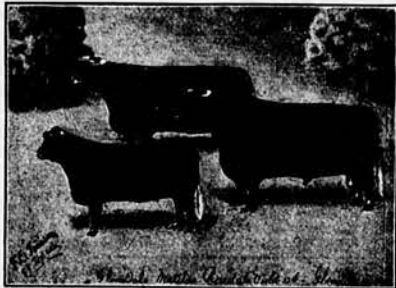


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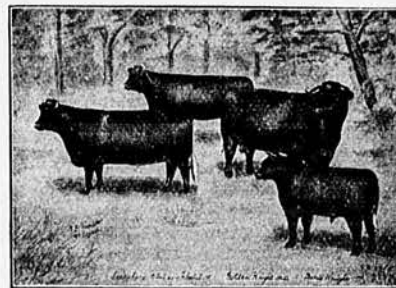
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LORD MAYOR was by the Baron Victor bull, Baron Lavender 2d, out of Imp. Lady of the Meadow, and is one of the greatest breeding bulls of the age. Laird of Linwood was by Gallahad out of 11th Linwood Golden Drop. Lord Mayor heifers bred to Laird of Linwood for sale. Also bred Shetland ponies. Inspection invited. Correspondence solicited. A few young bulls sired by Lord Mayor for sale.

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Agricultural Matters.

INSECT ENEMIES OF GROWING GRAIN.

Of all the insect enemies of growing grain the greatest interest is now centered in three, viz., the Hessian fly, the chinch bug, and the wheat plant-louse. These have been studied with especial care by Mr. C. L. Marlatt, first assistant entomologist of the Department of Agriculture. The results of his original investigations and studies of the work of others on the Principal Insect Enemies of Growing Grain, are given in Farmers' Bulletin No. 132. It will pay any farmer to write the Department of Agriculture, Washington, D. C., for a free copy of this bulletin.

Below is given excerpts as to the three enemies now most in mind:

Preventative and Remedial Measures for Hessian Fly.

It is practically impossible to save a field once severely attacked by this fly, and under such circumstances it is better to plow the wheat under deeply and plant to corn or other spring crop.

In cases of mild infestation, the best procedure is the prompt use of fertilizers, which may enable the wheat to tiller sufficiently to yield a partial crop. Pasturing in fall of early sown fields is also recommended, and may do some good by reducing the numbers of the pests.

Somewhat in line with pasturing of early sown fields is an interesting experiment made in the spring of 1900 by Mr. E. P. McCaslin. Finding that the flies were ovipositing abundantly on wheat which had reached a height of 6 or 8 inches, he conceived the idea of cutting it off closely with a mowing machine as soon as all the eggs of a spring brood had been deposited, keeping close watch to determine the proper moment. The theory was that the severed tops of the wheat with attached eggs would dry up in a day or two, and the larvæ, not being able to move freely except down the green leaf blades, would fail to reach the live stubble. Wheat so cut threw out new stalks and gave every promise of a good yield, but unfortunately for the success of the experiment, the fly was so extraordinarily abundant everywhere in the spring of 1900 that the stubble was reinfested and the experiment came to naught. Nevertheless, under a less extraordinary instance of general fly infestation, some benefit might reasonably be expected from the procedure, and it is perhaps worthy of further trial.

By some such means as the above a crop of wheat may be partly saved, but in the main the measures of really practical value against this insect are, of necessity, chiefly in the direction of preventing future injury. These are all in the line of farm methods of control, and are arranged in the order of importance as follows:

Late planting of winter wheat.—As already indicated in the paragraphs on habits and life history, late planting of winter wheat is undoubtedly the best and most practical means in normal seasons of preventing damage in regions where infestation is to be anticipated, and this is true in spite of the failure of this means of control during the season of 1899-1900. The most that can be advised under this head, however, is to give a general statement covering normal years and climatic conditions. The actual date after which planting may be safely made must necessarily be fixed for each locality separately, and be subject to yearly modification to meet varying seasonal conditions. In a general way, to avoid fly injury, planting should be made in the northern winter wheat districts after the 15th or 20th of September, and in the more southern districts between October 1 and 15. If the right time be selected, neither early enough to be attacked by the fly nor yet so late as to cause danger of winter killing, much of the damage in normal season to winter wheat from this insect may be avoided.

Burning stubble.—The fact has been noted in the life history that the second brood develops in the lower joints of the wheat and is left, for the most part, in the field in the flaxseed state at harvesting, all these individuals may be destroyed by promptly burning the stubble. Burning may be more easily effected if a rather long stubble be left, and especially if it be broken down by rolling. If the burning of the stubble be neglected until the rank growth of weeds has sprung up which usually follow harvest it will be well to run a mower over the fields, cutting off the stubble, weeds, and grass as close to the ground as possible, and

burning over as soon as the weeds and grass dry sufficiently. Careful burning will very largely prevent an abundant fall brood of flies, and may be supplemented by burning all screenings of the wheat if thrashing precedes the fall appearance of the fly.

Plowing under stubble.—In line with burning, and of nearly equal importance, is turning the stubble under by deep plowing, and afterwards rolling the field to compact the earth and prevent any flies which may mature from issuing.

Rotation of crops.—The regular practice of a system of rotation in the growth of crops is of the utmost importance in avoiding damages. Its value may be offset at times by invasion from neighboring fields of wheat on other farms, but usually comparative freedom from attack will result and the benefit will extend to the other crops coming in the system adopted in checking the insect enemies of these at the same time.

In seasons like that of 1899-1900, and possibly also 1900-1901, where the fly is very generally present, rotation of crops may fail very largely in being protective, and it may be even necessary to abandon wheat planting for a year over an entire county or state. Undoubtedly the Hessian fly can be starved out almost completely by the abandonment of the culture for one year of the crops in which it breeds, namely, wheat, rye, and barley, and occasions will probably arise again when this course will be advisable. To gain the full benefit of such a procedure all volunteer wheat, rye, or barley must be destroyed.

Trap or decoy plantings.—One of the earliest preventives recommended and one of considerable value is the early planting of narrow strips of wheat to act as decoys to attract the flies with the object of turning the infested wheat deeply under with the plow in late fall. This procedure will greatly reduce the numbers of the pest and should give greater immunity to late-planted wheat.

Destruction of volunteer wheat.—The supplemental fall brood antedating the principal brood will come to nothing if all volunteer wheat be plowed under or destroyed within a few weeks after its appearance. This is of especial value in the North, where spring wheat is grown, and where the brood developed on the volunteer wheat may be the principal means of carrying the insect through the winter.

Growth of resistant wheats.—The importance of selecting varieties which are less injured by the attacks of the fly will be at once apparent. Such wheats are those having coarse, strong, stems, and varieties which "tiller" freely or develop numerous secondary shoots. Among such wheats are the Underhill, Mediterranean, Red Cap, Red May, Clawson, etc. No wheats are, however, absolutely "fly proof."

Preventatives and Remedies for Chinch Bugs.

For the practical control of the chinch bug many suggestions have been made, some of which have a good deal of utility. These are considered in the order of their importance.

(1) **Burning over waste land.**—The hibernating habit of the chinch bug suggests at once the advisability of burning over and clearing up all waste land where the insect would be apt to congregate for over-wintering. The burning of grass lands, especially the wild grasses which have the stouling habit, should be done early in the fall so as to expose the chinch bugs that may not be killed by the flames as long as possible to the unfavorable action of the cold and freezing of winter. All the rubbish in the fence corners and hedge rows should be raked out and burned and as little material left as possible for protection of the insects. Cultivated meadows may be safely burned over when the ground is frozen without injury to the grass.

(2) **Trap crops.**—The planting of trap crops has been suggested and may occasionally be of some value. Of this nature is the early plantation of patches of millet or Hungarian grass or spring wheat to attract the chinch bugs in the first spring flight. Such land after becoming infested should be turned under with the plow and not planted until late in the season to other crops. The eggs thus buried will hatch in the soil, and, as a rule, the young insects will find plenty of avenues of escape; but if there be no near-by crops, they will ultimately perish, since they are unable to travel far at this stage. In the same way trap crops may be planted between wheat and corn to protect the latter from the migrating bugs from wheat fields after harvest.



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(3) **Rotation.**—If a system of rotation could be adopted which would entirely disassociate small grains from corn, very little damage from the chinch bug would ever be experienced, at least to the latter crop. Following out this idea would mean the planting of a farm to corn one year and to wheat and small grains the next or some similar system of rotation.

(4) **Plowing as a check.**—In checking the midsummer migrating bugs some good may also be done by turning under the first rows of corn or other crop attacked. To have any practical value, however, the plowing must be done very deeply, or many of the bugs will escape.

(5) **Spraying.**—The first rows attacked by the bugs may also be sprayed with a very strong oily insecticide, such as kerosene emulsion—a mixture strong enough even to kill the corn itself and the bugs along with it.

(6) **Protecting furrows.**—The making of protecting furrows, as recommended for the army worm, is also applicable to the chinch bug. The bugs which collect in the furrow may be killed either by dragging a log along or by thoroughly wetting with the kerosene and water mixture.

(7) **Coal-tar barriers.**—A good deal of effort has been made in some places to protect fields by placing about them lines or barriers of coal tar. Where this is done the line of tar must be renewed several times a day. At intervals along it holes may be bored, in which the bugs will accumulate and may be destroyed. All that is necessary is to put a single straight line of tar in front of the migrating bug, and make holes on the side of attack with a post auger at distances of 8 or 10 feet close to the tarred line. Various other forms of barriers will easily suggest themselves, such as putting a line of boards about a field and smearing it with tar or combining the tar with the furrow method.

Promptness and vigilance are the essentials in any of these remedial operations.

(8) **Control by fungous diseases.**—A great deal of work has been done of late years in the use of various fungous diseases as a means of controlling the chinch bug. It was early observed that the chinch bug was frequently exterminated by a disease, and the idea naturally suggested itself that this disease could be collected and disseminated at the proper time and result in quick riddance from this pest. Appropriations for experimentation with this disease have been made by various states, notably Illinois, Kansas, and Wisconsin, and the value of this method of control has been thoroughly tested by trained experts. The up-

shot of all this work has been to show that this agency of control is not of very great value. In other words, as already pointed out, unusual chinch-bug increase and damage are characteristic only of seasons of drought, and, unfortunately for the use of the disease mentioned, they are propagated successfully and are effective only under conditions of considerable dampness or following a wet period. The very conditions, therefore, which make the disease useful are inimical to the chinch bug and, as a rule, exterminate it without the artificial introduction of the disease germs. In fact, it seems to be pretty well established that the disease occurs very generally, doubtless attacking other insects besides the chinch bugs, and whenever the weather conditions are favorable it develops itself and accomplishes the destruction of the chinch bug without the necessity of artificial introductions. It is doubtless true that occasionally when the disease is introduced just at the beginning of a rainy spell it may take hold of the bugs a little more quickly and effect their extermination more promptly than would have been the case had no artificial infections been made. In the main, however, it is scarcely worth while to bother with or rely on the introduction of this disease. If suitable climatic conditions intervene, the disease probably will itself develop and the chinch bugs will disappear. If, on the other hand, droughty conditions prevail, the introduction of the disease will be of no service.

The immature bugs seem to be especially susceptible to the action of this disease, the mature insects being much more rarely affected by it.

Summing up the subject of preventives and remedies, it may be said that the ones of real value are the clearing of farms and adjacent lands of rubbish and deadened grass by burning, the adoption of a rotation of crops which will separate the small grains from the later-ripening crops such as corn and late-sown millet, and the adoption of the steps indicated to stop the migrating midsummer hordes.

The Wheat Plant-Louse.

This plant-louse is not one of the principal insect enemies of the wheat crop, but in some years, fortunately widely separated, it multiplies in enormous numbers and over wide regions, and becomes almost as destructive and occasions almost as much loss as does the Hessian fly or the chinch bug. Such periods of extensive damage were witnessed in 1861 and again in 1899. Local damage is of more frequent occurrence, and the species, in fact, occurs every year more or less, and often arouses fears which, for reasons to be

ANGORA GOATS FOR SALE.

I have for sale five or six double-deck cars of goats, consisting of Recorded, High-class, Medium-class, old-fashioned goats, about one hundred head of choice young bucks, and also two double-deck cars of fine Angora wethers, that are located thirty miles south of Kansas City. I can sell you any class of goats you may want at a reasonable price. Address,

W. T. McINTIRE, Agent,

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250 High Grade Angora Does

All pure white, thin pendulant ears.

Will sell very cheap if taken soon.

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subsequently explained, are not realized.

Origin.—This insect is believed to be of European origin, and is the *Siphonophora avenæ* of Riley and other authors, a common wheat pest of the Old World. There are, however, at least two other forms of plant-lice of similar habits in this country, and one of these is believed to be a native American species closely allied to the European one under consideration. The question of its origin, however, does not have much practical bearing on its present economic status in America, since it now occurs on this continent practically wherever wheat is grown. One of the other plant-lice occurring on wheat, *Nectarophora granaria* Kby., known as the grain plant-louse, is sometimes nearly or quite as bad as the pest as the species under discussion. In fact, almost any plant-louse that normally attacks the various wild or cultivated grasses or even other plants may occasionally occur in wheat. The habits of these other species which may sporadically appear on wheat are substantially identical with the one under discussion, and they need not be separately considered. Even the apple-tree plant-louse, *Aphis mali*, is occasionally found in wheat fields, and this has led to an erroneous belief in some quarters that this insect and the wheat-louse are the same species and that the winter eggs of the former, which often thickly cover apple twigs, develop the spring generation of lice which appears on wheat in April. The absurdity of this point of view is evident from the fact that the apple-tree aphid and the wheat-plant-louse belong to distinct genera.

When it appears.—The wheat plant-louse appears on winter wheat in September in the form of wingless females, which rapidly reproduce themselves, going through several generations. It occurs about the base of the wheat and on the roots, remaining in evidence as late as September 30. During the fall this louse does little damage to wheat growing in good, fertile soil, and after the lice leave, the plants, as a rule, soon recover. On poor soil, however, wheat may be seriously injured at this season. The method of over-wintering has never been discovered, but it seems probable that it hibernates on the wheat in the egg stage. At any rate, the wingless female lice reappear on the wheat early in April and remain in evidence, passing again through many generations, until harvest. Throughout the spring and early summer it works on the stems and leaves above ground. Later it moves to the wheat heads and very frequently these are simply filled with clustered masses of lice, which now assume a brownish-orange color.

Natural enemies.—Fortunately this species has many natural enemies, including various insect-feeding beetles and flies and also true internal parasites (minute four-winged flies). These predaceous enemies and parasites in connection with other natural agencies, particularly unfavorable weather conditions, are ordinarily sufficient to prevent undue multiplication.

Cause of outbreaks.—The reasons for the periods of excessive abundance or occasional outbreaks of this insect are not always easy to point out, but as a rule such outbreaks are due to the occurrence of unusually favorable climatic conditions. A rainy and fairly cool spring and early summer is favorable to the plant-louse, because, while not checking its own multiplication to any degree, and, in fact, favoring it, the conditions described prevent its predaceous and parasitic enemies from operating to any extent. As a rule, therefore, the drier and warmer weather commonly preceding harvest enables these natural enemies to gain the upper hand and quickly exterminate the lice, and this is commonly accomplished soon enough to prevent material damage to the crop.

No Remedy.

No remedy is possible in case of attack by this insect, since direct application of insecticides to growing grain is out of the question, and there are no mechanical means of destroying the lice. One can only await the providence of the weather conditions and the action of natural enemies. As already pointed out, in the great majority of seasons, and often when the lice appear in the spring in numbers, unfavorable weather and the natural enemies effectually prevent appreciable damage.

Poisoning Grasshoppers.

A writer in the Live Stock Farmer, of Dodge City, Kans., relates the following experience:

In the summer of 1896, the grasshoppers were very numerous in our section and it became necessary to do something to check them. Some of my neighbors adopted the coal oil Hopper doser, and destroyed large numbers of them, but the expense was so great that I did not think it paid. So the question came up what other method could be adopted that would destroy them. As is well known, insects are easily poisoned and as grasshoppers are insects, I concluded to try it. So I procured parisgreen and a spray pump, fixed up a coal oil barrel by fastening the pump in it and made a cover to avoid splashing the mixture out, and filled the barrel with water. I used one pound of parisgreen to fifty gallons of water, this is rather strong, but calculated that the poison was perhaps adulterated, so used more than was necessary if it had been pure.

Then with a man to work the pump and driver, we drove around the field, twenty acres, twice, around the edges only. The hoppers were very numerous, but had not yet penetrated to the middle of the field to any extent, so we didn't think it necessary to spray the whole field. The hoppers at this time were about half grown, and had not got to the flying stage yet. Being very busy I didn't go to examine the field until the third day, when I was surprised and delighted to find nearly an entire absence of grasshoppers, and what was puzzling to me, but few dead ones were found. They had left the field and never came back, having evidently died somewhere else.

I have found this characteristic of parisgreen, that it first makes the victim sick, with a tendency to movement, it is so with mice, potato bugs and I also noticed it with the army worm which I dosed with the poison last spring, when they invaded my potato patch, checking them immediately.

Now in regard to the effect of the poison on the alfalfa. It would be dangerous to pasture the alfalfa while the poison was on, but the first rain will wash it off. In cured hay I estimated that an animal would have to eat about 1,000 pounds of hay at one time to get enough poison to kill it, provided none had been washed off.

This method is certainly worthy of more extended trial, it is inexpensive and quickly applied. It is essential to have a good spray pump, one that will throw a fine mist-like spray; a good one costs about five dollars.

Farmer Drives an Automobile.

"The Ranch" published at Seattle, Wash., has the following: Milton, Oregon, probably has the only farmer in the Northwestern states who rides to town in an automobile. Joseph West recently purchased one of these horseless carriages and is now making daily trips to town from his farm, while his horses stay in the barn and munch hay. But it is probable the horses will still be useful in occasionally pulling the automobile out of mud holes. Mr. West is a prosperous farmer, who owns a large wheat ranch on the Walla Walla river, a few miles above Milton.

