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It has been suggested that the KANSAS FARMER resume publication of New York quotations of creamery butter. The editor has taken the trouble to make careful comparison of the prices given out by the Continental Creamery Company with the New York quotations for corresponding dates, and has found the Continental's quotations to tally exactly with those

of New York. In view of these facts it seems scarcely worth while to incur the trouble and expense of securing independent quotations from New York.

The Secretary of Agriculture has, by law, been authorized and directed to obtain in the open market, samples of seeds of grass, clover, or alfalfa, test the same, and if any such seeds are found to be adulterated or misbranded, or any seeds of Canada blue-grass (*Poa compressa*) are obtained under any other name than Canada blue-grass or *Poa compressa*, to publish the results of the tests, together with the names of the persons by whom the seeds were offered for sale. It is announced that the collection and testing of seeds will begin July 1, 1904.

THE COLORADO DISTURBANCE.

Whether Kansas shall become directly interested in the warfare now in progress in the mining sections of Colorado, or shall continue to have only the indirect interest of the general American public, is not yet determined. A chronic contest between mine-owners and mine laborers in Colorado has existed for many years. Occasionally this contest becomes acute and at times malignant. For the last several months a strike has been in progress. This has been attended with more or less violence, resulting in the calling of the State militia into service.

From the information which has reached the general public it appears that, acting under orders from some source, the mine laborers have refused to work until some matter of disagreement in some smelter should be adjusted in accordance with the demands of the smelter laborers' organization. The alternative of this demand was that the mines should desist from furnishing ore to the smelters in reference to which the disagreement exists. The mine-owners claimed that the smelter difficulty was not their affair, and that they would operate their mines with their former employees if they would work, otherwise with such laborers as they could secure. Reports of violence against the non-union men employed followed as usual.

Until a few years ago the general public extended its sympathy, under such circumstances, unflinchingly to the cause of the strikers. In the present Colorado strike, and in several others of recent occurrence, the public has reflected upon the fact that there are plenty of deserving laborers who are willing and anxious to accept and fill the positions from which the strikers have withdrawn; that these willing workers have been subjected to many indignities and hardships; have been in some cases maimed and in others killed for the offense of taking up a work that others had laid down. The general public has reluctantly charged these outrages to the labor organizations conducting the strike or to some of its sympathizers. Again, the general public has come to realize that the interference with productive industry and the great reduction in its output—estimated in the Colorado case

to be over \$5,000,000—must be borne ultimately by the general public.

The contemplation of these considerations has led up to the belief that the great power of the organizations which ordered the strike is being used oppressively, entailing suffering on the individual who is forced to remain idle, on his family and dependents, on the non-union laborer who wants work, and on the less fortunate of the community at large. The general public is quick to transfer its almost omnipotent sympathy to the oppressed. While it believed that organized labor represented the oppressed, organized labor was sustained in its actions even though these actions were not justifiable in law. When it believed that the organization which ordered and is conducting the Colorado strike was using its great power oppressively the general public's all-powerful sympathy was quickly transformed against the striking organization. The drastic measures taken by the Governor of Colorado to enforce the laws and maintain civil order gained public approval even before they were sustained by the supreme court of the State.

The power of the State is great and is not often used to oppress. It is the duty of those entrusted with this power to protect the lives of the people, and to make it safe to go about their lawful industries; to protect property from wanton destruction, and its owners in its use. An intelligent public sentiment will uphold all lawful acts necessary to accomplish these purposes. But should the power of the State be used oppressively or with unnecessary harshness, public sympathy is liable to be instantly transferred again to the strikers' side of the controversy, greatly to the detriment of the progress recently made by the government of Colorado in the elimination of anarchy.

PROPERTY CARRIED AWAY BY FLOOD.

EDITOR KANSAS FARMER:—On April 24 we had a flood. Some posts, lumber, fence, and farm tools washed in my alfalfa-field and are in my way. What is the law? Can I keep this property after I have taken the trouble to pile it up or can the owners come and claim it? SUBSCRIBER.
Reno County.

Property carried away in a flood does not change ownership unless abandoned or renounced by the original owner, but he may claim it wherever he can find it. In general, the person having recovered property is entitled to reasonable compensation for his labor and expense in recovering and caring for it, and this can best be agreed upon by conference of the parties interested. Under the old English law the loser of property by shipwreck or similar causes, was allowed a year and a day in which to reclaim it, otherwise it was forfeited to the crown. Precedents determining the period during which a loser may reclaim property lost in a flood are not numerous. Such losses have not been frequent in this country so that the time limit is not as well defined as under the old English law. Courts in this country

would probably hold that the owner having notice of the recovery of his property and its whereabouts should be given a reasonable time in which to claim it and take it away, but that long-continued neglect to take his property would leave the permanent possession of it to the person on whose land it was found. In the case of calamities, brought on by causes over which men have no control, it is well for all to exercise consideration of others' interests, to make reasonable agreements as to compensation, and to render assistance in restoring property. The writer showed the above inquiry to an old lawyer, not now in active practice, who said that if the parties can not agree as to reasonable compensation they ought each to go and hire a lawyer, pay him \$10 to represent their respective sides in a controversy involving \$5 or \$7 worth of goods and fight it out. This ironical advice will, it is hoped, not be accepted as good doctrine by readers of the KANSAS FARMER.

LAND-LINE QUESTIONS.

EDITOR KANSAS FARMER:—Did the Government Survey establish quarter-section corners? 2. When a section overruns, is each quarter entitled to an equal share of the surplus? 3. Will a partition fence, recognized as the line for a number of years, permanently establish said line? 4. Is there any other civil engineer in the State, who can establish legal corners outside of the county surveyor? If there is I would like to have his address.
Sumner County. M. L. SHETLAR.

1. The Government Survey established—or is supposed to have established—quarter-section corners on the section lines but not in the center of the sections.

2. The markings of the Government Survey control for all time. If a section was unequally divided by the Government Survey the inequality can not be cured by a subsequent survey unless by the enactment of a law authorizing or legalizing a change.

3. If a partition fence has been recognized as marking the Government Survey that fact might be used to prove the location of that survey, but if the fence was not built on the line as determined by the Government Survey, the fact that it has been recognized as making a just division of the land can not change the boundaries as determined by the Government Survey.

4. The county surveyor and his deputies alone are authorized to survey disputed lines and ascertain the location of corners of unknown location, but must establish missing corners in accordance with the Government Surveys. The statute—chapter 29, section 14, provides that "Any survey made by any county surveyor or his deputy shall be evidence in any court in this State, but shall not be conclusive." That is to say, if the county surveyor establish corners correctly they shall stand, but a party interested may appeal to the district court, and if it be shown that the county surveyor has not made a correct survey his survey is not binding on the parties interested and may be set aside by the court and

(Continued on page 686.)

Agriculture

COMING EVENTS.

August 2, 1904—Kansas Good-Roads Association, Topeka, Kans.; Grant Billbe, president, Iola; I. D. Graham, secretary, Topeka.
 October 17-22, 1904—American Royal Live-Stock Show and Sales, Kansas City, Mo.
 November 26-December 3, 1904—International Live-Stock Exposition, Chicago, Ill.

Thesis on Wheat.

C. C. CUNNINGHAM.

(Continued from last week.)

SEEDING OF WHEAT.

Time.—The proper time to sow wheat varies with the latitude and the variety. Occasionally, locality may have more or less influence. Carlton, in speaking of the time to seed wheat, says: "It is a safe rule to sow at a period which is considered early in the locality where the sowing is done." This statement is substantiated by various experiments at State experiment stations and in Canada. Increased yields of ten to twelve bushels per acre have been obtained by early seeding as compared with late seeding. In several of the above cases four different seedings at intervals of one week were tried and early seeded plots out-yielded others as stated above.

A series of experiments carried on at the Kansas Experiment Station to determine the best time to plant wheat to seed wheat in that locality is the third week in September. The same experiments also show that late-planted wheat always yielded a poorer quality of grain than early-planted wheat.

The results of considerable experiment at the Ohio Experiment Station show that the best time to seed wheat in that part of Ohio is between September 20 and October 10 and that as a rule wheat sown earlier or later does not do so well.

Thus we see that each part of the country has its own best time to plant wheat and that no rule can be made to govern it. Very often the climatic conditions are such as make it wise to hasten or retard seeding. Spring wheat should always be sown as soon as weather, or opening of spring will permit, especially in northern countries where the summers are very short.

In seeming contradiction to the foregoing statements, wheat is often planted as late as November or December in Kansas and Nebraska and gives yields equal to earlier seedings. Turkey, Odessa, and allied varieties may be sown in the western part of these States any time in the winter with fair probabilities of success. Planting in December and later may be considered as early spring seeding.

Amount.—The amount of seed to sow per acre varies from four to six pecks. The North Dakota Experiment Station carried on a series of experiments to determine what amount of seed per acre gave the best results. In these trials the plots seeded at the rate of five and one-half pecks gave the highest yield; however, this amount may be increased or decreased under certain circumstances with advantage. The factors that influence germination and growth of wheat are so varied that no reliable rule can be laid down. Where the season is favorable, the seed-bed in good condition, with an ample supply of moisture, one bushel of good, sound seed will furnish a sufficient number of plants to stool out and make the necessary thick stand of wheat. If the season is unfavorable, or backward in opening, the soil in poor condition, seed-bed not properly prepared, and soil open and drouthy, six or eight pecks per acre may be required to get a good stand. Poor seed is very unreliable in getting a stand and should always be avoided. At time of planting all the above-named factors influencing germination and growth should be noted and allowances made for each. As a rule one and one-fourth bushels per acre is the best amount to sow when the drill is used. When wheat is sown broadcast about a peck more of seed is required than for planting with the drill.

Depth.—If the subsurface soil is well compacted and the surface mellow, the drill shoes or hoes should run about two or three inches deep. On heavy lands wheat planted only one inch deep gives the best results, but loose and drouthy soils demand that wheat be planted at a greater depth to enable the seed to get sufficient moisture to start germination, and in order that the roots may at once grow into moist soil where they can obtain plant-food as soon as the leaves have grown enough to use it. Seed should always be planted at an even depth to insure uniform germination and give an even stand and growth.

Methods.—The best method of planting is also governed by conditions of soil and climate. The shoe drill, with a press wheel following the shoe, is perhaps one of the most satisfactory implements for seeding, wheat under more or less drouthy conditions or in light, open soils. Such a drill, though not so convenient and easy to handle as others, puts the seed in the soil in such a condition as to enable it to secure the greatest amount of moisture. That is, the soil is pressed and packed closely above and around the seed, thus more of it coming in contact with the seed. In localities where land is liable to blow, the press drill is valuable in that the firmed soil over the seed is less liable to drift than loose soil. In soils that are heavy or wet the press drill does not give as desirable results as drills without the press wheels.

Under certain conditions broadcast seeding will give as good a yield as any other, but as a rule this method should be avoided, especially in drouthy soils.

Harrowing is of great aid to wheat, in smoothing down after cultivating broadcast grain in, also when used after the hoe drill, and in many cases it should follow even the shoe drill, providing the increased pulverizing of the soil does not result in the soil drifting before the wind. Chains following or dragging after the shoe drill help cover grain and may do away with the necessity of harrowing. As a rule in a properly prepared seed-bed there is no necessity for further cultivation after drilling in the seed if the drill does the work that ought to be required of it.

HARROWING WHEAT.

Harrowing spring wheat after it comes up often increases the yield one or two bushels per acre. The increased yield is partly due to moisture saved by the soil mulch that the harrowing leaves. The use of a harrow is especially recommended when a crust has been formed by dashing spring showers. Wheat may be harrowed without much injury just before coming up or when it is just breaking through the surface, and after plants are several inches high and stooling. During intermediate stages of growth the single blades are especially covered and considerable injury may be done by harrowing. The most suitable implements for harrowing wheat are the light weeding harrows and spring-tooth weeders. Harrowing with any implement requires that the ground be in good condition, well prepared and level. The presence of trash and uneven or too mellow ground makes the work very unsatisfactory. In addition to saving moisture harrowing kills the young weeds and cultivates the grain.

PASTURING WHEAT.

The idea that pasturing wheat helps it in some mysterious way is a very general one. To determine the effect of pasturing wheat, Professor Georgeon at the Kansas Experiment Station carried on a series of experiments with wheat pastured and non-pastured, but his results did not uphold the above theory. In all instances pasturing injured wheat and diminished the yield more or less. The only instance where pasturing may benefit wheat is to keep it from stooling during a mild autumn.

The real question at issue then is whether the value of pasturage offsets the diminished yield. If it does, there is no loss, and if it more than offsets decreased yield then pasturing would be an advantage to the farmer but not to the wheat crop. Farmers of Okla-

homa claim that the pasture furnished by wheat pays for seed and planting and count a failure to harvest a crop as no loss.

HARVESTING.

In the United States wheat harvest commences during May in Texas, while in the Dakotas and Minnesota August is the harvest time. As a rule, harvest extends over a period of two or three weeks in any given locality, depending slightly on climatic conditions and the amount of wheat to be harvested. In California conditions are such that wheat-growers can take their time in cutting the grain. Here there is no danger of rain or wind to lodge the grain, and it will stand up for weeks after ripening. Other portions of the United States are not so fortunate in having conditions so favorable for harvesting, and it is important that wheat should be cut at the proper time, as it insures a better quality of grain and higher yields, and also removes certain elements of risk. Theoretically wheat should be cut when ripe and not in the least overripe, since at this time it gives the highest yield of the best quality. Experiments carried on by Professor Andrew Boss, of the Minnesota Experiment Station, uphold this statement. He divided a field of wheat into five plots and each of these plots was cut during different stages of growth. The first was cut while the grain was in the soft milky dough stage; the second, in soft dough stage; the third, in hard dough stage; the fourth, when the grain was fully ripe, and the fifth when the wheat was five days over ripe. The plot which was cut when the grain was fully ripe gave the highest yield and best quality of grain.

In practice the grain can not always be left until fully ripe especially where the acreage is large. In this case, cutting usually begins just as soon as the wheat turns yellow a little, and often before harvest is finished, the last grain cut may be several days over-ripe. The danger from rain, hail-storms, rust, chinch-bugs, etc., is so great that cutting early is often the best plan. Ripe wheat, either before harvesting or in the shock or stack, will shrink from 3 to 5 per cent in weight if it gets wet. This can not always be avoided, but it is a strong argument for securely capping the shocks and taking every precaution possible against the weather. Wheat cut while green and properly capped, will continue to draw nutriment, to a certain extent, from straw and increase in weight and size. Over against this, wheat allowed to get too ripe will not only shell badly, but there is also a loss in weight due to the shrinking of the grain. Moreover, over-ripe wheat does not produce as good a quality of flour, and its germinating vigor is less than that cut at an earlier period. The loss in shelling is undoubtedly the heaviest one, but this can be controlled some what by proper selection of varieties, combined with harvesting at the proper time.

SHRINKAGE OF WHEAT DURING STORAGE.

The question of shrinkage of wheat during storage is one that has attracted a great deal of attention. There is no doubt but that the weight of wheat in a bin often varies during the time it is in storage. This is apparently due to the moisture content of the air. Perfectly dry grain (artificially dried) when exposed to the atmosphere, will in several days increase in weight 10 to 15 per cent. Wheat naturally contains from 10 to 13 per cent of moisture, and a given quantity increases or decreases in weight according to the humidity of the atmosphere, the variation, except in extraordinary conditions, not amounting to more than 5 per cent. Wheat that is thrashed under rather dry conditions therefore will likely increase in weight when stored, while wheat thrashed when the weather is damp may lose in weight. When the granary is tight, so as to protect from loss by vermin and leakage, it is safe to count on taking out as many pounds of grain in the spring as was put in in August and September. The main factors, however, concerned in storing grain are the extra labor and risk involved. Unless there is a chance of getting over 5 cents



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more per bushel it does not pay to store grains, and if it is possible to take it from the machine to the elevator or car this should be done.

The products of wheat, such as flour, bran, shorts, etc., also exhibit the same peculiar oscillation in weight, responding to the moisture content of the air very readily. Records have been kept with one hundred pound quantities of different wheat products, and they seldom weigh the same two days in succession, varying to either side of the original weight.

PRINCIPAL INSECT ENEMIES OF WHEAT.

Among the numerous insects which feed upon and injure wheat, there are several which are of economic importance by virtue of the destruction they are capable of doing. These in the order of their importance are, chinch-bug, Hessian-fly, wheat-midge, and the grain plant-louse. Others that occasionally injure wheat to some extent, are such insects as the wheat-straw worm, army-worm, cut-worm, and various saw-flies; but these are of secondary importance, and as yet have not attracted much attention. Locusts or grasshoppers occasionally appear in such numbers as to cause considerable damage, but such pests are always local an infrequent. The first four species of insects mentioned often do excessive damage to growing crops of wheat. The reason for their remarkable numbers and multiplication is not hard to discover. The system of growing the same crop over such vast areas year after year furnishes the most favorable conditions for the multiplication of the insect enemies. Also long and hot summers, such as America presents, are favorable for the multiplication of most insects. In Europe, where farming is done on a more intensive scale, and where summers are short and cool; insect outbreaks are comparatively few and are more or less under control. This state of affairs is partly due to the fact that the farms are small and are carefully inspected and cared for, and in addition to this a regular system of rotation of crops is practiced.

The total losses incurred in field crops by reason of insect attacks, sometimes reaches up into the millions of dollars. This seems incredible, but nevertheless it is true. The Hessian fly often causes a loss of the entire crop in certain localities, and the lessened yield due to chinch-bugs, which varies from 10 to 60 per cent, is familiar to every wheat-grower in the United States. Much of this loss can undoubtedly be prevented by proper attention to cultural methods, and by the adoption of known remedies.

THE CHINCH-BUG (Blissus leucopterus, Say.)

The chinch-bug is perhaps one of the most formidable insect pests the farmer has to deal with. It is certainly responsible for as great annual losses to farm-crops as any other injurious insect. Although quite widely distributed, its injuries have attracted most attention in the Mississippi Valley, where it has destroyed many million dollars worth of grain. The wheat crop is the one that suffers most from its attacks. Chinch-bugs winter in adult form, hibernating in the stools of wild grasses and under rubbish, old straw, etc. Toward the last of September they begin their autumnal flight and disappear entirely from fields of corn and other late crops, but may be found in the hibernating places mentioned above. In the early spring they come forth and lay their eggs, in fields of grain, upon the roots or stems beneath the ground.

The eggs hatch in about two weeks. The nymphs or young are reddish in color, and feed at first upon roots of the crop; afterwards they attack the stalks of the plants they infest. It takes about fifty days for them to reach the adult form. About this time the whole brood starts out to find new fields, traveling on foot in one direction, like an army. As soon as they find new feeding-ground the females lay eggs for another brood. The second brood reaches adult form about September, when they leave the fields and hibernate.

PREVENTIVES AND REMEDIES.

Many remedies have been devised and practiced for controlling chinch-bugs. Perhaps the most effective of these are the burning over of waste grass land, the burning of rubbish of all kinds, and the practice of a system of crop-rotation. As chinch-bugs hibernate in grass stools and under rubbish, the burning of these would destroy many of them, and the remainder would be exposed to winter conditions without shelter, and chances of their survival under such conditions are rather doubtful. All rubbish in fence-corners, and under hedges, etc., should be raked together and burned. Cultivated meadows of tame grasses may be safely burned over when the ground is frozen without injury to the crop. This may seem a poor method of farming, as much manure and humus are lost by burning, but it is better to waste manure than lose next year's wheat-crop.

A system of rotation is perhaps the most practicable method of prevention, especially if crops that are not attacked by bugs are used in rotation. Any crop that does not belong to the grass family is not susceptible to the attack of the pest. Corn is a good crop to rotate with wheat in this capacity, as the nature of its growth is such that the bugs of the spring brood do not get into it, although the second brood feed upon it vigorously enough later in the season.

A great deal of work has been done of late years in the use of various fungous diseases as a means of controlling chinch-bugs. It appears that in wet, unfavorable years the chinch-bugs never attract much attention and do very little injury to the crop; while in dry, drouth-stricken years they appear in remarkable numbers and multiply rapidly. The non-prevalence of the bug in wet seasons is due to a fungous parasite which quickly destroys the insects when the conditions are favorable for its growth, namely, damp, moist weather. As drouth and heat are unfavorable for the growth of this fungus it does not appear extensively in dry years, and hence the devastation which the chinch-bug causes. As yet but little has been done with this fungus artificially, and under present prospects very little is likely to be done.

Really, at present the only way a farmer can protect his wheat from injurious attacks of this pest, is to destroy all hibernating places by burning, and practice some effective system of rotation.

THE HESSIAN FLY.

Of the injurious insects peculiar to the wheat-plant, the Hessian-fly is undoubtedly the most destructive and widely distributed. The losses caused by this pest very from 10 per cent to a total failure of crop. The adult flies are small, dark-colored gnats, about one-eighth of an inch long, but the insect is less seen in the mature stage than it is in the immature stages. The eggs are generally laid upon the upper surface of the leaves, but in the spring often beneath the sheath of the leaf. They are placed in regular rows of from three to five, each female laying from one hundred to one hundred and fifty. They hatch in a few days into small reddish maggots which soon turn white. The fall brood of maggots burrow beneath the sheath of the leaf, which is still below ground, causing a slight enlargement at the point of entrance. In the spring they usually stop at the first joint and enter the plant at that place. In both cases they weaken the plant by absorbing

its sap and tissues. In the fall, attacked plants show a tendency to stool out more than normal; the leaves turn darker in color, and central stems do not appear. Later many plants turn yellow and die. The spring brood attack tillers, which have escaped the fall brood, and weaken them so that they are liable to break and fall before harvest. The maggots remain in the larvae stage about four weeks, when their skin turns brown, shrivels slightly, and inside of it is formed the new stage, called the pupa stage. As this puparium, as it is called, resembles a flax-seed it is generally called the flax-seed stage. In this form the fall brood passes the winter, the flies emerging in April or May, while the spring brood remains in the flaxseed stage during the hot summer, and the insect emerges during September.

The Hessian-fly has several natural enemies and parasites that usually keep it well in check, and it is due to these natural enemies being destroyed by unfavorable climatic conditions that the fly becomes excessively abundant.

Methods of control and prevention are very unsatisfactory and uncertain. The most important and successful method is the late planting of winter wheat through the Central States. In this region, flies usually lay their eggs during September, and wheat sowed after the middle of the month will likely escape having eggs deposited upon it. The time of planting should be later farther south, but no arbitrary dates can be given for any country, as these must be determined by altitude, latitude and local conditions. Very often the character of the season will be such that flies will not appear during the usual time, but may emerge a week or so later. A dry fall will prevent their appearance at the proper time, but they will emerge as soon as a good rain falls. During exceptionally mild autumns the adult flies may appear in December, and larvae have often been seen at work during this month.

Inasmuch as the spring brood remain in the stubble after harvest, large numbers of them can be destroyed by burning, or a better plan is to plow the stubble under as early as possible and the firm ground will keep the buried flies from working their way out. By planting strips of wheat early many of the flies can be decoyed into laying eggs upon this grain, and then plowing under these strips the eggs and larvae can be destroyed and the regular crop protected. The trap strips should be allowed to stand about four weeks, or three to four days after the main crop is sown.

Nothing is known as a remedy for the attacks by the spring brood. A great deal may be done in preventing injury from the Hessian-fly by a good thorough method of cultivation. If the soil is properly fitted, a good seed-bed prepared, and wheat planted properly, so that the best conditions for good, vigorous growth are attained, the crop may escape attacks of the fly to some extent, as they prefer weak, unvigorous plants to work upon.

THE WHEAT-MIDGE.

The wheat-midge, when it appears in sufficient numbers, is a very damaging pest, often causing the loss of the entire crop, but its appearance is so infrequent that no great losses are caused by it. The adult insect is a minute gnat or midge, not exceeding one-tenth of an inch in length, and varying in color from orange to yellow, but tarnished or slightly smoky on back above the wings. The larvae injure wheat by attacking the forming embryos of the grain. The milky juice is extracted from the young kernel without any noticeable gnawing of the surface, causing the grain to shrivel, and heads to blight and fill imperfectly. This insect attacks crops in early summer and the time of attack depends very much on the condition of the weather, being hastened by warmth and retarded by cold. Under ordinary conditions it appears about the middle of June, and is present depositing its eggs for two or three weeks. In wet seasons it may remain in evidence until the middle of August. Extraordinarily wet seasons are favorable for its operation, while dryness is unfa-

vorable; therefore, wheat grown in wet seasons, or on low damp ground, is more or less liable to be subject to attacks.

The eggs are deposited in the crevices and openings which lead to the developing kernel. In about a week the eggs hatch and the larvae find their way to the kernel or germ. When the larvae become full-fed they find their way to ground and in it form minute cocoons no larger than mustard-seeds, and in this condition, they pass the winter, their durability being remarkable.

The only effective method of treatment is preventive. The hibernating habit suggests deep-plowing, which is very effective, as adults are buried too deep to get out. As a further preventive, chaff and straw should be burned. The practice of rotating crops is also applicable for the destruction of this pest.

The remaining insects that infest wheat are perhaps unworthy of special mention, as they do not attract economic attention.

THE STINKING SMUT OF WHEAT.

