

KANSAS FARMER

For the improvement



of the Farm and Home

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BETTER SIRES—BETTER STOCK

Hasten Live Stock Improvement by the Use of Pure Bred Sires

NO ONE factor would mean more in the improvement of livestock than the universal use of good pure bred sires. The continued use of scrub or inferior sires for breeding purposes retards the livestock industry and touches the pocketbook of the man who persists in fooling himself into believing that he cannot afford to use a good sire. Livestock men of experience have long argued for the abolition of the scrub sire. Farm journals, like KANSAS FARMER, have persistently given wide publicity to this progressive idea in livestock improvement and the bearing it has on increasing the returns from livestock production.

A nation-wide campaign to increase the use of better animals for breeding purposes, showing how this practice will increase production and bring greater profit, is being undertaken by the United States Department of Agriculture in co-operation with our state agricultural colleges and other agencies interested in live stock improvement. This is no new idea, but the nation-wide efforts of the department will give a new impetus to the movement for live stock improvement.

The plan is to hasten the replacement of the multitude of scrub domestic animals in the United States with pure-bred or high-grade stock and also to improve the quality of purebreds themselves. It has been evolved through long and careful observation of the livestock industry in this country and after extensive consultation with specialists and breeders.

Nation's Milk Average Low

For many years this country has contained thousands of the finest specimens of live stock in the world, but in spite of that fact the quality and productive capacity of the average farm herd and flock is still low. For instance, the average dairy cow in the United States yields about 4,000 pounds of milk a year, a figure scarcely two-thirds the average production in some European countries, such as Denmark. The United States has thousands of cows which have milk yields of more than 12,000 pounds—double the Danish average—but on the other hand it has hundreds of thousands which are kept for milk and yet yield only a small fraction as much product as the best cows, though receiving nearly as much feed and care.

The difference in milk yield is due in large measure to a difference in breeding, but a herd of low production can be improved rapidly by the use of a pure-bred sire from a family of high producers.

More Sirloin on Well-Bred Cattle

Among all classes of live stock a similar condition exists. Proper breeding of beef animals results in better and more uniform stock, having a greater percentage of desirable cuts of meat and a smaller quantity of bone, offal, and inedible parts. Likewise in swine, sheep,

goats, and poultry production, the kind of parent stock largely determines the quality and market value of the products. The crusade of improvement now to be undertaken is the outgrowth of investigations in genetics, of live-stock observations in many countries, and a close study of public opinion. In most live stock regions of the world a gradual evolution toward better live stock has been taking place for centuries. The rapidity of these changes has an important bearing on world commerce and on the prosperity of the nations in which improvement has been greatest.

Individual and community efforts in many cases have resulted in marked live-stock progress in small areas. The Islands of Jersey and Guernsey are familiar examples of this kind of accomplishment, but no large country so far has endeavored in an organized way to improve all its live stock simultaneously.

Live-Stock Men Equal to Task

Officials of the Bureau of Animal Industry and others who have considered the problem from every angle are convinced that it is possible to hasten the natural course of live-stock evolution with benefit to the Nation. They are confident also that the live-stock men of the country are eager to undertake the task.

The means of accomplishing most of the improvement—which affects about 200,000,000 head of live stock, besides poultry—will be through wider distribution and increased use of pure-bred sires and dams.

Once the use of pure-bred sires becomes general throughout the country, the process of grading up will be rapid. Many experiments and also practical experience, when good sires are used, show that within three generations most of

the individuals in a scrub herd headed by a pure-bred male resemble pure-bred animals in appearance. In a few more generations, under skillful breeding, the former scrub stock is graded up to such an extent that for production of meat and other animal products, they are practically as useful as pure breeds. The chief difference between a "high-grade" animal and a pure bred is in the value for breeding. Only the latter can be used in producing pure-bred breeding stock. Moreover only pure breeds are eligible to registry.

Official Emblem to be Furnished

The Department of Agriculture through its co-operative State agencies is preparing to supply live-stock raisers with printed information that tells in popular language the best animal breeding methods and the advantages to be derived from their use. In addition the Department of Agriculture is to furnish an official emblem, suitable for display, to every farmer agreeing to use only pure-bred sires and in other ways to co-operate in the better-live-stock effort. To obtain the emblem a farmer or breeder will be asked to fill out a simple blank showing the number and kind of live stock he possesses and also to declare that all his male breeding animals are pure breeds. From the number and nature of the blanks received the department will be able to measure the progress of the crusade, and at the same time obtain valuable statistical information which will be made public at suitable intervals. The betterment of the Nation's live stock is by no means a new idea. The topic has been discussed at length from public platforms and in the agricultural press for many years. Agricultural colleges, breeders' associations, various live stock organizations, banking and busi-

ness interests, live-stock judges and experts—these and other forces are responsible chiefly for the progress already made and the sentiment for further development.

Organization of Campaign

A general co-ordination of the work, however, now seems desirable, with a minimum of red tape and a maximum of red blood. So far as the activities of the Department of Agriculture in the crusade are concerned, the Bureau of Animal Industry, in co-operation with the State colleges of agriculture, will be responsible for live-stock policies, especially the breeding work and scientific problems. The States Relations Service of the Department will work in co-operation with the colleges of agriculture for carrying the plan of action through the extension divisions to every live-stock owner who can be reached. County agents and other field workers of the department and the colleges will be local sources of information and assistance.

While it is believed that stockmen of the country naturally look to agricultural officials to inaugurate a crusade of this kind, the problem primarily is one of adequate production and effective distribution. Responsibility for success depends accordingly on breeders and all live-stock owners.

Response to Will of People

For several months the department has been making an analysis of live-stock sentiment as expressed in the farm press and in correspondence received in its various offices. Of all the topics discussed the need for a better quality of domestic animals has been pre-eminent.

To make the crusade against scrub live stock most effective the department welcomes constructive ideas and suggestion from all sources. The following classes of live stock are to be included in the campaign for improvement: Cattle, horses, asses, swine, sheep, goats, and poultry.

Many Problems—None Insurmountable

In spite of the conspicuous merits of the task about to be undertaken, there are also a number of obstacles. It is recognized that sentiment in favor of pure-bred sires, while strong, is by no means unanimous. To win the support of those who, through lack of interest or opposition, fail to take their part in the crusade against scrub live stock is one of the problems to be met.

The cost of desirable pure-bred sires is another important factor which has long been an obstacle to live-stock improvement. Co-operative ownership divides the expense considerably, and the increased value of the young stock raised also helps to overcome that objection. In addition the campaign is expected to stimulate a greater production of pure-bred breeding stock of good quality.

In the United States we dig 52 per cent of all the coal used in the world.



MUSCOTAH Angus Calf Club members and their heifers are here shown on dress parade. Steve Speer, who stands at the right, now owns two pure-breds. The baby Angus at the side of his heifer was the center of attraction for club members on this occasion. The boys and girls are all anxiously looking forward to the time when their heifers will produce calves. All of the members of beef calf clubs in Atchison County are to keep their heifers until they are approximately three years old and it is hoped all will own two pure-breds by that time. O. C. Hagans, county agent, thinks money will not separate club members from their heifers after the calves come, although they will have a chance to sell at a public auction after the calves are born. The Muscotah Angus Calf Club has sixteen members.



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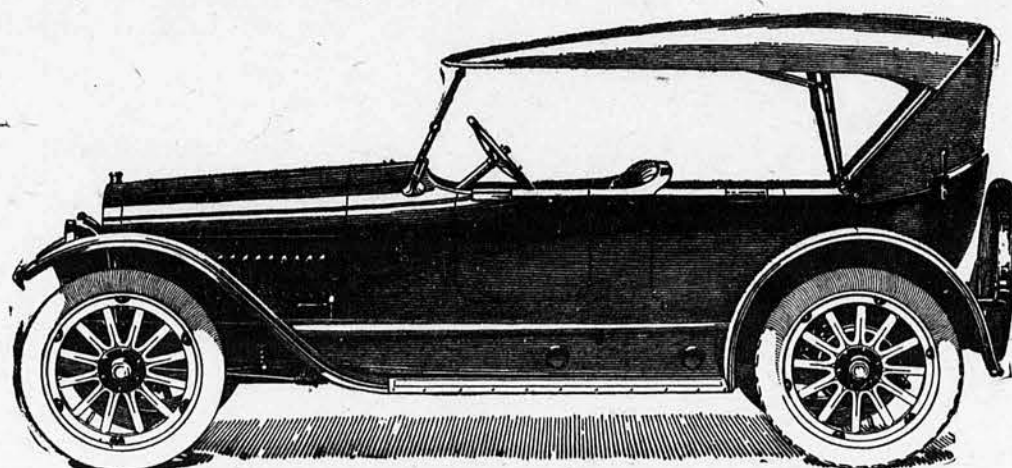
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COLLECTIVE BARGAINING

Refusal on the part of the employer's group of delegates to agree to the kind of collective bargaining demanded by labor union delegates was the rock upon which the recent industrial conference in Washington split. Collective bargaining is a term much misunderstood by the general public. Groups of farmers over the country are now fighting for the right to bargain collectively in the sale of their products. Officers of such groups have been arrested and tried under our anti-trust laws. So far, however, no cases have been made against the farmers attempting to sell their products co-operatively through their organizations. The kind of collective bargaining farmers wish to have the right to do is perfectly legitimate and in no sense to be interpreted as in "restraint of trade." It simply means that a group of farmers wish to go into the market with their pooled interests and bargain on an equal footing with distributors who are fully organized and who in the past have arbitrarily been fixing prices. It is not class legislation to grant producers the full legal right to so dispose of their products. In like manner a group of employes through their representatives may meet their employers and submit questions of wages, conditions of employment or other matters bearing on the relations existing between the workers and their employers. This is perfectly legitimate and is bona fide collective bargaining.