"Neglected" Farms in New England.

The Rhode Island State Board of Agriculture has issued a catalogue of "Rhode Island Farms for Sale," to which the following is the introductory:

Several years ago the State of Massachusetts, alarmed at the depopulation of farming communities—at the increase of abandoned farms so-called—issued a descriptive catalogue of farms neglected or not tilled. The result exceeded expectations; farms untilled heretofore began to bud and bloom, and, as formerly, the beneficent earth, under the nurture of heaven and the industry of man, brought forth of its abundance.

Connecticut and other States in some form followed the example of Massachusetts, and, judging by successive editions of descriptive catalogues or similar publications, the effort to reclaim lost farms and add them to the productive area has been effectual.

While Rhode Island is not distinctively an agricultural State, yet many farms and farmers, some of them as thrifty as any in the land, are found within its territory, and a large number of inhabitants derive all support directly from the soil; and, hence, agriculture in Rhode Island, though comparatively limited in extent, presents as many problems, naturally similar, as that of other States.

At all events, neglected or untilled farms are found in every county of the State; and, as continual inquiry is made this catalogue is sent forth with the hope that the farms now non-productive and gradually yielding to the encroaching forest may again contribute to the welfare of the commonwealth.

Some of these farms, left to decay and weeds, were once the pretentious homes of happy and contented households. They were not deserted because they were non-productive; death in many cases was the sole cause. After the death of parents, the children, already settled and otherwise employed elsewhere, the old home became the abode of strangers, or, worse, left to decay. And most of these farms, if not every one, will yield a better living than thousands in cities are compelled to accept; and a living, bare and scant as it may be, on a farm, is better than a similarly contracted living in the city.

At a meeting held on November 11, 1899, the State Board of Agriculture voted: That the secretary be and is hereby directed to prepare a list or catalogue of abandoned or neglected farms for general distribution.

The Commissioner of Industrial Statistics, in making the State census of 1895, collected data showing the location, average assessed value, and ownership of untilled farms. These details, transferred to the Board of Agriculture, were made the basis of the more extended canvass of which this catalogue is the result.

In some parts of the State, since the census of 1895, the number of neglected farms has decreased, owing to purchase of land, contiguous farms, for pasture or game preserves; while in other places the number of farms abandoned, as far as occupation and tillage are concerned, has increased.

Mr. John H. Davis, formerly chief clerk of the Bureau of Industrial Statistics, and also chief clerk of the State census of 1895, was engaged to make the canvass. He has visited every farm listed in this catalogue, and made report from personal observation and inspection.

The catalogue will be sent post paid to any address, and the Board of Agriculture, through its county commissioners and other officials, will aid as far as possible all persons who wish to visit any farm with the intention of hiring or buying.

Using Hay Caps.

During the rainy harvests the use of hay caps have paid their cost in one season. That they have not come into use on more farms is because of cost and lack of knowledge of their usefulness. Some farmers refuse to invest in them because of the cost, claiming they will not pay. Others use them because it makes for them a saving in putting up the hay. One farmer who has 100 hay caps that cost him \$40, claims they saved him \$20 the first season. He had 130 cocks standing out in a six days' storm. The ones covered produced passable hay, while the uncovered was worth but little. These caps were made of five-quarter cotton cloth, cut square, with little loops at the corners through which was run a slim wooden pin into the cock. A farmer who has used them for seven years says his hay is worth one or two dollars per ton more than his neighbor's and cites the health of his animals as proof. He mows his grass without consulting the weather predictions. All the hay is put in cocks in the evening and capped to keep off the dew. His covers are made out of stout unbleached cotton sheeting, 45 inches wide, cut into squares, and a loop or buttonhole worked into each corner through which a wooden pin may be stuck into the hay cock. They are something like a cotton umbrella. The first dash of rain would spatter through, but this would last only a moment, and the covering in a short time would be "turning the water." The cost of these covers at this time might be ascertained by consulting the local merchant.—Farmers' Guide.

Telephones in the Country.

The movement from the rural districts to the cities, which became so noticeable a few years ago, was generally attributed to the increased comforts of life in cities as distinguished from life in the country.

If certain inadequacies of condition between town and country existence can be obliterated many persons, it is thought, now living in the city may be induced to go back to the farm.

No two agencies are doing more to "urbanize" the rural districts than the telephone and the electric car, and they are doing it in the most desirable sense.

A long stride has been taken in the direction of obliterating the inconveniences of country life when communication between widely separated members of the human family is made easy

in all sorts of weather. In large areas in the central, middle western and eastern states the telephone is now serving the farmer in his daily business.

A Boston paper describes how, in one county in Massachusetts, farmers four years ago started a company with a capital of \$12,000, which now has 150 miles of wire, 2,000 patrons, and rates as low as \$6 a year for original subscribers.

The farmers of Montgomery county, Indiana, chipped in and raised enough money to buy a switchboard. They then bought their own telephones and helped to erect the wires required in their respective neighborhoods. By each one paying an initiation fee of \$3 and a monthly fee of 25 cents, they manage to keep the lines in repair. The tolls from non-subscribers pay the salary of the person who operates the switchboard.

By this arrangement, 40 towns are served, with 6,000 telephones, at a small cost to the farmers composing the company.

Not only is business for the country people facilitated by this method, but sociability is promoted, the doctor is made accessible, intercommunication between young people in all sorts of weather is made easy, and life moves along smoothly, conveniently and pleasantly.—Kansas City Times.

When to Cut Alfalfa.

A Kansas City paper reports the following remarks by Mr. H. K. Eberly of Wichita:

"The dry spring made many of the farmers and feeders fear that the alfalfa cutting would result in but a poor yield, but the returns are above the average, both as to quality and to quantity. I cut over 40 tons of it on a 20 acre patch, near Valley Center, a short time ago. The cutting of alfalfa illustrates the value of having advice from the agricultural station. It proves that farmers do not get as much knowledge by experience as a scientific study of agriculture will give. We had been accustomed to cut our alfalfa as late as possible, or rather wait until it was in full blossom, thinking that in that condition the plant would have the highest per cent of nutriment in it for stock. Secretary Coburn of Kansas, in one of his bulletins through the press, said that the alfalfa should be cut when about 1-10 in blossom as at that stage it furnishes the highest per cent of protein, while the full blossom was less nutritious. It did not take all of the farmers in my section long to get on to the secretary's advice, and we have found that aside from the advantage of getting our crop of alfalfa a litter earlier, what he said about the nourishment was true. I conducted a little experiment on my own account as to the value of the new cut alfalfa as a feed, and found that by using this spring's crop with less corn, I made a better gain in my cattle flesh than when I used the old hay and a larger quantity of corn. If farmers and stockmen who raise their own feed, would take the advice of the board of agriculture secretary in his bulletins, it is my opinion that they could get a lot more out of their land than they now do."

The reporter got the experiment station and Secretary Coburn mixed up a little in the above. The bulletin alluded to was issued by the station, while Secretary Coburn has written an admirable book on alfalfa. But Mr. Coburn is a regent of the Agricultural College and Experiment Station, and there is no conflict of authority in the publications which have emanated from Mr. Coburn's office and from the station, and there will be no jealousies aroused. The correctness of the main point as to cutting alfalfa when it commences to bloom is becoming better understood with each recurring harvest. Mr. Eberly's indorsement of the advantages of making use of the knowledge acquired by the station experiments should lead to a wider reading of the station bulletins.

Important News!

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until you hear from us. We want name and P. O. address of every Farmer and Teamster in the state. Address THE TIFFIN WAGON CO., Tiffin, O., or 1203 Union Ave., Kansas City, Mo.

The Stock Interest.

THOROUGHBRED STOCK SALES.

Dates claimed only for sales which are advertised or are to be advertised in this paper.
October 7, 1901—Newton Bros., Duroc-Jersey swine, Whiting, Kans.
October 8-10, 1901—American Berkshire Association Sale at Kansas City.

Baby Beef at Manhattan.

EDITOR KANSAS FARMER:—In the latter part of October 1900, the Kansas State Agricultural College, Manhattan, put into the feed lots 130 head of calves that had just been weaned.

Sixty head of heifer calves were purchased in the Kansas City Stock Yards. They weighed an average of 418 pounds each, cost \$4.25 per 100 pounds at the yards, and cost an average of \$13.25 per head delivered in the college feed lots.

The calves were vaccinated to prevent blackleg. Without this safeguard, we should not have dared to undertake the experiment.

All lots were fed twice daily all they would eat. Water and salt were always before them, and they were sheltered in common board sheds open to the south.

The calves were fed seven months with the following results:

RESULTS OF SEVEN MONTHS' FEEDING.

Table with columns: FEED, Average gain per head lbs., Grain per 100 lbs., Hay per 100 lbs., Cost for each 100 lbs. gain.

The corn cost 40 cents per bushel; Kaffir-corn 38 cents; soy-beans \$1 per hundred pounds; alfalfa hay \$8 per ton; and prairie hay \$4.50 per ton.

At the close of the experiment, May 27, the entire lot averaged 800 pounds per head in the college feed lots. The shrinkage in shipping was three per cent.

THE FEEDS.

Alfalfa hay and corn gave the greatest gains followed by alfalfa hay and Kaffir-corn. At all times through the seven months' feeding the calves fed alfalfa hay appeared to be in the best condition and they finished the best.

With the first four lots as given in the table, prairie hay shows a lower cost for 100 pounds of gain than alfalfa hay, but the prairie hay was purchased at \$4.50 per ton, an average price, while alfalfa hay cost \$8 per ton, double the usual price at Manhattan.

The soy-beans balanced up the prairie hay and corn and Kaffir-corn helping to secure good gains with these feeds, though not as good as were made by alfalfa.

Kaffir-corn did not show as good gains as corn, but the calves did well on it and it will be a profitable grain to grow on upland and in the dry regions of the west for feeding baby beef.

FEED REQUIRED.

The remarkable feature of this experiment is the small amount of feed required to make 100 pounds of gain. Last year the Kansas State Agricultural

College reported making 100 pounds gain on thousand-pound steers with 718 and 780 pounds of corn. Many old feeders wrote us that they could not make such gains with so little feed.

With the exception of one lot, these calves averaged 100 pounds gain for from 438 to 592 pounds of grain and 438 to 613 pounds of hay. The calves raised on whole milk by hand made the almost incredible gain of 100 pounds for each 223 pounds of corn and 410 pounds of alfalfa hay, less than one-fourth the usual amount of grain required by a fattening steer.

The whole experiment shows strongly how much less feed is used to produce a given amount of beef on calves than on older animals.

HIGH PRICES FOR HEIFERS.

These calves were put in the feed lots at weaning time and were probably a little over a year old when sold in Kansas City, May 29. The 32 steers sold at \$5.40 and brought an average of \$45.29 each, 74 of the best heifers sold at \$5.35 and brought \$40.60 each, and the 18 poorest heifers sold at \$5.15 and brought \$38.20 each.

For equal weights and quality the packers will pay as much for fat year-old heifer calves as they will for steers of the same age, and this is the only time in the heifer's life when she will bring as much pound for pound as a steer.

The prices secured for these year-old heifer calves were fully as great as would have been secured if they had been kept under usual conditions and marketed two years later.

HOME GROWN STOCK.

In every case, home grown stock made the best gains. In the first four lots there were in each lot fifteen range calves and five calves that had run with their dams in small pastures under ordinary farm conditions.

In three lots that were fed alfalfa hay and corn, range calves gained an average of 396 pounds each; calves that ran with their dams in small pastures 435 pounds each; and calves raised on skim-milk 440 pounds each.

The tamer calves are when they go into the feed lot, the better the gains and the cheaper every pound of gain is put on. The farmer who raises his own stock and pets them has every advantage in producing beef cheaply over the ranchman and over the feeder who buys at the stock yards and gets calves that have had all the loss and excitement of shipping.

A glance at the table will show that the calves raised until weaning on skim-milk made greater gains, and gains at less cost, than any of the lots that had run with their dams until weaning. The difference in favor of the skim-milk calves is strongly marked.

These skim-milk calves were not the stunted things that a feeder ordinarily thinks of when he hears of skim-milk calves, but were thrifty, rapid growing calves when they went into the feed lots and had made a gain of 1 1/2 to 2 pounds each per day while being fed creamery skim-milk and corn and Kaffir-corn.

We attribute their good gains to the fact that at weaning time they were already on grain feed, they did not worry at the loss of their dams as did the other calves and they were thoroughly tamed.

When a farmer can sell his skim-milk calves at a year old for \$40 to \$45 as we sold these, it adds largely to the profits of dairying.

WHAT DOES THE PRODUCTION OF BABY BEEF MEAN?

Nothing to the ranchman who has cheap pasture in abundance. A complete change in methods of crop production and of feeding to the farmer with high priced, limited pastures.

The farmer who raises and fattens mature steers has to furnish pasture for his cows, the yearlings, the 2-year-old, and often for the 3-year-old steers. He waits three years from the time a calf is born until he realizes on the investment and only one-fourth of his herd are cows producing calves.

Dip & Wash (for Live Stock)



Dipping, washing or spraying live stock is essential for the cure of Scab, Mange, Itch, etc., and for killing and removing ticks, fleas, lice, etc. Lincoln Dip is composed of nicotine, sulphur and valuable oils, but contains neither lime nor arsenic.

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mal has sold for as high prices per hundred as has the average steer.

In producing "baby beef" the farmer can market his heifer calves at the same price as his steers and will usually get more for the 12-months-old heifer than he would for the same animal if kept until maturity.

Experiments made at the Kansas Experiment Station show that the scrub cows may be bought at ordinary prices and, if selected with dairy forms, will produce from \$50 to \$75 worth of milk per year per cow at creamery prices.

The farmer who produces "baby beef" should raise alfalfa and feed alfalfa hay to both cow and calf every day in the year. Cow-pea, soy-bean, field pea and red clover hays may be used to give variety and this means that the farmer will grow leguminous crops largely and these will continually improve his fields.

The calves used in this experiment were "common" bred ones and they made good gains. The farmer whose business is producing "baby beef" should use the best type of bull that he can secure—short legged, thick meated, blocky and quick maturing.

The writer would like to hear from all the readers of the Kansas farmer who are producing "baby beef" in regard to their methods and results.

H. M. COTTRELL.

Kansas Experiment Station.

Best Summer Pasture for Hogs.

BY H. Z. CHURCHILL, ELIZABETHTOWN, KY., IN SWINE ADVOCATE.

To ascertain and discuss the best summer pasture for hogs is a subject upon which very few persons in any locality agree; and in writing anything about this subject one must take up and discuss it entirely from his own point of view and experience.

By the meaning of the summer pasture, I certainly would not confine it to just the three summer months, June, July and August, but would add part of the spring and fall months, thereby covering a period so as to include the time of farrowing in the spring until the hog is old enough to be placed in the fattening pen in the fall to be prepared for the market, making our pastures and show hogs, which are only sold for breeding purposes, but for the hog that is raised by every successful farmer for the market. The first thing to be considered in the arrangement of a good pasture is the water supply, for without good and wholesome water no pasture or feeding of any kind will be a success; no animal of any kind, however plentiful and good its feed may be, will thrive without water; it may be and is true that grasses contain a larger quantity of water than any other kind of feed, yet it does not take the place of water, nor should the raiser of hogs allow himself to think it does.

To start your hogs off in a thriving condition in the spring, when it is possible so to do, arrange a small lot and sow it in rye. Then by the last of March or the first of April, on all pleasant days, turn your hogs into the lot of green rye. The way both young and old relish it is wonderful indeed; nothing puts their system in so good a condition to stand the long summer months as this rye. Myself and partner were

so fortunate this spring and part of the winter months as to have the wheat so high that it was an advantage to both wheat and hogs to be turned on a fifty-acre field. To come right to the beginning of the summer pasture, nothing in my experience can compare to the clover field. It is certainly the "king of all pastures," and without it we would certainly be in a dilemma as to what to do and where to go at that season of the year for a substitute.

ZENOLEUM Kills Lice, Ticks, Mites, Fleas, Etc. Internally it drives out worms. Cures all cuts, wounds, sores, etc. Non-poisonous. Endorsed by leading veterinarians. "Veterinary Standard" from Zenger Disinfectant Co., 61 Bates St., Detroit, Mich.

PROTECTED PIGS PAY The verdict of thousands of stockmen who use VESEY'S STAR ANTI-CHOLERA. It not only protects—it cures cholera hogs. It makes them grow and fatten; it causes early maturity. SOLD UNDER AN ABSOLUTE GUARANTY. Pay no money until satisfied with results. Call on or address ANTI-CHOLERA CO., 263 F Exchange Bldg., Kansas City Stock Yards.

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WORK THE HORSE IF NECESSARY. BALSOLINE NATURE'S WONDERFUL HEALING SALVE. CURES SORE SHOULDERS, COLLAR GALLS, SCRATCHES, CRACKED HEELS, STIFFS, CHAFES, ROPE BURNS, WIRE CUTS, SORE TEATS, OLD STANDING SORES AND ALL FLESH WOUNDS ON MAN OR BEAST 25 and 50 Cents PREVENTS FLIES, MARGOTS, SCREW WORMS AND POUND FLESH. - ALL DEALERS - SEND 4c. FOR TRIAL SIZE TO B. H. DeHUY, Pa. C., STATION A, DENVER, COLORADO. ENDORSED BY HORSEMEN EVERYWHERE

Riverside Stock Farm. CHAPMAN, KAS., Feb. 13, 1900. DEAR SIR:—I have given your Balsoline a thorough trial in our stables for the last three years, and find it the most successful cure for horses and cattle in the shape of a salve I have ever tried. It is especially adapted to healing scalded shoulders of horses. I have also used it for sore teated cows, and find it splendid. I can highly recommend your Balsoline to all stock men. We use so much that I buy it in large quantities and think there is nothing like it for healing sores on stock. O. L. THIESLER.

selves stand ninth and the hay twelfth in feeding value of all mill products, grain, green fodder and hay, which is very high, considering fifty American feeding materials are treated. Hogs love this pasture, and with the eating of the peas and the green pea vines they come to the fall months sleek and almost fat enough for the market.