Stinking smut of wheat is a minute parasitic fungus that attacks the grain. The heads of affected plants retain nearly normal appearance, but upon closer examination the grains are seen to be swollen, greenish in color at first but finally brown or gray. The swollen grains when crushed are found to be filled with a brownish powder which has a penetrating and disagreeable odor. The presence of this odor is perhaps the best practical test for the presence of this smut. The smut is due to either of two nearly identical fungi, *Tilletia foetens* and *Tilletia tritici*.

Damage caused by this parasitic fungus is familiar to farmers and millers, and is much feared by them. When once introduced on a farm it increases year by year until 40 to 60 per cent of the grain may be destroyed, and the remaining portion be rendered unfit for milling or seed.

LOOSE SMUT OF WHEAT.

This smut differs from the stinking smut in that it effects the husk as well as the grain, transforming them into a black powdering mass consisting of spores, intermixed with a few shreds of plant tissue. The disease is first noticed at time of heading out, and becomes mature at blossoming time. By harvest time all affected heads are scattered by the wind, leaving only bare stalks. This fungus is known as *Ustilago avinae*.

The only method of treating smut is to prevent it. This can easily be done, as the crop can only be infected by spores adhering to the grain during the process of germinating. If such spores can be killed the crop is not liable to attack. This can be done by several different methods, as immersing in hot water for a limited period or soaking for a longer period in a solution of potassium sulfide or copper sulfate, the latter being followed by another soaking in lime water, or treating with formalin. In the first method, or hot-water treatment, the temperature should be such as to kill the spore, but not prolonged so that the germinating power of the seed will be injured. If the water be kept at a temperature of 132° F. the spores will be killed, and yet the seeds will not be injured if not immersed longer than fifteen minutes. The temperature should not be allowed to vary outside of 130° to 135° F. as in one case the spores will not be killed, and in the other case the grain will be injured. The operation of dipping can be performed in so many different ways, that any person with a little ingenuity can contrive some method to meet his conditions without much trouble. The following precautions should be followed rigidly. Always maintain the proper temperature of the water (132½° F.), and in no case let it fall below 130° or rise higher than 135°. The volume of water should be at least six or eight times the volume of the seed treated at any one time. Never fill the basket or sack containing the grain entirely



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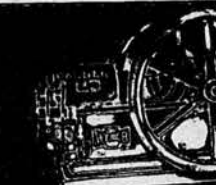
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full, but always leave room for the grain to move about freely.

When seed is dipped in a solution of potassium sulfide, one pound of the sulfide should be dissolved in twenty-four gallons of water. The seed should be put in a wooden vessel and the solution, after being thoroughly stirred, poured on grain until it is completely immersed. Leave grain in solution twenty-four hours, after which spread out to dry. The same solution should not be used more than three or four times as it gradually loses strength.

The copper sulfate treatment consists in immersing the seed in a solution made by dissolving one pound of commercial copper sulfate in twenty-four gallons of water for twelve hours, and then putting the seed for five or ten minutes into lime water, made by slaking one pound of lime in ten gallons of water.

The above methods of treating smut, though more or less effective and practical, can not compare with formalin or formaldehyde treatment, in efficiency and convenience of application. This method of treatment is comparatively a very simple one. Add one-half pint (or practically one-half pound) of formaldehyde to thirty gallons of water and immerse the seed for two hours, or wet the seed thoroughly by sprinkling, and let it stand in a covered pile for the same length of time. Then spread and dry it sufficiently to sow in the usual manner.

Formalin is sold extensively on the market as a general preservative, and can be obtained of almost any druggist, or it can be ordered through one. Formalin and formaldehyde are different names for the same thing, both being a solution of formaldehyde gas in water of a supposed strength of 40 per cent. As the strength of the solution deteriorates with age, formalin is more or less variable, but it can always be used on the assumption that it has full strength of 40 per cent. The price varies from \$1 to 50 cents per pound.

The substance is not poisonous to man or beast under ordinary conditions and modes of handling, and within certain limits is a harmless and safe material to use.

The action of formalin is slower than that of the common fungicides, and therefore treatment can not be so rapid, but on the other hand the range for safe application is far wider. No injury whatever is done if the seed remains in solution overtime, while the very last spores of fungus would be all the more certainly reached. The same solution can be used several times with desired results, but the period of immersion has to be increased every time the same solution is used as it gradually loses strength.

By either form of treatment, immersion or sprinkling, the grain will swell to a considerable extent, and if sown immediately after the treatment allowance should be made for the swollen condition. Thus when the grain increases one-fourth in volume, if it is desired to sow thirty-six quarts per acre of dry seed, the drill should be set to seed forty-five quarts per acre of the swollen grain. However, the degree of swelling is variable and the farmer will have to make his own estimates in every case.

Where seed is treated some time before planting, care must be taken that grain is well dried to prevent heating and moulding. This applies to all of the above methods of disinfection. As there is always more or less danger of reinfection where grain is kept until seeding-time, precautions should be taken against it. Sacks used for storing grain should also be disinfected and the grain stored in a place that is free from spores.

WHEAT RUSTS.

Rust is a general name given to several cereal rusts prevalent in the United States. The most common and widely distributed of these fungi is the Orange Leaf rust of wheat. This fungus is made especially notorious by the fact that its occurrence is constant from year to year. In this respect it is different from other rusts, and it is always present in abundant quantities

the year round, in unfavorable seasons as well as favorable ones.

The Orange Leaf rust is known to the botanist as *Puccinia graminis*. The life history of this fungus is about as follows: It develops three different stages of growth during its existence through the entire year. These different stages are so unlike each other that they were formerly given separate names as different fungi. In the spring certain spores (winter-spores, or talent-spores as they are properly called) germinate and develop a sporidium, which bears sporidia. These sporidia are scattered by the wind, and are supposed to fall on barberry plants, germinate and produce a mycelium which spreads through tissue of leaves. On the under side of the barberry leaves the mycelium produces cup-like receptacles, composed of closely packed chains of conidia, which are known as "cluster cups" or aecidia, and they produce spores which, when scattered by the wind, fall upon wheat leaves, germinate and develop mycelium within the tissue. While wheat is growing this mycelium sends to the surface numerous sporophores, each bearing a reddish spore, and as they appear in great numbers they form the rusty looking lines and spots which give the name to the disease.

These spores are scattered to other plants, germinate quickly, and thus spread the disease with great rapidity. Toward the end of the summer the same mycelium develops sporophores which bear an entirely different kind of spore. It is two-celled and black in color, and forms what is called black-rust, which appears late in the summer on wheat-stubble. These are the talent-spores or winter-spores, which lie dormant over winter and produce the spores that grow on barberry plants. The barberry stage is not necessary to the continued existence of the rust, as it remains in evidence in fields hundreds of miles away from barberry plants. In this case the sporidia germinate directly upon the young wheat plant, forming the rust-producing mycelium, and the cluster-cap stage is omitted.

There is no known remedy against the disease. Moist, damp weather, causing the succulent growth when the wheat is developing the kernel, seems to be favorable to the growth of the rust, while in a dry season very little damage is done by it. There is no such thing as "rust proof" varieties, but some varieties are more resistant than others, though the character of the season has something to do with the degree of resistance, certain varieties being more or less resistant one season, the next season they may not be, to such a degree. The following varieties seem to have considerable resistance to Orange Leaf rust in every part of this country provided they are sown in time to mature early (Bulletin 16, U. S. Department of Agriculture, Division of Vegetable Physiology and Pathology):

Winter Wheats.—Turkey, Uennonitis, Pringles No. 5, Ricti, Odessa, Pringles Defiance.

Spring Wheats.—Haynes Blue Stem and Saskatchewan Fife.

Varieties such as Allora Spring, Early Para, Early Barret, Budd's Early, Canning Downs and Rust Resistant often escape rust on account of their early ripening.

(To be continued.)

Is It Good Alfalfa Land?

EDITOR KANSAS FARMER:—I have on my farm a small piece of bottom land (a draw), at present there is bluestem growing on it. I intend to break it and sow to alfalfa. In my estimation it is an ideal piece of ground for alfalfa—black, rich, bottom land with a small trace of limestone gravel. At the depth of about fifteen feet there is a thick layer of a black hard mass (I do not know how thick it is) generally called shale in this country. What I would like to know is this: Would alfalfa grow on such a piece of ground? I will further state that there is very little alfalfa grown in this county, only small trial

patches. I see very poor stands. In my estimation the farmers do not sow enough seed per acre.

WENDELIN FRANK.

Rush County.

The piece of ground which you describe ought to make good alfalfa land. The hard-pan layer is far enough from the surface so that it will not interfere with the successful growth of the alfalfa. The difficulty will be perhaps in getting a stand of alfalfa on this ground, considering the fact that it is now in grass. It would be my recommendation that you break the land this season, leaving it fallow during the rest of the year, giving several cultivations with the disk harrow. Unless the sod is very tough, it will likely be in good condition to make a good seed-bed for alfalfa by a year from this spring, or it may be advisable to farm the land one year, putting it into corn or some cultivated crop, in which case if the corn be cut and removed, the alfalfa may be seeded in the fall without plowing, by disking and harrowing the corn stubble, or if the crop cannot be removed early enough to seed in the fall, the field may be seeded the following spring, giving the preparation mentioned above. It would not be advisable to break this land and attempt immediately to seed it down to alfalfa, as you will almost surely fail to get a catch.

It does not require a large amount of seed to get a good stand of alfalfa on a well prepared seed-bed. Some of the most successful growers are now only sowing ten pounds of good alfalfa seed per acre. The usual quantity to sow, however, is from twenty to thirty pounds per acre. A. M. TENEYCK.

Alfalfa or Bromus Inermis for Hog-Pasture.

I intend to sow some land to alfalfa for hog-pasture this fall. Should I sow some grass, such as Bromus inermis with it, and if so should the Bromus inermis be sown in the fall? Fall is much the best time for sowing alfalfa here (Jefferson County). Does Bromus inermis tend to "run out," or take the place of alfalfa?

HARRY C. TURNER.

Jefferson County.

The experiment of growing Bromus inermis and alfalfa together at this station has not been carried far enough so that I can answer your question as to whether the Bromus inermis will tend to run the alfalfa out or vice versa. It is my judgment that the Bromus inermis will prove the stronger of the two in this respect. Alfalfa alone will make excellent pasture for hogs if care is taken not to pasture it too closely or too late in the fall, and the hogs are prevented from rooting. At best, however, you could hardly keep the alfalfa productive for more than three or four years, if it is pastured by hogs. By seeding the Bromus inermis with the alfalfa a sod will be produced which tends to protect the alfalfa plants, and unless the Bromus inermis is seeded too thickly the grass will not materially reduce the growth of the alfalfa for several seasons. The Bromus inermis will not furnish so much pasture as alfalfa nor does the feed have so great value. I believe, however, that such a combination pasture will probably be more permanent than alfalfa planted alone.

Bromus inermis may be successfully sown in the fall, although as a rule I prefer early spring seeding. In sowing a combination of these grasses with alfalfa it would be best not to seed too much of the grass, say about six pounds of the Bromus inermis and ten to fifteen pounds of alfalfa per acre, being sure that you have a well-prepared seed-bed. The Bromus inermis rapidly thickens up, and with a very thin stand at first it will cover all the ground with sod in the space of two or three years.

A. M. TENEYCK.

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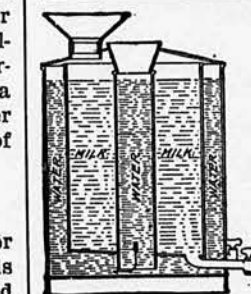
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THOROUGHBRED STOCK SALES.

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

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

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

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

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

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

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

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

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

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

December 8 and 7, 1904—Chas. W. Armour, Kansas City, and Jas. A. Funkhauser, Plattsburg, Mo., Herefords at Kansas City.

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

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

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

Notable Live-Stock Events at the Worlds Fair.

The live-stock exhibits of the Universal Exposition continue to attract general attention and stockmen in all the breeding districts of the world are looking forward with eager anticipation to the assembling of the best specimens of all the improved breeds of domestic animals at St. Louis from August 22 to November 19.

The Universal Exposition is daily in receipt of advices of important meetings to be held at St. Louis during the period of the live-stock show of the Worlds Fair. All interested in arranging live-stock meetings at the World's Fair that are not included in the following list have been invited to file dates for such conventions with Col. Charles F. Mills, chief of the live-stock department of the exposition.

The meetings of National and other live-stock organizations that have been appointed for the period of the live-stock show and to be held in connection therewith ensure a monster gathering at St. Louis of the leading breeders of all kinds of live stock of poultry.

The following are some of the interesting events arranged and will constitute a portion of the famous Live-Stock Congress of the Universal Exposition of 1904:

Dates for closing of entries in the several divisions are as follows: Division A, Horses, Asses, and Mules, July 16, 1904; Division B, Cattle, July 30, 1904; Division C, Sheep and Goats, August 20, 1904; Division D, Swine, August 20, 1904; Division E, Poultry, September 10, 1904; Division F, Dogs and Cats, September 10, 1904; Division G, Carload Lots of Cattle, October 1, 1904; Division H, Southern Breeding Cattle, October 1, 1904.

The dates for exhibition of live stock in the several divisions will be as follows: Division A, Horses, Asses, and Mules, Monday, August 22, to Saturday, September 3, 1904, inclusive; Division B, Cattle, Monday, September 12, to Saturday, September 24, 1904, inclusive; Division C, Sheep and Goats, Monday, October 3, to Saturday, October 15, 1904, inclusive; Division D, Swine, Monday, October 3, to Saturday, October 15, 1904, inclusive; Division E, Poultry, Monday, October 24, to Saturday, November 5, 1904, inclusive; Division F, Dogs and Cats, Tuesday, November 8, 1904, to Thursday, November 11, 1904, inclusive; Division G, Carload Lots of Cattle, Monday, November 14, to Saturday, November 19, 1904, inclusive; Division H, Southern Breeding Cattle, Monday, November 14, to Saturday, November 19, 1904, inclusive.

A list of meetings to be held at St. Louis during the Universal Exposition period follows:

Horses.—American Shire Horse-Breeders' Association, Chas. Burgess, secretary, Davenport, Iowa; National French Draft Horse-Breeders' Association, Chas. E. Stubbs, secretary, Fairfield, Iowa; American Breeders' Association of Jacks and Jennets, J. W. Jones, secretary, Columbia, Tenn.; American Percheron Horse-Breeders'

and Importers' Association, Geo. W. Stubblefield, secretary, Bloomington, Ill.; American Saddle Horse Breeders' Association, I. B. Nall, secretary, Louisville, Ky.

Cattle.—American Shorthorn Breeders' Association, John W. Groves, secretary, 17 Exchange Ave., Chicago, Ill.; American Galloway Breeders' Association, Chas. Gray, secretary, 17 Exchange Ave., Chicago, Ill.; American Devon Cattle Club, L. P. Sisson, secretary, Newark, Ohio.

Sheep and Goats.—American South-down Breeders' Association, Frank S. Springer, secretary, Springfield, Ill.; American Oxford Down Association, W. A. Shafor, secretary, Hamilton, Ohio; American Milch Goat-Breeders' Association, W. A. Shafor, secretary, Hamilton, Ohio; American Angora Goat-Breeders' Association, John W. Fulton, secretary, Live Stock Exchange, Kansas City, Mo.

Swine.—National Chester White Association, Thos. Sharples, Westchester, Pa.; Ohio Improved Chester Swine-Breeders' Association, C. M. Hiles, Ajax Building, Cleveland, Ohio; American Essex Association, F. M. Srout, McLean, Ill.; American Hampshire Swine Association, E. C. Stone, secretary, Armstrong, Ill.

Cats.—American Cat Association, Miss Lucy Johnstone, secretary, 5323 Madison Ave., Chicago, Ill.

Poultry.—American Poultry Association, T. E. Orr, secretary, Beaver, Pa.; Pea Comb Rhode Island Red Club of America, John Lowe, secretary, Swansea, Mass.; American White Wyandotte Club, Maurice F. Delano, Millville, N. Y.; American Plymouth Rock Club, H. P. Schwab, secretary, Rochester, N. Y.; American Buff Plymouth Rock Club, W. C. Denny, Rochester, N. Y.; American Leghorn Club, W. W. Babcock, secretary, Bath, N. Y.; National Golden Wyandotte Club, A. W. Davis, secretary, Big Rock, Ill.; National White Wyandotte Club, Ross C. H. Hallock, secretary, 6317 Clifton Ave., St. Louis, Mo.; National Bronze Turkey Club, Mrs. B. F. Hislop, secretary, Milford, Ill.; National Fluff Club of America, F. J. Revely, secretary, East Haven, Conn.

Dogs.—Collie Club of America, Wm. C. Hunter, secretary, Fayetteville, Pa.

Public sales scheduled for dates within the live-stock exhibition period of the exposition, and the names of the associations under whose auspices they are to be held:

Horses.—Percheron, American Percheron Horse-Breeders' and Importers' Association; French Draft, National French Draft Horse Association; Morgan, American Morgan Horse Association.

Cattle.—Shorthorn, American Shorthorn Breeders' Association; Hereford, American Hereford Breeders' Association; Aberdeen-Angus, American Aberdeen-Angus Association; Galloway, American Galloway Breeders' Association; Jersey, American Jersey Cattle Club; Holstein-Friesian, World's Fair Holstein-Friesian Association; Red Polled, Red Polled Cattle Club of America.

Sheep and Goats.—Shropshire, American Shropshire Registry Association; Hampshire, Hampshire Down Sheep-Breeders' Association; Rambouillet, American Rambouillet Association; Oxford, American Oxford Down Sheep Record Association; Cotswold, American Cotswold Association.

Swine.—Poland-China, American Poland-China Record Company; Berkshire, American Berkshire Association; Duroc-Jersey, National Duroc-Jersey Record Association; O. I. C., O. I. C. Swine-Breeders' Association; Yorkshire, American Yorkshire Club.

Parades of live stock at the World's Fair will take place as follows:

Horses, Asses, and Mules, Tuesday, August 23, and Thursday, September 1, 1904.

Cattle, Tuesday, September 13, and Thursday, September 22, 1904.

Color in Shorthorns.—No. XIII. EDITOR KANSAS FARMER:—The first prize in the class of junior heifer calves at the great International show was awarded to the red Dewdrop. Her

sire is red. Her dam is dark roan. Both her grandsires are roans.

Second, Chrysanthemum (roan). Her dam is a roan bred in Scotland. Her sire is General White (a white bull bred by Marr, of Scotland,) whose sire and dam are both roans.

Third, Fair Play 6th (red). Her sire is a roan (bred by Willis in England). Her dam is a roan (bred by Duthie in Scotland).

Fourth, Countess Vera (roan). Her sire is red (bred by Marr, of Scotland). Her dam is roan. One grandsire is red, the other roan. One grandam is roan.

Fifth, Silvermine (light roan). Her sire is a roan (bred by Duthie, Scotland). Her dam is a roan (bred by James Bruce, Scotland).

Sixth, Duchess of Gloster 56th (red). Her dam is a roan. Her sire is red. Her maternal grandam is white. Her paternal grandsire is roan.

Seventh, Choice Secret (red and white). Her sire is a roan (bred in Scotland). Her dam is red and white. Her maternal grandsire is a roan. Her maternal grandam is a roan whose sire was the world-renowned Gay Monarch 92411 (bred by Marr, of Scotland,) that won second prize in class for aged bulls at World's Fair at Chicago in 1893—the first prize bull being the roan Young Abbotsburn 110679 (bred in Ontario), whose sire was the roan Abbotsburn 106090 (bred by Amos Cruickshank) got by Roan Gauntlet 45276.

Eighth, Fairview's Orange Blossom 8th (red). Her dam and maternal grandsire and grandam are all red. Her sire is red. Her paternal grandsire is the great champion roan show-bull, St. Valentine 121014. Her paternal grandam is the roan cow, Monarch's Lovely, whose sire was the great roan Gay Monarch 92411 (noted above).

Ninth, Hampton's Duchess (red). Her maternal ancestry for three generations are all red except one, a red roan. Her sire is a dark roan. Her paternal grandsire is a roan, bred by Duthie, of Scotland. One paternal great grandsire is a roan; also one paternal great grandam is a roan.

Tenth, Lady Mysie (red). Her dam is red. Her sire is a roan.

Eleventh, Hampton's Pearl (roan). Her sire and dam, both grandsires and one grandam, are all roans. One grandam is red.

Twelfth, Charity (roan). Her maternal ancestry for three generations are all red. Her sire and paternal grandsire are roans. Her paternal grandam is an English cow (color unknown) but her ancestry are of mixed colors, and of Scotch breeding.

Thirteenth, Crimson Flower Belle (red) bred in Ontario. Her sire is a roan. Her dam is red. Her grandams are both red. One grandsire is white, the other roan. D. P. NORTON, Morris County.

Feeding Young Pigs.

Will you please give me some information in regard to feeding young pigs? Is corn chop and swill as good as shorts, and is there such a thing as feeding a sow with young pigs too much swill? W. E. COOPER.

I infer from the above letter that your correspondent wishes information on the feeding of young pigs after they begin to show a desire for something beside the milk of their dam. In the raising of pigs it is very important that the sow be fed an abundance of rich, nourishing feed during the suckling period, as she is producing a large amount of milk for the growth of the pigs. Of course the first few days her feed must be rather limited in quantity. Water only should be given the first day after farrowing and the feed should be very gradually increased as the pigs begin to make greater demand upon the sow. It will be found very difficult as a general thing to keep the brood sows from running down in flesh while suckling pigs. As to the question of feeding too much swill to a brood sow suckling pigs, I think it will depend somewhat upon the nature of the swill. If by swill your correspondent means the material which is composed of dish water and other ma-

"I lost courage and thought I would never regain my health."
"Three years of delicate health trying doctors' prescriptions and patent medicines" without benefit might well sap the courage of any woman. And yet Mrs. Bryant proved that the question of the cure of womanly disease is only a question of using the right remedy. A few doses of 'Favorite Prescription' restored her courage and revived her hope, because she could see "a decided change from the first." Three



months' use of the medicine restored her to perfect health.

Dr. Pierce's Favorite Prescription cures irregularity, dries weakening drains, heals inflammation and ulceration, and cures female weakness.

Mrs. Sarah Bryant, President of Memphis Social Science Club, residing at 271 Atkinson Ave., Memphis, Tenn., writes: "I suffered with delicate health for three years, trying doctors' prescriptions and patent medicines until I lost courage and thought I would never regain my health; but a few doses of your 'Favorite Prescription' made me change my mind. Could see a decided change from the first, so I kept on taking it for three months faithfully and am now in perfect health."

Dr. Pierce's Medical Adviser, in paper covers, is sent free on receipt of 21 one-cent stamps to pay expense of mailing only. Address Dr. R. V. Pierce, Buffalo, N. Y.

Great is Texas!

The Eyes of the World are Upon Her.

The Home-Seeker

Wants to know about her "Matchless" Climate and Her Cheap Lands.

The Investor

Wants to know about not only Her Cheap Land and Low Taxes, but as well, Her Wealth of Mine and Forest, and this is to let you know that the

The International & Great Northern,

Texas' Greatest Railroad.

Traverses more than a thousand miles of the Cream of Texas' Resources, latent and developed, and that you may learn more about the GREAT I. & G. N. COUNTRY by sending a 2-cent stamp for a copy of THE ILLUSTRATOR AND GENERAL NARRATOR, or 25 cents for a year's file of same, or by writing

D. J. PRICE,
G. P. & T. A., I. & G. N. R. R.,
Palestine, Texas.



BEE KEEPERS!

We have three car-loads of Higginsville Aplanian Supplies in stock, which we will furnish at factory prices, saving freight from factory to Kansas City. Special prices furnished on

large orders. Correspondence solicited. Catalogue furnished on application. Advise ordering early.

WALKER-BREWSTER GROCER CO.
Wholesale Fruit and Produce,
403 Walnut St., - KANSAS CITY, MO.

terials that are poured into a large barrel and not cleaned out through the whole summer, I should say that it would be very easy to feed a sow too much. If by swill he means a judicious mixture of skim-milk, shorts, ground oats, with possibly a little oil-meal, the appetite of the sow would be a pretty safe guide as to the amount fed. If a barrel be kept it should be emptied every day.

The little pigs will begin to show a desire for some additional food at 2 or 3 weeks old, and this desire must be met if the pigs are to make the best growth possible. A separate pen should be provided with a creep hole so that the little pigs may reach a trough apart from the dams. They may be given skim-milk with a little shorts stirred in or ground oats and barley if the hulls are sifted out. Corn should be used rather sparingly at this stage. While corn is an excellent and most valuable feed in the production of pork, it does not contain the elements of growth required by the young pigs. It gives young pigs a valuable addition to the ration and also induces exercise to feed them a little soaked shelled corn scattered over the feeding place, but it must not constitute the sole ration. An abundance of nutritious pasture is almost indispensable for the economical production of pork and there is nothing better than alfalfa for this purpose. Pigs grown on alfalfa will be in fine, hearty condition by fall for the finishing and fattening process, and will cost a minimum amount of grain to bring them to that condition. If your correspondent does not have alfalfa pasture he may secure pasture by the sowing of rape, rye, oats, sorghum, or other annual crops.