The collective bargaining, such as the United Mine Workers' Union, for example, are endeavoring to enforce at the present time, is of an entirely different character. It is bargaining between employers and outsiders who may attempt to dictate terms not even acceptable to the workers themselves. The union which makes the bargain offers no security or guarantee that it will be carried out. In ordinary business the individuals making bargains expect to live up to them. If either party fails to live up to a business contract, he may be compelled by process of law to keep his word. Collective bargaining through unions apparently is considered effective only so long as it suits the union.

Some fifty years ago our "captains of industry" were despots. Under such a condition there could be no industrial democracy, for no matter how well intentioned or high minded these representatives of capital might be, they were despots. Two principles of capitalistic action were adopted which were absolutely against public welfare, namely, "combination for profit in restraint of trade" and the principle of "charging all the traffic would bear." Continued agitation against this attitude and conduct of capitalistic combinations finally gave us the interstate commerce law in 1887 and the Sherman anti-trust act in 1891. Organized capital has thus been compelled to come under the law. During this development of capital, labor had to fight for its rights, and the labor union was the result. Labor, through these organizations, has become a power in this country, as was evidenced by the attitude of our government in yielding to the demands of labor as we entered the war. The labor union is to labor what the corporation is to capital, but as is pointed out in a recent issue of the Outlook, labor has now reached the place occupied by capital fifty years ago. It has adopted the same principles of "charging all the traffic will bear" and "combining for profit in restraint of trade."

Rural Organization Safeguards

RURAL organizations must be guided by the evolutionary group which wants progress a step at a time, and not by the "stand-patters," or reactionary element, nor yet by the revolutionary section which, with a vision of future possibilities, wishes by some direct action to bring in an immediate millenium. This, in brief, was the central thought advanced by Walter Burr, organization specialist of our agricultural college, in addressing farm bureau delegates gathered to form a State Farm Bureau Federation. The efforts of the last named groups are revolutionary movements and in no sense an orderly development which will function permanently along definite lines. When this group controls in an organization, the organization is likely sooner or later to die, pointed out Mr. Burr. The middle group, on the other hand, keeps the organization moving steadily forward and becoming a greater force for good. This group is always ready to take the next step.

"For the past six years in undertaking to give whatever voice or influence I may have to the service of the farmers," said Mr. Burr, "I have sought to get instructions from the farmers themselves. Among these three factors the element from which such instructions have been sought and advice has been taken, is not the reactionary, nor the revolutionary, but the central group—the evolutionary group.

"In organized labor circles of my earlier experience I have often witnessed a situation like this: The union is meeting to consider the adjustment of relationship between the employes and the employer. Some noisy, half-intoxicated, red-faced fellow speaks, and declares that the thing to do is to 'stand for our rights,' 'go out on a strike,' etc., in response to which statements he received vociferous applause. A more careful but just as loyal member arises and advises caution, saying, 'Let us first consider the facts in the situation and make our decision later on that basis.' Immediately the chorus resounds, 'Put him out,' and out he goes. Invariably when a strike has been called as the result of listening to the noisy, revolutionary element, and against the advice of the middle group, it fails to secure the moral support of the great middle class in society outside the union, and the cause of organized labor receives another serious jolt.

"We should learn a lesson which clearly has a bearing upon our farmers' organization movement. Of course it must not be reactionary, but in this day of social and industrial unrest there is little danger of such a course. Above all it must not be revolutionary. If it should become the latter, we would be led by those who suffer from certain immediate ills to undertake the correction of those ills by quite violent methods. We might succeed in correcting the ills, but the violent methods would kill our organization and there would be nothing with which to correct the ills of ten years from now. We should heed the advice of a great one who has recently gone on the long, long trail, when he said, 'The essential thing to do is to take the next step.' We can best do this by listening to and being governed by the same evolutionary element among the farmers.

"One reason that labor organization

has in recent times been safe in America is that the great leader of the American Federation of Labor—Samuel Gompers—has worked in close co-operation with Secretary Wilson of the Federal Department of Labor. The government itself has therefore been quickly responsive to the demands of the one element in organized labor. We have as one of the departments at Washington, and particularly as our department, the Department of Agriculture. The difficulty has been that there has been no accredited agricultural group organized by the states, and nationally, to co-ordinate with Secretary Houston. The fact has been brought out that this was very noticeable during the war, and was one of the reasons why the farmers seemed not to be properly represented as compared with groups having other interests. The point is this—whatever we organize must be organized as a part of the government, and not in any sense opposed to the government. There has been some little sentiment toward cursing the government for wrongs in the marketing situation of recent date. We need to remember that time and energy expended in cursing the government in a democracy like ours is entirely wasted. We will arrive sooner by spending that time and energy in cursing ourselves. Any federal department welcomes at any time the expression of the will of the whole rank and file of the group whose interests are to be served by that department. It is our duty not to criticize or oppose, but to get together and work in harmony with our department, helping it to be more and more representative of the will of the farmers of America.

"In a time when community action is the distinctive mark of social development, it is essential that we should remember the relationship between community action and scientifically trained leadership. The success of citizenship in a republic depends entirely upon having our action the result of the discovery of definite facts. Such action is always safe and progressive. The ignorant, unintelligent expression of the will of the people always makes for the destruction of democracy itself. It is the enlightened, intelligent, properly educated expression of popular will that insures the success and permanency of a republic. Whatever success the farm bureau has enjoyed in the few years of its existence has been due in considerable part to the fact that it has established as its program the business of finding out the facts and acting upon them. This falls within the realm of exact science and requires the work of scientifically trained persons.

"In a meeting of this sort, one man arises and with a great deal of passion announces that the farmers of America have made only so much profit on their wheat in a given year. Another man arises and declares that the farmers of America have made no profit, but have suffered a great loss during the same period. Nobody, however, knows the facts. Only the man who gives all of his time to discovering such facts and is trained as only an agricultural economist is trained can really get the facts upon which must be based proper action. Now let the organization get back of such a man or of a corps of such workers, receive from such a source a record of the facts, and take these facts to

our department at Washington, backed with the organized enthusiasm of the interested group, and the result will be quick action.

"In closing, let us again review these three safeguards of rural organization:

"It must be guided by the evolutionary group who want progress a step at a time, not by the reactionary or by the revolutionary group.

"It must be a part of the government (in this case the Department of Agriculture) and not for one moment against the government.

"It must recognize the proper balance between community action and scientifically trained leadership."

This was good advice from Mr. Burr, coming as it did in connection with the attempt to take a forward step in the farm bureau organization. It was well received. We need nothing so much at the present time as a close adherence to that policy of simply taking the next step. Conservative labor union leaders, who wish to save their organizations from destruction, would do well to stand with all the power they possess against the attempts of the radicals to gain control. Farmers should also strive to safeguard their organizations by a close adherence to the principles here set forth.

Next week the American Royal will be on in Kansas City. This great show of breeding cattle is a fitting climax to the series of state expositions held through the great live stock section of our country during the early fall months. This will be the twenty-first annual American Royal show. It will be held in Convention Hall, which has an arena admirably adapted to showing cattle. The building is steam heated and spectators can study the show in perfect comfort. Live stock producers who attend will be greatly benefited.