In making a pasture of cow-peas do not try and get all of one kind or variety. Get for the first a variety that will make a large quantity of vines and follow up with the variety that produces a large quantity of peas, so when cold weather comes the hogs will be prepared to take readily to grain that will then be given them.

The cow-pea, like clover, improves the land instead of taking from it; in other words, it both fattens the hogs and fattens the land. So it follows, in summing up, that in the judgment of the writer, for the best results to the hog and the constant improvement of the land, the best summer pasture for hogs would be to start them off early on a rye or wheat field; as soon as clover is well enough advanced to turn the hogs on and keep them there until the latter part of the summer, and then finish them for the summer on a good pasture of cow-peas. By this method you will find yourself with a herd of fat, healthy porkers and raised at a small expense. Not losing sight of the water supply, which should be plentiful and healthy, always remember that pastures for your pigs should contain grasses that are tender and juicy, if you wish them to thrive. Pigs do not have all of their temporary set of teeth until they are three months old, and, of course, can not bite or masticate anything old or tough; and when they do cut their temporary set they only contain about one-half as many teeth as they have when they have a full permanent set. One of the greatest causes of the death of so many pigs is because they are placed on food they can not masticate, and thereby die of many disorders.

In discussing the subject of pastures, I have lost sight of such pastures as rape, alfalfa and blue-grass, for the simple reason that the writer knows nothing of the first two, as they are not grown in this section, and the latter grows on land that is too expensive in this state to allow hogs to run on, and probably root up, so as to destroy these beautiful pastures that are the mainstay for the fine horses and cattle. However, when it is possible, the blue-grass pasture is one of the very best to go side and side with the clover, and the two mixed help wonderfully to make the ideal summer pasture.

It is sometimes, and I say generally, that the pasturing of hogs is supplemented with feeding of grain. In fact, it makes a quick growth and fattening for the market and is commonly carried on by most feeders who ship young and quickly fattened stock. But I must urge that it is best not to make the feeding of any kind of animal too expensive, especially the hog. While we can buy a great variety of mill feeds that are very fattening, the question is, does it pay to buy these to put on this additional weight? I should think not; better not to feed at all than to make it cost more than can be realized. Just feed what you raise on your farm, which consists of corn and oats principally, and if you have any overabundance of either you might sell some of it and invest that money in shipstuffs or shorts. I have found for a summer feed, with pasture, that a small feed twice a day consisting of two parts ground corn, one part shorts and one part ground oats makes an ideal hog food. This mixed with water the consistency of a thick slop and given about six quarts twice a day to each grown hog, with about half the quantity to shoats, is all they require in summer while running on pasture.

Raising a Colt on Cow's Milk.

Every year more or less trouble occurs on every breeding farm. A fine mare will die at foaling time or sickness will occur, and it becomes necessary to raise the foal by some other than the natural way. A word of advice at this time may be the means of saving some fellow a foal. Most men without having had previous experience either overdo or underdo in the feeding of the foal, and the result is either a dead colt in a few days or one that grows up a weakling that scarcely pays the cost of raising. To say that a colt can be raised on cow's milk as easily as a calf would be putting it rather strong; yet there is no difficulty in so growing up a colt when conditions are made right in the beginning, without which all goes wrong. The first requisite is a fresh cow. One long in lactation won't fill the bill in colt raising. A farrow cow can grow a calf but won't answer

to raise a colt upon. Her milk is by far too rich in solids. Right here is where many an inexperienced man falls. He selects a cow because she gives what he calls rich milk. By that he means milk rich in butter fat. This is the very cow he should discard. He needs a cow that yields quantity but not quality, as far as milk solids are concerned. The poorer the better, our object being to secure cow's milk as near like mare's milk as possible. Mare's milk, bear in mind, averages only 1.21 per cent of butter fat, nearly 2 per cent of casein and albumen and nearly 6 per cent of sugar, while it is a quite inferior cow that will not produce milk containing 3 per cent fat. And right here is another difference: Cow's milk always contains a less per cent of casein than fat, while it will be noticed that mare's milk contains more casein than fat. Also notice that average cow's milk contains 5 pounds of sugar in a hundred pounds of milk, while mare's contain 6 pounds. When we thus consider what milk contains we see how very unwise it is to use a Jersey or a Guernsey cow's milk to grow a colt upon, yet many a man who has a colt to raise will seek a Jersey on account of her milk being so largely butter fat. A colt can't grow upon it, and does well to live.

I said in the beginning select a cow that yields a large quantity. I say this because it will take a large quantity to furnish nutrition. There are few mares, indeed, but what will give a larger quantity of milk than an average cow. The little colt when running with its mother will nurse for the first week of its life, when not sleeping, as often as every hour, and no young animal will suffer more from hunger than a young colt. A little too long a period between nursing has caused the death of many a foal when the mare was being used and kept away from it, and many another one has grown up a dyspeptic horse in consequence of the man thinking the colt when from one to two weeks old could stay in the barn from morning until noon while the mother was working in the field.

But now we have our cow selected to raise the foal upon. For the first week the colt should be fed from a pint to a quart (owing to size of colt) every two hours fresh and warm from the cow, and safety demands that about a gill of warm water and a tablespoonful of molasses be added to the milk. Watch closely the excrement, and if the evacuations are hard add a spoonful of flaxseed jelly. Should there be a tendency to scouring use lime water to dilute the milk with. The vessel the colt is fed from should always be either tin or galvanized iron. Never try to use a wooden pail or trough. It is utterly impossible to keep them free from germs or ptomaines, which are apt to produce bowel disease. I might add right here, the feeding of calves from wooden pails and troughs produces more scours than any other one cause.

When the colt is about two weeks old it will begin to call for more solid food. Allow it a little fine clover hay and a spoonful of oat chop. Never put this in the milk, but feed it dry, and a pinch of salt will usually be relished. But remember while a pinch is relished a spoonful may produce gastric irritation and death.

A mistake is made by many when they think they can milk the cow morning and night, set the milk in pans and when needed warm it up. True, this has been successfully done, but there is always danger in doing it. Contaminating germs may render it injurious to the colt and in the heating a little carelessness on the part of the one in charge and it is overheated. By far better have the cow near at hand and milk her as needed. Yes, it will take a pretty good milker to furnish all the milk a growing colt should have, but there is money in raising a good colt and not a bit of money in a scrub. By following these directions closely a colt can quite well be raised on cow's milk.

—C. D. Smead, V. S., in National Stockman and Farmer.

Kansas City Market for May.

The top price of native steers for May, says the Drovers' Telegram, was \$5.85 on Wednesday of last week. The next highest was \$5.80 on Tuesday of last week. On five other days the top was as high as \$5.70 or \$5.75. The month's extreme high point was the highest May price since 1891, when \$6 was paid. Between May of 1891 and May of 1884, the top was \$5.50, so that with one exception the top price this month was the highest for May since 1884.

The top price for steers in the quarantine division this month was \$5.50, although the cattle that brought this price were on the native order. This is

the highest May price in the quarantine division of which we have any record.

A single load of 989-pound steers sold as feeders on Tuesday of this week at \$5.05. That was the highest point of the month. There was only one other day to reach \$5. In May of last year the top was \$5.25. Top stockers this month sold for \$5.25 against \$5.65 in May of 1900.

On May 31st was the highest point of the month on hog prices, the top reaching \$5.97½. It has been over a month since hogs sold as high as \$6, the last day being April 25. There was extremely little fluctuation in prices this month. At the opening, the bulk of sales was at \$5.65@5.75. The extreme low point of the month was \$5.60@5.70 and the extreme high point was to-day. This shows a total fluctuation during the month of only 20c. The net advance for the month is about 10c. In May of last year there was a decline for the month of 40¢@50¢. The opening was at \$5.20@5.35, which was the high point, and the close at \$4.80@4.87½, which was the low point. May of this year recorded the largest receipts of hogs ever known at Western markets in the fifth month. To-day's top price is the highest for May since 1893, when \$7.60 was paid. From 1893 to 1883 the top was \$5.90.

April cattle receipts at Kansas City were the largest ever had in that month, but May receipts are the smallest for the fifth month of any year since 1896. The shortage from May of 1898, however, is almost too small to be seen with the naked eye.

Hog receipts at Kansas City this month for the first time in the history of this market, reached and exceeded 400,000 head. The gain over May of last year is almost 100,000.

Receipts of stock at Kansas City in May were as follows:

	Cattle.	Hogs.	Sheep.
May of 1901	110,490	419,483	103,242
May of 1900	140,522	319,682	97,703
Gain	.....	99,801	5,539
Loss	30,332	.....	.....

Receipts of horses and mules for May were 7,237 head, which constitute the largest May supply ever had and 2,128 in excess of May last year. The total receipts for five months of this year were 45,671, exceeding all previous similar periods by a large majority. In the first five months last year 33,297 were received, or 7,374 below the present period.

Receipts of stock at Kansas City in five months of two years:

	1901.	1900.	Gain.	Loss.
Cattle	642,977	660,169	.....	17,192
Calves	16,756	17,219	.....	463
Hogs	1,627,387	1,365,546	261,841	.....
Sheep	424,393	378,377	46,016	.....
Horses & mules	45,671	38,329	7,374	.....
Total	2,757,184	2,459,608	297,576	.....

During May of this year Kansas City received 10,689 car-loads of live stock, or 40 below the same month last year. This shortage is rather remarkable considering the fact that hog receipts this month were nearly 100,000 above last year. Horses and sheep also increased over last May, but cattle fell off 30,000.

A Shawnee County Forest-Tree Grove.

EDITOR KANSAS FARMER:—The writer within the past week visited a forest tree grove in the southeastern part of Shawnee County, belonging to Mr. Wm. Lux, which is a practical demonstration of wisdom and fore-thought. This grove, or rather, these groves, is planted along a small stream; the bends of the stream are so filled in as to give straight lines for farm cultivation. One bend of the stream is filled in with Black Walnut that is making a beautiful grove. But the larger portion is planted with catalpa and Russian mulberries, in alternate rows about 5 feet apart. The soil, rich bottom land, is better adapted to the growth of the catalpa than the mulberry; consequently the former has made a rapid and beautiful growth (many of the trees being 6 to 8 inches in diameter 4 feet from the ground, and 30 to 40 feet high), while the latter made such a weakly, inferior growth that they are now dying out. These groves were set out about 13 years ago. Mr. Lux raising the trees from seed, consequently this valuable grove cost him comparatively little. The land occupied had scarcely any value for grain raising, as much of it overflows in time of high water, in many places the overflow having been so strong as to leave the top roots entirely bare. But, strange to say, it was where the overflow had been the strongest that we found the

TO THOSE DEFORMED

Crooked Feet, Spinal Diseases and Deformities, Hip Disease, Infantile Paralysis and Deformed Limbs and Joints are generally considered incurable; not because they are, but because the methods generally employed fail to accomplish a satisfactory result. Parents of afflicted children and patients themselves usually make several ineffectual efforts to obtain a cure, and finally become discouraged and more or less hopeless. The success which has attended our efforts in the treatment of crippled, deformed and paralyzed children and young adults during the thirty years we have been engaged in this special work, justifies our opinion that most every case of deformity and paralysis can be cured if treated in time and by our methods. We are willing to guarantee a perfect and permanent cure in every case of crooked or club feet of whatever variety, so long as the patient is of reasonable age; and we will accomplish the cure without severe surgical operations, plaster paris or other painful methods. We cure hip disease in almost any stage without confining the patient to his bed or room. Shortening deformity of the limbs or loss of motion should never occur and will not occur if we treat the case in time; and in the majority of cases they can be corrected after they have occurred. We know from actual experience that plaster paris, leather and felt jackets are obsolete and injurious in the treatment of spinal curvature or Pott's Disease, and have demonstrated the superiority of our methods in hundreds of cases. Children afflicted with infantile paralysis will not outgrow the trouble, and cannot be cured by any of the methods ordinarily employed. We have special means and facilities for the cure of these cases, and will be glad to furnish information. Write us regarding any case of deformity or paralysis. Our opinion is valuable to every afflicted child or person who desires relief. Our pamphlet, references and advice on any case are free of charge, and we are willing and anxious to be judged on our merits.

THE L. C. McLAIN,
MEDICAL & SURGICAL INSTITUTE,
3100 Pine Street, ST. LOUIS, Mo.

largest catalpas, but the mulberries were almost extinct.

From this grove we can draw a practical lesson on catalpa growing, especially on rich bottom land. Catalpas after they are 6 or 8 years old should not stand closer together than 8 to 10 feet. As a catalpa stump will send up shoots for a number of years after the tree is cut, and the tree being too small to have much value at that age, most parties have a hesitancy about thinning out their groves before every tree is large enough to have a commercial value, and the consequences are that all the trees are injured by remaining in too close proximity to each other. Therefore, in planting on rich moist land, intermix Russian mulberries with catalpas; the former being a sufficiently good nurse-tree to stand the catalpa with a straight, upright stem, but in a few years it dies, leaving the catalpas a good distance apart for future growth.

This is a good lesson in forest-tree growing, but not an infallible rule to follow in planting a grove in any or all kinds of soil, for we have seen just the opposite result in this county; in which case the catalpas and mulberries were planted in close alternate rows on dry upland of rather poor quality. Therefore, it is well to take into consideration the quality of the soil, and the peculiarities of the trees. The catalpa makes a vigorous, rapid growth in rich, moist land, and when planted alternately soon over reaches the mulberry; but, on the other hand, if planted on dry upland, the catalpa at first makes a more inferior growth than the mulberry, while the latter's spreading branches help to retard the growth of the former. The result is that the catalpa, not being in soil adapted to its rapid growth, soon gives up the contest, and we have a mulberry thicket, and no forest trees.

Mr. Lux said that when he planted his trees he did not know which would prove the most valuable, but he did a noble work, and his experiment turns out to be not only an exemplary lesson to other farmers, but he has added a value to his own farm that could not possibly be done with the same expense in any other way. Two or even 300 dollars per acre would be a low value to place upon his forest grove lands. For fence posts alone it is valuable, but for telegraph and telephone poles it is much more valuable.

If every farmer would do as Mr. Lux has done, what an increase of wealth would be added to our state, and the physical effects on climate could not be told.

D. C. BURSON.

STATISTICS OF KANSAS.

The following statistics will appear on the margin of the new railroad map of Kansas to be published by the Board of Railroad Commissioners about July 1:

KANSAS.
 Population..... 1,470,495
RAILROADS.
 Miles of main track..... 8,716.62
 Miles of side-track..... 1,476.56
 Total 10,193.18
LANDS.
 Under cultivation..... Acres. 16,219,416
 Prairie-grass fenced..... 6,988,358
 Uncultivated and undeveloped..... 29,364,386
 Total..... 25,572,166

FREE HOMES.
 Government lands subject to homestead..... Acres. 1,196,900
CHEAP HOMES.
 School-lands subject to sale under state laws..... Acres. 670,187
 School-lands subject to lease under state laws..... 348,190

AGRICULTURE—VALUES FOR 20 YEARS.
 Winter wheat \$410,463,644
 Spring wheat..... 12,624,549
 Corn 797,184,613
 Oats 139,574,255
 Rye 22,551,149
 Barley 6,981,066
 Buckwheat 427,591
 Irish potatoes 67,255,294
 Sweet potatoes 5,554,846
 Castor-beans 3,672,738
 Cotton 376,376
 Flax 26,494,182
 Hemp 160,986
 Tobacco 563,107
 Broom-corn 19,155,513
 Millet and hungarian 66,333,011
 Sorghum 46,821,725
 Milo maize 705,054
 Kafir-corn 27,017,538
 Jerusalem corn 781,219
 Timothy, clover, blue-grass, alfalfa, orchard-grass, other tame grasses 62,369,541
 Prairie-grass, under fence 140,935,923
 Live-stock products 869,394,374
 Horticultural products 40,786,168
 Pearl millet and rice-corn..... 1,384,040

Grand total..... \$2,768,467,666
 Annual average 138,423,383

YIELDS IN BUSHELS FOR 20 YEARS.
 Wheat. Corn.
 Totals 712,487,558 3,022,489,260
 Yearly averages..... 35,524,378 151,124,463

VALUE OF FARM PRODUCTS.
 1890 \$169,747,037.51
 1900 187,796,406.91

LIVE STOCK 1899.
 Numbers. Values
 Horses 796,866 \$32,048,342.00
 Mules and asses..... 87,838 4,208,208.00
 Milch cows 684,182 22,390,078.00
 Other cattle 2,201,886 60,605,136.00
 Sheep 232,039 677,972.00
 Swine 2,840,992 13,127,356.00
 Total \$133,067,092.00

LIVE STOCK 1900.
 Numbers. Values.
 Horses 786,888 \$39,344,400.00
 Mules and asses..... 89,064 5,343,840.00
 Milch cows 712,582 23,515,200.00
 Other cattle 2,443,043 60,933,000.00
 Sheep 200,301 600,903.00
 Swine 2,286,734 13,720,404.00
 Total \$143,457,753.00

VALUE OF FARM PRODUCTS AND LIVE STOCK.
 1899 \$302,804,129.51
 1900 331,254,159.00

VALUE OF DAIRY PRODUCTS.
 1899 \$6,643,058.00
 1900 7,459,693.00

UNDERGROUND PRODUCTS—1900.
 Coal and coke \$5,743,750
 Salt (with cooperage) 1,216,898
 Clay products..... 830,000
 Gypsum 265,000
 Stone (building and ballast)..... 593,750
 Petroleum and products..... 355,118
 Natural gas 925,000
 Cements 669,685
 Lime and sand..... 121,000
 Total underground products... \$10,720,201

Zinc ore—\$1,235,859, carrying zinc worth 2,009,286
 Lead ore—\$206,196, carrying lead worth 324,859

Total zinc and lead ore..... \$2,334,145
 Zinc smelting, over 57,000 tons..... \$5,017,682
 Lead smelting 150,000

Total zinc and lead smelting.. \$5,167,682
 Grand total (without counting the Argentine refinery)..... \$18,222,028

HORTICULTURE.