Most breeders wean their pigs at 6 to 10 weeks old and unless there is an attempt to raise fall litters this will probably be the most desirable age for weaning. G. C. WHEELER.
Kansas Experiment Station.

Fifty-Cent Corn and Four-Cent Hogs.

How often should hogs be fed in the day to get the best results? Should pigs be fed oftener than hogs in the fattening pen, and is there any difference in this respect in hot and cold weather? Does it pay to feed 50-cent corn to 4-cent hogs? J. H. MILLER.

Owing to the relatively small size of the digestive tract in swine better results can undoubtedly be obtained by feeding three times daily. Hogs accustomed themselves to conditions, however, very readily, and for fattening hogs feeding twice daily will probably be the most satisfactory and practicable. In the case of young pigs just weaned from the sow the feed could be given three times daily, and an abundance of fresh water should be provided at all times for both pigs and fattening hogs.

The question of hot and cold weather would not have any great effect except that hogs will not drink as much water in cold weather, and in very hot weather it is usually best to slightly reduce the grain feed, and it is also best during excessive hot spells to arrange the feeding hours so that hogs may eat in the coolest portion of the day possible.

In the fattening of hogs we can not expect to produce a hundred pounds of pork on an average for much less than nine or ten bushels of corn, which at 50 cents per bushel would cost \$4.50 to \$5. If the hogs are worth 4 cents now and after putting another hundred pounds on would still be worth only 4 cents, it can be easily seen that it would not pay. In the fattening of animals, however, we can very seldom expect to make the gains pay for themselves, and profit comes from the increased value of the product. For example, a hog in stock condition may be worth but 3½ cents a pound; by feeding him to fatness with an addition of 100 pounds in weight he might sell for 4 or 4½ cents. Not knowing the exact conditions effecting the question of your correspondent I could not give a decided answer. If the hogs are in market condition, however, at the present time, it certainly would not pay to feed them longer, unless a high-

er price could be expected in the future, which is impossible for any one to foretell. G. C. WHEELER.

Kansas Experiment Station.

Miscellany

Our Roads.

(A paper by Dr. A. L. Hitchins, Burlington, Kans., before the Kansas Delegation to the National Good Roads' Convention at St. Louis, May 16-21, 1904.)

It is a subject of frequent comment that time and money are being squandered on supposed road improvement that never bring us good roads. There is no other subject of such universal interest that seems to suffer from such universal neglect as that of road-building. It is a subject which is presented to us whenever we leave our doors, whether on pleasure or business. Doubtless it is because it is so near to us and seems so commonplace that we treat it with so much indifference. A discussion of "Imperialism" appeals to our imagination much more readily than would that of draining a mud-hole.

It becomes necessary, therefore, that men of practical sense who do have an appreciation of the near things in life, of the here and the now rather than of the remote and the hereafter, and who believe that with the common things well done the great things will take care of themselves, should exert themselves to call attention to the possibilities lying easily within our reach of even so prosaic a subject as that of road-making.

The construction of a dirt road does not necessarily require the supervision of an engineer, but simply the exercise of good horse sense by the road-builder. First of all he must consider the subject of drainage. Almost every problem of road-building resolves itself into this. How to handle the storm-water and quickly to dispose of it before it penetrates the roadway, as well as to prevent washing, should be his constant study. Covering in the form of sods, clods, and weeds or of any vegetable matter which retains moisture will tend to make his work a failure. In preparing the sub-grade for his road he should plow and scrape out on each side the rich surface soil so as to shape up the roadway from the subsoil. This should then be made to slope in straight lines from the center to the outside of the ditch on either side, and not be left, as is frequently done, in the form of an arc or segment of a circle.

"Not how much, but how well," should be the motto of the road-builder. Nothing is well done that is only half done. Nothing is well done that is not finished. There is more economy in finishing ten rods of road than in trifling with ten miles of it. What is poorly done is left to the mercy of the elements which would be more merciful if nothing had been done. Water can no more be fought with ignorance than can fire. An umbrella with nothing but ribs is only an incumbrance. A roadway that is not left covered is a sponge. It is unable to shed water—it holds it.

It is not enough that a road be built; it must be preserved. A road well built is easily cared for, while it is next to impossible to preserve a half-built or unfinished road. Still the best of roads need some constant attention. For every six miles of country road there should be at least one overseer whose compensation will justify him in giving his time to the work. A sufficient cash fund should be available to enable him to complete a section of road annually, and to employ such labor or buy such material as may be necessary to keep that already made in good repair. Our present methods of working out road taxes do not admit of either intelligent or economical road supervision. A dollar worked out is but half paid, and grudgingly at that. Again, it is not available when wanted and the maintenance of a good road may require an expenditure at any time.

Some action by the State Legislature is required to remedy existing evils.

Instead of leaving road work to be done to suit the varying whims of a multitude of indifferent and poorly paid local overseers, there should be some competent engineer charged by the State with disseminating information and so systematizing and supervising the work of the local overseers as to result in a wise expenditure of public money for good roads. If the work is too much for one officer the State might be divided into road districts, each to be controlled by a road commissioner who should be required to devote his entire time to the work. A general and a special fund should be provided that would at once equalize the burdens and still bear some relation to local benefits conferred. The State might appropriate, say 50 per cent, the county 25 per cent, the township 15 per cent, and the land-owner the remaining 10 per cent of the taxes.

If the State Legislature will but apply itself to the solution of this problem of good roads there may be some hopes of the National Government becoming interested. Good roads are a National necessity. There never was a civilized nation that did not regard them as such. In the history of the world progress has always been made over good highways. Missionaries have failed to enlighten China chiefly because the Chinese get stuck in the mud whenever they travel. Rome conquered the world as much by her roads as by her armies. Napoleon's appreciation of good roads was a mark of his genius. One of the first things this country did was to appropriate \$7,000,000 for the construction of the Great Cumberland Pike, ninety years ago. The building of good roads was properly regarded as a necessary part of our great National scheme of steamship and railway transportation. If rivers and railroads are the arteries of commerce our country roads are the capillaries through which the life blood circulates to every part. The National Government appropriates millions for the improvements of harbors and rivers and will soon appropriate more than \$40,000,000 for the opening up of an international waterway. While we ungrudgingly send this money abroad let us also ask for a judicious expenditure at home in ways that will directly benefit us all. There are 209,000 miles of railways in this country and sixteen times this length of common roads. National, State, and county cooperation are essential for an organization that shall be equal to the task of providing good highways.

The agitation of this subject is timely. Notwithstanding the opposition to the Brownlow bill in Congress, the National Good Roads' Association will in the coming campaign if possible prevail upon each political party to adopt a plank in its platform committing it to good roads legislation. The best place to begin agitation is at home. Call attention to local necessities and get somebody interested in doing something at home, and then the work speaks for itself. Where is there a subject that can appeal more equally to all classes and conditions? Where is there a field that admits of greater fellowship of labor?

The Armour Herefords.

The Armour herd of Herefords is owned by Charles W. Armour, president of the Armour Packing Company, and is located four miles south of Kansas City on the Meadow Park Farm. This is one of the most beautiful and picturesque farms in Missouri, modern in every respect, and consisting of over a thousand acres of green meadows and woody dales. No pains are spared to make everything conducive to the best possible results. The Armour herd is one of the largest collections of pure-bred Herefords in the United States, and comprises almost as many imported animals as home bred. A recent importation from all the finest herds in England has added greatly to the purple of the present blood. One of the most notable animals imported was Majestic, the present chief herd-bull. He was bred by the English wizard of bull-breeds, J. W. Smith, of Hereford, and was considered the best bull in the old country at the time he was purchased. Another good imported bull is Bell Metal, a grandson of the great Albion. The blood strains of the Armour Herefords run chiefly to Lord Wilton, The Grove 3d, and Anxiety, while of course one will find considerable rich local blood cropping out. One of the main holds of a breeding establishment is the herdsman. All Hereford breeders know Archie McNeil, the Armour herdsman. Archie is a Scotchman, and has practically been raised with Herefords. It is as a prominent breeder recently said, "What Archie doesn't know

Horse Owners! Use

GOMBAULT'S

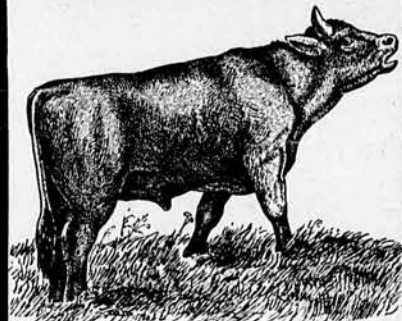


Caustic Balsam

A Safe, Speedy, and Positive Cure

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

KRESO DIP



FOR ALL LIVE STOCK SHEEP, SWINE, CATTLE, HORSES, ETC.

PREVENTS AND CURES PARASITIC AND SKIN DISEASES

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

NON-CARBOLIC, NON-IRRITATING, NON-POISONOUS

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

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

PARKE, DAVIS & CO.

HOME OFFICES AND LABORATORIES: DETROIT, MICH.
BRANCHES: New York, Chicago, St. Louis, Boston, Baltimore, New Orleans, Kansas City, Indianapolis, Minneapolis, Memphis.

Home Health Insurance

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

Dipolene

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

Marshall Oil Co.
Box 14
Marshalltown, Ia.

The Hay Baler

which is in a class by itself.



"ELI" PRESSES bale fastest and best for shipping and market. Largest Feed Opening. Horse and steam power, 28 styles and sizes. Many featured machines, standard of the world. Get the free Eli catalogue. Collins Plow Co., 1120 Hampshire St., Quincy, Ill.

FOR 10c OR 5 STAMPS will show you HOW TO MAKE \$30 daily. Address Zollner Zeuwander Co., 610 Burlington Bldg., St. Louis, Mo.

about breeding Herefords, isn't worth knowing."

Mr. Armour each year gives an annual sale, coming this year on December 6 and 7, while of course a great many cattle are sold during the year at private sale—such as supplying herd-bulls for small herds, for the range, and also a good many young bulls are sold to prosperous farmers who have a bunch of good grade cows and want a good bull to use on them. Mr. Armour is not interested in this herd of fine cattle with the idea of extorting any great pecuniary gain from them, but being at the head of one of the largest packing concerns in the world, is looking forward to the time when the returns will begin to come in in the form of choice beef steers on the markets. Mr. Armour also derives a great deal of pleasure from his farm by driving out from the packing house offices and having a cool place to sit and watch the beautiful animals.

Mr. Armour is one of our new advertising patrons and if you are interested in Herefords, we are confident it will be to your advantage to write to him. He takes much interest in his Hereford cattle correspondence and will be pleased to hear from you.

Colonel Lafe Burger.

Col. Lafe Burger, the live-stock auctioneer, of Wellington, Kans., has made for himself, by hard work, fair dealing and ability, a place among the great live-stock auctioneers of the country. He has handled stock since early boyhood and his rare judgment was ever a matter of comment among his friends. He started in the auction business eight years ago. Coming to Kansas five years ago, he located at Wellington and prepared to stay. A stranger with no rich or influential friends to back him, he met many difficulties but for these he was prepared and worked cheerfully on, seemingly unmindful of the difficulties and with a determination to down them. The work he has done in the last few years proves that "push" wins.

Gossip About Stock.

Scott & March, of Belton, Mo., made a sale of pure-bred Herefords from their Kansas breeding farm in Finney County on May 28, which proved quite satisfactory. The sale was made at Garden City and was conducted by Col. Lafe Burger, who made the bunch bring right around \$100 each.

Col. Geo. Moore, of the Moore Chemical Company, Kansas City, has the thanks of the Kansas Farmer for its entire equipment of summer millinery. New and many colored "hats" now cover the heads of all, from the business manager to the "devil," and they are alike in but one thing. They all have the brand "Car-Sul Cattle Dip" in big, black letters printed on them.

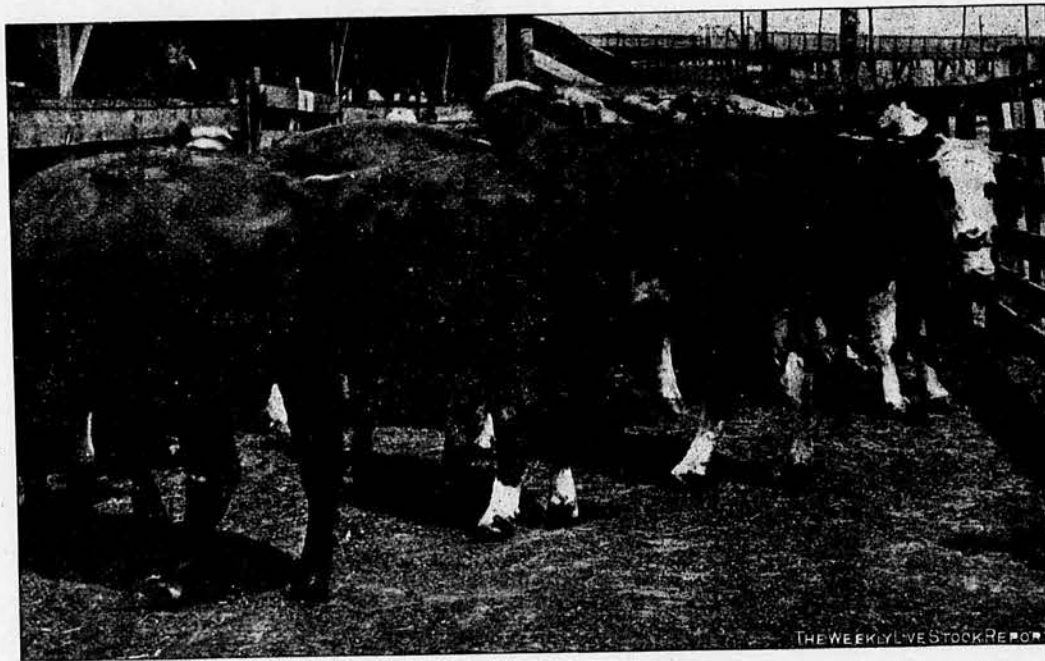
Most of the Kansas breeders had a quick and lively sale this season of Gallo-way bulls, especially those who had the business forethought to advertise the same early. However, we are pleased to announce that any of our readers desiring first-class bulls of serviceable age can now be accommodated at a special price by that veteran breeding establishment of W. R. Platt & Son, of Kansas City, Mo., whose advertisement appears in this issue on page 647.

Every summer there is more or less complaint in localities in the West of cattle and horses being affected with pink eye, and we have been on the lookout for some remedy to relieve and cure this ailment, and have finally induced Mr. W. O. Thurston, Elmdale, Kans., who has been quite successful in treating this affection by his own formula, to advertise Thurston's Eye Water. He now advertises for \$1 to send enough for the treatment of ten head. This he will deliver anywhere in Kansas for \$1. Any of our readers having stock affected with pink eye should make a trial of this remedy.

Farrish & Miller, who own the largest herd of home-bred Aberdeen-Angus cattle in the United States on their breeding

tra length, bone, and backs. They stand on the best of feet and are herd-headers, every one of them. As Hedgewood is a suburban place it is necessary to move these boars in order to make room for the spring pigs. For this reason they are priced very low when quality and breeding are considered. Since the loss of Shawnee Orion last year Mr. Lane has secured a boar named "No. 49," by Roycroft Prince 12413 and out of Madam Chandler 55182, as herd-header. Two of his sows, sired by a son of Peter Blocher's Big Joe 7363 and out of daughters of General Cronze 9485, have littered 21 pigs this spring. This their second litter each and the second time they have brought this number of pigs. Write Mr. Lane about his fall boars. They are snaps at the prices asked.

Mr. Chas. Morrison, owner of the Phillips County herds of Red Polled cattle and Poland-China swine, Phillipsburg, Kans., writes that the Red Polls are in fine shape and of better individual quality than ever. This breed is growing in popularity among farmers who milk their own cows as well as among feeders. Mr. Morrison says they are "the best all-purpose cattle that grows." He was unable to supply the demand for bulls last year but has a nice bunch coming on now. Most of these were sired by Actor 7781 by Iowa Daryson 10th, the Columbian Exhibition champion. He is considered the best bull of the breed now in the State. Every farmer who has a drop of Red Polled blood in his herd wants more, and parties who want to get any of this champion blood should order early and save in price and freight. Mr. Morrison also has a number of choice yearling heifers for sale, and also a very fine lot of Poland-Chinas that are out of sight in the alfalfa. The Poland-China trade has been excellent all spring, and he reports sales almost daily. His herd is now so large that he can supply demands for hogs of any age or size. Phillips County has an enormous peach and cherry crop this spring, while the pastures are good and the alfalfa is a wonder. See Mr. Morrison's advertising card on page 647.



The above drove of whitefaces, fed on the Stanton Breeding Farm, Madison, Neb., brought \$5.85 at Chicago on Wednesday, May 26, topping the trade for the week. They averaged 1,338 pounds, and were sold by Clay, Robinson & Co.

Colonel Burger began to do pure-bred work only three years ago, but by his wonderful energy, as well as his ability, honesty, and pleasing manner he has since that time been continuously before the people as a fine-stock auctioneer. He has worked in Kansas, Missouri, Iowa, Illinois, Oklahoma, Texas, and the Indian Territory, selling for many of the big breeders. His knowledge of pedigrees and individuality is hard to beat, and he



knows no such word as quit. To know that Colonel Burger is to make a sale is to know that the last dollar that it is possible to get he will get. He made one of the best combination sales that was made in Kansas this year. His date book for 1904 is showing many sales, but he still has some open dates and will be glad to date your sale. He works for you from the time he books your sale until the last animal is sold.

farm at Hudson, Kans., report a very lively trade in bulls during the spring months. They also report the sale of eight cows and five young bulls to Mr. F. E. Shackleford, of Wellsville, Kans. Mr. Shackleford is a young man who is just getting started in the breeding business and it is interesting to note that he has started right. He paid a good, round price for these animals but they will be money-makers for him. Hon. Parker Parish, senior member of the firm, was a caller at this office the other day and states that crop prospects in Stafford and adjoining counties were never better. Wheat prospects are the best in the history of the county and the acreage of corn is larger and the prospects better than before, while grass is great. Here is the place to raise good cattle.

Clay, Robinson & Co., the well and favorably known live stock commission firm, of Chicago, and of five other leading markets, whose advertisement appears regularly in this paper, inform us with regard to several notable sales made by them recently which seem worthy of special mention in our columns. On Wednesday, May 26, they sold for the Stanton Breeding Farm Co., Madison, Neb., 36 head of dehorned Hereford steers averaging 1,338 pounds, at \$5.85, topping the market for the entire week, no other cattle selling so high. In sheep-selling they have practically "swept the board"—having to their credit the extreme top prices of the season for both sheep and lambs. On May 26 they sold for A. L. Clark, Fort Collins, Col., 848 head of woolled lambs at \$7.50, the only ones to bring that price this season. May 31 they obtained \$5.80 for 1,045 head of shorn aged wethers, averaging 139 pounds, fed by Frank Hershey, Gibbon, Neb. No other sheep have sold so high this season. Such sales as these go far toward explaining the remarkable popularity of the above firm among the feeders and stock-shippers of the country.

Mr. H. G. Lane, owner of the Hedge-wood Herd of Duroc-Jersey swine, Topeka, Kans., has a nice bunch of fall boars that some good breeder ought to buy. They were sired by Shawnee Orion 11179 by Orion 2d 6537 and out of Duchess Gem 22066. This was a fine boar who lost his life in the great food and but few of his pigs can be had at any price. They now weigh about 200 pounds each, and are of a rich cherry red color with ex-

The Holstein-Friesian Year-Book.

The Kansas Farmer is in receipt of Vol. 3, of the Holstein-Friesian year-book and also an historical pamphlet describing the origin and history of this remarkable breed of milch cattle. Both these books are published by the Holstein-Friesian Association of America, and copies of them can be obtained from Secretary Frederick L. Houghton, Brattleboro, Vt. They are both valuable and should be in the hands of every breeder of this breed and of the farmers who are interested in milk farming.

We are glad to have the privilege of advertising the Hero Furnace, manufactured by the Charles Smith Company, 104 Lake Street, Chicago, because we believe it is the best furnace now manufactured for farmers' use. It will burn any kind of fuel and do it economically. It will heat either by hot air or hot water, or both, and it will not only heat the house cheaply but it will supply hot water wherever needed. Now is the time to figure on a furnace and get it in place before the cold weather comes. Look at their change in advertisement on page 640 and write them for estimates.

Baltimore, Md., December 27, 1903.
1114 South Charles St.
Dr. B. J. Kendall Co., Enosburg Falls, Vt.
Gentlemen.—Please find enclosed a two-cent stamp, for which kindly send me a copy of your "Treatise on the Horse and His Diseases." I have been using your Kendall's Spavin Cure for the past five years for my horse as well as myself and find that I would not be without it at any price. Without a doubt it is the best cure for any hurt or pain.
Very truly yours,
GEORGE TAUDTE.

Denver, Col., March 2, 1899.
Dear Sir:—Having had occasion to use your Balmoline upon my horse as well as myself last fall, in a runaway accident, I do not hesitate to recommend it for man and beast as doing a great deal more than even you claim for it. My horse was one complete mass of bruises and battered flesh, and it is surprising that you can not now find that the hair was lost in any spot.
F. MUELLER,
Wholesale Saddles and Harness.

FARM WORK

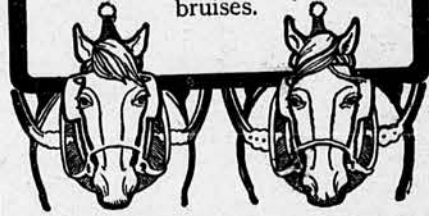


The strain of hard work on man or beast is quickly relieved by

SLOAN'S LINIMENT

IT KILLS PAIN!

Good for sore muscles and bruises.



Improved Dewey Stock Waterer.

This waterer is purely automatic. Can be operated weeks earlier and later each year than any other. Cannot leak, no hog wallows to breed disease. Supplies Pure Water only as fast as needed. Starts pigs right and makes healthy hogs. More sold than all other waterers combined. Write for free booklet.

THE B-B MFG. CO.,
71 Masonic Temple, Davenport, Iowa.

Fistula and Poll Evil

Do yourself what horse doctors charge big prices for trying to do. Cure Fistula or Poll Evil in 15 to 30 days.

Fleming's
Fistula and Poll Evil Cure
is a wonder—guaranteed to cure any case—money back if it fails. No cutting—no scar. Leaves the horse sound and smooth. Free Book tells all about it—a good book for any horse owner to have. Write for it.
FLEMING BROS., Chemists,
513 Union Stock Yards, Chicago, Ill.

Pink Eye Cure

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

W. O. THURSTON, Elmdale, Kansas

LUMP JAW NO CURE NO PAY

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



DEATH TO HEAVES Guaranteed
NEWTON'S Heave, Cough, Diarrhea and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strongly recommended. \$1.00 per can. Dealers. Mail or Ex. paid. The Newton Remedy Co., Toledo, Ohio.

LAFE BURGER, Live Stock Auctioneer
Wellington, Kansas.

Five years of successful selling for some of the best breeders in the United States. Posted on pedigrees and values. Entire time given to the business. Write or wire for dates.

WORLD'S FAIR

Accommodations, adjoining Fair Grounds, recommended by President of Fair, Mayor of St. Louis, and Y. M. C. A. WRITE FOR FREE BOOKLET.

\$1.00 A DAY

Highly moral, beautifully located; every convenience; moderate priced meals; no danger from fire; just the place for women and children.

UNIVERSITY PARK ENCAMPMENT, St. Louis

When writing advertisers please mention this paper.

The Young Folks

CONDUCTED BY RUTH COWGILL.

BURIAL OF BARBOUR.

(December 6, 1855.)

Bear him, comrades, to his grave;
Never over one more brave
Shall the prairie grasses weep,
In the ages yet to come,
When the millions in our room,
What we sow in tears, shall reap.

Bear him up the icy hill,
With the Kansas, frozen still
As his noble heart, below,
And the land he came to till
With a freeman's thews and will,
And his poor hut roofed with snow!

One more look of that dead face,
Of his murderer's ghastly trace!
One more kiss, O widowed one!
Lay your hands upon his brow,
Lift your right hand up, and vow
That his work shall yet be done.

Patience, friends! The eye of God
Every path by murder trod
Watches, idles, day and night;
And the dead man in his shroud,
And his widow weeping loud,
And our hearts, are in his sight.

Every deadly threat that swells
With the roar of gambling hells,
Every brutal jest and jeer,
Every wicked thought and plan
Of the cruel heart of man,
Though but whispered, He can hear!

We are suffering, they in crime,
Wait the just award of time,
Wait the vengeance that is due;
Not in vain a heart shall break,
Not a tear for Freedom's sake
Fall unheeded: God is true.

While the flag with stars bedecked
Threatens where it should protect,
And the Law shakes hands with Crime,
What is left us but to wait,
Match our patience with our fate,
And abide the better time?

Patience, friends! The human heart
Everywhere shall take our part,
Everywhere for us shall pray;
On our side are nature's laws,
And God's life is in the cause,
That we suffer for to-day.

Well to suffer is divine;
Pass the watchword down the line.
Pass the countersign: "ENDURE."
Not to him who rashly dares,
But to him who nobly bears,
Is the victor's garland sure.