Under present conditions there can be no real affiliation of farmer and labor organizations. Announcements have been made that such affiliations are to be brought about. They certainly seem premature coming at this time. Labor is demanding shorter hours, higher wages and a reduction in the prices of prime necessities furnished by farmers. It means a program of lower wages for the farm worker and higher and yet higher prices for manufactured articles which he must buy. Increased production along all lines is the prime need of the hour. Farmers have not as yet conspired to reduce production, although from necessity many can not continue to produce as much because of increased labor cost and higher prices for farm equipment. One of the reasons given for affiliation of farm organizations and labor organizations is their common interest in the right of collective bargaining. Legitimate collective bargaining has not as yet been declared illegal. Farmers had better stand on their own feet in their demand for the right to bargain collectively in selling their products. There is little ground for affiliation in order to shorten the route between the producer and consumer, which is another reason advanced. The interests of farmers and organized labor are directly opposed. We fear the desire for more power on the part of radical labor leaders is at the bottom of this effort to get farm organizations to affiliate with labor unions.

Banish the scrub sire, is a good slogan for stock breeders' associations.

GOVERNMENT CROP REPORTS

How Figures Are Gathered and Prepared and What They Mean

IN THE United States Department of Agriculture the Bureau of Crop Estimates keeps its finger on the pulse of American farming, knows just when it has the fever of over-production and when its temperature is dropping into the subnormal of under-production. This bureau-doctor pays no attention to therapeutics or materia medica, never says anything about what medicine to give or what operation to perform. It just makes the charts that show what, if anything, is the matter with the patient, and the task of prescribing belongs to the other doctor-bureaus. But diagnosis frequently forestalls disease, determines a likely cause of disturbance before the disturbances actually develop, so that the patient himself can take the steps necessary to keep himself well. That is the biggest function of the Bureau of Crop Estimates in gathering and publishing figures on crop production—figures of what has been grown, not only, but of what, under all the conditions, may be expected at a harvest months ahead.

Older than Department

In a sense, the Bureau of Crop Estimates might be considered the nucleus of the whole department. It was established as the Division of Statistics in the Patent Office of 1840, an appropriation of \$1,000 having been made the previous year for "the distribution of seeds and the gathering of agricultural statistics."

In May, 1862, the law creating the Department of Agriculture was passed and the actual establishment took place in 1863 by transferring the Division of Statistics from the Patent Office to the newly created Department. For some time, it practically constituted the Department of Agriculture. It continued in operation under the name of the Division of Statistics until 1905, when it became the Bureau of Statistics.

In 1914 a committee appointed by the present Secretary of Agriculture recommended the abolition of the office of state statistical agent. There had been in each state such an agent. They were political appointees and their services had proved of no great worth. In lieu of the statistical agents, the committee recommended two sets of employees, under civil service. In each state there was to be a field agent of the Bureau of Crop Estimates, devoting attention to all crops in the state. In addition, there were to be crop specialists, not confined to states, but each one covering the territory in which his special crop or special group of crops is grown. These recommendations were adopted and the Bureau was reorganized on that basis.

There is a field agent in every state, except that in a few instances, one agent serves a group of small states. There are crop specialists for the more important crops or groups of crops. To secure employment in either of these positions, a man must have had either technical or practical training as a statistician, must have had at least five years practical experience in farming, and must be of mature judgment and high standing.

Keeping an Eye on Crops

Each field agent has permanent headquarters in his state and travels over it at regular periods. He personally inspects the crops and interviews the best informed men in each county. He keeps, in his office, a list of well informed men, each of whom makes a written report to him every month of what has happened during the field agent's absence.

The crop specialists disregard state lines. Each of them travels throughout the territory where his special crops are grown, collecting information in the same manner as the field agents do.

Together, the field agents and the crop specialists have about 25,000 specially selected reporters who report direct to

them each month. At the close of the month, each field agent and crop specialist tabulates the information received from his reporters, averages and summarizes the data and reports the result of his best judgment to the Department, with brief comments explaining what has happened in his territory during the month.

That is one of the most important sources of information from which the Bureau of Crop Estimates finds out how the crops are growing and how much they are likely to produce. But there are several other sources. The Bureau has a local reporter in every township or other small civil unit in every county in the United States. Each local reporter makes a report every month, direct to the Department, on crop conditions under his own observation. Each county, also, is represented by a county reporter who makes, direct to the Department every month, a report based on personal observation, reports of neighbors and others, and information secured by interviews and over the telephone.

Organization is Wide

In addition to all these, about 35,000 in number, the Bureau maintains many special lists of voluntary reporters who report only on one subject, with which they are particularly familiar, as, for example, potatoes, flax, cotton, cranberries, live stock, wool, honey bees, or any other one thing grown on the farm. Counting all classes, the Bureau has about 200,000 regular crop reporters on the voluntary list. On top of it all, the names of more than a million farmers

In December of each year, the Secretary of Agriculture fixes and publishes the dates for the issuance of government crop reports for the following year.

The reports of field agents and crop specialists, on the speculative crops, are mailed direct to the Secretary of Agriculture in special envelopes. These are separated from other mail in the Washington post office and are delivered by messenger to the Secretary of Agriculture or his first assistant, who places them, with the seals unbroken, in a safe, to which he alone has the key. They remain locked in that safe until the morning of the crop report day.

Utmost Secrecy Observed

The returns on speculative crops from the voluntary reporters come direct to the Bureau of Crop Estimates and are tabulated on separate sheets for each crop. Before the figures are added, each sheet is given a key number known only to the chief of the Division of Crop Reports. The top and side of each sheet, showing the State and crop, are removed and the sheet itself is cut into sections which are distributed to expert computers who add and average the figures with no means of knowing to what state or crop the figures pertain.

On the evening before crop report day, all telephones in the Bureau of Crop Estimates are disconnected. On the morning of crop report day, all doors in the Bureau are locked and guards are stationed at the outer doors to prevent any one entering or leaving when the crop reporting board is in session. The sealed reports of field agents and crop specialists in the custody of the Secretary are



PRESS representatives anxiously waiting outside the room in which the government crop reporting board is at work. At the exact minute set in advance by the Secretary of Agriculture, copies of the report are handed out and immediately sent by wire to all parts of the country for publication in the daily papers.

who are available as sources of information when necessary are kept on file in the offices of the state field agents.

The monthly reports cover acreage, condition, yield, total production, stocks on farms, progress of farm work, wages, supply or deficiency of farm labor, fertilizers and seeds. These reports are made for about sixty crops which represent about ninety-five per cent of the total agricultural production in the United States. On truck crops, the reports are made weekly instead of monthly.

How Livestock is Estimated

The number of the different classes of live stock are estimated each January, and monthly estimates are made of changes on farms. Estimates of losses from disease are made one or more times a year.

The monthly crop reports are prepared by a crop reporting board in Washington. The board is composed of the chief of the Bureau of Crop Estimates, three of his most experienced assistants and one or more field agents called in each month. As the information collected affects the price of the so-called speculative crops—cotton, wheat, corn, oats, rye and barley—very strict measures are taken to safeguard the information until it is ready to be published. Any employee of the Bureau who gives out any information in advance of publication or who speculates in any produce of the soil, or who knowingly compiles any false statistics, is subject, under a criminal statute, to a fine of \$10,000 or imprisonment for ten years or both.

turned over to the chief of the Bureau, and the crop reporting board begins its work.

Each member of the board is supplied with a separate sheet for each crop. On the sheets are shown for each state, in parallel columns, the estimates of the crop specialists and state field agents, the average of returns from the county reporters, the average of returns from the township or local reports and the average of returns from special reporters together with the report for the previous month, for the same month of the previous year and the ten year averages for the same month. The chairman of the board reads the comments of the field agents and crop specialists, the reports of the Weather Bureau for each state, and such other data as may be available.

With this information before him, each member proceeds, independently and without consultation with other members, to make his individual estimate of the crop condition for each state. The chairman then lists the individual estimates in parallel columns and reads them. They are discussed by the board and a single figure is adopted for the crop report. This figure is not an average of the figures of the individual members of the board, but a figure upon which all the individuals agree after hearing what factors influenced each member in forming his judgment. As a general rule, there is surprising unanimity of judgment and little difficulty is had in reconciling differences.

As fast as the figures are determined

by the board, they are turned over to a force of expert computers who convert the condition figures into numerical estimates of yield per acre for each state which, when multiplied by the estimated acreages gives the total estimated production as indicated by reported conditions.

Making Information Public

The report is then summarized and a sufficient number of copies run off for immediate distribution to the press. Shortly before the minute set for the issuance of the report, the Secretary or Acting Secretary is admitted to the board room, reviews the work of the board and approves the reports. Exactly at the minute set in advance by the Secretary, the report is released to representatives of the press associations, in waiting in another part of the building, and is at once flashed over the country by wire for publication in daily newspapers. At the same time, a telegraphic report is sent to the office of each state field agent who issues a state report for papers in his own state. An hour later manuscript is forwarded to the Government Printing Office for publication in the Monthly Crop Reporter, which goes to all the voluntary reporters of the bureau.