Apple-trees Number. 11,000,000
 Other fruit-trees 9,000,000
 Total 20,000,000

PREMIUMS AWARDED ON KANSAS FRUITS.

- 1869.—Gold medal by the Pennsylvania Horticultural Society.
- 1871.—First premium, Virginia Horticultural Society, Richmond, Va.
- 1871.—First premium, American Institute, New York City, N. Y.
- 1872.—First Premium, American Institute, Fair, New York, N. Y.
- 1873.—Silver medal, American Pomological Society, Boston, Mass.
- 1873.—First premium, New Jersey State Fair.
- 1873.—First premium, American Institute Fair, New York City, N. Y.
- 1876.—First Premium, Centennial, Philadelphia, Pa.
- 1885.—First premium, New Orleans Cotton Fair.
- 1893.—Bronze medals, Columbian Exposition, Chicago, Ill.

Write for our WINDMILL BOOK

The man who knows most about windmills has written a book. It is a 40-page book with more than 100 pictures. To the man who wants a windmill every page of the book is interesting. Not a word will he skip. And when he is done he will know all that anybody knows about windmills and what they should do. He cannot be fooled; but the man who buys a windmill without reading this book will regret it. Simply send us your address and the book will be mailed to you free.

The writer of this book is president of the Aermotor Company.

But the book is not biased, nor unfair. It is a book of information, written by the man who knows more than any other man about windmills.

We are not trying to sell you direct. We simply want to tell you the facts that may save you a costly mistake.

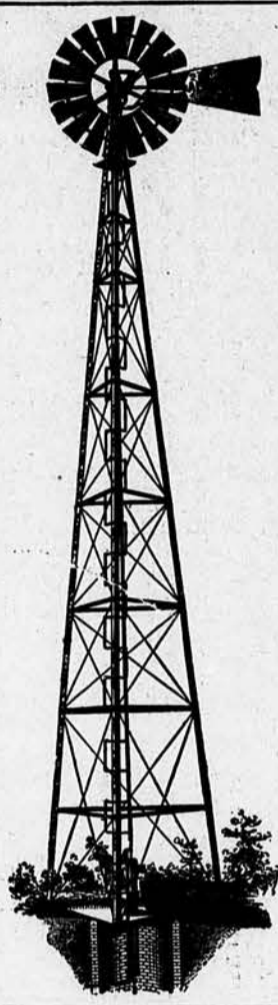
Half the cost of your outfit is in putting up and taking down. You can't get that back if you make a mistake.

When you know the facts, get the windmill you want; and if you decide on an Aermotor, you can go to your dealer for it. We will give you the name of agent nearest to you.

The writer of this book started in twelve years ago to make Aermotors. The field was overcrowded. Makers with millions of capital, and tens of thousands of agents controlled all the trade there was.

The Aermotor Company had little capital no trade, no agents, no reputation. 'Twas a pigmy among giants.

That was twelve years ago. Today the whole earth is dotted with Aermotors, and more Aermotors are sold than of all other windmills put together.



That is a record with scarcely a parallel in the history of invention. The book will tell you how it was done.

5,000 experiments were made before the first Aermotor was built. Sixty-five wind-wheels were tried before the right one was found.

He tells you how he knew that was right. He shows you why Aermotors work in the lightest breeze, when all other windmills stand still.

He kept on improving until 55 patents had been issued on Aermotors, covering 55 important features no other windmill has.

The book will tell you about them, and about the steel towers which he first made when other makers deemed them impossible.

In twelve years he has cut the cost of wind power to one-sixth what it was when he started.

Think what that means to you.

He has invented machinery to make each part of the Aermotor at the least possible cost.

More than half the world's windmills are now made in this factory; made by perfect machinery, in such quantities and so cheaply, that Aermotors cost far less than any other windmill worth having.

No man who reads this book will buy any windmill but the Aermotor. He will know why the majority buy Aermotors and he will demand what they seek. He will not be content to pay more than our prices for a windmill half so good. That is why we issue the book, of course. But it is better for you than for us. It saves you all you would waste if you bought the wrong windmill. It gives you the knowledge you need to avoid a costly mistake. Write a postal for the book.

AERMOTOR CO., 1255 TWELFTH STREET, CHICAGO

We have another book about Power Aermotors for doing all sorts of work—for grinding, for sawing, for cutting feed, shelling corn and running many kinds of machinery. This book is free, too. Also a book about Pumps, Tanks, Sub-structures, Pipes, Fittings and all sorts of Water Supply Goods. We make 160 Tons of Piping daily. Our plant occupies more than 30 Acres. This is considered a pretty good sized farm in New England.

1898.—Silver medal, Trans-Mississippi Exposition, Omaha, Neb.
 1900.—Three gold medals, Paris, France.

EDUCATIONAL FUNDS.
 Invested in bonds, for public schools and state institutions:
 Permanent school fund..... \$7,851,339.74
 Permanent university fund..... 151,218.03
 Permanent normal school fund.. 214,576.23
 Permanent agricul. college fund 485,646.89
 Total..... \$8,702,680.89

SCHOOLS, 1900.
 Number of school districts..... 8,927
 Number of school houses..... 9,256
 Number of school population.. 508,854
 Number enrolled in schools... 389,582
 Number of teachers employed.. 11,297
 Amount paid for teachers..... \$3,173,062.38
 Total amount expended for schools \$4,622,363.76
 Average wages paid teachers—males \$42.05
 Average wages paid teachers—females \$35.20
 Value of school property..... \$10,417,392.00
 Graduates from 118 high schools enter the freshman year of the State University without examination.
 In addition to the State University, the State Agricultural College, and State Normal School, Kansas has—

OTHER HIGHER INSTITUTIONS OF LEARNING.
 Denominational colleges 23
 Independent colleges and normal schools 3
 Academies 8
 Schools of oratory..... 2
 Business colleges 10
 County high schools..... 9
 Number in attendance at these institutions 13,408

CHURCHES.
 Number of church organizations.... 6,000
 Membership 325,000
 Value of church property..... \$8,000,000

NEWSPAPERS.
 Daily 51
 Weekly 634
 Semi-weekly 4
 Monthly 116
 Semi-monthly 14
 Bi-monthly 2
 Quarterly 11
 Occasional 5
 Total 837

BANKS.
 National banks 110
 State and private banks..... 413
 Deposits in national banks..... \$29,195,000
 Deposits in state and private banks 33,743,000
 Total deposits in all banks..... \$62,938,167
 Deposits per capita..... \$42.79

VALUE OF CAPITOL BUILDING AND STATE INSTITUTIONS.
 Buildings and grounds..... \$8,276,208
 Other property connected therewith 749,234
 Total \$9,025,442

STATE DEBT.
 Kansas state debt is..... \$667,000
 It is all owned and held in the permanent educational funds of the state.

Publishers' Paragraphs.
 Don't fail to notice the advertisement of Drs. Thornton & Minor, the great specialists of Kansas City, who have earned their well-deserved success in their chosen line. The publishers of this paper can vouch from personal knowledge as to their ability to carry out their promises. They are skillful and reliable in every way.

At this season of the year when haying is the important work on the farm and showers are likely to occur, probably no one thing will save as much loss and extra labor as an outfit of stack covers, wagon covers, and hay caps; such as the

Topeka Tent and Awning Co., are offering our readers in their advertisement this week.



Then, too, if you need awnings of any kind; tents for reunions or any other purpose; camp goods or canvas goods of any description, they can be found at reasonable prices at this up-to-date house. We would suggest that any of our readers needing anything in this line write them at 304 Kansas Ave., Topeka, Kans., for catalogue and prices, mentioning the Kansas Farmer.

SAVE A DOCTOR BILL
 by having a supply of medicine on hand. Our Big Drug Book contains 15,000 drugs, medicines, family remedies, extracts, paints, oils, etc. We save you 15 to 75%. Book mailed for 10c—refunded on your first order. "The Only Mail Order Drug House in the World." HELLER CHEMICAL CO., Dept. 47 Chicago, Ill.

...MEN...
 Book for men only, explaining health and happiness sent free in plain envelope. Address
CHICAGO MEDICAL INSTITUTE,
 110 West Sixth Street, Topeka, Kansas.

The Home Circle.

LIFE'S MYSTERY.

The stars, the skies, the peaks, the deep of the fathomless seas, Immanent is He in all, yet higher and deeper than these.

The heart, and the mind, and the soul, the thoughts and the yearnings of man Of His essence are one and all, and yet define it who can?

The love of the right, though cast down, the hate of victorious ill, All are sparks from the central fire of a boundless beneficent will.

Oh, mystical secret of nature, great universe undefined, Ye are part of the infinite work of a mighty ineffable Mind.

Beyond your limitless space, before your measureless time, Ere life or death began was this changeless essence sublime.

In the core of eternal calm He dwelleth unmoved and alone 'Mid the universe he has made, as a monarch upon his throne.

And the self-same inscrutable Power which fashioned the sun and the star Is Lord of the feeble strength of the humblest creatures that are.

The weak things that float or creep for their little life of a day, The weak souls that falter and faint, as feeble and futile as they;

The malefic, invisible atoms, unmarked by man's purblind eye, That beleaguere our house of life and compass us till we die—

All these are parts of Him, the invisible One, Who supports and illumines the many-creation's Pillar and Sun!

Yea, and far in the depths of being, too dark for a mortal brain, Lurk His secrets of evil and wrong, His creatures of death and pain.

By a viewless necessity chained, a determinate impetus drives To a hidden invisible goal the freightage of numberless lives.

The waste, and the pain, and the wrong, and abysmal mysteries dim Come not of themselves alone, but are seed and issue of Him.

And man's spirit that spends and is spent in mystical questionings— Oh, the depths of the fathomless deep; oh, the riddle and secret things, And the voice through the darkness heard and the onrush of winnowing wings!

—Sir Lewis Morris.

THE MAN OF THE WEEK.

W. A. Henry.

(Born June 16, 1850.)

It is the misfortune of some men to receive too much schooling. Hundreds of scholars are spending their best years in studying for degrees—working for the signs of accomplishment, but failing to realize the substance thereof, which is genuine service to mankind.

Professor W. A. Henry is a man of a different sort. Born and bred on an Ohio farm, his birthright was an ambition to get an education and to do something useful. He earned his education. In 1880, at the age of twenty-five years, he graduated from Cornell University in the agricultural course. He allowed no visions of academical honors to turn him aside from his purpose to do something. The opportunity of a life time came to him that very year in his election as professor of botany and agriculture in the University of Wisconsin. Ever since he has been working with rare diligence and success in the great institution that was so fortunate as to enlist his enthusiasm and his service.

As his department grew, Professor Henry had to choose between botany and agriculture, and he wisely chose agriculture as furnishing the broader field for his energies and his ambitions. In 1887 he was elected director of the experiment station connected with the university, and in 1891 was made dean of the College of Agriculture, both of which positions he still holds. Here he had a rare opportunity for usefulness. He was in a university where independent work was appreciated and encouraged; in a great agricultural state whose resources were only beginning to be understood, whose soil had been robbed by unsystematic grain farming. It was his office to discover the secret of the greatness of his adopted state and to be a leader in developing her agricultural riches.

Professor Henry established the first dairy school in America. It has many imitators, but no equals in usefulness. While this school grew and flourished, the dairy industry of Wisconsin grew also. During the past year this school has had an attendance of 120 students, and was compelled to turn many applicants away.

The first short course in agriculture was inaugurated by Professor Henry. The idea was new. College men did not like it. Education, they argued, is a long process; you can not educate man

in a few months. But Henry was not pleading for education in the ordinary application of that much-abused word; he was asking for an opportunity to give a limited amount of instruction. He knew that there was need for the kind of teaching which his short course provided; he could only hope that it would attract farmers and farmers' sons who would not or could not take the full course in the agricultural college. The short course has been a success, and has been adopted by other institutions. During the past year 287 students took the short course in agriculture in the College of Agriculture under Professor Henry's supervision.

The dairy school and the "short course" are not all of the Wisconsin College of Agriculture—a college which stands in the front rank of those of its class. The attendance during the year has been 437—a substantial increase over the previous year.

Professor Henry's own particular field of work is the feeding of farm animals. His first reports on feeding were models of their kind and class, and were the patterns for many others by investigators who, lacking Henry's originality, were wise enough to appreciate his good work and to make it the basis of their own. The ripe fruit of his studies in his book on Feeds and Feeding, which has been well described as "an invaluable handbook for the student, stockman, and farmer." This work has been adopted as a text-book by a large number of agricultural colleges.

Notwithstanding the great value of his own investigations and writings, Professor Henry's chief service to agriculture is as an organizer. He has surrounded himself, in college and experiment station, with some of the most successful workers in the world—men whose contributions to agriculture might be counted greater than those of their chief were it not that they owe their opportunities to him. Nearly every experiment station has its "director," but Professor Henry is one of the few real directors of experiment stations. He knows how to plan work, how to secure and keep competent workers, and how to harmonize and unify their work. Director True of the Office of Experiment Stations at Washington, who knows more about experiment stations than any other man in the country, says that Professor Henry "has been very successful as an organizer and manager of experiment station work, having built up a station in which science and practice are combined in a most excellent and efficient way." They work at the Wisconsin station—and they secure results.

Not only is Professor Henry a successful student of practical and scientific agriculture and a genuine leader of scientific investigators, but he is also a recognized leader among the farmers of his state and the whole country. He is one of them, assuming no airs of superiority, yet impressing himself upon them as one who feels a real interest in them and their work, who knows their difficulties and knows how to help without being officious.

Professor Henry is in the prime of life, is fortunately situated in a great university that appreciates him, and is spending his energies in behalf of a state whose farmers understand his value to their industry. He is a real captain of agriculture.

Denver, Col. D. W. WORKING.

Will Africa Be Redeemed Through Results of Negro Slavery in the United States?

With a note to the editor, saying he was a southern soldier from 1861 to 1865, Mr. John S. Schilling, of Toledo, Ohio, sends to the KANSAS FARMER the following, which to the men who were boys in those dark days, sounds like an echo from the half-forgotten past, or a voice from the tombs, repeating some of the arguments by which it was sought to prove that slavery was a divine institution and ought, therefore, not to be interfered with by the impious hands of man. The younger generation may like to be translated, for a few minutes, back through the years to a half century ago. If so, let them read Mr. Schilling's paper.

EDITOR KANSAS FARMER:—The continent of Africa; with the civilization of Egypt within its borders, dating back to ages remote; with its eloquent suggestions of the lost arts, and of mechanical prowess hardly excelled to this day; with the enlightenment of Europe separated only by the waters of the Mediterranean; was permitted through all ages to continue in its semi-barbarism to await action to be taken on the well-founded theories of Columbus, when the attention of Europe might be directed to a new continent, where was

to be founded a condition of events designed to grow, through all of its incipient stages, for the development of the saving and redeeming possibilities of the millions of a race of people without the inherent qualities to save and elevate themselves to civilization.

THE FIRST CARGO OF SLAVES.

The landing at Jamestown, Va., in the early years of the seventeenth century, in the infancy of the country's history, has not been a theme for the writers of prose or poetry—has no marks of a hallowed place, like the justly celebrated rock that commemorates the landing of the pilgrim fathers. Was not that landing at Jamestown, Va., in 1619, of the first twenty negroes, equally as important to the colored race, in the benefits that have accrued to the race, as the landing the year following to the white race? Let us examine why not. Divest the mind of all prejudices growing out of past differences of opinion, as they relate to that institution that had its beginning with the colonists at Jamestown, Va., and weigh the evidences that point to the many possibilities that have accrued to the negro race in this land, all due to the chance visit of that Dutch captain, who, on his way to the West Indies with his cargo of living freight, had lost his bearings in the then strange waters of the western Atlantic, and knowing that there had been a colony of English brought to the mainland, he felt it his duty to find them. He found them at Jamestown, Va., the worse for their hardships, without gold or money.

TRADED PEOPLE FOR TOBACCO.

For tobacco his cargo became the property of the colonists, then was started slavery, in this country, that was transferred by the colonists and protected as a right of the States. It therefore becomes evident that had not that transaction with the Dutch captain taken place, the race would not be here, the traffic would not have been repeated and enlarged upon. Impress this fact well upon your mind, for, think you, had not that first trade been profitable, that these people would be here in this land, of their own volition, when they failed to avail themselves of the advantages of the higher civilization of Europe and of Egypt, with no impassible geographical barriers to overcome?

PROVIDENTIAL DELIVERANCE OF THE BLACK MAN.

Earnest thought along this line of logic will make it plain that the slavery started at Jamestown, Va., served its providential purposes, and is now a memory of the past. There is no occasion to fret over its concomitant evils, when a review of all the evidences that can be adduced, shows plainly that it was the best and most practical method for drawing that race and people, by force, from their non-progressive condition to higher possibilities, as now enjoyed, when their antecedents are nominally the same as shown by the story of "The Dark Continent." Force is one of the essentials of civilization, and the condition of slavery involved force. Therefore, why longer disagree with its past methods, and the prime cause for their being brought here, when the results have been to train them for a degree of control preparatory to freedom, to place them in a relation to learn to be self-supporting in the midst of a most enlightened people; in the midst of the arts and the sciences, with intuitions nowhere found and so generally enjoyed as by the people of the United States? Will there, for reasons given, be justification for the conclusion that the institution of slavery, one of the causes of a conflict more terrible in its results as to the loss of life, more replete with evidences of endurance and magnanimity of spirit, than found in the annals of history, eventually result in elevating the people of Africa, in helping to Christianize their antecedents?

