mexican chicken bug, is common in New Mexico and some parts of Texas. The same remedies advised for bedbugs would probably prove effective in fighting this pest, although it is spoken of as almost impossible to get rid of, and that the easiest and most economical way to get clear of it is to desert and burn the infested house.

**LICE.**

There are nine known varieties of lice parasitic on poultry. These vermin live and breed on the fowl, and lay their eggs, or nits, in the soft feathers. A week to ten days is required for hatching these nits. The several varieties of lice have favorite parts of the fowl's body which they inhabit in preference to other portions; but two varieties are known as "wandering lice," and are common to all parts, and not infrequently leave the fowl and attach themselves to any one who may handle the bird.

Contrary to popular belief, the lice do not suck the fowl's blood. They are possessed of biting mouth parts only, and live on the scales of the skin and on the feathers. They are a source of much irritation to the fowl by their constant running about and scratching with their sharp claws. Their presence worries and frets the fowl, and the irritation of the skin results in interference with its normal functions. It is also probable that they act as carriers of infectious matter from sick fowls to well ones, and also as intermediate hosts for worm parasites.

Lice are rapidly spread through a flock by contact with a lousy fowl. One lousy cock is capable of distributing lice to a large flock of hens. The presence of numbers of lice about the vent, which is a favorite resort, may result in imperfect coition and infertile eggs; or the irritation and constant picking at the vent, to get rid of the pests, may result in sore vent. Many lice on a chick will cause dumpishness and indifference to food, and result in stunting.

Birds, pigeons, parasitic flies, and persons fresh from visiting lousy fowls often act as carriers, and spread lice from one place to another.

It is a good rule to count every fowl as lousy, and to treat her with suspicion, until it has been proved that she is free from them. I have never yet seen an adult fowl that was absolutely free from lice, but I have seen many that were practically so. If you think that a fowl is not lousy examine carefully the feathers of the head one by one, then look at the underside of the large wing feathers next the shaft, and then turn the fowl up quickly and exam-

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H. K. McLELLAN.

Subscribed and sworn to before me this second day of December, 1897.

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not sufficient, as in a few days the nits the feathers will hatch out more lice. remedy must be applied thoroughly at three times, at intervals not over week apart, and must be repeated there- whenever lice are found on the fowls.

## MITES.

Several varieties of blood-sucking mites found in carelessly kept poultry-houses. The vermin are not lice, and they live cracks about the poultry-house and its. They attack the fowls at night, dis- sisting their rest and sucking their blood. In a great many of them are present sometimes remain on the fowl through lay.

Dirty nests, hollow or cracked roosting, are favorite breeding places for this. They will breed in straw, under thing, and anywhere that they can hide and sally out to attack the fowls at night. They are able to live for a long without feeding on the blood of fowls, have been frequently found in deserted try-houses. They attack sitting hens, kill chicks.

There is absolutely no excuse for the tryman harboring this pest. It is pos- sible to get rid of it and keep rid of it. mites are discovered the fowls should be dusted well and treated to a fumigation with some good liquid lice-killer. Then they can be reinfected, they should be removed to other quarters. When the fowls are away the infected house should be thoroughly cleaned, fumigated with sul- fur fumes, hot whitewash liberally ap- plied to all parts of the house, nests, cracks everywhere it can be found. The roosts, dropping-boards should be well soaked in the liquid destroyer, and then, as soon as the whitewash is dry, the house is ready to receive the fowls again. Once free of the pests the house is easily kept free.

Thorough whitewashing (twice a year or oft- er) thoroughly done, and the free use of the lice-destroyer about the roosts and dropping-boards, say twice a month, and there will be no trouble with mites. Even if they are accidentally introduced they will not find a house that is so well cared for a good place to breed, and they will be killed off before they can get a start.

It must be remembered that the lice, the mites and feather-eaters, are on the fowl when among the feathers. The mites, blood-sucking pests, may be hidden on the fowl, but their home and breeding place is cracks and crannies about the house.

Any of these pests may be introduced by strange birds are added to the flock, for this reason all new birds should be quarantined and treated for vermin before they are allowed to run with the flock. If they are added to the flock weekly section should be made to discover if vermin have put in an appearance.

## THE SCALY-LEG MITE.

Another troublesome enemy is the scaly- mite, which produces the unsightly dis- ease known as scaly-leg. Remedy, keep the roosters clean, and roosts well kerosened. Wash the legs with warm soap-suds, dry and apply sulphur ointment or an ointment made as follows: Melt five ounces of lard, add to it one fluid ounce of the liquid destroyer; stir while cooling.

## THE DEPLUMING MITE.

This mite makes its home about the roots of the feathers, and causes baldness. The irritation produced by this mite causes the fowl to pull or scratch out its feathers, leav- ing the skin bare. Carbollated vaseline or lard ointment, mentioned above, ap- plied in small quantities about the edges of the denuded area, is an effective remedy. There are several other mites which are parasitic in fowls, some affecting the air passages and others the tissues. Those who are interested to learn more about them will find them described in the book "Insects Affecting Poultry," in the Poultry from December 15, 1897, to January 1, 1898, inclusive.—Dr. Wood, in the Poultry.

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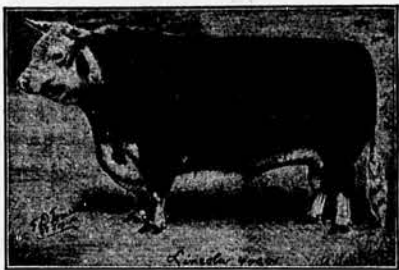
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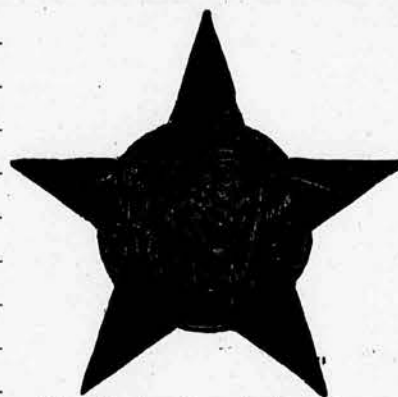
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