That is the way the Department of Agriculture gathers its information about growing crops and the way in which the figures are prepared and issued to the public. Now, what is the use of it all—what does it amount to? This:

Agriculture is now and probably will always remain the largest single industry in the United States. It represents an invested capital probably in excess of \$80,000,000,000 and an annual output in excess of \$20,000,000,000. The population either engaged in agriculture or directly dependent upon it—farmers, farm workers, and their families—is approximately 50,000,000 about one-half of the population of the United States. This industry, then, is easily more important than all other industries combined. Not only does it support half the people of the country, but it is the main source of the food supply of the other half and practically all raw materials for manufacturers and export. The prosperity of the country as a whole is closely related to and affected by the prosperity of the farmer; and the farmer cannot be prosperous unless his business is profitable; and his business cannot be profitable unless he can market his crops economically and to good advantage; and he cannot market his crops economically and to good advantage unless he knows something about what production is going to be and how it will affect the demand; and the only dependable way he has of getting that information is from the government reports.

Helps Farmer Sell His Products

The government, as a matter of fact, is just beginning to take the proper interest in the marketing end of the farmer's business. For half a century, the energies of the Federal and state departments of agriculture and of state college of agriculture and agricultural experiment stations were devoted almost exclusively to stimulating crop and livestock production and little attention was paid to the marketing of farm products. Until within the past six years, in fact, the whole marketing end of agriculture was undeveloped and neglected. As a result, farmers and their families often failed even to make wages, to say nothing of a return on their capital invested. Within the past six years, a Bureau of Markets has been established in the United States Department of Agriculture and a number of states, following suit, have established such bureaus. There have been established, also, many organizations of growers for the special

(Continued on Page Nine)

GENERAL FARM AND STOCK ITEMS

Something of Interest for All—Overflow from Other Departments

CO-OPERATIVE live stock shipping associations afford a means whereby the farmer feeding stock in less than carlots can get just what his stock brings on the central market, less shipping expenses. So far as marketing is concerned, this organization puts the small feeder on a level with the man who feeds a carload at a time.

Caldwell County, Mo., through the efforts of the farm bureau, is now included in the list of Missouri counties where stock is marketed co-operatively. Meetings were held in Hamilton and Cowgill and the plan of co-operative shipping was explained by the extension agent in marketing from the Missouri College of Agriculture. The farmers shipping from these points then organized two associations. Each association employs a manager working on a commission to handle the stock of its members.

To make co-operative marketing more efficient, the college is arranging for three-day short courses for Missouri managers, to be held in two of the principal markets. At these short courses instruction will be given in grading stock and in accounting. The managers will also have opportunity to discuss their common marketing problems.

Sprayed Apples Not Poison

Apples sprayed with arsenate of lead may be eaten with safety. This was brought out in some recent tests at the Oregon agricultural college by R. H. Robinson, associate chemist of the experiment station.

The Boston health department recently condemned several carloads of fruit shipped from the northwest and advised against the consumption of western fruit because a woman had died whose stomach on autopsy showed the presence of traces of arsenic. The experiments were made following this action.

Samples were taken directly from trees that had received in the season five applications of double strength arsenate of lead. The apples had a heavy covering of the arsenical. The dust colored sediment of lead arsenate was easily seen and it is inconceivable, points out Mr. Robinson, that any person would eat such an apple without first wiping off the lead arsenate. Chemical analysis showed that the apples averaged only .0007 grams of arsenate. Since an average fatal dose of arsenate is 300 times this amount, it is obvious that no harm would result from eating even larger quantities of fruit heavily covered with the spray. Other tests showed correspondingly smaller amounts on apples that had received the average application of the spray.

In order to ascertain whether any arsenic had penetrated the peeling an analysis was made of the flesh of the apple after first removing the peel. No trace of arsenic was found.

Advocates Straw Spreading

"It is a safe financial proposition to haul wheat straw and spread it," remarked a visitor to KANSAS FARMER office last week. "If the straw is left in one big pile in the middle of the field, it is in the way every time the field is plowed, harrowed, disked or drilled. It must be run around each year until it is rotted sufficiently to be hauled out as manure, or else burned, which is almost criminal when we realize the amount of fertility that goes up in the smoke.

The average farmer will tell you that he has not the time to haul and spread the straw," said our visitor. "I am sure if he tries this plan that he will never burn or permit a stack to remain an unsightly obstruction in the otherwise beautiful wheat field. Estimate

the time and labor that it will take to haul and spread the straw and take that much time and labor from the plowing and preparation of the wheat ground. Spread your straw and the lessened acreage will produce as many bushels of wheat as the entire acreage would have produced. The unused acres will increase in fertility if allowed to remain idle or summer fallowed and will show an increased yield the following year.

"The result will be better farming, efficiency in labor, conservation of fertility, and a tidiness of the farm which should appeal to the desires of the progressive farmer. A straw stack slowly decaying is not a cheerful nor a beautiful sight. A straw stack left to the mercy of the elements is a menace from fire, it is a harbor of both insects and animal pests. In self defense it should be quickly returned to the generous and always hungry soil which gave it."

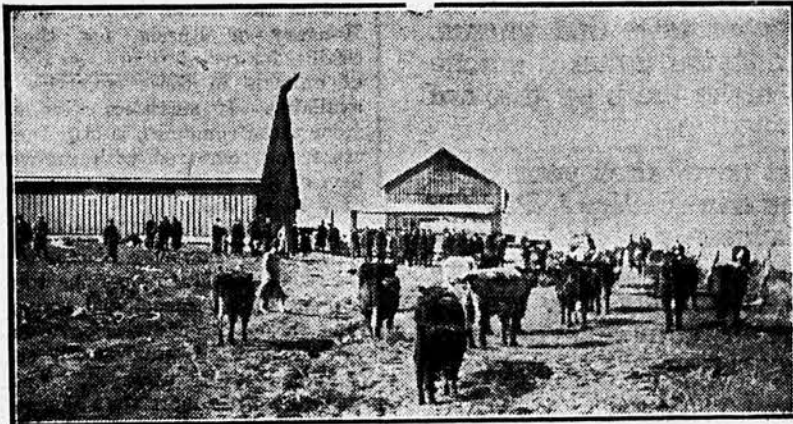
Power for Cutting Silage

F. A. B., Phillips County, writes as follows: "I am contemplating digging a couple of pit silos, and would like suggestions as to the best kind and size of a silage cutter to use in filling the silos. For power, I have a 12-24 horsepower tractor with a belt pulley eleven inches

reputed to own more than a thousand head. Periodically, the owners of these wandering herds round up a bunch of the best animals, six to twelve months old, and market them. But where do they find the market? Who wants razorbacks?

A ready market awaits them in G. E. Cain's feedlot, says Oscar H. De Wolf, Missouri's County agent, who is telling this story, and in the course of a year 3,000 pass through this feeding station. While these range hogs are of the razorback type rather than of good fat-hog type, yet Mr. Cain runs them close to market toppers and occasionally succeeds in really topping the market. How he succeeds in making these thin, grade range hogs, weighing from 100 to 125 pounds, place so well on the market after a feeding period of from 50 to 75 days, is the interesting part of this story.

The hogs, as they are delivered at the feeding station receive the double treatment against hog cholera, and this is the first safety step toward his success, as hog cholera is anything but stamped out in Southeast Missouri. After allowing two days to recover from the vaccination they are turned into the feed lot where they have free access to self feeders filled with corn and tankage. He has observed no detrimental effects from



INSPECTING R. L. RUSSELL'S HERD ON SHORTHORN TOUR OF ATCHISON COUNTY, OCTOBER 28.—ELEVEN HERDS VISITED THAT DAY.—TWENTY HERDS MISSED FROM LACK OF TIME

in diameter. The engine speed is from 450 to 750 revolutions per minute. The 750 R. P. M. is its usual operating speed."

W. H. Sanders of the Farm Engineering Department of our Agricultural College, answers these inquiries as follows: "Your tractor should drive any standard 20-inch silage cutter for pit silo work. If any high silos above ground are to be filled, it would be better to get a 16-inch cutter. Pit silos require power for cutting only. Silos above ground require additional power for elevating silage. Operating a blower requires from 25 to 125 per cent more power than is needed for cutting, depending on the height of the silo.

"The Agricultural College makes no recommendation regarding the 'best makes' of silage cutters. Probably the older companies in the business could be expected to have the more nearly perfect machines."

Buyers of silage cutters would do well to consult the advertising columns of KANSAS FARMER, writing to the companies advertising for literature setting forth merits of their respective machines.

Feeding Range Hogs at a Profit

Hundreds of hogs range the open lands in Mississippi County, Missouri. There are 40,000 acres of these lands, and one man who ranges his hogs thereon is

putting the hogs on full feed so soon after vaccination.