A WHITE MAN'S GOVERNMENT.

Whatever might be your opinions upon the subject, there is strong evidence for the belief that this country, for generations to come, will be controlled by the white race, whose methods will predominate—upholding a social barrier that will not be disregarded. While the intuitions of the country make honors open to whom honors are due, and, while the colored race have inherited this gift, they have the knowing that their chances in the race are not equal to the white race and they will naturally turn to the opportunities where they can be as good as the best. Does it not seem that the work of Livingston, of Stanley, and the philanthropy of Europe in the development of Africa during the last thirty years, have been to prepare one condition, for the other condition under process of

development in this country during the last three centuries? God, in His wisdom and goodness, frequently extracts results merciful and rich, that, to the human comprehension, appear cruelly wrong, as is most clearly shown in the conditions of the colored race in this land.

THE WHITE MAN'S FREE AGENCY.

While the white man, in his moral rights as a free agent, is responsible alone to his Maker for many transgressions, and as a slave owner has left many evidences not to his credit, a merciful Providence will make the most of his misdoing; and in the change of the negro in this land from the creature of servitude to one of higher power and aspirations—a result requiring several generations—is due the improved mental condition—the susceptibility to higher aims, the ambition to excel, the condition so necessary for the great work, and that will eventually result in the redeeming of this race and people. In evidence of these suggestions recall the press notices of the late United States Senator Bruce, of Mississippi, of Frederick Douglass, and hundreds of other able and talented men of that race, having much to commend in their character and attainments.

FITTED TO RETURN TO AFRICA.

Such a degree of acumen was not possible without their association with cultivated minds and the perfecting of generations. These evidences and advantages are now possessed by thousands of those whose forefathers were slaves who can now, with feelings of gratitude, admit that their ancestors were slaves, this ordeal giving them a rich inheritance of possibilities for themselves and their children in furthering the designs of Providence in the help to advance and in redeeming the land of Africa, the home of their antecedents. JOHN L. SCHILLING. 1034 Virginia St. Toledo, Ohio.

The Queen and Napoleon.

The simplicity of Queen Victoria's character is well shown by the ease with which the adventurer Bonaparte ingratiated himself and the obscure Spanish countess whom he had married into her favor. He was, as Greville remarks, the first man whom she had ever met on the footing of equality, and he took prompt advantage of this vantage ground to secure for himself the stamp of what may be called the social approval of the coterie of kings which her approbation conferred. He did it by the old but always effective method of familiarizing himself with the life history of the subject of his flattering attentions. "It is very odd," exclaimed the ingenuous queen, after her visit to Paris in 1855. "but the emperor knows everything I have done since I was 12 years old. He even recollects how I was dressed."—Harper's Weekly.

Nothing equal to Prickly Ash Bitters for removing that sluggish bilious feeling, so common in hot weather. It creates strength, vigor, appetite and cheerful spirits.

When writing advertisers mention this paper.

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THE KANSAS FARMER CO., TOPEKA, KANSAS.

The Young Folks.

SUCCESS.

At the foot of the Hill of Endeavor,
O Young One, look upward and see
The shine of the prize
That dazzles your eyes
With the gleam of the glory to be.

Far up in the clouds like a beacon,
Its luster illumines the world.
And you start on your way
At the dawn of the day
With the flag of your purpose unfurled

Youth, Hope and Ambition attend you,
And the line of your march is bestrewn
With the roses that bring
You the fragrance of spring,
While the fullness of earth seems your
own.

Up the steep of the Hill of Endeavor
You battle and toil and keep on
For the glittering prize
That dazzles your eyes
At eve as it did at the dawn.
Its brilliance is always before you
To lighten the arduous way
That leads to success,
Through struggle and stress,
And crown you with laurel and bay.

At the top of the Hill of Endeavor,
O Old One, look downward and call
To the brave and the true
Who are following you,
God speed and good cheer to them all.
—William J. Lampton, in the Independent.

Fragments of Money.

The receipt recently of the fragments of six \$5 bills which had passed through the stomach of an Iowa goat and were offered at the Treasury Department for redemption has revived interest in that division of the Department which concerns itself with the redemption of mutilated money. The bills were the property of Charles J. Allen, a farmer living near Ogden, Iowa. The affidavit which accompanied the mass of pulp gave the circumstances under which the bills passed into the stomach of the goat.

It appears that Mr. Allen became warm while doing some manual labor and removed his coat and vest and placed them on a fence, says the Washington correspondent of the St. Louis Globe-Democrat. The articles of wearing apparel fell from their resting place to the ground and an inquisitive goat happened along and nosed the six \$5 bills out of the pocket. No one saw him eat the bills, but when Mr. Allen replaced his coat and vest he found they had disappeared. A companion wagered that the goat had eaten the bills, and it was agreed that if Mr. Allen did not find them in the goat's stomach after it was killed the price of the goat would be forthcoming. The goat was killed and the bills were found in a little lump in the stomach. When received at the Treasury Department the mass had hardened into a little dark-brown lump that resembled anything but money. The experts took the mass in hand and soaked the whole until the minute particles separated. Then skilful fingers accustomed to the work separated each piece and in two hours the entire six \$5 bills had been placed together and were ready to be sent upstairs to the United States Treasury for redemption.

Mr. Ailes, assistant secretary of the treasury, says that the occurrence was anything but a novel one for the Government. The task of the department experts in this case in separating the bills was a comparatively easy one, and not to be compared with others which the department has had to handle. But a few weeks ago a case parallel in nearly every particular with that of the Iowa case was presented to the department.

A Michigan tax collector, who had little faith in banks, stored something like \$800 in a tin can for safe keeping over night and placed the can under his house. It appears that the house was elevated, so that the family goat was able to walk under it. The next morning, just as the tax collector started to crawl under the house and bring out the money owed to the county, he saw his goat emerging from under it slowly chewing on the remnant of a new \$20 bill. The excited collector caught the goat and forced the portion of the bill from his mouth. This was the largest piece found. The collector was a poor man, and was faced with the necessity of making good the amount of funds due his county. He killed the goat, secured the contents of the stomach, made the necessary affidavit as to the circumstances, sent the matter to Washington, and within ten days had brought, new crisp bills for the entire amount.

The regulations of the department require that at least three-fifths of a bill shall be recovered before the Government will pay for the mutilated bill. Each mutilated bill is carefully pasted on a backing of paper the size of the complete bill. The expert has a piece

of glass of the exact size of the bill. This glass is divided into forty squares. It is placed over the bill, and if the expert can find that the remnants of the bill fill twenty-four of the squares, or three-fifths of all of them, the bill will be redeemed.

A case within the last three weeks came from a farmer of St. Clair County, Missouri, who, while stooping over to feed his hogs, dropped his purse inside the pen. An hour later, when he missed his purse, he found the leather receptacle inside the pen, but nothing of its contents. There was a slaughtering, which it had been his intention not to have until several days later. What resembled the remains of the money was found and sent on to Washington. Three hundred dollars was returned to the Missouri farmer.

It is now the custom of the department to return mutilated money found by any person to the finder if it is reasonably certain the case is a bona fide find. This was not the case formerly. The negroes who found \$3,500 in bills torn into small bits on the lake front at Chicago six years ago turned it into the subtreasury at Chicago for redemption, confessing that they had found the amount. It was forwarded to Washington, but the ruling of the department was that it could only be redeemed when one established possession of it.

The finders got nothing. More recently two negroes found several hundred dollars near the Meramec Heights Hotel, not far from St. Louis. They turned the money over to the St. Louis substation, and it was sent to Washington. The money was sent back from there, with the instruction that the department held that unless some one came forward and established beyond question proprietorship in the money it had been the custom to give it to the finder. This was the find which was connected by some with a sensational assault which occurred near the resort where the money was found.

Burned money is the hardest for the government experts to work on, with the exception of the money which has been gnawed by mice. Saturday afternoon there came into the department a cigar box full of money which had been sent from Philadelphia with the necessary affidavit, showing that it had been inside of a poorly constructed safe and had been burned to the condition in which it was forwarded. Evidently with the idea that the original package ought not to be broken, the sender inclosed the charred pieces with some silver coins which had also been badly burned in the same safe.

During the passage of the money through the mails the heavy silver was shaken through the charred bills until there was hardly a piece left big enough to cover more than the head of a pin. Each of the pieces looked as though taken from a grate into which papers had been thrust. Mrs. Brown, who is in charge of the experts who handle the mutilated money, all of whom are women, did not despair; although she deplored the thoughtlessness which had allowed silver and charred paper to be packed together. She called two of her assistants, and the three, by the aid of the magnifying glasses, soon brought out four fifty-dollar bills, and within an hour recommended that they be redeemed by the treasurer.

The mice chewed bills make puzzles for the experts which can only be solved with infinite patience and care. Each of the pieces is carefully laid out on a hard, flat surface, and then with the assistance of strong glasses, magnified so it can be placed in a proper position in relation to all of the others. The experts have a copy of every bill which has ever been printed by the Government. These are used as models as soon as enough of the bill has been laid out to establish its issue.

The experts say that some of the best money that has been printed by the Government was printed during the civil war period. The grade of the paper was superior to any ever used, and the engraving has never been excelled. Bills which have been received recently of that period are in an excellent state of preservation. No bill has ever been received at the Treasury Department in a condition which has made it impossible for the experts to straighten it out and establish its character beyond doubt. Mrs. Brown has never been obliged to work on a bill longer than the eight hours of the day.

Secret-service officers have been frequently called upon to learn if the stories which are told of the way in which bills become mutilated are true. Within the last week a Washington dandy came to the department in great distress, bringing pieces of bills which he said represented \$500 of hard-earned

HEARTBURN

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Prickly Ash Bitters

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money. He declared that he had hid the money behind his home by burying it in a tin can. He explained that his wife was given to great extravagance and he was obliged to hide the money to keep her from spending it.

When the experts laid out the pieces they found that there was over \$700. A secret-service officer was then sent to establish the facts as to the matter, and gravely reported that the negro's story was a correct one, even to the claim that his wife was extravagant.

Recently an elderly German woman came to the department from Baltimore in great distress. She had charred remnants of some money which was, she said, the savings of forty years. She thought that there was at least \$500 in the original roll. On the evening before, as she knelt at her devotions, a lamp in the room adjoining had toppled over and set fire to a dress skirt in which she had the money. Part of the debris had been lost before she remembered that the money was in the burned skirt. She had collected what had remained. Sympathetic officials took her through the treasury building to the room of the experts in the basement. There she seated herself while half a dozen experts worked on the money. She rocked to and fro and cried and sighed during the greater part of the three hours, while the women worked and at intervals tried to calm her. By noon she had been given \$300 of the amount and sent back to Baltimore with the assurance that if she could secure the rest of the debris more of the money might be restored to her.—Inter-Ocean.

Commotion in a Monkey Cage.

Monkeys big and little in an indeterminate fight demanded the attention of the keepers of the zoo the other afternoon, and it required half an hour before the combatants could be separated. A piece of a juicy apple was responsible for the trouble, and while the fight went on a sly ape sat in one corner of the cage quietly munching the apple and watching his companions quarrel. An old lady, accompanied by a lad of perhaps 17 years, entered the zoo in the afternoon and made direct for the cage containing the monkeys. The monkeys swarmed to the end of the cage, waiting patiently for the usual piece of cake or peanut. Leisurely cutting off a large slice of an apple the old lady threw it into the cage and watched them scramble for it. Each one did his best to secure it and in an instant there was pandemonium. Nothing could be seen but a struggling mass of monkeys rolling from one end of the cage to the other, biting, scratching, and yelling. The entrance of the keepers only made this worse. Bars and sticks were thrust through the sides of the cage, and eventually were effective in putting down the riot.—Philadelphia Press.

Spain's National Sport.

Bull-fighting, Spain's national sport, was supposed to be too strongly entrenched in the spirit and traditions of the people ever to become distasteful to them, but it now appears to be destined to be swept away before the march of civilization. At a recent mass meeting in Barcelona, the scene of many a gory contest between matador and bull, resolutions were passed condemning the sport as cruel and brutalizing, and calling upon the government to suppress it throughout the peninsula. The fact attests the power of the humanizing ideas and influences which, slowly but surely, are transforming the world into a better and happier abiding place for man and animal alike.—Youth's Companion.

Couldn't Teach Him.

A showman had an announcement stating: "Come and see the great sawed fish!"

A learned gentleman read it and informed the showman that he had made a mistake in the word "sawed," that it ought to be "sawd."

"Yer'd better come in an' see for yerself; the hadmission is only tuppence, sir," said the showman.

So the learned gentleman paid his "tuppence," went in and was shown a large codfish sawn in half.

"Yer ain't the fust gentleman wot has tried to each me 'ow to spell; but I tell yer I've 'ad a good eddication an' I'm runnin' this show to prove to people I 'ave," grinned the showman.

The learned gentleman left, deeply indignant with the world in general and the showman in particular.—Spare Moments.

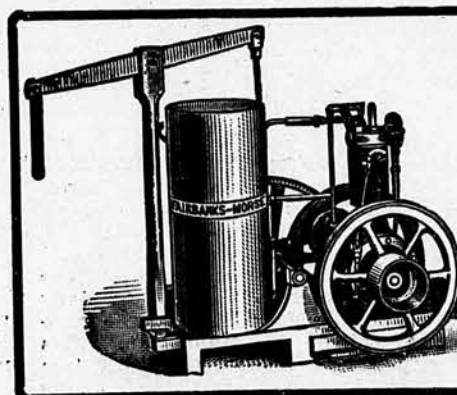
Art and Maple Sugar.

Hester—People think so differently. While some are always talking about the beauties of nature, others think there's nothing like art.

Uncle George—Yes, nature is well enough in her way, but after all there's nothing like art. Take maple sugar, for instance. Nature can produce it only a few weeks in the year; but art, Lord love you, is equal to its production the whole year round.—Boston Transcript.

Beware of Ointments for Catarrh That Contain Mercury,

as mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally and is made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free. Sold by Druggists, price 75c per bottle. Hall's Family Pills are the best.



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Every advertiser will receive a copy of the paper free, during the publication of the advertisement.
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NOTICE EXTRAORDINARY. BLOCKS OF TWO.

The regular subscription price for the KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, and no single subscription will be entered for less than this price, 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.

Exchanges tell of a fakir who is working towns and cities and rural districts in the following manner: He drives through the country and sells soap at \$5 a box, which sum includes the price of 40 yards of carpet selected from the sample which he has on his wagon. He takes the \$5, leaves the box of soap and promises to deliver the carpet within a week, and drives away. The soap is probably worth fifty cents. It stays with the purchaser. The carpet is worth probably \$15, but it stays with the fakir and has not been delivered to a single victim.

FOREIGN MARKETS FOR PURE-BRED STOCK.

A meeting was held at the Transit House, Chicago, last week, the object being to further means whereby an outlet for pure-bred cattle in the United States and Canada could be found in South America, particularly in the Argentine Republic. The meeting was presided over by Alvin H. Sanders, of the Breeder's Gazette, and Charles Gudgell, the Hereford breeder, at Independence, Mo., was secretary. The attendance was large, representatives of many breeding associations being present. Mr. Sanders stated that Director General Buchanan, of the Pan-American Exposition, late United States consul to the Argentine Republic, had drawn his attention to the great possibilities for American breeders in the South American markets, especially now that they are closed against England on account of the prevalence of the foot and mouth disease in some sections of that country. Mr. Snow, a statistician who spent last winter in the Argentine Republic studying agricultural conditions and the live stock situation, said there was undoubtedly a great opening in that country for American cattle, but it would first be necessary to educate the people there up to the fact that we have the right kind of animals. He said the fact that buyers from Argentine met American breeders abroad buying animals had given them the impression that our cattle were as poor as their own. As an evidence of the number of pure-bred animals imported into Ar-

gentine from England he gave the following figures:

In 1899 there were imported 825 Shorthorns, 43 Herefords, and 14 Aberdeen-Angus; in 1900 the number was 418 Shorthorns, 14 Herefords, and 6 Aberdeen-Angus.

After a discussion as to means for securing a portion at least of this trade, the following resolution was introduced by C. E. Leonard, of Bel Air, Mo., president of the American Shorthorn Cattle Breeders' Association:

Resolved, That in the opinion of this meeting it is desirable that steps should be taken to cultivate the trade in live stock between this country and South America, and that the first step in this direction should be the appointment of an accredited agent who should proceed to that country to represent the associations chiefly interested in the various breeds of live stock, with a view of disseminating accurate information as to the supply of superior animals in the United States and Canada suitable for export to that country.

This resolution was adopted, and in a general discussion as to methods the consensus of opinion seemed to be that the representative of the associations should use his best endeavors to have a party of the leading cattlemen of the Argentine Republic visit this country during the International Live Stock Exposition, at the expense of the associations, and see for themselves the superior class of live stock raised in the United States and Canada.

A resolution was passed authorizing the executive committees of the various associations, in conjunction with General Manager W. E. Skinner, of the International Live Stock Exposition, to select a representative to visit South America.

THE RUSH TO THE TOWNS.

Those who had hoped that the 1900 census would show a tendency of populations to seek the country rather than the towns are doomed to disappointment. The census office has issued a bulletin giving the population of incorporated places in the country. The bulletin shows that there are 10,602 such places, as compared with 7,578 in 1890.

The bulletin shows thirty-eight cities containing more than 100,000 people each. Of the large cities in 1900, three, New York, Chicago, and Philadelphia, contain upward of a million inhabitants, the same as in 1890, while for cities having between 500,000 and 1,000,000 inhabitants, those in 1900 number 3, as against one only in 1890. There are no cities in 1900 containing between 400,000 and 500,000 inhabitants, but at the census of 1890 there were three cities of this class.