Frozen earth to frozen breast,
Lay our slain one down to rest;
Lay him down in hope and faith,
And above the broken sod,
Once again, to Freedom's God,
Pledge ourselves for life or death.

That the State whose walls we lay,
In our blood and tears, to-day,
Shall be free from bonds of shame,
And our goodly land untrod
By the feet of slavery, shod
With cursing as with flame!

Plant the buckeye on his grave,
For the hunter of the slave
In its shadow can not rest;
And let martyr mound and tree
Be our pledge and guaranty
Of the freedom of the West!

—John G. Whittier.

Over the Border—A Story of the Kansas Pioneers.

XII.

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CHAPTER XVII.—A FREE-STATE COUNCIL.

It was about two o'clock when Dolman and Nathan returned, bringing the boy with them. They had found him that morning, wandering forlornly about, his faithful dog following, seeking up and down in the tall grass and bushes by the creek for his father and sisters.

Dolman had overtaken Nathan plodding rapidly along on the road toward his old home. Dolman told him what he knew of the boy, asserting his belief in his safety; for the more he thought about it, the more he felt assured that the border ruffians' boast had been an empty one. He had been horrified when he saw Henry come running toward him there at the door, brandishing his pistol with equal danger to friend or foe. He had taken the weapon from the boy, and ordered him to "get out and look after his sister." He said the boy had obeyed docilely enough, and he saw him disappear into the outlying shadows. Then his whole attention had been required in a struggle for his own life. He had kept the pistol in his hand and, in some way, he knew not how, had finally made his escape.

His story had greatly comforted Nathan, and together they had gone over the smoking ruins of the old home, finding everything destroyed, even to the stock, except one lone chicken, which crowed lustily from a tree, at sight of them. From the house they

had gone down to the creek, where at length they found Henry, to their great joy and gratitude.

Nathan, relieved of the strain of anxiety, was so wearied that he could scarcely keep his seat upon the horse, and when he reached Mrs. Robinson's house, tottered into a chair, unable to go further.

Sarah lay sleeping the deep sleep of utter physical fatigue. She looked so pathetically sweet and childlike with the long eyelashes lying upon her white cheeks, that Mrs. Robinson did not wonder at the look she surprised in Dolman's face. She bent and kissed the girl saying, "Wake, Sarah, wake."

Henry was standing shamefacedly beside the couch, for he had been rebuked in no uncertain tones for his rashness by Dolman. His sister opened her great eyes and gazed at him solemnly, unremembering of recent events in her first sudden waking. Then with a cry of joy she flung her arms around his neck, and to the surprise of every one, himself included, Henry began to sob tempestuously.

When they were calm enough, they talked over the whole affair. Henry supplied what Dolman was too modest to say regarding his part in the affair. Indeed, from this time Dolman was his idol. He acquiesced blindly in whatever opinions Dolman uttered. He proved everything by Dolman. He followed him about with doglike devotion. Dolman's nature, quiet, restrained, and self-controlled yet unflinchingly brave, daring and resourceful, contained all the characteristics that appealed to the boy's unquiet soul.

Nathan suffered much anguish of spirit as he contemplated his venturesome offspring. Henry's impulses were directly opposed to all Nathan's dearest beliefs and precepts. He had hitherto treated all his great boasts of what he would like to do as childish bragadocio, troubled the less by them because his mind was full of graver matters. Now he began to see that his son's nature was unlike his own, and it troubled him.

"I do not know why thee is so venturesome," he said to him. "Thee is not like thy mother nor yet like me. Thee reminds me of thy mother's brother who ran away to sea and never was heard of again."

Nathan said this in a tone of such sorrow that Henry was moved to yet deeper repentance. "Indeed, father, I will not do so again. I will leave my pistol with Friend Dolman, and I will never grieve thee again."

"By the way, Henry," Dolman said, "how did you come by this pistol?"

"It was given to me," said the boy, with the assumption of a very casual air.

"Given thee? Who would give thee a pistol?" Sarah asked her brother in amazement.

"Well—they did, anyhow. I've been down to the camp several times watching them, and helping, too, and I've learned lots about war and shooting."

Dolman was scowling. "Yes, there is a good deal of that sort of thing going on," he said. "There is a certain class, rovers like myself, who are reckless enough to cause a great deal of trouble if they have a chance."

"Such men are not good companions for thee, Henry," said Nathan, gently.

"Well, father, I think it's a good deal better to fight than to be killed," said Henry, with spirit, dodging the immediate issue, which he found embarrassing. "And, anyway," he added, as a new idea struck him, "I use my pistol mostly to shoot rabbits with."

His friends could not refrain from smiling at his naive second thought, but Nathan said, gravely, "That is a far better use of it than any other, my son."

"Now, Henry, if you will listen," said Dolman, "I will tell you something of the plans of the free-state policy. Mrs. Robinson knows them better than I, because her husband is the man who has the leadership of the whole movement. And a brave and wise leader he is although"—and his smile at Mrs. Robinson robbed the criticism of any sting—"some of the younger ones think he is a little too cautious. You know, yourself, Henry, how hard it is to be cautious when you are mad!"

Henry nodded emphatically.

"But Doctor Robinson, and a good many others have decided that it is better to bear a good deal than to fight, for that would give our enemies a good chance to come over here and 'wipe us out,' as they say."

"Let 'em wipe, then," said the boy, but before more could be said, Doctor Robinson came in, and the conversation soon left the boy far behind.

In the evening, friends of Doctor Robinson came in who had heard something of the affair, and were eager to know more. Their indignation was great against men who would perpetrate so cowardly a crime against an inoffensive and defenceless family. Henry sat in unusual quietness through all the evening, listening attentively to the conversation. The people who were talking were high in the Free-State Party, men and women whose judgment was respected and whose conclusions decided the policy. There was Sam Wood, a slight but shrewd and dauntless-looking young man with a bronzed and weather-beaten face, and a Western air, who went straight to the heart of a matter with brusque, incisive, though sometimes picturesque phrase. There was a young reporter for an Eastern paper, Phillips, an Irishman, whose ready wit did not conceal his serious purposes. Even Colonel Lane, familiarly called "Jim" Lane by every one, chanced to drop in, and becoming interested, stayed the evening out.

Henry was completely fascinated by this last-named worthy. He had peculiar and uncouth mannerisms, which were disgusting to well-bred people, yet the magnetism of his personality charmed all, especially the younger and more impetuous ones, into an adoration that was astonishing. He talked with great gusto, and, once started, he kept the floor, literally talking down every one who wished to interrupt. He seldom kept his chair, but paced nervously up and down the room, chewing vehemently, and pausing now and then to throw a quid of tobacco into a convenient flower-pot. Sometimes he would stop for a full minute, and stand with eyes tightly shut and body awkwardly braced, while all the assembled company watched him in eagerness for his next word. Henry fell under this strange witchery, and when at last the evening was over, could talk of nothing else, and could not understand why Dolman and their good friends, the Robinsons, were so dispassionate in their estimate of him. Even Sarah was carried away by his charm and felt vaguely hurt that no one but Henry joined her enthusiastically in his praise.

Doctor Robinson said, "Yes, he will doubtless be of great service in the Free-State cause, if the time ever comes for fighting."

CHAPTER XVII.—AN ENCOUNTER.

There was one occurrence on that night crowded full of events, of which Dolman told no one. Yet he thought of it often, as he now and again, in going about the country, met Howard Burk, who looked at him always with scowling eyes.

When pursued from the burning house by the two or three ruffians, he had dropped upon the ground in a hollow place as the report of guns sounded on the air. When he had satisfied himself that they had given him up for dead and gone back to their mad frolic, he had crept cautiously on his knees toward the road. He had almost reached it when he heard the sound of approaching hoofs. Rising to his feet, he had walked on out to the road where the fellow overtook him, and he saw that it was Burk. Burk's face was white, and strangely distorted. At sight of Dolman, he had drawn up his horse and presented a cocked pistol.

"Here, you!" he had shouted, pointing to the red glare of the burning house, plainly visible from there. "Whose deed is that?"

"Some of your black-hearted Missourians!" Dolman had answered back, quietly, yet watching the other's face, for he did not trust the man. But Burk seemed not to notice the taunt, but went on wildly:

"The—the girl—where is she?"

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"Sarah?" Dolman had felt the keenest surprise and the instant antagonism of jealousy. "She is safe—no thanks to you and yours."

"Thank God!" Burk had muttered, an unutterable relief in his tone and face, and turning about without a word had gone back in the way in which he had come.

Dolman thought of this encounter a great many times. He loved Sarah—he had loved her from the time he saw her that first bright day when, flushed and happy as a child with her new sport, she had met him so graciously. And now Burk's anxiety about her brought back with redoubled certainty his early suspicion of a rival whose existence he deplored, not only for his own sake, but for hers.

(To be continued.)

The Patriotism of Ants.

Many times and in many ways the devotion of ants to their commune has been tested. The rule is well nigh invariable of instant and absolute self-abnegation, and surrender of personal ease and appetite, life and limb, to the public welfare. The posting of sentinels at gateways is customary, and they are apt to know first the approach of danger. With heads and quivering antennae protruded from the opening, these city watchmen not only dispatch within news of threatening peril, but rush out with utter abandon to face the foe. With ants patriotism is not "second nature;" it is instinctive, in-born, seemingly as strong in the callow antling as in the veteran brave.

It must be confessed, however, that it is rigidly exclusive. Racial catholicity is not an emmetonian virtue. Ants are without that elastic hospitality which embraces and assimilates all foreigners. Even the slave-makers hold their domestic auxiliaries strictly distinct.

It may be due to overmastering patriotism that one fails to discover individual benevolence in ants. Friendships and personal affection, in the limited and specialized sense familiar among domestic animals, are as yet unknown. And thus it is with other social insects.

Insects are scrupulously clean in their personal toilet, and often brush, comb and wash themselves—a service for which they are admirably provided with natural implements. This habit is transferred to communal affairs. The streets within the city bounds and the gates and external plaza and "country roads" leading into the foraging-fields—as with agricultural ants—are kept free from filth and obstructions that might gather filth. The constant washings and combings of baby ants by the nurses would satisfy the most fastidious maternal taste. One may not say that sanitation is an exact emmetonian science, but it certainly is an art thoroughly practiced in every department of the formicary, and brought to perfection as far as natural conditions will permit. Every insect citizen takes part in this service. All ants unite to keep their civic precincts clean.—H. C. McCook, in Harper's Magazine for March.

The curious theory of M. Boyn is that N-rays keep marine animals in their native habitat. These rays enter salt water readily, but are completely stopped by fresh water, and they have the remarkable property of increasing visual power, other effects being probable.

For the Little Ones

THE DUTY OF THE STRONG.

You are the tallest,
You are the oldest,
Don't you think you ought to help
The youngest and the smallest?

You are the strongest,
You are the quickest,
Don't you think you ought to help
The weakest and the sickest?
Never mind the trouble,
Help them all you can;
Be a little woman!
Be a little man!

—Gelert Burgess, in More Goops.

Johnny's Tame Bullfrog.

The Creek was the chief element in Johnny Peck's life, being, in a way, his school, playground, bathtub, and skating-rink, all in one. It was a noisy, babbling stream, too small to have a name, being only about three miles in length, and not over a rod across in its widest part, nor more than four feet in depth in its deepest place; but still the Creek taught Johnny many, many things not to be learned from books.

It flowed directly across his father's farm; and soon after Johnny learned to walk he had been led down to its grassy border to wade in the shining ripples where it spread over a broad level "table" of slate rock, as smooth as the floor of a room and much longer than most rooms.

This was the only part of the Creek that Johnny knew well in babyhood, but as he grew older he learned more and more about it, till in his tenth year, he was permitted to go with a neighbor's son, older than himself, to fish for bullheads in Sampson's mill-pond, a half mile above his home. They always went at dusk, for bullheads bite best after dark, and on hot nights they had to build a smudge-fire to keep off mosquitoes.

This was, perhaps, the keenest sport the Creek afforded, and the most mysterious and thrilling, too, for the light of their pine torches threw long shadows into the thick woods about the pond, the frogs piped and croaked in the rushes, and one windy moonlight night Farmer Robinson's big, bad-tempered Durham bull got out of his pasture and chased them home a-flying.

In winter a small boy could learn to skate in a hundred places on the Creek's frozen surface; in summer there were swimming holes where one could bathe without the slightest danger of drowning; and above the mill lived large speckled trout.

I could almost write a book about Johnny and his Creek, I remember both so well; but all I set out to tell about this time was Jumbo, his pet bullfrog.

Many people think frogs are stupid, slimy things, though really there are none of God's creatures that can not be taught something; but maybe Jumbo naturally was brighter than most of his brothers and sisters of the marsh.

One bright spring morning Johnny was crossing the bridge on his way to carry a jug of water to the men at work in a distant field when he saw something white in the pool below. It was a young bullfrog floating on his back.

Frogs or fish never float on their backs unless they are hurt or sick, so Johnny climbed down to see what the matter was. The frog did not try to escape—he was too feeble—so the little boy lifted him from the water and laid him on the grass in the warm sunshine. He was not hurt that Johnny could see, but was so sick it did not seem that he could live.

When Johnny came back from the field, however, he was still alive, so he carried him up the lane and put him on a shingle that he set afloat in the big watering-trough in the barnyard.

Well, Johnny fed him crumbs from the table and everything else he could think of that a frog might like to eat, and he grew so fast that by the time the frosts came he had more than doubled in size and weight. When he showed that he would become the biggest frog anywhere about if given a chance, Johnny decided to call him Jumbo, after the huge elephant that

had just been brought over from England.

At first Jumbo was too ill to be shy, but when he got better he showed his wild nature by slipping off the shingle and hiding under it every time his young master came near. Johnny then set about winning his confidence. He never made a quick motion when Jumbo could see, but softly dropped the crumbs on the water and then stepped back. When the frog stuck his nose up Johnny would approach, one step at a time, till finally Jumbo ceased to fear him.

Always when he came with food he whistled shrilly, and at length, just as Johnny meant he should, Jumbo learned that the whistle was a call to dinner. Whenever he heard it he would come swimming or scrambling toward his boy friend.

No one scared the frog, and after a long time he learned not to be afraid; still he knew the difference between Johnny and the others, and before fall Johnny could pick him up without his trying to get away, while no one else could do it.

Early in November, by his father's advice, Johnny took Jumbo back to the Creek, where the frog at once made a nest in the mud in the bottom, in which he lived through the winter, safe from the snow and ice. The first warm day in April Johnny was on hand with a box of food. He had to whistle twice before Jumbo heard, but then he came in a hurry to be fed.

The frog really was as tame as a pet kitten, and though not taken back to the trough, he would come whenever Johnny called, either at night or in the daytime. He was so big that every one in the neighborhood knew him and all were careful not to harm him. All of Johnny's boy friends used to feed him, but he never would come when they whistled.

Johnny even believed that he could tell Jumbo's croak from that of the other bullfrogs when they sang in chorus at night, but other people had their doubts about that.

Four springs Jumbo was on hand to be fed as soon as the ice broke up, but on the fifth he did not come, though Johnny whistled long and loudly, and for many weeks kept going down to the side of the pool in the hope of seeing his pet. What had become of him we never knew, but, anyhow, he had had a happy life and had shown that even a frog has intelligence and will respond to patience and kindness.—Roe L. Hendrick, in Little Folks.

On May 24-27, Prof. West Dodd, of Des Moines, Iowa, delivered a lecture in Topeka before the National Association of Farmers' Cooperative Insurance Companies. This association has been investigating the value of lightning rods for grain elevators and farm buildings and of ground wires for wire fences because of the fact that about 75 per cent of their losses are caused by lightning. Professor Dodd is a member of the firm of Dodd & Dooley, of Topeka and Des Moines, Iowa, who manufacture cable-laid copper lightning-rods and ex-ray machines. He began by stating that one company in Iowa, which has 60 per cent of its insured buildings rodded has only paid \$2 in losses caused by lightning in the last ten years, while on the 40 per cent of their buildings which are not so protected they have paid \$35,000 loss in the same time. He said that the experience of this and other companies had induced them to charge a lower rate for insurance on buildings that are properly protected against lightning than they do on those not so protected. Professor Dodd gave a very interesting illustration of the operation of his ex-ray machine and of his Toepler-Holtz, with which he produced electric sparks of such length that they were real flashes of lightning. He showed that lightning struck buildings or other objects because of the condition existing between the clouds and the earth, and he also showed how the rods will protect buildings by conducting the electric current direct to the earth without injury to them. His point was that lightning does not happen to strike, but does so because it must. No one ever heard of a railroad locomotive being struck by lightning because this great mass of metal serves to dissipate the strength of the current and carry it to the earth. The same thing is accomplished on a wood or stone structure when protected by a metallic rod that is a good conductor of electricity. He showed the association the copper cable rod that his firm manufactures and told them of the guarantee which they give with every rod they put up. The association then voted their endorsement of these rods and of the Dodd & Dooley system. They are advertised in the Kansas Farmer.



Miss Nettie Blackmore, Minneapolis, tells how any young woman may be permanently cured of monthly pains by taking Lydia E. Pinkham's Vegetable Compound.

"YOUNG WOMEN:—I had frequent headaches of a severe nature, dark spots before my eyes, and at my menstrual periods I suffered untold agony. A member of the lodge advised me to try Lydia E. Pinkham's Vegetable Compound, but I only scorned good advice and felt that my case was hopeless, but she kept at me until I bought a bottle and started taking it. I soon had the best reason in the world to change my opinion of the medicine, as each day my health improved, and finally I was entirely without pain at my menstruation periods. I am most grateful."—NETTIE BLACKMORE, 28 Central Ave., Minneapolis, Minn.

Painful Periods

are quickly and permanently overcome by Lydia E. Pinkham's Vegetable Compound. The above letter is only one of hundreds of thousands which prove this statement to be a fact. Menstruation is a severe strain on a woman's vitality,—if it is painful something is wrong. Don't take narcotics to deaden the pain, but remove the cause—perhaps it is caused by irregularity or womb displacements, or the development of a tumor. Whatever it is, Lydia E. Pinkham's Vegetable Compound is guaranteed to cure it.

If there is anything about your case about which you would like special advice, write freely to Mrs. Pinkham. She will treat your letter as strictly confidential. She can surely help you, for no person in America can speak from a wider experience in treating female ills. She has helped hundreds of thousands of women back to health. Her address is Lynn, Mass., and her advice is free. You are very foolish if you do not accept her kind invitation.

Details of Another Case.

"DEAR MRS. PINKHAM:—Ignorance and carelessness is the cause of most of the sufferings of women. I believe that if we properly understood the laws of health we would all be well, but if the sick women only knew the truth about Lydia E. Pinkham's Vegetable Compound, they would be saved much suffering and would soon be cured.

"I used it for five months for a local difficulty which had troubled me for years, and for which I had spent hundreds of dollars in the vain endeavor to rectify. My life forces were being sapped, and I was daily losing my vitality.

"Lydia E. Pinkham's Vegetable Compound cured me completely, and

I am now enjoying the best of health, and am most grateful, and only too pleased to endorse such a great remedy."—MISS JENNIE L. EDWARDS, 604 H St., N. W., Washington, D. C.

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WHEN WRITING OUR ADVERTISERS PLEASE MENTION THIS PAPER.

The Home Circle

CONDUCTED BY RUTH COWGILL.

IF I CAN LIVE.

If I can live
To make some pale face brighter, and to
give
A second luster to some tear-dimmed
eye,
Or e'en impart
One throb of comfort to an aching heart,
Or cheer some wayworn soul in passing
by;

If I can lend
A strong hand to the fallen, or defend
The right against a single envious strain,
My life, though bare,
Perhaps of much that seemeth dear and
fair
To us on earth, will not have been in
vain.

The purest joy,
Most near to heaven, far from earth's al-
loy,
Is bidding clouds give way to sun and
shine
And 't will be well
If on that day of days the angels tell
Of me: "She did her best for one of
thine."
—Helen Hunt Jackson.

An Education—Does It Pay?

Once, long ago, when the world was young, and people's fates were decided for them by the fairies, a little old woman appeared to two children, holding out three nuts.

"Does this one contain a golden carriage and horses?" asked the boy, taking one.

"Yes," said the little old woman.

"Does this one contain a lace handkerchief and a beautiful dress?" asked the girl.

"Yes, many," answered the woman. There was one left—a little plain brown nut.

"You may have that one," said the girl, with a sneer. So the boy took it, and with great pains kept it for many years. In the meantime, as the years passed, and the children grew up, they were separated for a long time.

The boy had his chariot and horses, though the horses ran away and kicked the golden chariot to pieces. But in spite of this misfortune, and many others, he never came to want nor lacked beautiful things, because he had the little brown nut.

One night, a beggar child came to him with a pitiful tale of a sick mother. He went with the child and found the mother to be his old childhood friend. She was dying in poverty and want. In this extremity he gave the child his own one great helper, the little brown nut, and the child found therein comfort and joy and everything he needed. * * *

An education always pays. It is worth while, no matter how difficult to get, no matter what toll, what sacrifice, what long years of waiting, it may require. It is worth while because it stays with you—it will never leave you—it is not at the mercy of fire or thieves. War, earthquake, drouth can have no effect whatever upon this investment. Financial panics, that may convulse the Nation and make paupers of rich men and drive men to despair, can never touch this investment. It is safe—it stays with you all through this world—and, I verily believe, it will not come amiss in the next.

There is one point, however, that is often overlooked. An education does not mean necessarily a college course. Going to college is the easiest and the most perfect way of getting the beginnings of an education—but it is not the only way. Many of our great and illustrious men have never been college students. But no one of our great men has been without an education. Benjamin Franklin, working by a dim tallow candle; Lincoln, spoiling his eyes by the flickering firelight; Greeley, with his book under the wavering and uncertain street-lamp—all were educated men, although none of them could call any college his alma mater.

An education is the developing of one's powers, it is the opening of one's eyes, the quickening of his ears, the training of his hand. And every man must do it for himself—that is why I say it is not absolutely essential to go to college. The equipment, the books, the professors, and especially the other students, are helps—very great helps, but they are not in themselves

an education. To be educated is not to be crammed with facts and book-learning, any more than to become an athlete is to be over-fed. No one can make an athlete out of another man. Every man must exercise his own muscle—he must work, he must exert himself strenuously, to become strong and able. Just so, no one can be educated. Every one must exercise his own mental muscle—he must work, both with his mind and with his hand, to become an intellectually strong man. Yes, one must work—nay, he must sacrifice much of ease and inclination, to acquire an education—but it pays—it is grandly worth while. An education broadens the world for you, it makes life worth living. The more he learns, the more beautiful seems this world of ours, and the more wonderful seems each smallest detail in it, and the more interesting each humblest living thing. To "find tongues in trees, books in the running brooks, sermons in stones, and good in everything," is not that worth while?

An education consists more in acquiring a certain habit of mind than in the mere studying of books. To be interested in things—enough interested to find out about them—that is to become educated. To study the laws of nature, at first hand, and then delve into the books to see what other people have found out about them and what conclusions they have come to about them—that is the best education. To become able to use the results of this research, to the improvement of your own conditions and other people's, that is the highest joy because it is the highest service. "He who can make two blades of grass grow where only one grew before is a benefactor."

One of the great questions of the farmer is, "How can I keep my children on the farm?" and sometimes it is urged that an education is the very means to tempt them away. I do not know how it is in fact, but does it not seem that the educated boy would be far more contented in God's country than the know-nothing? It seems to me that the country is the very place to go to apply what one has already learned, and to learn more. To be a successful farmer requires intelligence of a high order, and knowledge of many things. It calls for more varied abilities than almost any other profession. And this is becoming ever increasingly true. The time is not many years distant when to keep up with the times, a farmer must be thoroughly educated. Already we turn to the farmers for our sanest, clearest judgments. The young farmer who does not learn to think, whose powers are not developed and disciplined, will lose out in the struggle for success.

To keep your son on the farm, do not preach to him contentment, do not rudely shatter his dreams of great achievement. Give him ambitions. If he is inclined to be satisfied, prod him on. Tell him to "hitch his wagon to a star." Tell him there is no goal too distant for his attainment. But direct his ambitions. Point out matters in the farm management, in himself, that need improvement. Give him a broad outlook. Suggest the stupendous possibilities of your own chosen profession. Begin his education yourself, and encourage him to go on with it, though that going on cost you dear both in money and ease.

Once in a while one hears a remark like this: "I am not going to educate my boy—why, look at my cousin, Charlie Blank—a perfect stick—never did anything—never will amount to anything—ain't worth a cent!—and he went to college!"

I have never had a very good chance to answer that argument, for, don't you know, when people are talking about their own children and relatives, it behooves you to be careful what you say! But my private opinion is that Charlie Blank would be a stick, anyway. He never would have been able to make his own living, education or no education. The trouble is not with the education, it is with the subject. An education never hurt anybody. If it does not improve him, why he is a very bad case, in truth!

Statistics show—I hate statistics

and so does every one else—but they do show that the educated man is far more likely to succeed, financially, and in honors gained also, than the uneducated man. We get just about what we earn in this world. There is sometimes a little mistake made in distributing the honors, I admit, but in general we get the recognition, and the wages that we deserve. It lies with us what we shall make ourselves worthy to receive.