The hogs are fed in a series of lots of five acres each, on which various forage crops are grown in rotation. This year the lots were seeded to Sudan grass. Mr. Cain says he had noticed that Sudan grass is a very sturdy plant and thought he would try it out this year as a forage in his hog lots. Although being very heavily trampled and pastured through the whole summer, and the summer was unusually dry, by-the-way, yet it kept even with the hogs and in one lot gained a little. The test has not been carried far enough to determine whether this will prove a successful hog-forage crop or not, but it did what few other forage crops would do which was that it furnished tender fresh forage for the hogs all summer. The county agent doubts whether any other forage crop, legumes included, would have stood the punishment this grass did and keep such a constant supply of green forage available all the time.

One of the things watched closest at this feeding plant is feed economy. The feeder who did not give it careful consideration last summer was undoubtedly permitting a leak to absorb the greater part of his profits. Mr. Cain, by careful watching found that when corn rose to more than \$1.60 a bushel, it was more economical to feed grain by-products, and grain not standard in our local mar-

kets. He found that by substituting hominy feed, wheat middlings, and whole ground barley his gains were made more economically. The practice was first started by using wheat middlings as the grain part of the ration, and while feeding this exact figures were kept. He found that gains were produced cheaper than with corn at the prevailing prices. It was rather late in the summer feeding period before whole ground barley was found an economical feed when corn was costing \$2 a bushel.

Another point in economy Mr. Cain has found to be the use of the self-feeder. Nothing is fed by hand. Where more than one kind of grain is being fed each is supplied in a separate feeder. However, while the hogs eat all kinds of feed, well, they seem to prefer the hominy feed. Tankage, which takes an essential place in these rations, is also fed in a self-feeder.

While Mr. Cain does not keep an itemized account of his feeding operations, sufficient records are kept to show upon which side the balance rests. Records show the average daily gains made by the hogs range from 1 1-2 to 1 3-4 pounds. Approximately 3 1-4 pounds of grain is required to produce one pound of gain.

The hogs are at all times supplied fresh clean water and shade, and are kept free from lice. At each feeding bunk is a driven well to supply the abundant amount of water required. Water is pumped into a square box trough of two sections, each section being about 14 feet long. A removable slatted top fits over the trough, permitting the feeder to clean the trough readily several times a day. On the other side of the pump, Mr. Cain has constructed a shed four feet high, sixty feet long and twelve feet wide. Under about one-third the length of the shed is a water-tight box ten feet wide and ten inches deep, which he keeps half filled with water to furnish the hogs a wallowing place. Occasionally crude oil is poured over the water, transforming the wallow into a self-oiler. When the hogs find a freshly oiled surface, Mr. Cain says their actions remind him of a bunch of boys at a picnic. As a practical way of oiling hogs to control lice it is a complete success.

Better Bulls by Co-operation

Better sires—better stock is a slogan which might well be adopted by livestock associations all over the country. Universal use of good pure bred sires for breeding purposes would bring about a remarkable improvement in the livestock kept on our farms. The co-operative bull associations make it possible for a man to have the use of a good bull at a minimum cost. A concrete illustration will show how this becomes possible.

At Roland, Iowa, a co-operative bull association was formed. Before it was formed the farmers used bulls with an average value of \$89.44 and the annual cost to each farmer was \$29.81. After the association was formed the farmers used bulls with an average value of \$240 and the annual cost to each farmer was \$7.50. In other words by organizing a co-operative bull association the farmers used better bulls at a lower cost. This means better cows, increased production and greater profit.

Holstein Business Meeting

The semi-annual meeting of the Holstein-Friesian Association of Kansas will be held in Wichita on Monday evening, November 17, at the Lassen Hotel. This meeting will have important matters to attend to and a full attendance of members is expected. This meeting is held in connection with the Association sale in the Forum, November 17 and 18.

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Prince Albert never tires your taste because it has the quality! P. A. is made by our exclusive patented process which cuts out bite and parch—assurance that you can make new smoke records without any comeback but real smoke joy every time you fire up!

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is as profitable as grain growing. Successes as wonderful as those from growing wheat, oats, barley, and flax have been made in raising Horses, Cattle, Sheep and Hogs. Bright, sunny climate, nutritious grasses, good water, enormous fodder crops—these spell success to the farmer and stock raiser. And remember, you can buy on easy terms

Farm Land at \$15 to \$30 An Acre

—land equal to that which through many years has yielded from 20 to 45 bushels of wheat to the acre—grazing land convenient to good grain farms at proportionately low prices. These lands have every rural convenience; good schools, churches, roads, telephones, etc., close to live towns and good markets.

If you want to get back to the farm, or to farm on a larger scale than is possible under your present conditions, investigate what Western Canada has to offer you.

For illustrated literature with maps and particulars regarding reduced railway rates, location of land, etc., apply to Department of Immigration, Ottawa, Canada, or

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ADVERTISING PAGE FOR READY BARGAINS**

Livestock Losses in War Countries

CATTLE, sheep and swine in nine countries of western Europe have decreased, but have increased in other countries, including the United States, so that the present situation with respect to numbers is very much the same as before the war.

American exportations of meats and meat products may reach the pre-war level before the herds and flocks of Europe have been increased to pre-war numbers.

These are outstanding statements in a report on the live stock situation by two United States Department of Agriculture specialists who recently observed conditions in foreign countries.

A summary of their report follows:

"The situation with respect to the total number of live stock in nine countries of Western Europe and in the United States, Canada, Argentina, Australia, and New Zealand, considered as a whole, according to the best information available is very much the same as before the war. The European countries are important from a consuming standpoint, and the other countries are important from a producing standpoint.

"A comparison of the figures obtained shows that the total number of cattle in the fourteen countries increased approximately nine millions, while the total number of sheep and swine (figures for which are for thirteen countries, as recent information on sheep in Belgium and swine in Argentina are not available) decreased approximately two and one-half millions and seven and one-fourth millions, respectively, which practically counterbalances the increase in cattle. This does not take into consideration the former empires of Austria-Hungary or Russia, nor the Balkan States, for recent figures on the number of animals in those countries are not available. If statistics were available from these countries, a still further decrease as compared with pre-war numbers of live stock in Europe would probably be shown.

Increases and Decreases

"The most important factor to be considered, however, is that the total numbers of cattle, sheep, and swine in the nine European countries have decreased, while the total numbers in the other countries have increased. Cattle decreased a little more than seven millions in the European countries and increased a little more than sixteen millions in the other countries named. The loss in numbers of swine in the European countries amounted to approximately 24 1-2 millions as compared with a gain of approximately 17 1-2 millions in the other countries. The decline of sheep in the European countries was approximately seven and one-half millions and the increase in the other countries approximately four and three-fourths millions.

Swine Situation Important

"Inasmuch as the greatest decrease in the live stock of these European countries was in the herds of swine, this phase of the situation is of vital importance. While some of the countries, particularly Belgium, France, and Italy, may try to increase their supplies of meat and to build up their dairy herds by the importation of a few live cattle, our chief interest lies in the future market for our surplus pork and lard. The length of time which will be required to re-establish the European herds of swine has been variously estimated at from one to three years. Judging from opinions expressed by Government officials and stockmen in the different countries visited and from our observation, it appears to us that two years will elapse before the herds are brought back to the pre-war normal, that is, the herds will not be back to pre-war numbers before the latter part of 1921. This, of course, will depend on weather and crop conditions in the countries affected, the amount of grain available for feeding, and the rapidly with which the production of the dairy herds is increased.

Probable Exports

"While the shortage of live stock in

Europe may be felt in these countries for several years, it does not follow necessarily that importations of meat and lard equivalent to the difference between pre-war and immediate production will be made while the herds and flocks are being brought back to the old basis. The ability to buy, credits and exchange, taxes, and the needs for retrenchment undoubtedly are factors which will and must be considered. All of these will tend to limit the amount of money sent to other countries for the purchase of food, and it is very likely that our exportations of meats and meat products may reach the pre-war level before the herds and flocks of Europe have been increased to pre-war numbers. The demand for these products, however, very likely will be considerable for some time."

Better Cattle Needed

Farmers everywhere are coming to the realization that something must be done, and live stock leaders are saying: "Do you know that we must feed cheaper feeds and feed them to live stock of better natural qualities—in other words, better bred cattle—if we are to make a profit."

Dean Farrell, of the Kansas Agricultural College at Manhattan, sounded the slogan of cheaper feeds for better bred live stock last spring and awakened up a lot of Kansas and Missouri farmers who were gathered on Cattlemen's Day to study the results of experimental feeding work at first hand. To breed better cattle, one must have ideals as to what better cattle are. To get a good idea on the better beef breeds and what can actually be accomplished in beef cattle breeding so as to take the very best advantage of the utilization of the cheaper feeds, the cattleman has only to visit Kansas City and the American Royal Live Stock show, starting November 15 and continuing one week. The big beef breed cattle show will be held in Convention Hall this year, which means that Kansas City is going to be hostess to the biggest gathering of beef breed cattlemen that it has entertained for several years.