On the other hand there are five cities in 1900 with a population of between 300,000 and 400,000, but in 1890 there were no cities coming between these limits of population. Of the total number of places in the list, almost one-half, or 4,318, contain fewer than 500 people, while there are 2,501 places of between 500 and 1,000.

Of the states, Illinois leads with 930 incorporated towns, and Pennsylvania comes next with 833. New York has 438 such places. There are no incorporated municipalities in Alaska. The incorporated places contain in the aggregate, 35,849,516 inhabitants, as compared with a total of 26,079,828 persons living in incorporated places in 1890.

The combined population in the incorporated towns and cities constitute 47 per cent of the population of the entire country, as against 41 per cent in the towns in 1890. In the state of New York, which takes the lead in this respect, 77 per cent of the people live in the cities and towns, as against 69 per cent in 1890. In six other states, namely, Massachusetts, Illinois, Rhode Island, Pennsylvania, Colorado and Connecticut, more than two-thirds of the people live in the incorporated places. Mississippi has the smallest percentage of its people living in the towns, the percentage being 15.

THE FARMERS' COLLEGE AND EXPERIMENT STATION.

This week is peculiar in that it witnesses the closing of the year's work in the colleges and the State University. While young men and women from the farms furnish a large proportion of the students for the University and all of the denominational colleges, the institution which is more especially that of the farmers is the state agricultural college at Manhattan. This school has long enjoyed the distinction of being the largest institution of its

kind in the world. There were 1,321 students enrolled during the year just closing. These are classified as follows: Post-graduates 40, fourth year 74, third year 80, second year 183, first year 348, preparatory 318, special 21, hospitalants 2, dairy 72, farmers' short course 109, domestic science short course 47, apprentices 79, counted twice 52.

Of these, 1,261 came from 85 counties in Kansas, and 60 came from 20 other states. The record of attendance shows an almost uninterrupted increase from 207 in 1878-9 to the 1,321 of the present year. When one reflects upon the advantages of an education at the agricultural college, and then remembers that Kansas has very many thousands of boys and girls who ought to have these advantages, the magnificent attendance shown is insignificant compared with what it ought to be. Every young man and woman in Kansas ought to have the advantages of a college or university education. The state should, and ultimately must, provide facilities for thousands instead of hundreds at the agricultural college.

True, no state sends a larger proportion of its youths to college. It is also true that the young people of no state outrank those of Kansas after they leave school. The latest catalogue of the agricultural college shows that its graduates have been sought to fill chairs of instruction in institutions of learning from the Atlantic to the Pacific. It was one of our agricultural college boys who, now holding a position in one of the old New England colleges, recently startled the scientific world by measuring the heat received from some of the fixed stars. One of our agricultural college boys is a professor in a similar institution in Nova Scotia; another in the University of Vermont; another in Armour Institute Chicago; another in the great Leland Stanford University in California, and so on. Several are engaged in original investigations for the U. S. Department of Agriculture, and others for various states. One of the greatest gains for the state is the application of science to agriculture on their own farms or on the farms of employers which is being made by those who go out from the college prepared to make such applications intelligently.

The courses of study are arranged with especial reference to what the student needs to know. The value of mental discipline and development is not underestimated, but it is found that this may be acquired as well by acquiring knowledge that one may use in after life as by attention to that which is sure to be forgotten for lack of use.

Under the same management with the college and closely associated with it is the Kansas Experiment Station. The purpose of this is for original research touching the problems of the farm. It is scientific and practical in its experiments. The problems which confront the farmers of Kansas differ in a marked degree from those presented elsewhere. This is partly owing to the fact that the border land between fertility and semi-aridity extends through this state. It is also the division between the cold climate of the North and the heat of the South. Grains and fruits adapted to Kansas may be, and in many cases are, out of place elsewhere, and vice versa. Insects and plant diseases require special study and feeding problems need to be worked out in Kansas. It has been held, and rightly, too, that to be fully adapted to Kansas conditions, many of our grains and grasses should be bred to the environment. Indeed the field for experimentation is so broad and so inviting as to present to worthy ambition its great opportunity. In some lines of experimental work the Kansas Station has done its full part. Its farm bulletins are freely quoted by the authorities. The chemical and some other results stand well in the world of applied science. But it must be confessed that, while as an educational institution ours stands at the head of its class, the experiment station work has been surpassed by other state stations whose \$15,000 a year from the U. S. treasury was no bigger and had been received no longer than ours, and whose opportunities for making enviable records were not better than those presented in Kansas. The KANSAS FARMER is of opinion that our state station should hold a lead in experimental work as pronounced as that in the school work. It further believes that the regents will see to it that our station makes the most of its opportunities.

There is one more observation to make as to the institution at Manhattan. Salaries are lower than in many

other state schools. Our college is therefore subject to being robbed of workers who ought to be kept. It will be impossible to remedy this until the legislature shall have made sufficient provision. But it must be remembered that the Kansas youth measures up best in every test. He is entitled to the best possible opportunity for development and preparation. This will cost money, but it will be money well invested.

Condition of Kansas Crops June 1.

The Kansas Board of Agriculture on Friday, June 7, issued a report covering the crop situation in every neighborhood, June 1, but dealing more in detail with the wheat, oats, and corn.

Based upon 100 as an entirely satisfactory condition the winter wheat condition for the whole state on the date mentioned was 82, a decline of 17.8 per cent since the report of April 5. Three counties, Allen, Osborne, and Riley, report a condition of 100, and 25 other counties range from 90 to 97. Prior to June 3 there was a shortage in rainfall, the effects of which were beginning to be noticeably harmful, and accounts for most of the lowered condition, but since then many portions of the state have had more or less rain, and at a time to prevent imminent diminution in yield, and many others have not. In various localities some injury has been done by Hessian flies or other pests, but such damage has not been general.

Commenting upon matters relative to the crop the secretary says: "All recent figures received indicate that the present Kansas winter wheat acreage is a very considerable per cent larger than has at any previous time been officially estimated, and place it close to, if not somewhat above, the largest ever recorded, viz.: 5,110,873 acres, harvested in 1893. Unique by leadership in wheat production, as in various other beneficent undertakings, and her bread-stuff output being such a potent factor in the country's commercial and financial affairs, Kansas and her wheat situation are always profitably prolific themes for the enterprising sensation-monger, and the traveling "expert," with their faithful coadjutor, the headline writer, and in no other year than this have these genial gentlemen displayed more tireless industry in earning their bread by the sweat of their pencils out of Kansas wheat. Since the growing season began a diminished yield has, from their standpoint, seemed to promise them more bread than they could realize if a full crop were harvested. With this in mind the first attempts to lessen the crop were through introducing, by telegraph, a supposedly very destructive green louse from Oklahoma, naturally via Sumner, that being the greatest wheat-producing county in the world. The green louse proved so inefficient as a successful destroyer that resort was early had to the Hessian fly, which, although worked overtime, failed to seriously harm the wheat, except in a very few localities. Following the failure of the fly, and while a cloudless sky was making possible the harvesting and curing in a perfect condition of the largest and best first-cutting of alfalfa yet grown, the dry weather and the chinch bug have been utilized zealously for the work of havoc, and if these agencies of destruction invoked sooften in the past ninety days fail to do service there will yet be time for the exploiting of various other destroyers before the crop is entirely garnered; likewise a continuation of the alarming stories about the probability of losing much of the wheat by lack of men for its gathering, which have been so staple for several weeks. Yet, in spite of unkind, heedless, inconsiderate and indefensible fictions to the contrary, Kansas seems on the eve of harvesting a prodigious total of high grade winter wheat; a total such as some other very creditable agricultural states could not reach by aggregating their product of a century, and not an acre of any value in all the millions will fail of reaping."

The present area in corn as estimated by correspondents is approximately 6,900,000 acres, or a half million less than one year ago. The condition for the state is 81.38, as against 93.2 one year ago, and 90 two years ago. No county reports a condition of 100 and but very few of the real corn counties reach 90. The backward and extremely cool spring followed by protracted dry weather have delayed planting, germination and cultivation nearly everywhere.

Official returns of this year's area devoted to all field crops have been received from 46 of the 105 counties, and disclose some surprising facts. For instance, each county reports an increased wheat acreage, Barber leading

with a gain of 208 per cent, and fourteen other counties showing increases ranging from 20,000 to 37,000 acres, while the whole 46, including a dozen or more of the foremost wheat counties, advance over their last year's sowing 24.4 per cent. It is likewise of interest to note that with one or two exceptions the corn area in each of these counties is considerably reduced; the decrease averaging a trifle over 12 per cent, and closely corresponding in some counties to the increases shown in the acreage of wheat. The corn acreage is less than one year ago by 5 to 25 per cent even in such great corn-growing counties as Cloud, Coffey, Jewell, Linn, Neosho, Phillips, Pottawatomie, and Smith.

The following table shows by counties the present estimated acreage of winter wheat; its condition, the condition one year ago, last year's yield per acre, the present condition of corn, and the condition one year ago:

Table with columns: COUNTY, WHEAT (Estimated Acreage, Present Condition, Condition one year ago, Last yr's yield per acre, bu.), CORN (Present condition, Condition one year ago). Lists 46 counties from Allen to Wyandotte.

Other counties range downward to as low as 31 in Atchison.

ALFALFA. General average 95. Seventy-eight counties, in which nearly all the larger acreages are found, report conditions ranging from 90 to 115. A considerable increase in acreages is evident.

SORGHUMS. Continued interest in the various sorghums for forage and grain is indicated by the large acreage reported. Although too early to report with much definiteness the condition is placed at 85.

OTHER CROPS. Spring wheat condition, 80; potatoes, 83; broom corn, 81; flax, 73; barley, 73; castor beans, 78; tame grasses, 85; apples, 73; peaches, 82; grapes, 89; cherries, 96.

LIVE STOCK. No reports of disease among live stock have been received from any source.

The Outlook for Crops.

SPRING WHEAT.

Preliminary reports to the Department of Agriculture of the spring wheat acreage indicate a reduction of about 1,200,000 acres, or 6.4 per cent. Of the twenty states reporting 10,000 acres or upward in spring wheat eight report an increase, aggregating about 34,000 acres and twelve a decrease, amounting to about 1,235,000. There is an increase in acreage of 10 per cent in New Mexico, 7 in Nevada, 4 in Arizona, 3 in Michigan, 2 in Montana and Utah and 1 per cent in Wyoming and Washington, while in Iowa there is a decrease of 13 per cent; Oregon, 8; Kansas, 7; Wisconsin and Minnesota, 6; Illinois, Nebraska, South Dakota, North Dakota, 5; and Colorado 2 points. The average condition of spring wheat on June 1 was 92.0 as compared with 87.3 at the corresponding date last year and 91.4 on June 1, 1899. The mean of the June averages for the last ten years is 92.6 and for the last 15 years 92.7. The averages of the principal states are as follows: Oregon, 95; California, 94; Minnesota, 93; Iowa and South Dakota, 92; North Dakota, 91; Wisconsin, 89; Nebraska, 88.

WINTER WHEAT.

The average condition of winter wheat declined during May 6.3 points, the condition on June 1 being 87.8, as against 94.1 on May 1. On June 1, 1900, the condition was 82.7 and on the corresponding date in 1899, 67.3. The mean of the June averages for the last ten years of winter wheat is 81.2 and for the past fifteen years 82.3. The principal averages by states are as follows: Maryland, 100; Virginia, 98; Pennsylvania, 96; California, 92; Ohio and Indiana, 90; Tennessee, 88; Kansas, 87; Missouri, Illinois, and Oklahoma, 84; Michigan, 68; and Texas, 46. The low condition in Texas is due to drought and the ravages of the wheat plant louse; in Kansas, Oklahoma, and Missouri the crop has been damaged by the Hessian fly and by drought; in Michigan the Hessian fly has seriously injured the crop and it has done considerable damage in portions of Indiana, Illinois, and Kentucky. The averages of condition relate strictly to the crop still under cultivation June 1.

OATS.

The total reported acreage in oats is smaller than the acreage harvested last year by 3.8 per cent. There is an increase of 2 per cent in Wisconsin and 1 per cent in Minnesota and a decrease of 8.3 per cent in Ohio, 8 in New York, 6 in Indiana, Illinois and Kansas, 5 in Iowa and 2 in Pennsylvania and Michigan. The decrease in the larger producing states is offset to some extent by increases in states having smaller acreages.

The average condition of oats is 85.3 against 91.7 on June 1, 1900; 88.7 at the corresponding date in 1899, and a 10 year average of 90.0. Of the states having 1 million acres or upward in oats Pennsylvania reports 3 points and Ohio and Michigan 2 points above their 10 year averages, while Minnesota and New York report 1 point, Wisconsin and Nebraska 2 points, Illinois 3 points, Indiana 3 points, and Kansas 12 points, respectively, below the mean of their June averages for the last 10 years. In Iowa the condition is reported as 94, corresponding with the 10 year average in that state.

The acreage reported as under barley is 1.2 per cent smaller than the area harvested last year. There is an increase of 7 per cent in California; on the other hand there is a decrease of 2 per cent in Minnesota, 4 per cent

in Wisconsin and South Dakota, 6 per cent in Iowa, Kansas and New York, and of 8 per cent in North Dakota.

BARLEY.

The average condition of barley is 91.0 against 86.2 on June 1, 1900, 91.4 at the corresponding date in 1899, and a ten year average of 88.5. The ten year averages are exceeded by 12 points in California, 4 in Kansas, 3 in South Dakota, and 2 in New York, while Minnesota reports 7, Wisconsin and North Dakota 3, and Iowa 2 points respectively below such averages.

RYE.

The acreage under rye shows a reduction of 1.9 per cent from that harvested last year. In Pennsylvania the area is reported the same as last year, while in New York there is a shrinkage of 4 per cent. Kansas reports a decrease of 2 per cent, Wisconsin 3 per cent, and Iowa 10 per cent, these being the only other states having 100,000 acres or upward in rye.

The average condition of rye is 93.9, as compared with 87.6 on June 1, 1900; 84.5 at the corresponding date in 1899, and a ten year average of 89.4. In Pennsylvania, New York and Kansas the ten years' average are exceeded by 6, 1 and 3 points respectively, and in Wisconsin and Iowa the condition figures are 4 points above such averages.

CLOVER.

The acreage and condition of clover for the county as a whole can not be satisfactorily determined, but the changes in the principal states have been reported. An increase in acreage of 6 per cent is reported in Wisconsin, 5 per cent in Michigan and Nebraska, 3 points in New York and Kansas, and 1 per cent in Iowa. In California the acreage is reported as being the same as last year. In Indiana, Minnesota and South Dakota a decrease of 4 per cent is reported, in Pennsylvania and Missouri 3 per cent, and in Illinois 2 per cent as compared with the acreage of last year. As to condition, Ohio reports 12 points above the ten year average, Nebraska and Wisconsin 10 points, New York and Michigan 9 points, clover states reporting below such averages are Missouri 13 points, Pennsylvania 11, California and Illinois 3 points, and Minnesota 1 point. In Kansas the condition is reported as 91 corresponding with the average condition in that state for the past ten years.

EUROPEAN CROPS.

The Mark Lane Express in its weekly crop review June 10 says: "Owing to the deficiency in rain, English hay inevitably will be considerably below the average and importers who are not now complaining of the plethora of dry food stuffs, such as oats and maize, will find a good sale for them long before this time next year."

"It may be added that with foreign wheat we are not at all overstocked. The official report shows the French wheat crop is better than anticipated so that if the week-end markets are depressed, it is only the sure large coincident import requirements in England, France and Germany that a large surplus both in America and Russia could be adequately balanced. The present outlook is that there will be a large deficiency both in England, Germany and a large surplus in the United States and Russia. Therefore France seems to hold the scale and confirmation of the present news is awaited with interest. The spread of rust in Hungary is serious. Unless it rains soon, the crops will be gravely injured."

"In Austria the prospects are regarded as very unfavorable and the agricultural affairs of the dual monarchy should be watched attentively, for the deterioration of French and Austria-Hungary prospects might in the present state of trade alter the balance of power and shift the control of the wheat and flour markets from the buyer to the seller."

The Horticulturists Meet.

The June meeting of the Shawnee County Horticultural Society occurred at the home of Mr. Ezekiel Marple a few miles north of the city. A large number were in attendance. It is a good place to go. Aided by his generous wife and daughters, Mr. Marple keeps open house at all times, and especially when the society meets there is nothing undone that will contribute to the comfort and pleasure of every one, even the "stranger that is within the gates." The morning was delightfully cool for the ride thither, and the discomfort of dust was regarded but little.

Silver Lake, Soldier, Menoken, Grant-

ville, Kilmer, Mission Center, and Topeka were well represented.

A very bountiful dinner was served. The tables were spread in the shade of large trees. By the law of hospitality expansion was strictly enforced, and no one seemed to demur. After a pleasant hour of social enjoyment the meeting was called to order by the president, A. E. Dickenson, and a very instructive season followed, the program being quite interesting and fully carried out.

The subject of raising cherries, beginning with the necessary kind of soil, proper planting, culture, period of growth, etc., were thoroughly discussed. In fact, as Judge Wellhouse expressed it, one could begin successful cherry culture for the market from the valuable information so definitely expressed by Messrs. Smith, Ham, Cecil, Vanorsdal, and others. All confirmed Mr. A. B. Smith's assertion that a dry soil is necessary, that the Early Richmond and Morello are most successful in this country, and that the cherry is a money making fruit to raise. Mr. Cecil considered the "Wrag," which originated in Iowa a failure here. A general discussion brought out many minor points, but also confirmed the three essentials-given above. Mr. O. F. Whitney presented a very good paper or "Experience in Handling Small Fruits," covering the ground so remarkably well that it was requested by the society for publication in KANSAS FARMER. [It will appear next week, Editor.]