Is an education worth while? Well, what is worth while? I can remember asking myself the question when I was a schoolgirl and had the blues. Everything is worth while, of course. One does not have the blues all the time, and life is well worth living. But surely, above all else, the mind—the soul—the immortal part is worth inestimably much, and whatever is done to that is worth while, because it is for always. Let us not scorn the little brown nut. It will prove itself far more valuable than it looks when we take it. It may help us over many a misfortune and headache, and we can pass it on.

Literature for Children.

If fathers and mothers would take the trouble, and it is a trouble which is its own reward, to really know the books which children may be helped to love, if parents would but open the doors of literature's "stately pleasure dome" and walk with their children in its glancing lights, they might be forever free from fear of godless schools or schools of narrow culture.

Many a mother who would be shocked by the bare statement of Rousseau's old doctrine that children should be wholly surrendered to the care of the community, not watched and ministered to in the family, does virtually surrender her own children to the care of the State in those things which are most vital to their real well-being. With care and toil and tress she feeds and clothes her children's bodies, but is content to know little of school or teacher, either of day school or of Sunday school, and is content to know still less of library or librarian. Yet these are the agencies that feed and clothe the mind and soul "that build for aye."

It is such "a sunny pleasure dome," too, "that dome in air," that one envies the fathers and mothers who play there with their children, and wonders how any are found who pretend to "the luxury of children," and yet surrender this delight to teachers or to librarians.

The gateway into literature is the printed page, but in the childhood of the race, to which teachers are fond of tracing back in studying how best to teach the children of to-day, it was not so. Literature then passed from lips to ears, and law and history, song and story, were always something "our fathers have told us."

Blind Homer and the chief singer of Israel and skalds and bards and minnesingers are all gone, tradition is almost a by-word, but mothers still live, and children need not wait until they have conquered the crabbed types before they begin to love literature.—Mrs. H. L. Elmendorf, in *The Chautauquan*.

Railways and Civic Improvement.

In looking forward to a realization of high ideals in artistic development, it is with difficulty that one overcomes the feeling of discouragement at the slow progress along these lines. A glance backward, however, over the last twelve years, since I entered the field of landscape architecture, convinces me that wonderful strides have been made, and gives me faith in the future.

I have seen develop from tiny grass plats grudgingly permitted by a few railroads an almost universal system of parks surrounding the railroad stations throughout the country. True they vary in size and artistic effect, in proportion to the appreciation of the value of the work by the railroad managers, as results naturally depend upon the amount of money and skill expended. Not until recently have the services of experienced landscape



The bread of the American housewife made with Yeast Foam leads the world. Do you know the secret? It's in the Yeast. Good yeast—

Good Bread

Poor yeast—poor bread—and indigestion. Yeast Foam is a purely vegetable yeast that preserves in the bread all the delicious flavor and nutriment of the wheat.

The secret is in the yeast

Sold by all grocers at 5 cents a package—enough for 40 loaves. "How to Make Bread," free.

NORTHWESTERN YEAST CO.
Chicago.

architects been considered necessary, and many roads still permit their section men to have charge of the work. Comparisons may be odious, but they are nevertheless convincing. A glance at the results of the two methods clearly shows that utility and beauty, to be wisely combined, should be in the hands of persons trained to that special work.

Buildings can be planned artistically at very little more cost than the usual ugly station now seen. They can be grouped so that the station proper is the one building in evidence, the others being compactly clustered, in an inconspicuous position, quite hidden by a bank of shrubbery, which by judicious selection and arrangement, produces a succession of bloom, and ever-changing color, at the same time that it forms a background for the lawn, which should remain unbroken, except for a few shade trees, when space permits. The painting of the buildings is most important, and the selection of colors should be in the hands of an expert, that harmony may result.—A. E. McCrea, in *The Chautauquan*.

The Last Straw.

It was Saturday night, and, owing to the temporary absence of his wife, it fell to Mr. Brown to attend to the usual process of giving his 8-year-old son a bath and putting him to bed. He had left his evening paper with a man's reluctance, and had hurried matters along with more speed than the little chap was accustomed to. However, he endured it all without a protest until it came to the prayer. It was his habit after "Now I lay me" to ask the divine blessing upon a long list of relatives and friends, calling each by name.

"Please, God," he began, "bless papa and mamma, grandpa and grandma, and Aunt Edith and Uncle George, and"—A pause. His father, thinking to curtail the list of beneficiaries, softly insinuated an "amen." Not heeding the interruption, the little supplicant drew a long breath, and continued, "And Aunt Alice and Cousin Annie, and—and—" Again his father said "amen."

This was more than flesh and blood could stand, and, lifting his little head, he exclaimed, with tears of indignation: "Papa, who's running this prayer, you or me!"—*Harper's Magazine*.

A baker's oven heated by electricity is a novelty at Montauban, France. The heating elements—numbering twenty—are placed at the side of the interior, and heat is quickly applied and cut off at once, with a considerable saving in time. No heat is lost up the chimney, as the only opening is the door through which the bread is passed.

Club Department

OFFICERS OF STATE FEDERATION OF WOMEN'S CLUBS.

President..... Mrs. Cora G. Lewis, Kinsley
 Vice-Pres..... Mrs. Kate E. Applington, Council Grove
 Corresponding Secy..... Mrs. Eunice H. Brown, Olathe
 Recording Secretary..... Mrs. F. B. Hine, Kinsley
 Treasurer..... Mrs. J. T. Willard, Manhattan
 Auditor..... Mrs. D. W. Wilder, Hiawatha
 State Secretary for General Federation.....
 Mrs. C. C. Goddard, Leavenworth.

Our Club Roll.

Mutual Improvement Club, Carbondale, Osage County (1895).
 Give and Get Good Club, Berryton, Shawnee County (1902).
 Woman's Literary Club, Osborne, Osborne County (1902).
 Ladies' Reading Club, Darlington Township, Harvey County (1902).
 Woman's Club, Logan, Phillips County (1902).
 Domestic Science Club, Osage, Osage County (1888).
 Ladies' Crescent Club, Tully, Rawlins County (1902).
 Ladies' Social Society, No. 1, Minneapolis, Ottawa County (1888).
 Ladies' Social Society, No. 2, Minneapolis, Ottawa County (1889).
 Ladies' Social Society, No. 3, Minneapolis, Ottawa County (1891).
 Ladies' Social Society, No. 4, Minneapolis, Ottawa County (1897).
 Chaitso Club, Highland Park, Shawnee County (1902).
 Cultus Club, Phillipsburg, Phillips County (1902).
 Literatae Club, Ford, Ford County (1903).
 Sabeau Club, Mission Center, Shawnee County, R. No. 2 (1899).
 Star Valley Woman's Club, Iola, Allen County (1902).
 West Side Forestry Club, Topeka, Shawnee County, R. No. 8, (1903).
 Fortnight Club, Grant Township, Reno County (1903).
 Progressive Society, Rosalia, Butler County (1903).
 Pleasant Hour Club, Wakarusa Township, Douglas County.
 The Lady Farmers' Institute, Marysville, Marshall County (1902).
 The Woman's Progressive Club, Anthony, Harper County.

[All communications for the Club Department should be directed to Miss Ruth Cowgill, Editor Club Department.]

Being a Club Woman.

Twelve years ago I began to be a Club Woman. A tea-drinking was going on, small enough to enable every one to stay and have a cup simultaneously and for conversation to be general. A little woman began to speak of a book that she had recently read. She spoke convincingly and with enthusiasm, and in some occult manner created an illusion of reality that compelled us into a silence which lasted for a moment after her story was told.

"Why can't we do this regularly?" exclaimed the Eager One.

"Why not organize for that purpose?" corrected the Practical One.

And we did; we organized a club, to drink tea and listen to the voice of a little woman who had the gift to lapse us all into the mood of her moment and imbue us with the color and fragrance of "the best that has been thought and said in the world."

For a short time we went on as we had begun, with utter unconsciousness and simple sensuous enjoyment. Like all periods of youth, this was golden; like all youth, it could not last. Some one, probably the Practical One, visited a distant city. She came back to tell us that we were really way behind the times. "For an organization to be conducted in such a slipshod fashion is really most undignified and entirely unworthy our position as such able women." She concluded her remarks with these words. I remembered them, for it was the first time I had been classified "as such." When we thought of it and evoked a self-conscious something out of our season of delight, we realized that her words were true.

We had never been called to order, never had had a secretary, never even had been aware of needing one. Do not imagine, emancipated reader, that we for long postponed our redemption. Our action was as prompt as Eve's. Before going home (we had never adjourned) we appointed, under the direction of the Practical One, a committee to draft a constitution and nominate officers. That constitution was a marvel of skill. It provided for all possible contingencies, and was "adapted to the needs of a growing organization." Its appended code of "by-laws" gave directions for performing nearly every feat under the sun, except providing some reason for such performance, and specifying what the feats should be.

"Yet," said the Practical One, "all authorities concur in saying that the constitution can not anticipate too much. It is well to have a mold into which we can shape our fluid material." We early found that we had to create material. In the first place, un-

der the constitution, we elected a treasurer and an auditing committee. Then we discovered that there were no duties for them to perform. They "were to have charge of all the moneys of the club, and faithfully account for the same," but there was no money. We hastened to add a "by-law" that should authorize the collection of admission fees and dues. We made them small, very small, in order that the indifferent members should not resign, and thus secured to our officers their inherent rights. For many meetings the treasurer reported "total amount of cash received, \$4.50; expended, nothing; balance on hand \$4.50. Approved by the auditing committee." As it was training the treasurer in "parliamentary usage," no one smiled. There were other discrepancies that had to be met and which were adjusted, before it was decided that to have a constitution and by-laws was a very useful and commendable course, but that it need not prevent us from doing as we pleased.

It doesn't take long for women to fall into prevailing civic practices. Having converted our laws into a monument of antiquity, and learned to say, "Madame President instead of "Why, Molly," we were fairly launched on what proved a long and serious career. Being a club woman had been such a simple thing in those festival days when we came together for the slight stimulus of talk and tea. To be sure, the talk was from one pre-eminently gifted, and the tea caravan lifted the occasion above the commonplace, but as yet we were abroad in the woods of egotism, seeking a little merriment for the moment. "But that's all shove be'ind me—long ago, an' far away," and something of the regretful longing of Kipling's homesick soldier possesses me as I look back from my vantage point of experience bought with the price of becoming a particle in a "great machine designed for social amelioration." I can say "Madame President" without stammering now, and, what adds more to my physical well being, without breaking into a cold perspiration; indeed, I have faced the audience, gavel in hand, and graciously received the title without, I trust, showing undue gratification. The feeling of pride in office still lingers, a relic of the old days of egotism. It may be that the woman still seeks the office, but only in isolated and degenerate cases, for soon, in the natural trend of development, holding office will be regarded as an humble opportunity for self-sacrifice and social service.—Martha E. D. White, in The Club Woman.

Farm Notes.

N. J. SHEPHERD, ELDON, MO.

The overgrown horse is seldom a durable one.

Filthy stables are often the source of disease.

Gentleness should rule every action in handling young horses.

The training of a colt can not be too thorough.

All fruit sent to market should be carefully sorted.

Change the food of the horses sufficiently often to have them relish it.

It never pays to work a slow, sluggish horse beside a quick, spirited one.

Untidy fence rows and roadsides are a great disfigurement to the farm.

Sheep are gregarious. When one is seen "flocking to itself," it indicates that something is wrong.

To drink freely immediately after eating prevents a favorable digestion of food.

Cool a heated horse gradually. It is not in the heating up that danger lies but in the cooling off.

So far as possible, whatever cultivation is needed in the orchard should be given before hot, dry weather sets in.

From the time the milk is drawn until the cream is ready to be churned,

\$50,000.00

Cash Given Away

TO USERS OF

Lion Coffee

We are going to be more liberal than ever in 1904 to users of *Lion Coffee*. Not only will the Lion Heads, cut from the packages, be good, as heretofore, for the valuable premiums we have always given our customers, but

In Addition to the Regular FREE Premiums

the same Lion Heads will entitle you to estimates in our **\$50,000.00 Grand Prize Contest**, which will make some of our patrons rich men and women. You can send as many estimates as desired. There will be

Two Great Contests

The first contest will be on the July 4th attendance at the *St. Louis World's Fair*; the second relates to *Total Vote for President* to be cast Nov. 8, 1904. **\$20,000.00** will be distributed in each of these contests, making **\$40,000.00** on the two, and in order to make it more interesting, in addition to this amount we will give a

Grand First Premium of \$5,000.00

to the one who is *nearest correct on both contests*, and thus your estimates have two opportunities of winning a big cash prize.

Five Lion Heads cut from Lion Coffee Packages and a 2c stamp entitle you (in addition to the regular free premiums) to one vote in either contest:



Printed blanks to vote on found in every Lion Coffee Package. The 2c Stamp covers the expense of our acknowledgment to you that your estimate is recorded.

WORLD'S FAIR CONTEST

What will be the total attendance at the St. Louis World's Fair on July 4, 1904? At Chicago, July 4, 1893, the attendance was 238,273. For nearest correct estimates received in Woolson Spice Company's office, Toledo, Ohio, on or before June 30, 1904, we will give first prize for the nearest correct estimate, second prize to next nearest, etc., as follows:

1	First Prize.....	\$2,500
1	Second Prize.....	1,000
2	Prizes—\$500.00 each.....	1,000
5	" — 200.00 ".....	1,000
10	" — 100.00 ".....	1,000
20	" — 50.00 ".....	1,000
50	" — 20.00 ".....	1,000
250	" — 10.00 ".....	2,500
1800	" — 5.00 ".....	9,000
2139	PRIZES	TOTAL, \$20,000

PRESIDENTIAL VOTE CONTEST

What will be the total Popular Vote cast for President (votes for all candidates combined) at the election November 8, 1904? In the 1900 election 13,959,653 people voted for President. For nearest correct estimates received in Woolson Spice Company's office, Toledo, Ohio, on or before November 5, 1904, we will give first prize for nearest correct estimate, second prize to next nearest, etc., as follows:

1	First Prize.....	\$2,500
1	Second Prize.....	1,000
2	Prizes—\$500.00 each.....	1,000
5	" — 200.00 ".....	1,000
10	" — 100.00 ".....	1,000
20	" — 50.00 ".....	1,000
50	" — 20.00 ".....	1,000
250	" — 10.00 ".....	2,500
1800	" — 5.00 ".....	9,000
2139	PRIZES	TOTAL, \$20,000

4279—PRIZES—4279

Distributed to the Public—aggregating \$45,000.00—in addition to which we shall give \$5,000.00 to Grocers' Clerks (see particulars in LION COFFEE cases) making a Grand Total of \$50,000.00.

Complete Detailed Particulars in Every Package of

LION COFFEE

WOOLSON SPICE CO. (CONTEST DEP'T), TOLEDO, OHIO.

it must be kept clean and free from exposure to odors.

The best systems of croppings are invariably those which call for the most thorough preparation of the soil.

One of the best checks for weeds is to keep the land occupied all the time, especially during the growing season, with a crop.

Butter can be more thoroughly washed free from buttermilk while in the granular condition than after it is gathered and pressed into rolls.

Too heavy shoes should be avoided in shoeing young horses. It tends to make them awkward and is an unnecessary burden.

With all crops it is the early cultivation that is the most important. Get the plants well started to growing and it is comparatively easy to keep them so.

Where anything like a full number of stock is kept during the best part of

the growing season, some crop should be grown to be used as a soiling crop if needed.

In a good pasture it is not only essential to have plenty of good grass but there should be plenty of good water and good shade in addition.

It is quite an item at this time to keep well up with the work, so that everything needing to be done may be done in the best season and in a thorough manner.

ROCK ISLAND SYSTEM.

Through Tourist Sleepers to California

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

When writing advertisers please mention this paper.

DON'T BUY GASOLINE ENGINES

—UNTIL YOU HAVE INVESTIGATED—
 "THE MASTER WORKMAN"
 A two-cylinder gasoline engine superior to all one-cylinder engines. Costs less than half of one-cylinder engines. Give size of engine required. Especially adapted for irrigation in connection with our centrifugal force pumps. (Sizes 2, 2½, 4, 5, 6, 8, 10, 12 and 16 Horse Power.) High-grade Gasoline Engines, 3 to 6 horse power—adapted for Electric Lighting, Marine and Pumping purposes. Please mention this paper. Send for catalogue. THE TEMPLE PUMP CO., Manfrs., Meagher and 15th Sts., CHICAGO, ILL. Established in Chicago, 1854.

LAND-LINE QUESTION.

(Continued from page 625.)

a new survey by one or more surveyors may be ordered.

"The corners and boundaries established in any survey made in pursuance of an agreement, or in any survey where no appeal is taken from the surveyor's report, and such corners and boundaries as are established by the decree of the court, shall be held and considered as permanently established, and shall not thereafter be changed." (Chapter 29, section 29, General Statutes.)

It will be well for our correspondent to call upon a justice of the peace or his township trustee and read chapter 29 of the General Statutes of Kansas. Its provisions are very plain, but are too voluminous for full reproduction here.

RUBBER FROM SUNFLOWERS.

The United States will import this year about 40 million dollars' worth of rubber. The demand for rubber is increasing very rapidly so that there is anxiety about the adequacy of the supply.

There has been organized a company under the name "The American Rubber Company." Its purpose is to produce rubber from the Colorado rubber plant. This is a species of sunflower which grows mostly on waste lands in the vicinity of the Arkansas River at altitudes of 5,000 to 9,000 feet.

This company has employed Mr. J. E. Payne, a graduate of the Kansas Agricultural College, to take charge of the agricultural side of the enterprise. No better selection than Mr. Payne could have been made.

The plant grows about a foot high. So far, wild plants have been gathered and there are enough of these to keep the factory running for several years. The plant produces rubber in all parts except the seed stalk, but with the machinery now in use only the root is used. Rubber obtained from these roots has been used in the manufacture of many articles, and seems to be equal to that produced in Central and South America.

Mr. Payne is testing the culture in its native place this year. If successful there, it may be tested in other places later. The plant produces seed in abundance so that there will be no difficulty on that score if its cultivation prove profitable.

PEARS IN KANSAS.

EDITOR KANSAS FARMER:—Will you please advise me through your columns, the best varieties of pear-trees, adapted to the climate of Southeastern Kansas, to insure a successful succession of fruit, and their mode of cultivation?
F. W. JONES.

Neosho County.

This inquiry, received on the day of the June meeting of the Shawnee County Horticultural Society, was submitted to the members for answer. The practical pear-growers replied: "Kieffer is the hardiest and is the pear for market and for canning. Seckel is best for eating, Garber is good for eating. Should also plant some Duchesse de Angouleme. Plant in poorest soil on the place; at least, do not select very rich soil. Cultivate for two years. Then seed down to blue-grass. The pear orchard will make a good calf pasture. Make the soil hard and give the trees a hard time of it to avoid blight. Or if one must cultivate, plant in the pear orchard such small fruits as will sap the soil."

The subject is open for discussion.

A TEST OF DISINFECTANTS.

To test the question of the relative and the absolute efficiency of various disinfectants, the Oklahoma Experiment Station made many experiments, the results of which have just been issued in Bulletin No. 62. It was found that the coal-tar preparations are excellent for their efficiency and for the fact that they are not poisonous and do not irritate the skin. Among these dips the Oklahoma investigators enumerate Zenoleum, Cremoline, Lincoln Dip, Car-Sul, Moore's Hog Remedy, Chloro-Naptholeum, and Morlepest Sheep Dip.

In a general summing up the investigators say:

"When the various coal-tar dips were used in a one per cent solution, they were effective disinfectants in laboratory experiments, but in practical work at least a two per cent solution should be used.

They were equally as good and in some of the tests proved better disinfectants than carbolic acid when used in the same strength.

"The coal-tar dips tested are non-poisonous and are not irritating to the skin when used in wounds. As compared to carbolic acid they were certainly as effective, are cheaper and are not so dangerous to use.

"The coal-tar preparations tested are not only good disinfectants but are also good deodorizers."

BLOCKS OF TWO.

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

Special to Our Old Subscribers Only.

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

DESIRABLE CLUBBING OFFERS.

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

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

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

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

In China, many of the people "shave dry," that is, without moistening the beard. It can hardly be a pleasant performance, but not much worse in its effect than the use of cheap, inferior soap. Shaving is a delicate operation and demands a soap made for the especial purpose. As per their offer elsewhere in this paper The J. B. Williams Company will send for the cost of mailing a trial tablet of "Williams' Shaving Soap"—"the only soap fit for the face." It won't take long to write them and your face will never cease to thank you.

We refer with pride to the very striking and unique advertisement of the De Laval Cream Separators advertised in this issue of the Kansas Farmer. We think this is one of the most original creations of avertect in the line of dairy machinery advertising of the twentieth century. It is the most attractive line of advertising ever attempted by the De Laval Separator Company.

Miscellany

DO YOU WANT \$500,000,000?

Statistics show that the burden of bad roads is the heaviest one that is borne by the American people. It now costs more to transport the surplus products of the farms and forests to the shipping point each year than the total cost of transporting all the freight, passengers, express and mail over all the railroads of the United States. The seven hundred million dollars received by the railroads from all sources last year all went back to the people for labor, materials, taxes and interest. The one billion dollars spent in cost of transportation over poor roads was entirely lost. In the old country where good roads prevail, the cost of transportation of farm products, etc., is about 8 cents per ton per mile. In the United States this cost is over 25 cents per ton per mile. If this cost could be reduced by one-half it would save the American people at least five hundred million dollars per year. This is the mud tax.

The purpose of the National Good Roads' Association is to aid the people in saving this vast drain upon their resources. They propose to do this by securing National aid for good road building; by securing the passage of such State laws as will make the National fund available, and by arousing such local interest and aid in each community as the importance of the subject demands.

The good roads' problem is the most important industrial question of the day and Government aid will accomplish as much towards its solution as it has done for the rural mail service.

It is impossible for the farmer to build the roads alone and it would be unjust to ask it of him. The city business man is just as much interested in good roads as is the farmer. Few local communities can build good roads but all can help. With National aid, State aid, and local aid, good roads are assured and the tremendous mud tax now exacted by our bad roads will be so reduced that its burden will not be felt.

The movement in favor of good roads is National in its scope and urgent in its need. The continued prosperity of our country depends, in a very large degree, upon its success. Every one appreciates the stupendous advantages that would follow a complete system of good roads. The cost of securing them would be paid for by the savings of one year. They can not be had, however, without unity of action. All must work for them that all may enjoy them. Kansas never lags in a good action, and it is to be hoped that every board of county commissioners, commercial club, fair association, grange, breeders' association, horticultural society, and farmers' institute in the State will send representatives to attend the meeting of the Kansas Good Roads' Association, which will be held at Topeka on August 2, 1904.

Government Ownership of Public Utilities.

EDITOR KANSAS FARMER:—On pages 414 and 415 of the KANSAS FARMER for April 14, under the caption of "Government Ownership of Public Utilities," Ewing Herbert has assumed ground untenable and arrived at conclusions not warranted by the facts in the case. The names of a number of persons are used, and in part quotes their language, in support of the position he strives to make appear as the best possible line of policy to pursue in regard to the control of public utilities.

The parties named as his witnesses are not by any means men in close touch with the various industries of the country; nor is one of them identified with the real laboring and producing class of our people; nor has he stimulated them to besiege, bribe, and

quoted a single writer upon economic questions, or referred one time to the annual loss of human life, property, valuable time, and the convulsions of commerce, all of which is constantly on the increase, and has become so dangerous to public safety that the civil laws can not be enforced without the aid of the military forces in different States. In fact, the President has been appealed to for aid from our standing army.

All this is occurring under the present system of controlling public utilities, which is by individuals and corporations. I shall here make the sweeping declaration that never under Government control have such wholesale irregularities been known to occur in any country where a government assumed absolute control and ownership of public utilities of any kind whatever.

He has permitted the term parental government to creep into his discourse, which, permit me to state, never has any legitimate place in the discussion of such a subject. It was introduced into politics not as real logic or actual argument but as a sarcastic fling at all who would delegate the discharge of such business as they can not look after to persons chosen for this special purpose. A real parental government is what the whole world wants, for such a government would protect the weak and uninformed against the crafty and greedy. The truth about the matter is, that so long as the principles of good and evil exist, that long the one will seek the mastery of the other; and the matter of a government that will best meet the wants and protect the rights of mankind is the greatest of all the problems that come up for solution.

An absolute monarchy controlled by a czar is one form of a parental government, and under a just, intelligent and benevolent ruler might work well, but so far in the world's history has not given general satisfaction to people under such control. On the other hand, an absolute government of the people has not proven satisfactory. A government of the people, through representatives chosen almost entirely from the three great supports of all civilization, namely, the agricultural, mechanical, and mercantile, will come nearer caring for all real interests of mankind than if selected from other pursuits. For instance, a man who owns a railroad should never be permitted to become a member of a legislative body, either State or National. The same is true of the man who owns a bank or a mine, for the reason that he is not likely to so arrange the government of these interests that those who depend upon them in any way (which all must) are likely to have strict justice meted out to them. All these interests are most unquestionably created for the people and not for the few who, by craft, become their owners, and when members of our legislative bodies also control them. Yet Mr. Herbert's method of reasoning, together with the opinions expressed by some of the parties he names in support of his position, will forever leave the control of public utilities in the hands and under the control of their owners, which is control of these utilities by craft, or a species of feudalism; for there is no denying the fact that the march of a concentration of the wealth of this country is going on at a rate unprecedented in the world's history. With it men are steadily losing their individuality or independence and self-reliance and are becoming more and more willing to accept what the owners of public utilities see proper to arrange for them, and are becoming the subjects of a most humiliating form of crafty parental government; while Government ownership of these utilities, put under the control of really representative men, chosen by the people from the three great industrial classes named, will take them out of the hands of individuals and corporations. They will then have nothing to besiege, bribe, and

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corrupt legislative assemblies, as is now the case. Call this paternalistic if you like, as it is worthy of such a high honor and will do more in behalf of the common equality of mankind than any other form of government ever instituted among men.