Just now the world is wondering whether there are enough beef cattle on the land to make it possible for everybody to have their steaks and roasts, and the matter of shoes and harness is bobbing up. More cattle and better cattle seems to be the call of the world. Just like the world makes its plea for its daily bread, with one eye on the Kansas, Missouri, Oklahoma and Texas wheat fields, while making the plea, just so does the world look to the west and southwest for the slices of beef, rich red beef, fattened on grass and corn, to go with this daily bread. The west and southwest is the natural home and haunt of the cow and her calf, and to keep up the beef supply of the world it is necessary that the cow and her calf should be encouraged to increase and multiply and populate the west and southwest.

The coming show is expected to be the greatest exhibition of beef cattle ever held. Several hundred thousand pounds of beef on the foot will be displayed. The beef cattle shown are the forebears of more and better beef cattle to come and it will pay to see them. The ponderous tread of the beef animals will be heard for six full days at Convention hall. It will be the grand march of the beef makers.

Young stock requires considerable care and attention, but at a season when the field work is not pressing. The owner of young live stock can well afford to do extra work for them in the winter, as these same animals will assist in harvesting his crops later.

Raising more than \$800 worth of watermelons and tomatoes on a two-acre patch of ground was the way P. Phorson, of Norway, Kansas, helped to lower the high cost of living.

This Handy En-ar-co Oiler **FREE** To Automobile and Tractor Owners

Send the coupon for a long, slim can with a long spout that reaches all hard-to-reach places on your machine.

This oiler is intended to remind you that when you buy

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you get the best that money can buy. Made by graduate workmen, trained to their tasks and skilled in Scientific Refining. For this reason En-ar-co brands, for nearly forty years, have enjoyed a reputation for dependability.

En-ar-co National Motor Oil For Automobiles and Tractors

An oil of the right body to protect the moving parts with a soft, velvety cushion or film, strong and tenacious, so as to permit that necessary smooth movement of the motor to develop its greatest strength and power.

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goes through a Scientific Refining Process, wherein it is distilled many times, vaporized and filtered until a clear, clean oil, containing no free carbon, is produced. An oil that will prolong the life of your motor, giving it increased power and save, in cold cash, many times its cost in preventing lubrication trouble.

National Light Oil

The most economical fuel for oil-burning tractors, best for lamps, insuring a bright, clear light without charred wick or sooted chimney. No soot or smell when used in oil stoves. Its uniform heat makes it most desirable for incubators, as it emits no fumes to clog egg shell pores or kill live chicks in the brooder. Buy it by the barrel.

Black Beauty Axle Grease

for the wagon. Insures a friction-free axle, as it contains no compounds to clog and gum.

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If he cannot supply you, write us for prices and location of nearest distributing point.

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per year.

I use.....gals. Kerosene per
year.

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give make of your auto or tractor.

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THERE is no "off season" for the Cletrac. It is a year 'round investment paying you a steady interest. When not necessary in the fields use it to do the *other* work that you formerly did with horses or the stationary engine. The Cletrac is a master at belt work and knows no equal at dragging dead weight.

It is ideal for orchard work and because of its small size, its short turning radius and its power, has become the *standard tractor* among orchardists.

The Cletrac runs on metal tracks like a locomotive. No extra power is required to push it *through* the soil. It runs on its tracks *on top of* the ground and consequently most of the power goes into drawbar pull where it belongs.

The Cletrac operates on a very small amount of kerosene, gasoline or distillate. It does *more work more days* in the year and does it *better, cheaper and faster*.

Order your Cletrac *now* for prompt delivery. With it you are assured of a service fully in keeping with the machine. Send today for booklet, "Selecting Your Tractor."

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Watts No. 1. Corn Sheller for the man who shells corn only for his own use. Capacity 50 to 75 bushels per hour with a 3 H. P. engine now \$34.50. Order No. KB-900.

Watts No. 4. Corn Sheller with cleaning system, cob stacker and grain elevator \$69.50. Order No. KB-901.

Watts No. 7. Corn Sheller with standard equipment including wagon box, grain elevator, corn stacker, type "R" feeder, on steel trucks. Capacity 200 bushels per hour, now \$285.00. Order No. KB-903.

Watts No. 8. Double Cylinder Corn Sheller for custom work. With standard equipment, wagon box elevator, swivel cob stacker and feeder on steel trucks. Capacity 600 bushels per hour, now \$330.00. Order No. KB-905.

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Write today for Free Watts' Corn Sheller Book No. KB-77

Don't Miss a Word of This

ANNOUNCEMENT

To the farmers of Kansas in general, and to the farmers of Montgomery County in particular:

GREETING: On October 11, 1919, our Fertilizer plant at Crane, Kansas, commenced manufacturing the material that will **Restore Your Land to its Original Fertility**. If you wish to increase your production of Grain and Alfalfa from 25 to 50 per cent and more, you cannot afford to delay in getting your order to us at once.

We are more than anxious that our home farmers benefit. We have orders from Oklahoma and other states that will have to wait until your wants are supplied. Remember, if your wheat is already sown, or is up, you can derive the same benefit, and more, by Top Dressing your crop now, or at any time during the winter. Don't fail to drill this on your Alfalfa after the last cutting; also your pasture lands. You will have the same great benefit if used on your Garden, Orchards or Lawns. You cannot calculate what this Soil Rectifier will do for you. We extend to you a cordial invitation to inspect our plant at Crane Station, and at our office, 200 Citizens Bank Building. Phone 386, office.

Yours to Double Your Production,

THE LIME FERTILIZER & MFG. CO., Independence, Kan.

Many an internal combustion engine is seriously injured by permitting the water to freeze in the cooling system. Do not fail to drain the water from the cooling system of the tractor when it

is laid away for the winter, or even when left over night in cold weather. Be sure that it is standing level in order to insure thorough draining. The drain cock should be left open.

MECHANICS ON THE FARM

Items of Interest About Automobiles, Engines, Tractors and Motorcycles

UPON practically every farm a disk harrow is found. About twenty years is the average life of a disk given proper care. This has been shown by carefully compiled statistics. Thus it is a long-lived tool. There is very little about a disk to wear out. It has few moving parts and if given good care should cause but little trouble. Disks should be gone over carefully every season. During the winter months the boxes should be taken apart and carefully cleaned and, if badly worn, replaced. See to it that the oiling system works and that the bearings are getting oil. Keep the arbor bolt tight. This holds the disk firmly in place. If the disk is used much it should be sharpened at least once each season. This greatly increases the penetration and decreases the draft, as it will do more work with less set. It will also do better work, and because it does not need so much angle or set there is less strain and wear on the boxes. While a dull disk will cut, it is like a dull axe, inefficient and expensive to work with.

Saving Fuel

A shortage of coal, due to the national coal miners' strike, emphasizes the need of economy in the use of fuel. The following suggestions on fuel economy are from Bulletin No. 8 of our engineering experiment station, just published:

The furnace or stove should be fired at regular and frequent intervals, care being taken not to allow the fuel to burn too rapidly.

The fire of a furnace should burn evenly over the whole grate and should be kept free from bright spots.

Excessive shaking of grates should be avoided, in order to prevent loss of fuel to the ash pit.

Ashes should not be allowed to accumulate in the ash pit.

The fire pot should be kept well filled with fuel during cold weather. In moderate weather a layer of ashes on the grate and below the active fuel bed will prevent the fuel from burning too rapidly.

Every effort should be made to keep the air moist. When a dwelling is heated with dry air a rapid evaporation of moisture from the bodies of occupants will take place, producing a feeling of cold, and this requires the rooms to be kept at a higher temperature in order to insure comfort. Dry heat also cracks furniture and woodwork.

Registers, radiators and heating surfaces should be kept clean.

Care should be taken in using fine coal not to lose too much fuel to the ash pit by sifting through the grates.

American Royal and the Truck

A modified form of the ship-by-truck move that is sweeping the country will be put into use at the American Royal Live Stock Show in Kansas City next week. It was decided to hold the American Royal at Convention Hall in order that cattlemen might have the finest show building in the world in which to display their cattle, and so visitors to the greatest beef breed cattle show in the world might have a comfortable, warm and well ventilated building in which to view the cattle. Then came the problem of getting the high priced cattle, more than a million dollars worth of them, from the freight terminal yards to Convention Hall.