Mr. Cecil exhibited specimens of peaches, plums, and eleagnus longipes, a pretty and delicious little fruit from Japan. Also specimens of the curculia, that were captured by the "parring" method, which he pronounced more successful than any method in the curriculum of insecticides.

After the usual tilt with witticisms the meeting adjourned with many pleasant words for the generous entertainment provided by Mr. Marple and his family. KITTIE J. MCCracken, Secretary pro tem.

Observations by a Kansas Man.

EDITOR KANSAS FARMER:—We left Topeka on Monday, May 30, amid dry surroundings and baked earth, and found the same conditions existing through Missouri and the western part of Illinois. Waterless creeks told the story of what was wanting to complete the growth and insure satisfactory harvests during the present season. When within 100 miles of Chicago, more evidence of moisture was noticed; still corn, in most instances, was not more than 2 or 3 inches high. Clover fields in Kansas and Missouri showed but a meager growth, and one would think that farmers were very shy on alfalfa. June, more than any other month, gives hope that the embryo plants will reward the toiler with that which makes wealth and happiness.

Wednesday afternoon, as we were traversing the beautiful thoroughfare of Michigan avenue, to visit the Panorama of the Battle of Manila, black, threatening clouds rose in the northwest that promised to almost rival Dewey's famous battle of three years ago. This enormous painting is said to faithfully depict that famous encounter that gave the United States supremacy in the islands bordering on the Orient. During the electrical display, when the guns of the American fleet were battering the retreating Spanish boats, the storm outside burst in full force on the roof of the building, adding a thrilling finale, as the opposing guns were silenced amid the smoke of screaming shells and clouds of flying spray. During this engagement, the spectator stands supposedly on the upper deck of the flagship Olympia, while Dewey, glass in hand, poses in full view on the bridge, directing every movement, and at the critical moment exclaims, "Gridley, you can fire whenever you are ready." The whole scene is realistic and thrilling. A. E. JONES. Chicago, Ills.

Sea Lions of Argentina.

Off the territory of Chubut, Argentine Republic, are 10,000 sea lions, which are worth, in their double fur, \$300,000. These sea lions range about the island of Escondida, which has just been surveyed by the fisheries investigation commission of the republic. Dr. E. Lahitte, of the commission, has reported to the minister of agriculture what has been accomplished in the surveys and he himself is surprised at the number of sea lions to be found about this island. He estimates that their skins are worth \$30 each.—Chicago Chronicle.

Horticulture.

The Rubber Industry of Costa Rica.

H. STUART HOTCHKISS IN THE FORESTER.

Among the numerous industries that have opened up in Costa Rica during past years the rubber industry perhaps stands first in its capabilities for development. For a long time rubber has been exported in quantities that have varied exceedingly according to demand and to the inclination and ability of the Costa Ricans to collect it at points convenient for shipment to the markets of the world. Yet as the following figures (furnished by the National Bureau of Statistics in San Jose) indicate, the exportation of recent years have shown a steady and consistent increase; excepting 1900, when there was a slight falling off from 1899.

Years.	EXPORTATIONS: Kilograms.
1885.....	31,125
1886.....	9,918
1887.....	48,728
1888.....	11,388
1889.....	6,317
1890.....	10,197
1891.....	15,041
1892.....	28,561
1893.....	16,738
1894.....	9,822
1895.....	9,667
1896.....	16,741
1897.....	24,992
1898.....	49,639
1899.....	81,787
1900.....	72,197

With these general figures relating to the industry as a whole, it may be of interest to look a little more carefully into such details as the habit of the trees and the interesting attempts that have been made and are being made to cultivate them.

There are several orders of trees naturally indigenous in Costa Rica but foremost among them in commercial value are the *Siphonia elastica* and the *Castilloa elastica*. Their required environment is the same and their commercial value about a par. However, as most of the experiments have been made with the latter, this is the one with which we will deal.

The *Castilloa elastica* is by nature a tree of the deep forests, feeding largely upon decomposed vegetable matter, and like all such, has most of its root system near the surface of the ground, although it also sends some roots deep into the soil to secure its position and enable it to absorb a greater amount of moisture. This moisture is essential for the *Castilloa* to attain its best growth, but as standing water seems to be detrimental we usually find it best developed where the drainage is good.

Like many other tropical trees whose wood is especially susceptible to decay, and which need protection when exposed, this species produces the Cauchio in a milky fluid capable of drying in a few hours into a more or less moisture-proof cap, which furnishes a first-class protection to the wound.

Professor Pittier, of San Jose, who has made a study of the subject, states that "The Costa Rican rubber tree is generally met with on both the Atlantic and Pacific slopes to an altitude of about 2,400 feet, but that 2,000 feet would probably be the extreme upper limit of that tree, for profitable cultivation." It is very probable, however, that this last limit is too great as it is yet an open question whether plantation made where the natural growth is best, namely, from 800 feet down, will pay. But to return once more to the habits of the *Castilloa elastica*. Growing among other trees and protected by their shade, the delicate bark is kept in the moist condition conducive to make of it the best possible conductor for the Cauchio, while the roots find ample moisture, and the leaves, which rapidly push their way above the tops of their rivals, find an abundance of light to assure their rapid and healthy growth.

There is a curious belief among many Costa Ricans that the milk of the female tree is much richer in solid matter than that of the male tree, but where this idea could have come from is difficult to imagine, as the *Castilloa* is not a dioecious tree, that is, the male and female flowers are not on different individuals.

Like most other tropical vegetation the growth of this rubber tree is very rapid. In the first year it will reach a height of from three to five feet according to location, and many have been noticed that have attained a height of thirty feet in four years. These first four years represent the most rapid growth of the tree and from this point to the time they reach their maximum height, which may roughly be placed at about sixty feet.

Many interesting experiments in rub-

ber cultivation have been tried throughout the world, but in Central America at least, no experiments of the past can be called decided successes. There are, however, some under way at the present time, that bid fair to yield better results than their predecessors.

Realizing the uncertainty of making a paying proposition out of a rubber plantation alone, most of the experiments have been made in connection with banana or cacao plantations. Of these the former would appear to offer the best chance of success because it is invariably the case that where in nature you find the most luxuriant growth of *Castilloa* trees, there is the place to lay out your "bananal" with assured success. Of course the banana will grow (often profitably) in land unsuited to rubber, yet as a rule most of the great plantations have been reclaimed from land once thickly covered with trees of the latter variety, that have fallen prey to the ravages of the rubber thief, who in his attempt to get the most possible gum from the tree at one cutting, usually succeeds in killing it outright, or ruining it for a future yield.

On a banana plantation near Jimenez, Santa Clara Province, some experiments have been made that promise to give good results. In this case the cultivator has placed beds of young rubber trees planted about a foot apart in the most favorable places. When these attain a height of from eight to fifteen inches they are transplanted and scattered among the bananas at generous intervals and with the idea in mind to give them conditions as nearly like nature as possible. As many of their roots are very near the surface it is impossible to plough around them and thus keep them free from the weeds which sap their energy. This, however, is not a serious problem, as the shade afforded by the bananas, which is so necessary to the commercial condition of the rubber tree, serves effectually to suppress all of the less tolerant kinds of vegetation. It is found an advantage to pile dead leaves and other refuse around the base of the tree from four to eight inches in height and to a distance of from two to three feet from the trunk; by this means the rains of a tropical summer are prevented from caking the clayey soil into a hard impenetrable mass and the worms which are abundant, are brought to the surface, thus allowing the water to circulate freely through the holes that they have made and thereby dissolve vegetable growth.

Near Port Limon on the coast many young rubber trees are grown merely for exportation and with no idea of tapping. These are grown among the cacao and when about a year old, are cut off just below the leaves, and the stems are packed in boxes, the layers being separated by a little dry earth. The market for this queer product is, I understand, Belgium whence they are reshipped to the Congo.

In the Talamanca district in southern Costa Rica the Indians have gained very favorable results by planting the trees in the forests in close imitation of nature and although they tax their vitality to the utmost by constant and severe bleeding, they are reported to derive a very respectable income from their venture.

Although the *Castilloa* is inferior to the *Henia* trees of the Amazon regions in many respects, both in the quantity and the quality of the yield, yet I think we may safely look for a steady increase in the rubber trade in Costa Rica as the subject of cultivation becomes better understood, and the inhabitants learn to gather their product systematically and economically.

The Fruit of the Ginkgo.

This curious tree, with its adiantum fern-like foliage, a voice from the past, as it were, and which makes such a picturesque feature in the streets and grounds of Washington, D. C., seems to claim attention as well from a utilitarian standpoint as from its decorative qualities. An argument in the case is set forth in a recent issue of the "Revue Horticole."

The fruit of the Ginkgo is of the size, shape, and consistency of a small plum. The fleshy portion, at first a bright green, turns yellow when ripe. Each flower stalks bears ordinarily but a single fruit. Sometimes, however, two perfect fruits are found. The pulp is rich in an oily substance, which at an ordinary temperature is of a butter-like consistency. The quantity of sugar contained in this oil is very small, and fermentation, supposing it to be easy to ascertain, would certainly yield only a slight proportion of alcohol, the value of which, supposing that it could be util-

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- JEWETT New York.
- ULSTER New York.
- UNION New York.
- SOUTHERN Chicago.
- SHIPMAN Chicago.
- COLLIER St. Louis.
- MISSOURI St. Louis.
- RED SEAL St. Louis.
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ized, would not cover the cost of production.

It is, then, rather the oily matter that attention should be turned in endeavoring to put the fruit to some practical use. This could probably be obtained by any process applicable to the olive. This oil, however, in three or four days' exposure to the air, develops a rancid odor.

According to certain authors it appears well established that the Chinese eat this pulp with much relish but it probably would not be to our taste. There are many other foods upon which we have not the same ideas. It is possible, however, that in spite of the rancid odor, the oil of the Ginkgo, in default of being used as a food, could be utilized for certain industrial preparations, such as soap.

But if the pulp of the Ginkgo has no chance of figuring in the ordinary fare, it may be otherwise with the seed. This possesses a flavor somewhat like that of the walnut or hazelnut. The oil it contains does not become rancid like that of the pulp, and it is quite probable that this seed might be acceptable as an article of food. In common with the greater part of the Conifers, contains besides the oil a certain quantity of starch.

The writer referred to regrets that this beautiful Chinese tree is used only for ornamental purposes. "It flourishes in deep mellow land, where there is no undue proportion of clay or flint, and shows a hardness practically absolute, due in part to the decay of its leaves, which renders it almost indifferent to the rigors of winter. Moreover, the propagation is very simple, both by sowing immediately after the fruit is gathered, and by cuttings struck even in the open air at the end of the season. The wood of the Ginkgo appears to be strong, with a fine and close grain. All these qualities lead us to suppose that there would be some advantages in trying the species in forest cultivation, when, according to all appearances, it should give a good account of itself."—American Gardening.

Strawberry Culture—Post-Picking Work.

The best thing to do with a strawberry field that has borne is to plow the plants under, run off rows three feet apart and sow in these drills and cover shallow, cow-peas at the rate of one bushel an acre. The residue of the fertilizer not appropriated by the strawberries will make a fine crop of pea vines. The vines can either be cut for forage or turned under, to the very great benefit of the soil. Even when the vines are cut the nitrogen gathering roots are of much value. In fact many farmers insist that little or no good results from turning under the vines in addition to the roots. The facts seem to be that the nitrogen gathered by the pea is mostly stored in the roots, and that the vine is but little more than any other form of vegetable matter.

Land thus treated will be ready for strawberries the coming fall, winter or spring as may be most convenient to plant. Nor will it ever "berry out," as some one with more point than elegance has expressed it.

But this plowing up the old strawberry field presupposes that a young one has been planted the previous fall, winter or spring and is now coming on to replace the one destroyed. If this has not been done it will be necessary to rehabilitate the old field or bed. Timely and properly done this is practicable, though quite as good results can

not be expected as from a new planting. Proceed as follows:

"Bar off" the rows on each side, leaving a strip about a foot wide. Then chop out the plants on this strip, leaving them about one foot apart. Vigorous new plants should always be left in preference to old ones.

The plants chopped out, sow in the furrow along each side of the row a good commercial fertilizer rich in potash, at the rate of 300 to 500 pounds an acre, and then split the middles, throwing dirt back to the plants, but not smothering them. At the next hoeing the soil can be snugly settled around them. After that the culture should be as with a young field.

The cultivation of a young field is simple, calling only for diligence and a fair share of judgment. We do this by plowing the middles with a small tooth cultivator, stirring the soil to within about six inches of the plants and dropping back to eight inches as the plant and root growth increases. The unplowed space around the plants should be shallowly stirred with hoes often enough to kill grass and weeds before they come.

If the matted row system is to be followed the beds should be given a good and thorough cultivation before the runners are allowed to take root. After that little more stirring than is required to kill the grass is necessary or practicable.

These young fields should have been manured in the drill before planting. Subsequent manuring is best done in the form of top dressing. This top dressing, which should be of a highly soluble fertilizer, can be safely and rapidly done in the following late fall, winter or early spring. The plants are then in a dormant state, except in the far south, and fertilizer sown on them will do no harm, provided the leaves are not wet with dew or rain. Should it be necessary to apply fertilizer to them at other times, it must be sown around and between the plants and not on them.—O. W. Blacknall, Vance Co., N. C., in Rural World.

Strawberries.

Mr. James Wood of Mt. Kisco, N. Y., in some remarks before the New York farmers, spoke of strawberries as follows:

"Strawberries grown in this latitude are much better than those grown in the south. Southern berries are deficient in quality and as you journey further and further northward you get them better and better, until you get your own; and better than your own are those grown still further north. Those of you who have eaten strawberries grown in Canada have eaten better fruit than you ever ate grown in a southern or middle state. Those of you who have eaten strawberries on the other side of the Atlantic have found the highest flavor and best quality in those grown in Scotland, and if you went to the extreme north of Scotland, you found them better than they were in the south. I do not hesitate to say that the best strawberries I have ever eaten were produced on the borders of the Arctic Circle, in Norway. The strawberries of Denmark are better than those grown anywhere on the continent of Europe further south."

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Grange Department.

"For the good of our order, our country and man kind."

Conducted by E. W. Westgate, Master Kansas State Grange, Manhattan, Kans. to whom all correspondence for this department should be addressed. News from Kansas Granges is especially solicited.

NATIONAL GRANGE.

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

KANSAS STATE GRANGE.

Master.....E. W. Westgate, Manhattan.
Lecturer.....A. P. Reardon, McLouth.
Secretary.....Geo. Black, Olathe.

Woman's Work in the Grange.

The grange is a home representative. All its teachings relate directly to the home life. The woman's influence as the mother in the home has much to do with shaping the character of the coming men and women. Upon them largely depends the development of a better and higher manhood and womanhood among the rising generation.

To develop that higher step in the grange and among ourselves, we must advance our work and build up our order, and by so doing we develop manhood and womanhood, not only in the grange, but among ourselves, in our homes, and in every one associated with us. It is not doing good that makes people happy, it is doing better. Far too many sit with folded hands and say, "Oh, I have not time to train and develop the spiritual side of my nature." Moments that are properly employed make cultured men and women.

Education of women is a modern theme. It is not an interest of family or state here and there. Many a woman by her force has become noted and influential. "Let not the past give the measure of woman's sphere, duty, or possibility excelsior" should be woman's motto, and let us make that our motto here in the grange, for we can proudly say that the grange is founded on educational basis.

We are advancing with equal honors with the men. The women of the grange are thinking more and more, and the more they wisely think of their lives the more easily they will perform their duties, and the better will be the results in their homes and lives.

We need in every grange earnest men and women who are enabled to see what is noblest and best in life, and are always ready and willing to help the grange to a higher level, and to promote its interest and spread its principles and purposes among the agricultural classes of the State. More and more friendly and true fraternal feelings are cultivated among farmers and their families. Jealousy and envy are suppressed, and the good fellowship and peace of neighbors is promoted through the influence of the grange and its social intercourse.

This, one of the greatest educators and civilizers of mankind, is everywhere encouraged. To promote and develop manhood and womanhood among ourselves and to spread our principles among farmers and others who are well wishers of society, frequent public meetings should be held, and the importance of agriculture, and the duties and rights of farmers discussed. This will tend to remove certain prejudices which designing persons have in some measure created in the minds of some farmers against our order.

Another thing, we must take so much interest in our order that even in the busy season a few members can meet and transact the necessary business. When all the granges see this fact we will see a marked improvement in their condition. We need to extend and build up our order, and gather more farmers within our gates, for here they may find and obtain essential aid in their chosen vocation, and their lives will be more pleasant and profitable, and their families will grow better morally, socially, and financially, and they themselves will be what they should be, the true nobility of the land.

Do the mothers in our different granges use enough influence on their children to join the grange?

Do the fathers converse enough with their boys when they come from their work in the field?

The father takes up his paper and does not want the boys to bother him.

Do you ever stop to think that your boys are interested in the work as well as yourself?

You should remember that they each have some talent, and you should study to find out what it is and provide for it.

If they have a mechanical turn of mind, get them a kit of tools; if literary, get them a library. Talk to them

about anything that interests them, and help them in their efforts to improve their minds.

In the grange, parents learn to respect and feel an interest in the plans of their children. Parents, use your influence to have your children join, for we need the young people in the grange. One of the best features of the grange is the presence of the young people among its members.

Within the grange hall we strive to promote among the members more especially an interest in literary pursuits, which should interest the young people and advance our cause. This important branch of education should be more extensively encouraged, for however long and dreary may be the pathway of life, they who are blessed with the possession of literary accomplishments can enjoy its pleasure.