That the people have manifested a degree of indifference scarcely distinguishable from stupidity and inexcusable neglect, in regard to the selection of men to do their law-making (which has resulted in great injustice to themselves, and is from generation to generation being riveted upon posterity, and is seriously holding in check human progress and happiness in every department of society), is a fact that can not be successfully contradicted. And it is with painful regret that I recognize it to be true. For any government with its wealth principally in the hands of the few, and these few so organized that either they in person, or their hired and paid agents, are seated in our law-making bodies in overwhelming numbers, can not long exist and be in reality a government of, by, and for the people. But it is assumed by Mr. Herbert that under Government ownership of public utilities the chance for removal of a party once in power is doubtful, and that fraud and corruption would go on most high-handedly. There are two ways to remedy this source of injury. The one is to so change our National constitution that all regularly organized parties shall be represented in the civil service department in proportion to numerical strength. The other is to treat all employees in the civil service just as soldiers are treated in our regular army. I was disfranchised when a soldier while absent from my home in Indiana, and I thought it no hardship. If it is necessary to thus conduct our Government in order to have a government of, by, and for all, I am most unhesitatingly in favor of it. G. BOHRER. Rice County.

Kansas Crops Officially.

The Kansas Board of Agriculture has issued a report comprehending the crop situation in every neighborhood June 3, but dealing more in detail with wheat, corn, and oats.

Winter Wheat.—In December last the board's correspondents estimated that the area sown to winter wheat was or would be 5,670,000 acres. The same reporters are now of the opinion that about 13 per cent, or 733,000 acres, will be abandoned or plowed up and devoted to other crops. Almost the whole of this abandoned area is in the counties in the western half of the State, and this situation is attributed jointly to late seeding and shortage of timely rainfall. Fields in which seed was sown on stubble ground were the first to succumb. The lowest conditions are likewise reported from the section named, and while the general precipitation came too late to be of much benefit in some portions, generous downpour dispelled the uncertainty in others, and especially in a majority of the main wheat-growing counties. The present condition of the 4,940,000 acres now likely to be harvested is 87 per cent. Among the principal wheat-producers reporting highest conditions are Harvey County 100 per cent, Kingman 100, Reno 97, Sedgwick 95, Harper 94, Cloud 92, Sumner 92, Mitchell 91, Dickinson 91, Saline 91, Pratt 91, McPherson 90, Rice 90, and Marion 89. The area of these fourteen counties comprises slightly over 41 per cent of the State's acreage, which will be harvested and its average condition is 93 per cent. Hessian fly is rarely mentioned by correspondents, and in fact thus far the season has been notably free from injurious insects of any description.

Corn.—Last year's area was 6,525,777 acres, and correspondents estimate that this year's area will show a substantial increase, especially where wheat was such a failure that any considerable acreage was plowed up. The returns also suggest that more corn has been planted in the recognized corn-growing territory, but the backward and extremely cool spring followed by excessive wet weather delayed planting, germination and cultivation nearly everywhere. Much re-

planting has been made necessary because of seed rotting or being washed out by dashing rains. Until the past few days the general situation has not been propitious for corn, and the average condition for the State of that now growing is 78.6 per cent. As the present report, however, is based on conditions as found June 3 it is likely the average might now be safely advanced several points owing to the improved and improving weather and soil conditions since. Prevailing warmth and sunshine are conducive to vigorous growth and permits of cultivation which is being pushed. With the soil so thoroughly saturated the present circumstances would seem to be all that could be asked for the prosperity of the whole. No county reports a condition of 100 and but very few of the real corn counties reach 90. It is noteworthy that the highest percentages with few exceptions are reported from a block of a dozen adjoining counties in the northwestern portion of the State and the lower conditions are found in the eastern portion where there has been superabundant rainfall.

Oats.—Acreage probably about the same as last year, and prospect promising. The condition for the State is 80, but the figure in several of the counties is much higher. One county, Linn, reports 100, followed by Labette 98, Sheridan 96, Wyandotte 96, Wabaunsee 95, Jewell 94, Phillips 93, Cowley 92, Douglas 92, Geary 92, Smith 92, Doniphan 91, Graham 90, Harvey 90, Lyon 90, and Norton 90.

The following shows by counties the acreage of winter wheat presumably sown last fall; the condition of that now standing, and the condition of the growing corn and oats:

Table with 5 columns: County, Wheat sown, acres, Wheat condition, Corn condition, Oats condition. Lists counties from Allen to Wichita with their respective crop statistics.

To Farm Dairymen:



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for roofs, inside of poultry houses and all wood and iron under ground, is prepared coal tar paint. Write to the GAS COMPANY, Hutchinson, Kan. Very cheap—Very durable.

is necessary to plant in this way when the purpose is the production of seed, and perhaps nearly as large yields of hay may be secured by this method of planting, but the hay crop is not so easily harvested as it may be when the peas are sown in close drills, then the plants will grow upright and the crop may be easily cut with the mower. Planted by the other method it is usually necessary to use the bean-harvester, since the vines lie so close to the ground that they can not be readily harvested with the mower.

It will cost a little more to plant the cow-peas than it will to plant cane, and the crop of cow-pea hay produced may not be so large as that which would be secured from the cane, but the cow-peas will leave the ground in better tilth and fertility, and in a more favorable condition to get a start of alfalfa by fall seeding. You can secure seed through your local dealer, or from any reliable Western seed company.

A. M. TENEyCK.

Wireless Telegraphy in Practical Use.

Wireless telegraphy promises to supplant the present methods of communication on at least one railroad. Officers of the Chicago, Rock Island & Pacific Road in Texas are now experimenting with wireless telegraphy as a means of communication between moving trains and division headquarters. A number of freight cabooses have been equipped with the wireless instruments, and the experiments so far conducted are satisfactory. Wireless telegraphy may prove of much value to the railway companies, as it will allow instant communication between trains on any part of the road and the offices of the company. Accidents occurring between stations, where telegraph offices are out of reach, may be communicated readily by the new method.

For years the railroad companies of the country have been anxious to improve upon the old form of telegraphic communication. The telephone has come into quite general use in this way.

The liability of misunderstanding telegraph messages on railroads is the cause of the attempts of the managers to get a system that will allow officers and employees to communicate more directly and more quickly with one another.—Chicago American.

Small table with 4 columns: County, Wheat, Corn, Oats. Lists Wilson, Woodson, Wyandotte.

Other Crops.—Spring wheat 87.5; alfalfa 95; sorghum 80; potatoes 90; broomcorn 80; flax 75.6; rye 76; barley 86; castor beans 80; tame grasses 96; apples 71; peaches 66; grapes 87; cherries 80.

Live Stock and Grasses.—No disease is reported among live stock, and pastures and grasses are flourishing, affording excellent grazing.

Cow-Pea Questions.

I wish to ask you for information in regard to cow-peas. I have a field which I wish to sow to alfalfa in the fall. I planted it to Kafir-corn and the seed failed to grow. I do not wish to sow it with cane, as it is hard on the soil and I am afraid that the alfalfa would not do well to follow it, and I am afraid that I will not get the cane crop off of the ground in time. Is it too late to sow with cow-peas, and would you advise me to do so? Also, what variety would be best and where can I get them? I want them for hay. How much seed of cow-peas is required per acre? C. E. BURKS.

Sumner County.

Cow-peas grown as a fodder crop and harvested in the latter part of August or first of September, will make a good crop with which to precede the sowing of alfalfa. By disking the ground immediately after removing the pea crop, a good seed-bed may be prepared, and unless the fall is unusually dry, a successful catch of alfalfa should be secured by seeding after cow-peas. As you have suggested cow-peas will be a safer crop than cane with which to precede the fall seeding of alfalfa.

It is not too late to sow cow-peas, and for the production of forage this crop may be sown up to the latter part of June at this station, but since your purpose is to take the crop off from the land as soon as possible it will be advisable to plant the peas at once. The Whippoorwill variety of peas is the one generally grown in this State. This variety does not produce quite so rank a growth of vines as the Clay or other later-maturing sorts. At this station we were able to produce about two and one-half tons of cow-pea hay per acre, last season, using the Whippoorwill variety.

For the production of hay I prefer to sow the cow-peas with the grain-drill, in close drill-rows, say six to twelve inches apart, having prepared a good seed-bed. Planted in this way it will require a bushel to a bushel and a half of seed per acre. Cow-peas are often planted in drill-rows and cultivated. It

In the Dairy

Handling Milk for Cheddar Cheese-Making.

G. A. MENZIES, IN THE INDUSTRIALIST.

The dairy stables should be planned so that the stock may be attended to with the least possible amount of labor. They should be warm, roomy, and comfortable, five hundred to eight hundred cubic feet per cow. They should be well ventilated by removal of foul air and bringing in of fresh without creating a draught. Have plenty of light and face south if possible. Sunlight is cheap; it is nature's great disinfectant, and even diffused daylight has a beneficial effect. A plentiful supply of pure water is necessary, but it should be remembered that it is for drinking and washing purposes only, and that it makes poor cheese.

Next in order comes our stock. Keep any breed preferred, but keep good ones. It need not be imagined that because a cow has a long pedigree she must be a good one, and a breed should not be condemned because it contains some poor animals. As far as my experience goes, there is nothing in the dairy line so much misunderstood as the dairy cow. I have had dozens of men tell me that the Jersey cows gives very little milk, but that the quality is good. This is not entirely true. Jerseys are noted for giving a large flow of rich milk, and if a Jersey does not do this, something is wrong, probably the strain, and the sooner a change is made the better. I would advise all dairymen to learn the points of a good dairy cow, to study the principles of heredity, to buy and keep none but those known to be good, and in selecting a sire to look for something more than pedigree and points. Milk is your primary and final object, and the record of dam, granddam, and family in general should be ascertained.

A cow should receive the best of care and attention. A good cow will respond to kindness, liberal feeding, and attention to her comfort and wants in general. I would advise feeding some substance, such as bran or meal, in addition to pasture at all times of the year, and also the growth of soiling crops for use when pasture becomes dry. Avoid feeding anything that is liable to taint the milk.

All this bears directly on the profits of the farmer, and through him indirectly on the manufacturers' profits, and on the quality of the cheese made.

We now come to an essential point in the production of the raw material, upon the quality of which will largely depend the quality of the cheese made.

We now come to an essential point in the production of the raw material, upon the quality of which will largely depend the quality of the cheese made. This point has been emphasized time and again with, I fear, small results. Nor do I see how we can expect any great reform until we find some way to bring home to the farmer the weight of his responsibility. The result of his neglect should be a corresponding depreciation in bank account.

Milk is a secretion of the mammals for the nourishment of the young. It has a specific gravity of 1.028 to 1.034. When first drawn from the cow it is both acid and alkaline in character, but the acid almost immediately gains ascendancy and continues up to a certain point, when the alkaline character, which has lain dormant, begins to overcome the acid, the latter having evidently worked itself out. Its composition is as follows:

	Per cent.
Water.....	87.5
Fat.....	3.6
Casein.....	2.5
Albumen.....	0.7
Sugar.....	5.0
Ash.....	0.7
	100.0

Water of milk is the same in chemical composition as ordinary water. Milk fat is in the form of little drops or globules, varying in size from one fifteen hundredth to one twenty-five

thousandth part of an inch in diameter, and are invisible to the naked eye. These globules are held in suspension in the liquid, which form is called an emulsion. Casein and albumen are the nitrogenous or muscle-forming part of the milk, and are partly in suspension and partly in solution. The milk sugar is in solution. It is capable of being converted directly into alcohol, and is easily changed into lactic acid by the action of at least ten different kinds of lactic acid bacteria. The effect of temperatures on the lactic acid germ is worthy of special note, as it is the means whereby we preserve the milk and which the cheesemaker uses to develop the proper amount of acid at the different stages of manufacture. On this largely depends the character of the cheese made. The lactic acid germ does not develop below 15° Fahrenheit, and increases fast from 59° to 107°, then diminishes and ceases at 113° to 114° F. It will be seen by this that a temperature below 59° F. is suitable for holding milk which is to be kept for some time. Ash or mineral matter is mostly in solution, and consists of that portion of the milk which can not be burned.

Milk in the udder is practically sterile, or free from germs, but the moment it is drawn off it becomes contaminated with bacteria and other taints. The former come from different sources; the teat acts as an incubator. From the time of one milking to the next, large numbers of bacteria develop in the milk left in the duct; particles of filth and manure adhere to the udder when the cow is in a reclining position, or when wading through swamps, muddy streams, etc. These filth particles adhere to the lower end of the teat, and from there find their way into the duct, where the conditions for development are very favorable. So it is that the first few streams of fore milk are seeded with bacteria in great numbers. The hairy coat of the cow is more or less covered with dry excrement, mud, filth from the stables, from the barnyard, and muddy fields. A whisk of the tail or stamp of the foot, in fact, any motion of the animal or milker, serves to dislodge them and they fall into the milk-pail. Dirty or dusty garments of the milker also contribute to the general supply. Particles of dust floating in the air have germs attached to them, and these fall into the milk. This occurs frequently in a barn where dry and dusty fodder and bedding are used. Perhaps the most common source of all is the use of unclean dairy utensils.

How then, one may ask, are we going to keep our milk free from germs? We can not. Nor is it necessary, as many of them are useful and we are obliged to enlist them in our service in the manufacture of both cheese and butter. What we can do, however, is to reduce the number to such an extent that they will give little or no trouble, and the cheesemaker will have a chance to develop those kinds he requires and crowd out the undesirable forms.

Bacteriologists tell us to throw away the first few streams of fore milk, and to moisten the sides and udder with a damp cloth, but a good many practical men take exception to this, because throwing the milk on the stable floor creates a nuisance. It might also be mentioned that the majority of the germs found in the fore milk belong to the lactic acid group, and as a certain number of these are required, we may safely let them go into the milk-pail. As for the damp cloth, a cow should first be kept clean, after which if a soft, dry cloth is used on the udder it will be found sufficient.

All vessels brought into contact with milk, such as cans, pails, strainers, etc., are a prolific source of germ life, and the most thorough scalding will not serve to sterilize them, although it will greatly reduce the greater number of germs in them. Wash with cold or warm water first, to cleanse them from particles of milk, then scald or steam thoroughly. Taking the by-products back to the farm in the same set of cans used for the milk to be

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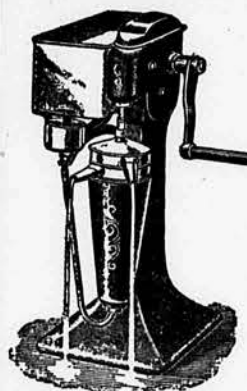


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THE IOWA DAIRY SEPARATOR.

Skims milk HOT OR COLD. Skims cream RICH OR THIN. No separator on the market will skim at as wide a range of temperature as will the IOWA.

The only separator made that the bowl can be stopped immediately, thus saving valuable time in cleaning. Full information and description furnished on application.

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Why not save half the standing-lifting—washing? Make your dairy work twice as easy—twice as profitable. Our friends call the Tubular Cream Separator the "Easy Way." Try It. Catalog J-165 describes it.

The Sharple Co. Chicago, Ill. E. M. Sharple West Chester, Pa.

condemned, owing to the rich germ life found in these products and the filthy condition of the whey tanks throughout the country.

Do not buy cheap or poorly soldered tinware, as the milk gets into the cracks and crevices and is difficult to remove. It will be found a good plan to take all utensils to the tinsmith and have soldered the ears of the pails, all the joints, and any place where milk or dirt can lodge. Remove milk from the barn immediately after milking and strain in a pure atmosphere. Aerate milk immediately after milking, and cool only to the temperature of the atmosphere. An ordinary tin dipper will do for the purpose, but there are many excellent aerators on the market, which save labor, and where they are in use the work is not likely to be neglected.

Having produced a first-class article on the farm, it is ready to hand over to the cheesemaker, and we now make the acquaintance of our friend, the driver, who forms the connecting link between the farm and the factory. This gentleman seems to be pretty much the same all the world over, and never improves very much. Perhaps about all we can tell him to do is to keep clean, and as different people have different standards of cleanliness he takes his own and is satisfied. His wagon should be supplied with springs, should be kept painted and washed, his horses should be clean, and above all he himself should be clean.

reasonably well feathered. They can with liberal feeding be made to grow rapidly and will be ready for market when 10 weeks old, weighing usually twice as much as chickens of the same age, and will sell in market for nearly twice their price. After the first few days they are very hardy and are not bothered with lice and disease like chickens.

Experiments along the line of egg-production, show that pullets from the time they are 6 months old until they are 18 months old, lay twice as many eggs as will hens of 3 or 4 years old, in the same length of time. It has been found by keeping careful account that it costs from 50 to 75 cents a year to feed a hen. The higher price of course means where the feed is highest and everything bought. Where the farmer raises his own grain, and the hens have free range, the cost is not nearly so much. If, when well cared for, the hen lays about seven dozen eggs a year, it is readily seen that there is little profit in keeping her for the production of eggs, where you have to buy all the feed. On the other hand, the well-cared-for pullet, laying fourteen dozen eggs annually, is much more profitable. It will pay, therefore, to sell or kill the old hens and have as many pullets as possible for laying purposes.

Color of White Langshans.

EDITOR KANSAS FARMER:—Will you please tell me if the White Langshans are pure white when hatched? I have some which are a yellowish grey on the back. What color should they be? Will you give me the address of a reliable breeder of White Langshans? Mrs. W. O. K.

Answer.—White Langshans are not pure white when hatched, but will turn white when the feathers ripen. They run from a yellowish grey to a dark grey. Other white breeds are the same way. White Plymouth Rocks sometimes hatch a real dark chick but it invariably turns white when 5 or 6 weeks old. Black Langshans, on the other hand, often throw light chicks but will grow black with age. Mrs. B. F. Scott, Waverly, Kans., is a reliable breeder of White Langshans.

Turkey Questions.

EDITOR KANSAS FARMER:—Can you tell me what is the matter with my young turkeys? They get weak in the legs and break down at the knees. They are healthy but can not walk. They roost in coops with a floor in and I feed them sour milk curd and millet seed. Mrs. M. V. B. Osborne County.

Answer.—It would be well to feed your young turkeys some bone-meal or better still feed green cut bone, that is, bones and meat ground up fresh from the butcher's. Turkeys are of a roving disposition and ought to have plenty of exercise. Keep shut up till the dew is off the grass, then let them have free range.

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

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

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

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

F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c. Hall's Family Pills are the best.

The World's Fair.

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

National Prohibition Convention, Indianapolis, Ind., June 28-30.

The Chicago Great Western Railway will on June 26 and 27 sell round-trip tickets at one fare plus \$2.25 to Indianapolis, Ind. For further information apply to any Great Western Agent, or J. P. Elmer, G. F. A., Chicago, Ill.

The Poultry Yard

CONDUCTED BY THOMAS OWEN.

High-Priced Chickens.

Were you to tell the ordinary farmer that a rooster sold for an even thousand dollars, he would be apt to either sneer at you or tell you outright that you lied. Still such a sale was made the other day as stated in the American Fancier:

"The largest sale, as far as the amounts received for individual birds are concerned, was made recently by George N. Northrup, Raceville, N. Y. Mr. Northrup sold to parties in Germany the following Rose Comb Black Minorcas: One cock, \$1,000; one cock, \$500; one cock, \$200; and sixteen hens \$1,700. The price \$111.11 per pound live weight, Mr. Northrup claims, is higher than he has known any other stock to sell for, excepting some of the fabulous prices paid in England for Games and Game Bantams, in the late Captain Heaton's time. We are inclined to think Mr. Northrup is correct in his claims."

One hundred and eleven dollars per pound for chicken is pretty high, and a square meal of such for a husky harvester would amount to a small fortune. This will probably remain the record price for some time, though one never knows how soon the record might be broken. Last year a Buff Plymouth Rock cockerel, at the Boston show, was sold for \$300 and that was considered a pretty good figure.

Poultry Notes.

While the guineas are noisy creatures they lay a large number of eggs during the summer time, and as after they fairly get started to growing they hunt up their own living during the greater part of the growing season, a flock of them can be kept on the farm to good advantage. They make an excellent table fowl, the flesh being sweet and of a gamey flavor. Their eggs also are especially rich and are better for baking purposes and making icing than eggs of other fowls, and bakers and confectioners will pay more for them. The shells of the eggs are especially thick and tend to preserve them fresh longer and they can be shipped without so much danger of breakage as other eggs.

With ducks it is best to put sand and gravel in their drinking vessels, changing sufficiently often to prevent it becoming foul. Young ducks should not be allowed to swim in water till

POULTRY BREEDERS' DIRECTORY.

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

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

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

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

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

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

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

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

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

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

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Grange Department

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

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

National Grange.

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

Kansas State Grange.

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

Executive Committee.

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

State Organizer.

W. G. Obyrhim..... Overbrook

The National Master in Kansas.

The Hon. Aaron Jones, master of the National Grange, will give his time from July 13 to 23, inclusive, to Grange work in Kansas. Dates have been assigned as follows:

Sibley, Douglas County.....	July 13
Ackerland or vicinity.....	July 14
Meriden.....	July 15
Canton, McPherson County.....	July 16
Scranton, Osage County.....	July 18
Garnett.....	July 19
Paola.....	July 20
Linn County.....	July 21
Wellsville.....	July 22
Olathe.....	July 23

The Patrons of Husbandry in the localities mentioned above are fortunate in securing Worthy Master Jones during this, his third and probably last visit to Kansas in his official capacity.

No member of our order enjoys the confidence of its membership to a greater degree than Brother Jones. He has been successful in harmonizing conflicting elements, and has proved himself a safe and conservative leader of the great organization of which he has been the most prominent member for the past five years.

He comes to Kansas full of faith in the objects and purposes of the Grange and desirous of doing everything in his power for the strengthening and enlarging the membership of the order in Kansas. No other State has enjoyed so much of his services during his term of office as Kansas. Let us show him that his interest in the Patrons of Kansas is appreciated by securing for him large audiences of those who are or should be interested in our work.

To this end let preparations be initiated at once for the meetings in the several places to be visited by him. There is work to be done and lots of it by some one or by many in working out the details of these meetings. Bring out some of the home talent by speeches, recitations, and music, but give the lion's share of the time to our honored guest, and let there be no other attractions on the ground at that time asking for the attention of those present. Worthy Master Jones will be accompanied by the master of the State Grange, who will simply act the part of Moses in presenting Aaron to speak to the people.

E. W. WESTGATE.

The Grange Declaration of Purposes.

I. ITS HISTORY.

Whoever has carefully studied the declaration of purposes of the Grange must have been impressed with a firm belief that it was written to express the ideals and aims of men and women of strong convictions, and of great moral energy and earnestness. But this is far from being all. There can be no doubt concerning the earnestness of purpose of those responsible for the promulgation of our declaration; yet earnestness and moral energy alone could not have given us such a comprehensive and impressive statement of principles and aims. The great impulse that became the soul of the declaration of purposes was in the mind and heart of the members of the Grange throughout the land before a

word of that great Grange platform was written. The story is worth telling again and again.

When the National Grange met in St. Louis, on February 4, 1874, to hold its seventh annual session, an address of welcome was delivered by Worthy Master T. R. Allen, of Missouri State Grange, which is notable for the record of achievement which is reported. Recalling his plea at the previous session for a meeting in Missouri, Worthy Master Allen said: "And when I pledged you, as a result of the favorable consideration of my motion, that we would have one hundred granges in the State by the time this session convened, I did it with fear and trembling, lest we might fail in its fulfillment. And when, at the unanticipated favorable result of my motion, I arose to thank you for the compliment, I was so overcome with emotion as to break down, as you who were present may remember. We had nominally at that time nineteen granges in the State—really not half that number of live, active ones." The speaker then continued:

"And, now, behold! I have the exceeding great pleasure to inform you that, instead of one hundred, we have fifteen hundred live, active, working granges. I feel sure that you give me credit for having abundantly fulfilled my promise."

At this session of the National Grange, Secretary O. H. Kelley reported the organization of 8,667 subordinate granges during the year 1873. The receipts of the secretary's office for dispensations alone amounted to nearly one hundred and thirty thousand dollars. The Grange was growing at an amazing rate. During the month of the St. Louis session more than twenty-two hundred granges were organized. Is it any wonder that the men and women who constituted the National Grange at its seventh session felt the burden of a great responsibility? Is it remarkable that they felt the need of a "platform of principles" for the organization which had so suddenly achieved National importance?