Kansas City is hilly and its streets, like those of all other cities, are slippery for cattle in late November, so the problem of getting them up the hills and over the paved streets had to be solved. The motor truck was the solution, so the fine, pure-bred registered cattle will step from their palace stock cars on arrival

at Kansas City from Ohio, Indiana, Illinois, Iowa, Nebraska, Kansas, Texas, Oklahoma, Missouri, Colorado, Montana, Wyoming, Kentucky, Tennessee, Georgia, Mississippi and the other states from which they will come for the Royal, right into a waiting motor truck, bedded like a palace stock car, and will be whisked away over the hills to Convention Hall.

Many pure-bred cattlemen are now using motor trucks to convey their fine cattle from their farms to their nearest railway station when starting on the fair circuits, so that most of the cattle which will show at the Royal in Convention Hall November 15 to 22 will be as used to their motor truck ride as they are used to their palace stock cars and the big show rings and the blue and purple ribbons which they have been accumulating at the various state fairs.

Motor truck dealers everywhere will be interested in knowing how well the motor truck has fitted in with the pure-bred live stock industry.

Use of Labor-Saving Machines

Improved machinery has made the American farmer the best farmer in the world from the standpoint of individual production. This tendency to increase the productive capacity of the individual through the use of more and better machinery has become more pronounced as a result of war conditions which made it necessary for more food to be produced with less available labor.

Some interesting figures have been compiled by the Ohio Experiment Station, showing this tendency to produce more food with less labor. A number of instances are recorded where farmers with the use of the tractor and large binder have harvested their crop with little additional help. In one instance a man with an improved outfit harvested thirty acres a day.

The figures show that even in 1910 twelve acres of grain represented the amount one man was capable of harvesting. To accomplish the same work with the methods of 1840 would have required twelve men; in 1855, eight men; in 1865, seven men, and in 1875, three men. The scarcity of labor and the high wages prevailing during the European war did much to increase the use of labor-saving machinery, just as the Civil War hastened the adoption of improved farm machinery.

It is interesting to note that the first public trial of the reaper in Ohio was made near Cincinnati in 1833, but up to 1850 no machine for planting corn had been introduced. The first corn planters were used during the Civil War. Mowing machines were introduced about 1850 along with the horsepower threshers and separators. Steam power was not introduced for threshing until after the Civil War.

Focusing Headlights

A trade paper gives the following method for focusing automobile headlights so they will comply with the laws of various states:

"Set the car twenty feet in front of the garage door or the side of the barn. Shift the bulbs until the light appears as two uniformly bright circular patches on the door. Perfect focus is obtained when these circles of light are brightest and are reduced to the smallest possible diameter. Now back away seventy-five feet, and tip the reflectors downward until the light of the top of the light beam measured vertically on the garage door is not more than forty-two inches above the ground. To make such adjustment, of course, it is necessary that the ground be level from the car to the garage door or the side of the barn."

GOVERNMENT CROP REPORTS

(Continued from Page Four)

purpose of improving marketing machinery, grading products, obtaining better means of transportation, storage and distribution, and avoiding disastrous shortage and overproduction. A good beginning has been made, at least, toward furnishing the farmer the information he must have before he can make full success of his business.

But before any intelligent program of marketing or of production can be formulated, knowledge is necessary as to the number of live stock, acreage in crops, present condition and prospective yield—the information that is ascertained and published by the Bureau of Crop Estimates, and that possesses a surprising measure of accuracy.

The war emergency demonstrated more clearly than anything had previously done what this organization can accomplish in obtaining quickly and accurately country-wide information on present and prospective food supplies.

For the two war years, 1917 and 1918, the bureau estimated in advance of the planting season the acreage that farmers intended to plant in food crops. Both years these estimates came within 3 per cent of the final figures. On some special crops even closer results were obtained. In 1918 the preliminary estimate of the total production of wheat came within 2 per cent of the final figures, as shown by the quantity of wheat

seed and total receipts at mills and elevators as reported by the Grain Corporation of the Food Administration. For the three years immediately preceding the war—1914, 1915 and 1916—the preliminary estimates on cotton production were within 1 per cent of the final figures. On cotton, the board did less accurate work during the war than for the period immediately preceding, but the preliminary estimates were within 3 per cent of production both in 1917 and 1918. The estimate proved too low in 1917 because the high price of cotton stimulated closer picking than had ever been done before, cotton picking continuing in many sections until March. The estimate was again too low in 1918 because of the extremely mild fall and the late coming of winter. Cotton went on producing long after the time when it is ordinarily killed by frost.

Most Accurate in the World
These instances are cited merely as preliminary to the statement that the United States Government crop reports are the most complete and accurate of their kind in the world. They are unbiased and dependable. They discourage the issuance of biased and misleading crop reports by speculators, just as the presence of a police force discourages crime. They tend to stabilize prices by giving advance information of over-production or under-production. By showing what supply may be depended upon, they reduce the carrying risk of buyers and dealers and enable them to pay better prices than would be possible otherwise. Without these reports the farmer would have no dependable means of knowing what the crop production would be in other states—or anywhere outside of his own neighborhood, for that matter; speculators would be free to issue any sort of reports that might suit their interests, for, unlike the farmer, the speculator is always in position to obtain information complete enough for his own use. He can get it from local merchants, buyers, salesmen, bankers, private crop reporting agencies and other sources that are not available to the farmer. The government crop reports put the farmer on an even footing with the speculator and the buyer so far as knowledge of conditions goes.

The crop reports are of greatest benefit, of course, to the farmer, but they are of essential benefit to many other interests and industries. They enable transportation companies to estimate tonnage and provide cars when and where most needed. They assist bankers in gaining the information they need in

providing funds to finance farmers in the production of their crops, and for assisting buyers to purchase and distribute the crops after harvest. They enable manufacturers to know, months in advance, what farm machinery, equipment and supplies will be needed, and to place contracts for raw materials far enough in advance to assure the minimum of expensive and annoying delays to the consumer. They furnish the basis of much of the constructive work of the Department of Agriculture and of the state colleges and experiment stations, as well as legislation in the interest of farmers.

Only one kind of man is injured by the government crop reports—the professional speculator who profits by the uncertainty and ignorance of others.

Farmer Gets Half

Of the money that the consumer pays for the staple foods, the farmer who produces them gets only about one-half. That is the statement made by a former Iowa State College man, B. H. Hibbard, now connected with the University of Wisconsin.

On the basis of what the average family spends for staple foods, about \$550 per year, Mr. Hibbard and others have estimated the share the farmer gets about as follows:

	Retail Prices	Farmer's Share
Meat.	\$155.00	\$66.00
Milk, butter, eggs.	85.00	54.00
Fruits and vegetables.	115.00	52.33
Cereals.	45.00	27.00
Flour, bread, pastry, etc.	155.00	77.50
	\$550.00	\$277.23

The farmer's share, considering that he produce the food, is not considered an undue share by men who have studied the situation. E. G. Nourse, agricultural economist at Iowa State College, says that it is a mistake to proceed on the theory that the producer is getting too much and then hammer down his prices. "Price fixing propaganda," he says, "has taken no account of the true situation and needs of agricultural producers and of the long time effects of price fixing policies. Mere pounding down of prices, while giving temporary relief, is in danger ultimately of enhancing prices by impairing the productive efficiency of our farmers. Price fixing agencies have shown too little understanding of the farming business, too little desire to go to the bottom of the matter and too much willingness to assume that the city dweller's interest in lower prices must be met willy-nilly by paring down the producer's returns. Such price fixing would defeat its own ends by impairing the efficiency of agriculture and precluding the reduction of cost of production. That would be penny wise and pound foolish, even from the standpoint of the consumer's best interests."

Pig Club Sale

Boys of the Riley County Pig Club exhibited 56 pigs at their club show held in Manhattan October 25. This club has been a very successful one. The average age of the pigs was 200 days and the average weight 210 pounds. The prize litter was shown by Everett Stahl. They were Duroc Jerseys, seven months old the day of the show, and averaged 222 pounds in weight. In feed this litter had cost \$201.40. Everett won the trophy cup offered by Col. L. R. Brady and \$19 in cash. Norman Jones won second with his Spotted Poland Chinas. They were 230 days old and averaged 250 pounds in weight. The prize was \$15. Every boy showing won something, the smallest prize being \$1. The pigs were sold at auction and brought fairly good prices, considering that it was a bad day and market hogs were at the low point. George Wreath, the leader of this club, feels that it has been a very profitable undertaking and well worth while.

What Is Big Business?

BUSINESS, be it big or little, is production and distribution of commodities and service.

The size of a business is measured by the service it renders the public, and regardless of the capital invested, it never can become Big Business unless its output of useful service is great.

The Standard Oil Company (Indiana) is classified with big business, and it deserves to be, for from the day of its organization the goal toward which every effort has been directed has been to render a useful service to the public at large.