Woman's work in the grange should develop thought, ability, sympathy, and a quickness of perception which enables her to grasp the new and weave it into the practicalities of her daily life, thereby giving her health and time to enjoy the beauties of her home and the companionship of her children, for after all, are not these the things that make life worth living?—Ida Gusten in Butte Grange, Oregon.

Worthy of Deepest Reflection.

No class of people are to-day paying a larger tribute to the great trusts and combines than the farmers. And no class of people are better situated to combat them and give them the real knockout blows that are so much needed. They can if they will, and they will when they fully understand the situation. They must learn their lessons well, and then by united efforts, here, there, and everywhere, put down these giants who are going through the land trampling all individual effort and honest industry under foot.

A western paper sizes up the situation in such a good, practical way that it is worth repeating. There are many million of dollars in it if farmers would only study such object lessons, and use the dormant power they possess:

"A farmer and dairyman of Blue Earth County, Minn., had a few dry cows that he wanted to sell. He made them fit for the block and offered them to a Mankato meat seller, but was offered a price so ridiculously low, in proportion to the price of meat, that he was indignant; thereupon the meat seller said: 'You don't understand the situation. I dare not butcher these cattle here; if I did, Swift, Armour, and those fellows would ruin me. If I buy your cows I must keep and feed them until I can pick up enough more to make a carload, ship them to Chicago, pay the expenses of shipping and selling, and bring the dressed meat from there—at more expense—that I sell to you.' Of course, the farmer had heard of the 'meat combine' before; but it so happened that its power and disposition were never made so vividly apparent to him, though he and all of his fellows in all the country had been for years, and still are, the victims of that combine, whose millions represent flichings from farmers' pockets. Is it any wonder that cattle are low in price notwithstanding their enormous decrease in number, relatively to population?"

"But why do the American people submit to such things? They do it because they think they must, and impotently exclaim: 'Well, what are we going to do about it?' Do about it? Let the people of Blue Earth County, for instance, combine and declare that they will buy no meat, except that butchered at home, nor any meat products save those made at home. Then let other counties follow suit; and people will have destroyed the combine, and they will have wholesome meat to eat, and no longer will embalmed and otherwise doctored meats kill ten of our soldiers to one killed by the enemy! It is a more patriotic duty to destroy the despotism of the meat combine than to destroy that of Spain, for we might scrape Spain with a fine tooth comb and there would not be found a despotism more complete, more despoiling, more directly destructive of the interest and prosperity of her subjects than the one that struck our farmer friend in Mankato the other day."

Free rural delivery is "coming" to those who are "going" for it. The post-office department at Washington has plenty of business in this line just now. "Ask and ye shall receive." The grange asked for the system of free delivery for the rural districts, and has won its claims; now local granges can press the button and do the rest. Think of the convenience of a post-office on wheels coming right to your door, collecting and distributing letters, furnishing stamps, postal cards, money orders, and so forth, and all without extra cost because the grange believes in equal rights and equal privileges, that a farmer is just as good as any other man, if he behaves himself.

It has always been the fault of some otherwise good members of the grange that they want victory all at once. A set back, or defeat for a time, unnerves them, and they lose heart. These things are a part of the discipline of life and we may add of the grange also. Our ritual tells us "difficulties are but opportunities to test our abilities." Henry Ward Beecher once said, "It is defeat that turns bone to flint, and gristle to muscle, and makes men invincible, and formed those heroic natures that are now in ascendancy in the world. Do not, then, be afraid of defeat. You are never so near to victory as when defeated in a good cause."

More and more the evidence is being brought to the front to show that the grange in its many years of battle for pure food has had a good cause, and that it is sure to win soon, if we will keep pushing it along. Such items as the following are helping to create a proper public opinion:

The annual report of the Connecticut agricultural experiment station shows that adulteration of foods sold in the public markets is quite common. Sixty-three samples of fruit jelly examined showed adulteration. Out of 40 samples of marmalades and jams, only three were pure. Eleven coffee samples out of 45 were found adulterated, mainly by peas, chicory, wheat and pea-hull pellets. Out of 91 samples of ginger 24 were adulterated. Out of 48 samples of beer and ale 12 contained salisic acid. Examination of 19 samples of sausages and oysters, showed "embalming" by boracic acid, four samples of cream out of 18 containing the same preservative.

Mrs. Fremont in Old Age.

In the decline of her life Mrs. Jessie Benton Fremont, widow of the famous "pathfinder" and first candidate of the Republican party for president of the United States, is living quietly in a pleasant home in the environs of Los Angeles, Cal. The home was a gift from the women of California, a token of their tender regard, and they are happy in knowing the wife of the "pathfinder," and the daughter of "old bullion" is in their midst, loving and beloved.

The Fremont cottage is one of the points of interest in Los Angeles. The grounds are full of tropical verdure, while the blossoming of the rarest roses and brilliant effect of flowering, climbing vines add greatly to their beauty. The home is filled with handsome old furniture and collections of travel, as well as many portraits and mementos of Gen. John C. Fremont.

Jessie Benton married for love while very young, and from the time of her marriage until the death of Gen. Fremont she shared with him most happily every trial, every success, every rise and every reverse of fortune. Both were in exulting youth when Fremont had the certainty that on the Cahuenga plain he had completed the long hopes and great aims of wise men and secured that ocean frontier that now gives us a country from sea to sea.

While abroad in 1852-53 Mrs. Fremont's life reads like a fairy tale. She was in London in the early days of Victoria's reign. To her the doors of the throne room were open; and for two hours she watched, in line with other diplomatic ladies, the beautiful procession of English women as they made their obeisance before the queen.

In Paris Mrs. Fremont felt much at

Sinking Spells,

fainting, smothering, palpitation, pain in left side, shortness of breath, irregular or intermittent pulse and retarded circulation all come from a weak or defective heart. Overcome these faults by building up the heart-muscles and making the heart-nerves strong and vigorous. Dr. Miles' Heart Cure is the remedy to use. It is the best.

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home, life there seeming but an amplification of her old French life in St. Louis. From her beautiful residence in the Champs Elysee she witnessed the official entrance of Louis Napoleon as emperor, the day so memorable to all the rulers of Europe, and rich in that vivid personality with which French history is so invested. During all their stay abroad the Fremonts took part in many brilliant ceremonies not only in London and Paris, but in Denmark, Austria and other foreign countries.

Few women have met more distinguished men and women of her time both at home and abroad than Jessie Benton Fremont, and her memories are rich with the vivid personality of famous characters in American, French, and English history in many of their domestic, political and military aspects. —Chicago Chronicle.

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In the Dairy.

Conducted by D. H. Otis, Assistant Professor of Agriculture, Kansas Experiment Station, Manhattan, Kans., to whom all correspondence with this department should be addressed.

Dried Blood as a Tonic For Young Calves.

PRESS BULLETIN NO. 70, FROM FARM DEPARTMENT, EXPERIMENT STATION, MANHATTAN, KANS., JUNE 4, 1901.

For two years the Kansas Experiment station has used dried blood in connection with its experiments in feeding calves. In March 1899 one of our cows gave birth to a calf weighing 86 pounds. This calf was allowed to suck several weeks to assist in reducing the inflammation in the dam's udder. On account of poor quality or quantity of milk, the calf did very poorly and to save its life it became necessary to remove him from his dam. With the ordinary treatment accorded to our calves, he grew worse and worse and when 79 days old weighed only 90 pounds, or 4 pounds heavier than at birth. Although no one would have given 10 cents for the calf at this time, an effort was made to bring him out. He was given castor oil, laudanum, fresh eggs, calf meal, and, as a last resort, dried blood. With the blood, the calf commenced to improve and in a short time was gaining at the rate of nearly 14 pounds per week, and not infrequently as high as 17 to 18 pounds per week. When a year old, he weighed 578 pounds, a pretty good record for a calf that gained only 4 pounds for the first 79 days of its existence. The dried blood consumed during parts of three months amounted to 7 1/4 pounds. At 2 cents per pound the cost was 15 cents.

In October, 1900, a heifer belonging to the Agricultural College dropped her first calf. The calf was small and sickly and for the first few weeks did very poorly, as is shown by the fact that, on December 1st, it weighed two pounds less than on November 1st. For a few weeks, its life was in a very critical condition, but when induced to eat a little dried blood with its milk it began to improve and has been making fair gains ever since.

Dried blood is not only good for a weak calf, but is an excellent remedy for any calf subject to scours. The Kansas Experiment Station has just purchased 20 young calves. Frequently these calves arrive at the Station badly affected with scours; a little dried blood always brings about a cure. Recently a test was made with five calves that happened to be scouring at the same time. With two of these, dried blood was fed after reducing the regular feed of milk. With the other three, the dried blood was fed without changing the supply of milk. In the former case the calves recovered from the scours after two feeds; in the latter after three feeds. With the seventy heads of young calves under experiment at the Kansas Station during the past year there has not been a single case of scours that dried blood has failed to check.

In feeding dried blood, a teaspoonful at a feed is a great plenty. This should be continued until the scours disappear. In case of a weak calf the allowance may be gradually increased to a tablespoonful at a feed. To prevent the dried blood from settling to the bottom of the pail where the calf is drinking or the milk and blood may be fed immediately after being thoroughly mixed. Since dried blood is such a cheap and effective remedy it will pay anyone who raises young calves

by hand to have a little available whenever a calf shows signs of disorders in its digestive tract. It can be obtained from any of the large packers. When ordering state that the blood is wanted for feeding purposes.

D. H. O.

Notes from College Dairy.

The early growth of pasture is being mowed to give vigor to the later growth. The pasture was originally sown to orchard grass, Kentucky blue grass, timothy, clover, and English blue grass. None of the timothy can be seen, only a scattering of the red clover plants, and the English blue grass appears only along the sloughs, leaving the pasture almost entirely of the first two named.

Eight of the ten calves fed in the whey experiment of last winter have been loaned to the Veterinary Department for black-leg experiments. The other two will be kept for the dairy.

F. E. U.

Pleased With Kansas Dairy Interests.

Mr. F. A. Leighton, editor of the butter-making department of the Chicago Daily Produce, has recently taken a trip through Kansas, and has the following encouraging and complimentary words concerning her output of dairy products:

"The writer has always had the impression that Kansas was not a State where a fine quality of butter is made, but since coming here he has had reason to change his views, for he has seen some very fine butter with just as good flavor, as any made in Iowa. Among those who are turning out excellent butter are the Belle Springs people, the Continental people—especially that from pasteurized cream—the Great Bend concern, the Helzer, Claffin, and Logan Township factories. There are others whom the writer has called on who have the same opportunities to make a good grade of butter, but they fail to get the same results that the others do. Undoubtedly there are other factories that are making good butter which the writer will see later on, but when the next fellow tells him no good butter is made in Kansas, he will tell him that he is mistaken. If I wanted some good butter and in large lines, I would take the first train for some of these creameries. These large plants are scrupulously clean, and we have not found a dirty creamery in Kansas. This is more than can be said after a ten days' trip up north among Iowa and Minnesota creameries."

Why Milk May Sour Before Morning.

C. C. CUNNINGHAM.

When milking time comes, the farmer calls Johnny, and sends him after the cows. Johnny whistles for the dog, and has a fine time chasing the cows home.

The farmer comes in after the milk pails, and not finding them, says to his wife, "Wife, where are the milk pails?"

"Why, I left one out in the chicken coop, when I fed the chickens this morning, and you must have left the other one by the pig pen when you watered them this morning."

The old man goes to the chicken coop, finds the pail looking pretty clean, and the hogs didn't happen to get into the other, so he thinks it too much trouble to go clear back to the well and rinse them, and goes out and does the milking.

He gets one pail full, and sets it up in the barn window, or some other convenient place, finishes milking, sets the other bucket up; and climbs up in the loft and throws down a lot of dusty hay to the cows, does a few other things, while the milk is catching all the hay bacillus, and various other germs that are floating around in the air and absorbing all the barn yard odors as fast as they come in contact with it. Then he takes it in, and strains it through a strainer that answers the purpose, —but does not strain at all—puts the lid on the can, and sets it in a tub of cold water, which it warms up to about the ideal temperature for all the numerous germs to develop the fastest, and then wonders why his milk sours before morning, or it has so bad a taste, if it does happen to keep sweet.

Alfalfa as a Green Feed.

During the summer of 1899 the Kansas Experiment Station soiled 10 head of milch cows. For 74 days these cows received green alfalfa. This feed is especially relished by cows and when properly handled a field can be kept in good condition for furnishing green feed practically the whole summer. It took 2.97 acres to keep these ten cows on green alfalfa and 1,623 pounds of corn and Kafir-corn meal. During this

time these cows yielded \$85.69 worth of butter fat and skim-milk, figuring the fat at creamery prices, and skim-milk at 15 cents per 100 pounds. The grain cost \$10.65. This leaves \$75.04 to be credited to the green alfalfa, amounting to \$1.95 per ton or \$25.26 per acre. Where pasturage is abundant, it will doubtless not pay to feed green alfalfa, but where pasture land is scarce or the grass became short or dry, green alfalfa furnishes an excellent feed, and will not only keep up the flow of milk for the time being, but will help materially to maintain a large flow of milk through a longer period of lactation. Pasturing alfalfa will sometimes cause cows to bloat; the Kansas experiment station did not experience a single case of bloat from cutting and feeding it green.

On June the 21st, 1900, 21 cows milked by Agricultural College yielded 389.8 pounds of milk. On July 12, these same cows yielded 390.2 pounds of milk. During this period of a little over three weeks there was a severe drought in the region of Riley County, which caused the pastures to dry up and the files to be very annoying. During these trying days the flow of milk was kept up by feeding green alfalfa. D. H. O.

Bill of Fare for a Kansas Dairy Cow.

(Continued from last week.)

CORN STOVER.—RATION NO. 13.

Since corn is, and in all probability always will be, king in Kansas, the problem of how best to utilize the forage is an important one. Where there is plenty of young stock to "rough" through the winter the problem is a comparatively easy one. Even with milk cows on a full feed of alfalfa or clover it is well to have stover in a rack in the yard from which the cows can eat at will. Where corn stover is the total roughness it will require more grain to meet the cow's need than most any other kind of roughness, except straw. It will also be impossible to supply all the protein needed from grains raised on the farm. The nearest approach will be to feed all the stover the cows will eat and then give 12 to 14 pounds grain daily, composed of 1 part soy-bean meal, 2 parts corn or Kafir-corn, 2 1/2 parts cottonseed meal, and 7 parts oats. Only 1/4 of the grain need be purchased. The acreage required would be as follows: Soy-bean 1/4, corn 1-5, oats 1 1/2. No acreage is allowed for stover, as there is usually plenty in the corn field which, if properly cut and cured, can be had without any extra outlay of land.

RATION NO. 14.

Another good ration with corn stover is 20 pounds of mangles per day, with 10 pounds of grain, composed of 3 parts corn, 3 parts cottonseed meal, and 4 parts bran. This is a reduction of about 3 pounds in the total grain needed, but an increase of about 4 pounds in the amount to be purchased.

RATION NO. 15.

Where it is desired to substitute about 1/2 of the corn stover for prairie hay, a grain ration of 1 part oats, 2 parts cottonseed meal, 3 parts corn or Kafir-corn, and 3 parts soy-bean meal. The area required in this case would be, prairie hay 1/2 acre, oats 1-5 acre, corn 1/2 acre, soy-beans 4-5 acre.

Kafir-corn stover can be substituted for corn stover whenever desired, as the two feeds possess practically the same feeding value. D. H. O.

Cows and Spring Pasture.

F. E. UHL.

There is considerable discussion concerning the variation in yield and butter-fat when cows are first turned on pasture in the spring. Cows which are poorly fed during the winter, given too wide a ration, or having a deficiency of protein, will certainly give an increased flow of milk when first turned on grass; and they may give a decreased percentage of butter fat in consequence. The College herd, however, which was fed a ration more narrow than the standard, shows little variation in either flow or per cent of fat. Let us note the record for the last of April and the first of May.

The herd numbers 28 scrub cows, but as eight of them were dry or going dry by the first of May, they were counted out, and only 20 of them considered in this comparison. These twenty gave a daily yield of 448 pounds of milk during the last of April. On the first of May they were turned to pasture well started; during the first week they yielded 462 pounds of milk daily; during the second week, 447.9 pounds daily. The highest daily yield, 475 pounds, was given during the second week. This was probably the result of a stimulus due to changing to a more palatable feed; the following day the yield was only 458.2 pounds. For a few days the

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cows were taken to the pasture about 10 a. m. after filling themselves with alfalfa hay. Later they were put on grass from 7 to 8 a. m. and always brought in about 3 p. m. They were fed all the alfalfa hay they would eat at night either in the stable or the rack outside. The grain ration consisted of 5 parts, by weight, of corn meal, 3 parts bran, and 2 parts oat hulls. The ration was 139 pounds daily the first week, and 82.5 pounds the second week. The aim is to feed no more grain than the cows will pay for. For instance, eight cows getting four pounds a day were given five pounds for several days; five of them failing to give sufficient increase in flow were reduced again to a ration of four pounds.

As to the test variation; the samples for the testing were taken for eight milkings, the last being taken the morning of the date named. Three different sets of samples were taken, ending on April 30, May 6 and 15. The average test for the samples ending April 30 was 3.88 per cent; May 6, 3.89 per cent; and May 15, 3.99 per cent. By May 30, we find the pasture shortening, the yield decreasing, and the test raised to 4.01 per cent. Six of the cows gave a lower test May 6 than on April 30, three of these regained the test of April 30 by May 15; the other three gave a still lower test by May 15. Five gave the same test May 6 as on April 30, 9 gave a higher test on May 6 than on April 30, and 5 of these falling back to, or below, the test of April 30 by May 15. One gave the same test for the three periods.

Thus we see that great variations do not necessarily follow the turning to grass, especially when cows have been well fed and cared for, and whose winter quarters do not take them beyond a lot enclosed with a high board fence, where, although they may "smell the grass," they can not see it.

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