It was under such conditions as these that, at the close of the third day of the St. Louis session, the committee was appointed which presented the report then named and since known as "The Declaration of Purposes of the National Grange." The official record, as given in the proceedings of the seventh session of the National Grange, is very simple. The minutes of Wednesday, February 11, 1874, after noting that the Grange "opened in due form, Worthy Master Adams in the chair," and noting that the minutes of the previous day were read and approved, said: "The committee on resolutions presented their report as follows." At the conclusion of the report these words appear: "The report of the committee was adopted and ordered printed."

The committee named consisted of five members—B. F. Wardlaw, of Florida; J. M. Hamilton, of California; John T. Jones, of Arkansas; William Maxwell, of Tennessee, and George D. Hinckley, of New York. But none of these men had more than a minor part in preparing the report, that work being done by Major J. W. A. Wright, the first master of California State Grange. Major Wright was a brilliant, brainy man. It was his known readiness and resourcefulness that induced the California member of the committee to ask him to formulate the report. As accepted by the committee, and adopted by the National Grange, the report was almost entirely the work of this one man; and, so far as the Grange is concerned, it is the greatest work of his long and useful life. It is to be understood, however, that the declaration of purposes is not the product of a single brain. The ideas which it crystallized had been seething in the minds of the people for years; it was an interpretation of the desires and hopes and purposes of the members of the Grange; not the expression of the ideas of the brilliant and scholarly man whose name is connected with the Grange declaration of purposes as Jefferson's is with the Declaration of Independence.

As the declaration of purposes was

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promulgated in St. Louis, in February, 1874, so it remained until 1886. At the meeting in Boston, in November of that year, upon recommendation of a Commission of Digest, the sentence which declared, "For we seek the greatest good to the greatest number," was ordered changed to read, "For we seek the greatest good to all." In making the change, some one blundered, and now the sentence, as given in the Digest of the National Grange, ends with the words, "of all." It has been objected that the change destroyed the rhythm and cadence of the original sentence, and that it also made the statement too broad and inclusive.

However, one may view the action of the nineteenth session of the National Grange in respect to the minor change above described, there can be no difference of opinion about the wisdom of its statement that the declaration of purposes admirably sets forth "the fundamental principles upon which our organization rests," or any doubt about the soundness of its advice to the officers and members of subordinate granges to make its teachings "a matter of special and careful study, to the end that we may understand and perform our whole duty and thereby fulfill our obligations so as to build higher and better."

What the Grange needs to-day is a revival of the great impulse that caused the wonderful growth of the early seventies—the impulse which resulted in the writing of the declaration of purposes.—Grange Bulletin.

The New Member With a Fad.

Once in a while some ambitious brother joins the Grange all of a sudden, and, like the proverbial "new convert," becomes very zealous, and frets and fumes because the Grange is not ripping up the universe and undertaking all sorts of impractical things; and when he can not find any other rock to strand the ship upon he goes full-head on into some poorly considered cooperative scheme, which in the very nature of things must prove disastrous. Very often he feels that the Grange is depriving itself of a very energetic and efficient officer by not electing him, on the spot, to some position of great responsibility. Well, that may be so; but the Grange has learned some things by experience, and other things by absorption, and it knows too well the folly of putting "raw recruits" in the front of the battle. The Grange needs to take great care in the selection of those whose acts or utterances may retard or embarrass the advancement of the order. None but well-seasoned timber should be put into the ship. The farmers can not afford to trust to the leadership of any one who has not proven his loyalty and faithfulness by some years of disinterested service. This should not discourage any one, because between the day of initiation and the head of the order there are many degrees of usefulness where his efforts for the betterment of agricultural conditions will bronze and season him in the sun and winds of antagonistic influences. What a glorious order we would have if every member would always do the very best he can in the place where he is. Such a brother need have no fear but that very soon he will be asked to come up higher. The Grange needs strong men with true hearts and noble purpose.

T. C. ATKESON,
Overseer National Grange.

The height to which birds fly is still an unsettled question in ornithology, and recently the German Ornithological Society requested aeronauts engaged in meteorological exploration, with the aid of balloons, to observe the various heights at which birds are found. It is not to satisfy mere curiosity that the information is desired, for the question of the elevation of the tracks pursued by birds when migrating has an important bearing upon other scientific problems concerning the feathered inhabitants of the air. At present it is believed that birds generally do not rise more than about 1,800 feet above the ground, although

occasionally they attain an elevation of between six thousand and seven thousand feet.

The Veterinarian

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

Beginning with next week I expect to write a short series of articles for this department with reference to the live-stock sanitary laws of Kansas, and also to take up the diseases and conditions that are most frequently met with in the live-stock sanitary work in this State.

Caustic Fluid.—Will you please give your opinion of the following prescription: Oil of vitriol, oil of spike and muriatic acid, equal parts of each, and its effects on poll-evil and big-jaw? Also, please give method of removal of the afterbirth or placenta, so that a common herdsman can understand and perform the same. H. L. C. Baldwin, Kans.

Answer.—Oil of vitriol is strong sulfuric acid; the oil of spike is oil of lavender; the oil of vitriol and muriatic acid are both powerful caustics and will destroy animal tissues where applied. But they are very painful to use. I think there are other preparations that are equally efficient in destroying tissues and cause less pain. I think butter of antimony is one. It is difficult to give an opinion on a prescription because so much depends on the case on which it is used. You also ask if arsenic is a safe remedy to use in poll-evils and fistulas when applied by using a capsule. It is a very common and efficient remedy for sloughing out or destroying the diseased tissues and false membrane. There is always some danger in using caustics of this character as they sometimes cause extensive sloughing and destroy a good deal of living tissue, leaving a hollow in front of the withers commonly called "drop neck." In a few cases the arsenic may be absorbed and cause poisoning, but the latter is quite rare.

The placenta or afterbirth should be removed from a cow within twenty-four hours and never left to decompose. An excellent method is to bare the arms to the shoulder and apply to the arms and hands a 5 per cent solution of carbolic oil, either raw linseed or sweet oil. In the absence of this, any bland oil or clean lard will do. The animal should be confined in a stall and an assistant should hold the tail out of the way. The free portion of the placenta should be wound about a small stick which is held in the left hand. The right hand should be inserted into the uterus; by twisting the stick gently so as to tighten the placenta the points of attachment can be easily located with the right hand, and the placenta worked loose with the fingers from the "buttons" where it is attached, and the whole placenta removed. It should not be removed by pulling, as this is apt to cause considerable irritation and straining and may cause an eversion of the uterus. If the placenta is decomposed the uterus should be thoroughly flushed out with clean, warm water and a little antiseptic, such as a one and one thousandth solution of corrosive sublimate, injected. After operating on such a case the hands and arms should be thoroughly washed out and disinfected with the same solution. N. S. MAYO.

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WEEKLY WEATHER CROP BULLETIN.

Weekly weather crop bulletin for the Kansas Weather Service, for the week ending June 11, 1904, prepared by T. B. Jennings, Station Director:

GENERAL CONDITIONS.

The rainfall has been light in the eastern counties north of Woodson, Allen, and Bourbon; it was also light in Ford and Kiowa and thence northeastward to Mitchell and Cloud, but over the rest of the State it was heavy, being decidedly excessive in Cowley and Elk.

RESULTS.

EASTERN DIVISION.

Wheat is doing well. The soft wheat is turning in the northern counties, and is ready to harvest in the extreme southern but the ground is too soft for binders. Corn prospects have improved, the drier weather permitting of much cultivation. Oats are doing fairly well and in Anderson are heading unevenly. Prairie-grass, clover, and timothy are in fine condition, and pasture is very good. The first crop of alfalfa is ready to cut and in some counties cutting has begun but the wet weather has damaged the hay. Early potatoes are being marketed in the central counties but are rotting in the southern. Apples are a light crop in Jefferson and the late apples are falling badly in Osage County. Cherries are ripening in the central counties and turning in the northern and are abundant. Strawberries are abundant. Raspberries are being marketed in Chautauqua, and blackberries are blooming in Leavenworth County.

Anderson.—Corn prospects slightly improved; oats heading unevenly; wheat injured and not filling well on low ground; pastures and meadows fine.

Atchison.—Early corn being cultivated; late planting progressing rapidly; soft wheat beginning to turn; hard wheat heading; grass growing; early cherries turning; strawberries ripe.

Bourbon.—Conditions for farmwork much

week; alfalfa hay damaged by rain; new potatoes plentiful; corn getting weedy; grass fine.

Wyandotte.—A fine week for work and all crops doing well.

MIDDLE DIVISION.

Wheat is generally in good condition; some complaint of rust in Kingman and Lincoln Counties and of getting too rank in others, with damage by high water in Cowley. Soft wheat is ready to harvest in the extreme southern counties but the ground is too wet. Corn is getting very weedy in the eastern counties but much has been cultivated in the western. Oats have improved and give a better prospect. Barley is doing well, and in Pawnee is heading. Grass in general is good. The first crop of alfalfa is ready to cut and is a fine crop, but the weather is too damp. Cherries are ripe and abundant in the central and southern counties. Apples are growing rapidly. Potatoes are being marketed in Ottawa County, but are rotting in the ground in Cowley.

Barber.—Alfalfa haying delayed by wet weather; wheat very fine; all spring crops doing finely; cultivation of corn in progress.

Barton.—Too wet for farmwork; the rains have washed corn considerably; wheat out of bloom; oats and barley not as good as expected; early cherries on market.

Butler.—Crops on bottom-land badly damaged by flood; wheat and oats look well on upland; corn weedy; considerable alfalfa cut and badly damaged by rain; fruit dropping badly.

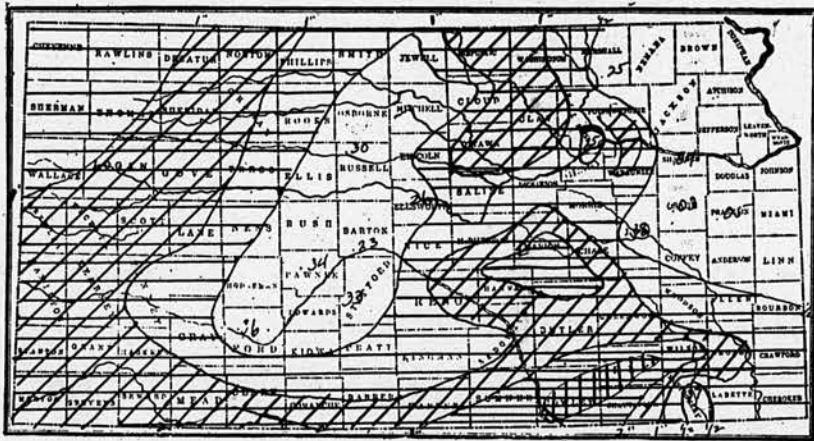
Clay.—Alfalfa delayed by wet weather; wheat getting quite ripe and needs clear weather.

Cloud.—Considerable alfalfa ruined by rains; ground generally too wet for farmwork.

Cowley.—Too wet for farmwork; wheat considerably damaged by wet weather and floods; early wheat ready to cut; potato crop good, but rotting in the ground; oats doing well; some corn quite weedy.

Dickinson.—A good growing week; cultivation advanced well fore part, too wet latter part; much alfalfa hay damaged by rain; wheat growing rank and lodging in low

RAINFALL FOR WEEK ENDING JUNE 11, 1904.



SCALE IN INCHES.

Less than 1/2, 1/2 to 1, 1 to 2, 2 to 3, Over 3, T, trace.

better than last week; corn about all planted and making fair growth; oats and grass fine.

Brown.—Wheat in good condition and blooming; oats looking fair; corn now doing well; much of first planting washed out; replanting not completed on low ground; large crop of strawberries; cherries ripening; some clover ready to cut.

Chase.—Alfalfa being cut but too wet to cure; corn getting very weedy; early potatoes rotting.

Chautauqua.—Wheat has done well; harvest will begin when weather permits; corn generally in good condition, much of it waist high; potatoes beginning to rot; raspberries on market; all fruit in good condition.

Coffey.—Ground still too wet to work except in some upland fields where farmers are replanting corn.

Crawford.—A wet week; some corn getting very weedy; potatoes beginning to rot; cherries ripe; all farmwork at a standstill.

Doniphan.—A warm, growing week; corn backward but in good condition; strawberries on market; cherries ripening; fruit dropping.

Elk.—No farmwork done since the 8th; some corn very weedy.

Franklin.—Corn-planting again in progress; all small grain looks well; grass very fine; cherries ripe.

Jefferson.—Upland corn about all planted; most bottom ground now dry enough to work; wheat and oats good except where water stood; grass fine; cherries ripening; apples promise a light crop.

Leavenworth.—Wheat in bloom; somewhat damaged by wet weather; oats promise a fair crop; early corn being plowed—a poor stand; late corn coming up well; pastures fine; tame grass growing rapidly; alfalfa being harvested; strawberries plentiful and of good quality; blackberries in bloom; large crop promised; fruit in good condition.

Linn.—Completion of corn-planting being rushed, and cultivation in progress; corn doing well; wheat doing well; clover and timothy heavy.

Lyon.—All crops on bottom land very badly damaged; upland crops doing well; wheat heading; potatoes rotting in the ground.

Marshall.—Wheat looks fine; oats good in north, but not in south part; pastures very good; a good crop of alfalfa being cut; rather cool for corn; it is generally a good stand but very weedy; ground now dry enough to cultivate.

Montgomery.—Much wheat and corn destroyed by floods; ground still too wet; May wheat ready to cut but ground too soft; meadows and pastures good.

Morris.—Alfalfa a fine crop but greatly damaged by wet weather; corn growing slowly; badly in need of cultivation; wheat and rye good; oats fair; blue-grass fine, both spring and fall sown.

Osage.—A fine week for growing crops; corn being cultivated and doing well; planting about completed; wheat in good condition; cherries ripe; late apples dropping badly.

Pottawatomie.—Too wet to plow corn; much alfalfa cut and damaged by rain; wheat and oats doing well; much sweet potato ground being listed to corn on account of scarcity of plants; too cold and wet for sweet potatoes; strawberries plentiful; cherries ripe.

Shawnee.—Planting, replanting, and cultivating corn in progress; corn uneven and not very thrifty; wheat filling well; other small grains and grass doing finely; alfalfa haying delayed by wet weather; apples a light crop; other fruit generally doing well.

Wilson.—Too wet for much farmwork; some corn very weedy, other fields clean and doing well; wheat considerably damaged by floods; potatoes beginning to rot in wet land; some corn yet to plant.

Woodson.—Some corn cultivated fore part of

ground; corn, oats, and grass continue fine; cherries being picked; all fruits doing well.

Ellsworth.—A good growing week.

Harvey.—Farmwork delayed by wet weather; cornfields getting very weedy; some corn not yet planted; alfalfa ready to cut, but ground too wet to get into the fields.

Jewell.—Another fine week for all crops; alfalfa haying begun.

Kingman.—Some rust on the wheat; oats and barley doing well; corn weedy; ground too wet to work.

Lincoln.—Too wet for farmwork; corn very weedy; alfalfa hay damaged by wet weather; some complaint of rust in wheat.

McPherson.—Wheat filling well and looks fine; considerable alfalfa hay got wet; corn doing better, but much is weedy; dry weather needed.

Mitchell.—A good growing week.

Ottawa.—All crops that have had the proper culture are good; new potatoes on market; raspberries a full crop; peaches a light crop; apples fair to good; strawberries good; pears blighting badly; alfalfa damaged by wet weather; wheat harvest will be late; oats good.

Pawnee.—Early wheat in bloom; barley heading; corn doing well but weedy; Kafir-corn and cane up and a good stand; pastures fine.

Phillips.—Corn and wheat looking well, but much corn is getting weedy; a heavy crop of alfalfa is being cut; fruit doing well.

Reno.—Wheat in fine condition; corn needs cultivation; fields too wet to work; oats improving; a heavy crop of alfalfa being cut, and considerable of it injured by rains.

Republic.—Wheat doing well; most of the oats short and thin on the ground; farmwork delayed by wet weather; corn getting weedy; alfalfa ready to cut.

Russell.—A fine growing week; wheat and corn doing well; alfalfa being cut.

Saline.—Wheat damaged in bottom-land; too wet for alfalfa haying.

Sedgwick.—Wheat filling well; oats rank; corn very weedy; ground too wet to cultivate; very little alfalfa cut on account of showers; cherries ripe and plentiful.

Stafford.—A good week for all growing crops; grass good and stock doing well.

Sumner.—Crop growing where it is not too wet; wheat damaged on low ground; good prospect for oats; gardens fine; corn getting weedy; alfalfa damaged and some washed away.

Washington.—Ground too wet to cultivate; corn getting very weedy; oats weedy and yellow; corn growing well where cultivated; alfalfa haying begun; some damage by rain; wheat very good; pastures good; stock doing well; new potatoes on market; apples and peaches growing rapidly; late cherries dropping some.

WESTERN DIVISION.

Wheat has improved in the northern counties but is not doing well in the southern. Spring wheat is doing well. Macaroni wheat gives fine promise in Finney County. Oats are doing well. Barley is doing well, and in Thomas is heading. Corn has improved but it needs warmth and cultivation. The first crop of alfalfa is about ready to cut; in Ford it has been cut and put up but much was damaged. Grass is very good. Stock are doing well.

Clark.—Crops benefited by the rain, especially buffalo-grass which was drying up.

Decatur.—Crops greatly benefited by rains and warm weather; even winter wheat shows a marked improvement; corn growing rapidly; alfalfa getting ready to cut; pastures fine; stock in fine condition.

Finney.—Crops doing well since the rains;

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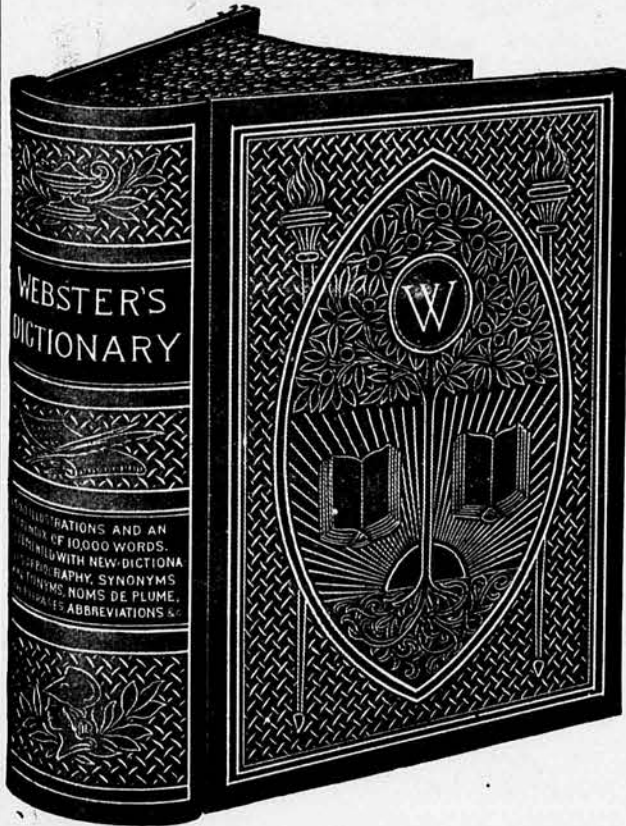
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except that most fall wheat has been plowed up and other crops planted; macaroni wheat promises a fine yield.

Ford.—Wheat headed short and some not at all; crop will be light; oats, barley, and spring wheat doing nicely; a large crop of alfalfa is nearly all harvested, but much of it damaged by rains; grass fine; early cherries ripe.

Greeley.—Monday, Tuesday, and Wednesday good weather for drilling and listing; a steady rain Wednesday night; some cane coming up; corn looking fine.

Kearny.—A good week for growing crops; there is a fine stand of most all crops; weeds growing rapidly; grass was burning before the rain.

Lane.—Corn growing better and other spring

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Largest and best equipped Business College west of the Mississippi; highest standard, national reputation. Seventeen professional teachers. Positions guaranteed to all competent Stenographers and Bookkeepers from our school. Graduates sent to all parts of the world. Tuition low. Board Cheap. For Journal address

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When Writing our advertisers please mention Kansas Farmer.

crops improving since the rain and warm weather; potatoes nearly ready for use. Ness.—A poor week for growth of crops—too dry and windy; feed-planting well advanced; cane and millet coming up; grass coming up; potatoes look well; nights too cool for corn. Norton.—Corn growing rapidly; alfalfa beginning to bloom; potatoes look well and are setting; pastures very good; farmwork progressing slowly on account of recent rains. Sheridan.—Fall wheat improving; spring wheat, oats, barley, and corn doing well, although corn is backward in growth and needs cultivation, which has been delayed by wet weather; alfalfa fine. Thomas.—A good growing week; corn is a good stand, but weedy; alfalfa nearly ready to cut; grass abundant; cattle doing well; wheat and barley heading; potatoes good.

One of the events of the year in Salina is the annual commencement exercises of the Kansas Wesleyan University. President T. W. Roach and his able faculty have received many well-deserved compliments upon the success of the exercises of commencement week because they represent the culmination of results of the most successful year's work in the history of that institution. The enrollment of the past year numbered 900 in all departments, and the faculty have reason to feel proud of their work. The class of 1904 was a strong one, though the number of graduates from the college of Liberal Arts was not great. The military department is an especially attractive feature of this institution and its work is now required of all students in the Academic, Normal, and Freshman years. This was done on petition of the students themselves. The commercial department has always been very popular and its students have been remarkably successful in securing positions of trust and responsibility. The Kansas Wesleyan is fortunate in being located in the largest and most beautiful city in Central Kansas, where the public morals are so high and the outside advantages for the student so great. The price of good board is very reasonable and the tuition charges very reasonable for the quality of the service rendered. If you will look up the advertisement of the Kansas Wesleyan on page 642 and write for a catalogue you will have full information.

Many of our readers are probably considering the advisability of buying a hay-press this season. Various causes have increased the price that can be realized for hay and straw provided it is baled for long-distance shipment. The Russian-Japanese war has caused a great demand in the West and Northwest, and several thousand tons of American hay were shipped to Port Arthur at the outbreak of hostilities. The continuation of the struggle means that much more will be called for, and altogether it seems that this will be a good season for those who have hay or straw to sell. In passing, we can not but wonder at the enormous increase in the value of the hay crop in the United States in the past thirty years. In 1877, when George Ertel patented the first hay-press, the value of the hay crop was practically nothing, as it all had to be sold locally for what could be realized. To-day the hay crop represents an annual income of over \$500,000,000 to the farmers of the country. The invention of the hay-press is wholly responsible for this, as without this means of preparing hay and straw for transportation it would be impossible to market it. The inventor of the hay-press was George Ertel, whose attention was called to the subject by seeing some men in a field trying to tie up hay in bundles with ropes. His first press was a crude affair compared with the steel presses turned out by his firm to-day. The Ertel presses are known all over the country and by many are regarded as the standard. The firm has kept right to the front and the presses it offers to-day are the most practical and economical. They have large feed openings and convenient application of the power to the work. They are easiest on the team and turn out smooth, compact bales of which there is no trouble to get full weight into an ordinary box-car. The Geo. Ertel Company is located at Quincy, Ill., and publishes an illustrated catalogue of information about the hay business called "Hay-Press Hints." A copy can be obtained without charge by addressing them.

Cheap Round-Trip Rates for Vacation Trips.

From Kansas City via Chicago Great Western Railway \$15 to St. Paul or Minneapolis, \$19 to Duluth, Superior, Ashland, or Bayfield. Equally low rates to summer resorts in Minnesota and Michigan. Tickets on sale every day to September 30. Good to return until October 31. For further information apply to any Great Western Agent or J. P. Elmer, G. P. A., Chicago, Ill.

4th of JULY. You want a good noise maker. Don't risk your life fooling with a toy pistol, but buy a Young America Double Action Revolver \$2.50. Safe Reliable Durable. 22 caliber, 7 shot, rim fire. 32 caliber, 5 shot, rim or center fire. If not to be had of your dealer write us, stating preference and enclosing amount, and we will supply you by return mail or express, sending prepaid. Write for Free Catalog. HARRINGTON & RICHARDSON ARMS CO. 359 PARK AVE. WORCESTER, MASS.

The Markets

Kansas City Live-Stock and Grain Markets.

Kansas City, Mo., June 13, 1904. The receipts of cattle at this market to-day were exceedingly large for Monday, there being 11,000 yarded up to noon and more yet to come. The receipts were made up mostly of stockers, feeders, and Westerners. The market on dressed beef steers was steady with last weeks close, but on other kinds it was lower. Stockers and feeders were 15@25c lower, and stock cows and heifers were fully 20c lower. Fat heifers were steady. There were 4,000 cattle in the Texas division to-day and the market was 10@15c lower. Top for dressed beef stuff to-day was \$6.05, and most of the sales were above \$5.50. All grass stuff was as much as 10c lower and in many instances much lower. There were very few stocker and feeder buyers on the market to-day, and that trade was slow and without life.

Cattle receipts at this market last week were \$3,800, of which the Texas division got more than its usual portion. The advance in price of beef steers the past two weeks attracted a liberal supply of the better grades of steers to the market last week, and the prices on the best grades advanced throughout the week, while the more common kinds only held their own. The weeks top, which was had on Tuesday, was \$6.35, and was also the top for the year; nothing has sold so high since the latter part of 1902. There were numerous sales above \$6 and the bulk of all the sales were above \$5.55. Fat she stuff is selling strong with the previous week's close, a good bunch of fat heifers sold Friday for \$5.45. Stock cows and heifers are not very ready sale and are 10c lower than the previous week. Shipment of stockers and feeders to the country last week were 160 cars, about 30 more cars than last week. Heavy fleshy feeders have advanced a little, while the lighter grades and good stockers are steady, and the common kinds are weak and lower. A heavy supply of common quality cows caused the market on that class to decline 20@30c.

Hog receipts here to-day were a little above the Monday average, and 2,200 of the 7,500 head in the receipts went direct to packers from other markets. The supply generally was not very good in quality, however, there were several good loads on the market. The most desirable hogs were steady to 5c higher, while the more common kinds and lights were only steady. Pigs were hard to sell and ruled anywhere from weak to 15c lower. The top hog sale for the day was \$4.92 1/2 with the bulk of all the day's sales around \$4.80. Fair to good mixed packing hogs sold around \$4.75@4.90. The top on light hogs was \$4.77 1/2 and ranged as low as \$4.50. Good light butcher hogs sold in some instances 5c higher, but the greater part of the supply of lights were only steady.

Receipts of hogs last week were 45,300 head, a normal run, and about 2,000 more than the previous week, and the same week last year the flood was on. Last week was a strong bull week in trade and the advance for the week amounted to 15@20c and closed up at the high point. The packers expected a heavy run last week and their being disappointed gave strength to the market, causing a general living up for the time being; but \$5.25 hogs are as often predicted as were \$4.25 hogs two weeks ago, and no doubt they will go higher and that they have left the low point for keeps this season. All grades of hogs have shored very evenly in the advance. The top for the week was \$4.90 against \$4.70 the previous week. The bulk of all the sales for the week were between \$4.60@4.80.

Sheep receipts at this market are decidedly lower than they should be. The expected and usual supply of Texas sheep did not materialize last week, and the bulk of the offerings were of Western and Mexico sheep, which were of fairly good quality. Natives were fairly well represented throughout the week and sold well; there has been a good demand for them all along. Heavy natives and medium fed Westerners lower. Some good Colorado lambs sold for \$6.25 this week. The demand for feeding sheep is extra good, but there has been so few on the market recently that it is hard to quote prices accurately.

Sheep receipts were heavier here to-day than in several weeks at 6,000 head. The general quality was good and the supply was well divided between muttons and lambs. There were a few good Texas grass muttons. The market was generally steady spring lambs may have been weak in some instances. Top for Western lambs was \$6.10. Texas grass sheep sold at \$4.37 1/2. Top for lambs was \$6.90, and some clipped Mexicans sold for \$6.05, and the top for fed Western lambs was \$6.10, and the bulk of the lambs sold around \$6. The supply of horses for last week was light, about 150 head. Outside buyers were not very plentiful and local speculators took heavily of offerings, the bulk of prices ranging weak to a little lower. No extra qualified offerings were on hand and no unusual prices were realized. Trade during the rest of the week after Monday was slow and not much was done, leaving speculators to carry 50 head over for this week. To-days run was less than 100 head and the auction was short. The quality was rather ordinary and prices were weak to \$10 lower again, the best kinds suffering the least decline. Some Western horses were sold by the carload this afternoon at prices ranging from \$9 per head to \$19.50, pretty good prices for the kinds of horses offered. The mule trade last week was slow. The demand was from outside sources and was limited to a demand for big mules. Prices on these kinds are but little changed from the best time of the winter. To-day was a very quiet day, but few head being sold.

Receipts of grain at Kansas City to-day

Special Want Column

"Wanted," "For Sale," "For Exchange," and small or special advertisements for short time will be inserted in this column without display for 10 cents per line of seven words or less per week. Initials or a number counted as one word. No order accepted for less than \$1.00.

CATTLE.

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

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

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

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

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

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

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

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

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

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

HANDY HERD REGISTER—The improved Handy Herd Book for swine breeders is a record book that every breeder should have. It is perfect, simple, practical and convenient and contains 101 pages or about one cent a liter for keeping the record. The regular price of this handy herd book is \$1, but we furnish it in connection with the Kansas Farmer one year for only \$1.50.

ASK YOURSELF this question—If you need a Shorthorn bull, hadn't you just as well buy one of me, as to pay some one else more money? I have 1 roan and 2 reds—good ones—from 15 to 23 months old. J. H. Bayer, Yates Center, Kans.

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

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

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

SWINE.

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

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

PEDIGREED POLAND-CHINA males cheap. Barred Plymouth Rock eggs 5 cents each. John D. Ziller, Hiawatha, Kans.

HORSES AND MULES.

FOR SALE—An extra fine Chestnut stallion at a bargain. Dam Strathmore by Norman by Manbrino Chief. Pedigree furnished. No better breeder living. Write for particulars. A. M. Graham, 1901 West 6th Ave., Topeka, Kans.

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

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

FARMS AND RANCHES.

FARMS—Corn; tame grass. Small payments. Buckeye Agency, Route 2, Williamsburg, Kans.

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

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

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

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

were 77 cars containing 43 cars wheat, 30 cars corn, and 4 cars of oats. Wheat was active and higher. No. 2 hard 86 1/2 @ 88c, No. 3 hard 84 @ 85 1/2 c, No. 4 hard 74 @ 78 1/2 c; No. 2 red \$1.02 @ 1.03, No. 3 red 98c @ \$1, No. 4 red 86 @ 92c. Corn was steady. No. 2 mixed 48 1/2 @ 49c, No. 3 mixed 48 @ 48 1/2 c, No. 4 mixed 46 @ 47c; No. 2 white 49 @ 49 1/2 c, No. 3 white 39 @ 40c, No. 4 white 37 @ 38c. Oats are in good demand and selling at steady prices. No. 2 mixed 35 1/2 @ 39c, No. 3 mixed 38 @ 38 1/2 c, No. 4 mixed 36 @ 37c; No. 2 white 49 @ 49 1/2 c, No. 3 white 48 @ 48 1/2 c, and No. 4 white 37 @ 38c. H. HOWARD PETERS.

POULTRY.

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

SEEDS AND PLANTS.

FOR SALE—Genuine Siberian millet-seed—55 cents per bushel. Sacks free in lots of two bushels or more f. o. b. at Topeka. Address J. W. Ferguson, Route 1, Topeka, Kans.

ALFALFA SEED—\$8.50 per bushel. No sand, no weed-seeds. J. H. Glen, Farmer, Wallace, Kans.

MISCELLANEOUS.

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

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

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

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

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

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

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

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

FOR SALE AND RENT—300 female cattle, 2,000 sheep, teams, and tools, for cash or short time. Will rent for cash or share of sales for any number of years, good ranch to carry all of above stock. Good buildings for the purpose; pasture, fenced in three pastures, water in each; bottom and alfalfa hay; farm land fenced separately. Or will sell whole outfit on any kind of time. Address E. H. Boyer, Meade, Kans.

WORLD'S FAIR—50 rooms for visitors, close to grounds, furnished with or without board, good neighborhood, on car line. Write for list at once. A. T. Eakin, (formerly County Treasurer of Hodgeman county, Kansas) 4612 Bell Ave., St. Louis, Mo.

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

PATENTS.

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

The Stray List

Week Ending June 9.

Montgomery County—Samuel McMurry, Clerk. PONY—Taken up by J. F. Shipley, in Parker tp., May 16, 1904, one 10-year-old dun colored mare pony, branded C L on left shoulder, valued at \$20.

Week Ending June 16.

Trego County—J. W. Phares, Clerk. CATTLE—Taken up by E. L. Frye, in Franklin tp., Feb. 5, 1904, one red motley faced 3-year-old heifer, J on left side; one red 2-year-old heifer; one black 2-year-old white faced heifer; one red 2-year-old steer, with white forehead, belly and breast; one red 2-year-old white spotted steer; also one red 2-year-old steer, with white forehead, breast and tail; valued at \$15 each.

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

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

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Horticulture

THE APPLE CURE.

In these days of indigestion, Of fever and congestion, A new and pleasant remedy has lately come to light; 'Tis a cure-all pure and simple, The very latest wrinkle— Just eat a big round apple and you'll be all right.

Then good-by to inflammation, To pain and ulceration; The vermiform appendix will be forgotten quite; Throw away your pills galore, You won't need them any more, Just eat a big round apple and you'll be all right.

If swear words rise and choke you, If an awful thirst comes o'er you And you can not find the keyhole in the middle of the night, This will bring the peace of mind After which you long have pined— Just eat a big round apple and you'll be all right.

Then good-by to palpitation, To germs and amputation, The surgeons and the specialists are in a dreadful plight; Throw away your pills galore, You won't need them any more; Just eat a big round apple and you'll be all right.

If you're feeling pessimistic In a way that's realistic— If everything is going wrong and things look black as night; If you're ill in mind or body, Do not take a drink of toddy— Just eat a big round apple and you'll be all right.

Then good-by to all narcotics, To tonics and hypnotics, The medical profession will soon be lost to sight; Throw away your pills galore, You won't need them any more; Just eat a big round apple and you'll be all right.

—New York Sun.

Shawnee Horticulturists:

The June meeting of the Shawnee County Horticultural Society was held at Prospect Farm, the beautiful home of Mr. and Mrs. H. W. McAfee.

The place is an ideal one for an outdoor meeting. The farm and every building has certainly passed the stage of prospect and is now a certain reality. The hospitality of "Henry" and his good wife is not exceeded in magnitude even by any of the commodious buildings, though the barn has a capacity for sheltering nearly 300 tons of hay and over 200 head of stock.

After one of those spreads for which the ladies of the society are noted, the meeting was called to order by President S. M. Crow. Mrs. Walter Bates responded on "Canning Fruit," with a well-prepared paper, handling the subject in a very able manner. It was full of good suggestions and was ordered printed in the KANSAS FARMER. Incidentally Mrs. Bates related one of her experiments, as follows: Took ten quarts of freshly picked strawberries, made a syrup of equal parts by measure of sugar and water, put the berries into pans and poured the syrup over, sealed and put in dark room. Six of the ten quarts kept and were very delicious.

The paper was followed by a general discussion from ladies, and from the many ways of keeping fruit offered only these few could be taken down: "Sunshine cherries" was offered by Mrs. Meade. Take Morello cherries, alternating a layer of fruit with a layer of sugar, keep jars in the sunshine for a few days; cover with a pasted cloth.

Mrs. Kleinhans did not like to can fruit over a hot stove in a warm room so she takes freshly picked strawberries, must be clean when picked, must not wash; mash fruit thoroughly, use a little more sugar than fruit; seal in Mason's jars. Handle the fruit in glass, earthen or silver dishes; will keep as well as if cooked.

Mrs. Crow preserves the color of strawberries by mashing a few and putting this pulp into the cans just before sealing.

A member fills jars with whole gooseberries, then puts all the water she can into the jars, seals; fruit comes out in perfect condition when wanted.

Mrs. A. B. Smith offered the "just to suit," sweet-peach pickle: A good syrup, well spiced, stick whole cloves into cling peaches, cover fruit with syrup, scald daily three times and the peach will be well cooked, and will clear from the pit easily when eaten.

A member: Pure cider vinegar must always be used to insure best results.

A stenographer could have taken down many more useful recipes for canning and preserving fruit for future use.

"Should the farmer raise fruit commercially?" was responded to by Phillip Lux, and he said in part, that there are so many varieties of fruit, and the conditions to produce this fruit were so varied, he would confine most of his remarks to the apple. We are a fruit-consuming people and the more there is raised the more will be consumed. With facilities such as we now have for transportation we have fruit in and out of season. Even the soft strawberry can be shipped across the continent and arrive in good condition. So there is a continued demand for fruit, and the better the fruit the greater the demand. One should consider the surroundings and the ability and time one can devote to the raising of fruit; should have a knack for work, a love of the calling to make a success, and be near a good shipping-point. Every farmer should raise enough fruit for his own use, and we really should have a law compelling a farmer to put out an orchard and a plantation. Any one can set out a tree, but only a few can harvest a crop of apples. Probably only one tree in twenty that is produced by the nurseryman bears fruit. There are many causes for this. Lack of care, insect enemies, rabbits, etc., all tend to the destruction of trees and fruit. Unless the farmer has good executive ability, coupled with a natural love for the calling he would advise letting the commercial orchard alone, but be sure to raise enough fruit for the family.

Mr. Lux said that there was not enough care used in propagating our apple. Scions should be selected from trees producing the finest fruit, then we could improve the apple just as the stockman improves his stock.

B. F. Van Orsdal gave a short report of the semi-annual meeting of the State Horticultural Society, held at Dodge City, in the interests of forestry. There are many more trees out there now than fifteen years ago. The cherry will grow in Western Kansas and produce good fruit, and the white elm, Osage orange, and honey locust, with catalpa for the bottom-lands make good trees for their groves and forests. The United States Forestry Station is quite an educator and when properly handled will be of lasting benefit to Western Kansas.

Adjourned to meet July 7 at the home of J. F. Cicil.

OMAR F. WHITING, Secretary.

Canning Fruits.

MRS. W. L. BATES, BEFORE SHAWNEE COUNTY HORTICULTURAL SOCIETY.

A few general rules apply to the canning of all varieties of fruits and vegetables. Glass cans, with elastic bands are best for canning fruit, and the cheapest in the end, as they can be easily cleansed and used year after year by purchasing new bands each year and occasionally new covers. I roll my cans in hot water the last thing before using them, and wrap them in a wet cloth of several thicknesses. I like this better than putting in the pan of hot water, for then you can handle the cans without burning yourself. I fill the cans not quite full, take a silver knife and run it around the sides to let out any bubbles of air remaining, then I put on the rubber and fill the can clear full, screw on the top as tight as possible, then turn the can upside down and let stand over night. In the morning, I give them another turn to be sure they are perfectly tight. Put away in a cool, dark place, and keep as dry as possible.

The first fruit that interests us is the strawberry and I think of all the fruits it is the hardest to put up satisfactorily. Here is a recipe that is considered very good for canning strawberries: To each pound of berries allow half a pound of sugar; put in an earthen jar, first berries then sugar alternately, until all are in, then set in cellar over night. In the morning drain off the juice and let it come to a

boil, skim and add the berries. When all comes to boiling point, put in airtight jars. But I always use the following method with some of my berries: Put the berries into a porcelain vessel and thoroughly mash them, put on just a little water and cook until they are very soft. Then I add a little more than half as much sugar as fruit and cook until the fruit is thoroughly sweetened; put in glass cans and seal. This I find the most satisfactory way of caring for strawberries.

Cherries, of course, come next. While I always seed the bulk of my cherries, I make it a rule to can some with the seeds left in, for I like the flavor the seed gives. Why, we even had some pies, this last winter, made with the seeds in, and I can tell you they were good. Now there is one thing I wish to say right here, and that is, every housekeeper should have a fruit press. I would hardly know how to keep house without mine.

If you want something especially nice, put your cherries on with a little water, scald them up good, then turn them into a fine collander and rub through; add three-fourths as much sugar and pulp and boil until thick. Put in glasses or jars and cover with egg paper and you will have a spread fit for a king. If you want to get genuine enjoyment from your black raspberries, put them on with a little water, heat thoroughly, then put through fruit press, add half as much sugar as fruit, cook until thick, and you will have the finest marmalade you ever ate. You can enjoy it because there will be no seeds to bother you. Red raspberries: I just make a regular jam for they are generally too expensive for town folks to handle any other way. Plums treated the same way as the cherries are very nice.

I sometimes make a jam by using half black and half red raspberries, but the black ones are so seedy, I prefer to make marmalade of them.

You want to be sure and have a supply of spiced currants along about fried chicken time, for while spring chicken is pretty good by itself, the currants give it a relish that makes it taste like more chicken.

Peaches are usually my main stay in the fruit line. I take the early half clings and can them whole and I also like these for sweet pickles. Of course the freestones are really used the most in canning. I do not care much for the late clings; it is too unhandy and awkward to eat them. Pears I think are rather insipid canned, but for sweet pickles and for spicing there is nothing finer.

Grapes I treat the same way as the black raspberries. Of course, half-ripe grape jelly is fine.

Crab-apple jelly is the jelly in our family. I make as much of it as of everything else put together, in the jelly line.

Blackberries: I can a few, but I treat them the same as the black raspberries for the largest part.

Sweet apples with just enough quince to flavor make a very fine sauce. For the persons who are fond of fruits, there are a thousand and one ways they can be prepared for table use. If I were to talk to you of all the different ways of putting up the different fruits, I should have to keep you here until dark, and then would only have just commenced.

The St. Louis Line is Open.

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

Annual Convention Travelers' Protective Association of America, Springfield, Ill., June 5-12.

The Chicago Great Western Railway will on June 16 to 20 inclusive sell round-trip tickets at one fare plus \$2 to Springfield, Ill. For further information apply to any Great Western Agent or J. P. Elmer, G. P. A., Chicago, Ill.

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Miscellany

The Dirt Road.

S. M. Smith, Fredonia, Kans., delegate from the Southeast Kansas Good Roads' Association to the National Good Roads' Convention, St. Louis, May 16-21, 1904.

I propose very briefly to touch upon some of the practical points which have come under my observation and been used by myself and others in road-building. In doing so I shall confine myself to hints and suggestions concerning dirt roads, as for a great many years to come the great mass of the American people must use and depend upon the common dirt road.

OLD METHODS.

It will be well for us to consider for a short time the old and impracticable method of building and working roads. In the large majority of the Western States, farmers and others, owing road service, work out their road tax, usually at \$3 a day of eight hours for a man and team, and \$1.50 for a single hand. As a rule, the most worthless team is sent and the poorest hand, and the tools are of the poorest quality. A good share of the day is spent in getting ready to work and a large part of the remaining time is taken up in moving from place to place. The work done is without system and as a rule of little or no permanent value. Often the roads are left in worse condition than they were before the work was done, and this method, or want of method, goes on from year to year with little or no progress toward real improvement in our highways.

NEW METHOD.

In some localities a new method is coming into use, and it is to be hoped that it will come into general use. Road tax is paid in cash. A road commission for each township is appointed or elected. Twenty-five cents an hour, under the direction of the township road commissioner, is allowed for each team and hand accompanying it; and twelve and a half cents an hour is paid day laborers who do not furnish teams. In some places it may be necessary to pay fifteen cents an hour. And good work is and should be demanded.

In most of the soils throughout the western and central portions of the United States, the road grader can be profitably used. Each grader should be handled by eight horses or their equivalent and two hands, at an average cost of \$9 a day. In most soils the grader will save about one-half the expense of grading. But there is no exact method of determining the difference in cost. That would depend somewhat on the surface of the country traversed by the road and by the character of the soil. In an ordinarily level country, with average soil, it would cost about \$85 a mile to properly grade a road.

My observation has been that the better method of grading is to leave a strip twelve feet wide in the middle of the road, unplowed, and to plow a strip ten feet wide on each side, plowing deeper as you approach the outer edges, making about thirty-two feet from ditch to ditch, moving the dirt so as to form an oval highest in the middle. After the road is graded in this way, the grader or roller should be run over the top so as to practically level it about seven feet wide in the middle. This is done to compel the travel to keep in the middle of the road. The sides should be steep enough so as to make it uncomfortable to travel on them. This method preserves the road and prevents cutting the sides of the road into channels and causing the dirt to wash into the ditches on the sides. A road built in this manner will require very little attention and will be easily kept in good condition.

Where convenient, all main traveled roads should have a top dressing of gravel or crushed rock, from eight to twelve feet wide and from six to ten inches thick. Yet very good roads can be obtained without top dressing, if built on the plan here described.

As few culverts should be built as

the lay of the ground admits. The ditches at the sides of the road should be extended as far as practicable, even at considerable expense. It will be understood that roads should be made as near level as the topography of the country over which they run will admit. If the plan I have suggested be adopted by all the townships in the county, and all the counties in the State, the State will have much better roads than any of our Western States have at the present time.

In the township where I live, most of our main traveled roads are in good condition, and in a few years we expect to have every road in the township so that any one, desiring to haul farm products or merchandise of any kind over any of the roads, can with an ordinary team haul from two tons to two and a half at any time of the year.

DRAINAGE.

Roads to be maintained in good condition must be thoroughly drained. There are three cardinal principles in road-building. The first is drainage; the second is quick drainage; and the third is adequate drainage. No dirt road is properly made unless the water drains properly to the ditches at the side, and is at no point allowed to stand on the grade. Then the water must drain off quickly or the dirt soon becomes soft and travel soon cuts through. Then the drainage must be adequate. This particularly refers to the fall of the ditches so no water stands in them, and that the culverts be of proper size and the outlet sufficient.

State Fairs and Live-Stock Shows for 1904.

- Missouri State Fair, Sedalia, August 15-August 19.
- Iowa State Fair, Des Moines, August 22-August 29.
- Minnesota State Fair, Hamline, August 29-September 3.
- Nebraska State Fair, Lincoln, August 29-September 2.
- Ohio State Fair, Columbus, August 29-September 2.
- Wisconsin State Fair, Milwaukee, September 5-September 9.
- Kentucky State Fair, Lexington, September 5-September 10.
- Pennsylvania State Fair, Bethlehem, September 6-September 9.
- New York State Fair, Syracuse, September 5-September 10.
- Indiana State Fair, Indianapolis, September 12-September 16.
- South Dakota State Fair, Yankton, September 12-September 16.
- Central Canada Exhibition, Ottawa, September 16-September 23.
- West Michigan State Fair, Grand Rapids, September 19-September 23.
- Interstate Fair, Trenton, N. J., September 26-September 30.
- Colorado State Fair, Pueblo, September 26-September 30.
- Washington State Fair, North Yakima, September 26-October 1.
- Illinois State Fair, Springfield, September 29-October 7.
- Louisville Horse Show, October 3-October 8.
- Kansas City Horse Show, October 17-October 22.
- American Royal Live Stock Show, Kansas City, October 17-October 22.
- San Antonio, Texas, International Fair, October 22-November 2.
- Chicago Horse Show, October 24-October 29.
- St. Louis World's Fair—Horses, August 22-September 3.
- Cattle, September 12-September 24.
- Sheep and swine, October 3-October 15.
- Poultry, dogs and cats, October 24-November 5.
- National Horse Show, New York, November 14-November 19.
- International Live-Stock Exposition, Chicago, November 28-December 3.

The managers of the various fair associations, who are interested in the speed ring, have arranged a circuit of fairs for this fall which will constitute a continuous series beginning on August 9 and ending on October 7. The list as arranged is as follows:

- Eldorado, August 9 to 12.
- Fredonia, August 22 to 27.
- Smith Center, August 23 to 27.
- Chanute, August 29 to September 3.
- Winfield, August 30 to September 2.
- Seneca, August 31 to September 2.
- Leavenworth, September 5 to 10.
- Burlingame, September 5 to 10.
- Ottawa, September 5 to 10.
- Clay Center, September 6 to 9.
- Mankato, September 6 to 9.
- St. John, September 6 to 9.
- Topeka, September 12 to 17.
- Eureka, September 12 to 17.
- Great Bend, September 13 to 16.
- Burlington, September 13 to 16.
- Marysville, September 13 to 16.
- Hutchinson, September 19 to 24.
- Eldorado, September 20 to 24.
- Council Grove, September 21 to 23.
- Wichita, September 26 to October 1.
- Newton, October 3 to 7.

Cheap Round-Trip Rates for Vacation Trips.

From Kansas City via Chicago Great Western Railway \$15 to St. Paul or Minneapolis, \$19 to Duluth, Superior, Ashland, or Bayfield. Equally low rates to summer resorts in Minnesota and Michigan. Tickets on sale every day to September 30. Good to return until October 31. For further information apply to any Great Western Agent or J. P. Elmer, G. P. A., Chicago, Ill.

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



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DUROC - JERSEY SWINE Prize-winning strains. Bred gilts all sold. A few fall pigs, choice ones, for sale.

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Rockdale Herd of Duroc-Jersey Swine. I have at present 40 head of bred gilts I am pricing at \$20 and \$25 to close them out. Also 60 head of fall pigs I am offering very cheap.

SOLOMON VALLEY HERD Duroc - Jersey Swine. No sows nor gilts for sale, males only. Visitors always welcome.

POLAND-CHINA SWINE. FOR SALE Poland-China Hogs, Holstein - Friesian Cattle; either sex. Best strains represented.

SHADY NOOK HERD Poland-Chinas. Up-to-date breeding. Correspondence solicited, inspection invited.

Kansas Herd of Poland-Chinas I now offer for sale, Proud Kansan, he by U. S. Perfection, by a son of Mischief Maker and a son of Ideal Sunshine.

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RICHLAND Poland-China Herd - Headed by Prince Henry 66955 and Black Chief Perfection 50587; dams, Big Bone Beauty 178492, Richland J. P. Best 178498 and others of the Patches-Perfection-I-Know strains of best Poland-China blood.

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WORTH THE MONEY 3 Poland-China boars of last spring farrow HERD HEADERS.

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BERKSHIRE SWINE. Large English Berkshires Pigs of both sex sired by first prize boar at Topeka fair.

East Reno Berkshire Herd Best Blood in the Land. My 3-year-old herd boar Baron Beauty Jr. 72642 is for sale.

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REGISTERED Tamworth Hogs 15 fall gilts, 5 fall male pigs, and will spare one of my heard boars; he is coming 2 years old.

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