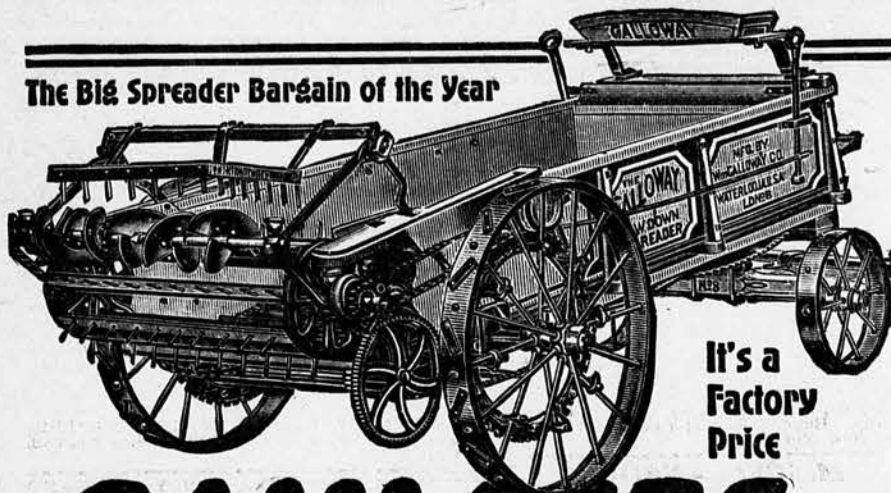
Originally the purpose of the Company was to manufacture and sell an illuminating oil of superior quality, but as the years have passed the Company has been able to take a wide range of other useful products from crude petroleum, and has made them available to mankind.

Today the Standard Oil Company (Indiana) is big because its job is big, and as the job expands so must this organization if it is to keep pace with the insistent and ever-increasing demands of a discriminating public, and thereby discharge completely its obligation as a public servant.

Standard Oil Company
(Indiana)

910 S. Michigan Avenue, Chicago, Ill.

The Big Spreader Bargain of the Year

It's a
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Price**ONLY \$154.75**

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**A Special 30 Day Offer on the
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It's a Spreader sensation—selling these first quality Galloway Spreaders at this new low price. Only Galloway can do it, because Galloway's plan—direct from the factory—reduces costs to the very lowest figure. You get the best Spreader built at tremendous savings.

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Don't Over-
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Big Value**\$139.75****Investigate! Compare! Compare!**

That's the answer. Don't take our word. Look around. See what other Spreaders are selling for. Prove to yourself what Galloway says about the Spreader situation is so. The Galloway new whirlwind distributor absolutely pulverizes every bit of manure

and scatters it six to seven feet, saving time and labor in spreading. Remember that Galloway has eleven other great features that enable the Galloway Spreader to spread more land with less effort—less horse and man power—than any other method known.

WRITE QUICK—Reserve One for Present or Future Delivery

Don't let this 30 day opportunity slip by. Get your order in early. Have your Spreader now for immediate or next Spring's work and save big money over next Spring's price. Write today and get the full facts with complete descriptions. Nearby shipping points save you on the freight.

WILLIAM GALLOWAY, Pres.

WM. GALLOWAY CO., 1199 Galloway Station, Waterloo, Iowa

Be Not Discouraged

**REDUCE THE DEATH RATE IN YOUR
HOME TOWN**

Decide to join in a well organized and determined fight against tuberculosis—the cause of 10 per cent of all deaths—watch the mortality records steadily dwindle.

Now consider one of the greatest facts of the century—

Tuberculosis Can Be Prevented and Cured

It thrives because of our carelessness and neglect. Join the forces that are successfully battling tuberculosis.

Don't pass a Red Cross Christmas Seal Booth without buying—encourage those who are selling.

USE RED CROSS CHRISTMAS SEALS

Each Seal Is a Penny's Worth of Cure and Prevention

Proper Wintering of Bees

By J. H. MERRILL, State Apiarist

GOOD wintering of bees involves the following important essentials: First, to have plenty of young bees in the hive in the fall of the year. Second, to have plenty of stores. Third, to have the bees protected by a good windbreak. Fourth, to have the hive well packed with an insulating material, and fifth, to have plenty of room for spring brood rearing. If these essentials are attended to, the colony should winter in good shape to be ready to take an active part in spring brood rearing, and to insure a good strong colony of bees to take advantage of the honey-flow when it starts.

It is necessary to have a large number of bees in order that they may be able to maintain the proper temperature in the hive by muscular exertion during the winter, and yet have enough energy in the spring to take up the spring duties in the colony. To have a large number of bees in the hive, one of the best ways is to requeen during the month of August with a young queen. Such a queen will be more apt to raise a lot of young bees than an older queen, and another thing in her favor is that she will be less likely to swarm during the following season.

The proper amount of stores to the colony for Kansas is about thirty-five to forty pounds. Sufficient stores should be left to carry the colony of bees through until the honey-flow actually starts in the spring. It is not enough just to leave sufficient honey to carry them through until the maples and elms bloom in the spring, because this time is very apt to be followed by a period of bad weather, or a dearth of honey, and although a colony may be strong at this time, a shortage of stores may cause their death before the real honey-flow begins. If at the time of putting colonies into the winter they do not have a sufficient amount of stores, they should be fed sugar syrup, made up at the rate of two parts of sugar to one of water, by measure. Enough of this sugar syrup should be fed them to bring up their stores to the required amount.

For a protection from the wind, a good hedge or some shrubs will furnish the ideal conditions. A solid windbreak is to be avoided at all times. If the bees are placed near a solid board fence, or a solid board windbreak, better results will be obtained if every other board is removed. When a solid windbreak is used, a current of air passes over the top, and then down directly to the hive.

The single-walled hives which are commonly used do not give sufficient protection from the cold, and these should be packed with some insulating material. A hive may be placed singly in a packing box, or they may be put in groups of four, with two of the entrances facing to the east and two to the west. Four inches of packing should be placed beneath the hives, six inches on the sides, and eight inches on the top. Tunnels should be made to the exterior so that the bees can pass out for flight. Packing should be put on after the first frost, and a good insulating material will be ground cork, leaves, chaff, shavings, or saw-dust, packed in tightly around the hives. Another method of packing is to place poultry netting with two-inch mesh around the hive, allowing it to protrude about six inches all the way round, and pack between this and the hive with leaves. More leaves should be stuffed beneath the hive, and a super filled with leaves placed on top. This last form of packing gives good winter protection, is easy to prepare, and costs but little.

Plenty of room for spring brood rearing may be given by using a two-story hive for wintering purposes, as the queen will then have much more room than if confined in a single story. However, two-story hives are not always satisfactory, and it really would be better to winter bees in one of the larger hives, such as the Dadant hive or the Jumbo hive, because instead of having a break between the upper and lower hive bodies, there would be one continuous sheet of comb between the bottom bar and the top bar, which would give more ideal conditions for brood rearing than if the queen were obliged to pass over the obstructions which would be found in going from one hive to the other. She would pass up from the lower hive body to the upper much quicker than she would go back down. The obstructions in the way of her passing would act as a natural queen excluder.

To sum up, a young queen should have been introduced in August to insure plenty of young bees, then winter packing should be applied immediately after the first killing frost, and if the bees are placed so they are protected from the wind, with plenty of stores and plenty of room for spring brood rearing, there is no reason why large colonies of bees should not be carried through the winter. In order to get more honey from a colony, we must have more bees in it.

Rainfall of October, 1919

Reports furnished by S. D. Flora, Meteorologist, U. S. Weather Bureau, Topeka

0.91	1.58	1.78	2.35	2.06	2.13	1.53	1.00	1.36	1.24	1.57	1.48	2.43
1.11		1.21	1.92				1.05	1.10	1.30	1.30	2.13	
0.56	0.91	no report	no report	2.38	2.63	1.62	1.18	1.30	1.30	1.30	1.50	1.30
0.94	no report	0.87	1.62	1.81	1.42	0.66	1.46	1.08	0.60	2.47	1.73	2.34
1.27	no report	1.01	0.67	0.93	1.52	1.24	1.82	0.66	1.30	1.70	1.32	2.11
1.78	1.48	1.23	1.07	0.56	0.68	0.54	0.80	2.84	1.74	1.89	2.23	5.49
	1.41		0.97	1.01	0.43	0.85	1.37	1.64	6.30	5.73	2.25	7.71
1.57		1.28	0.78	0.43	0.87	2.69	5.47	5.90	5.37	5.45	7.50	8.44
1.34	2.87	1.00	0.48	0.43				7.48	5.65	7.50		10.61

THE rainfall over Kansas as a whole was practically normal, but the southeastern counties received record-breaking downpours, while many of the central and western counties failed to get as much as a quarter of an inch. However, there was plenty of moisture in the ground for current needs the latter part of the month, except in some of the southern counties, which have not had a good rain since last June. Wheat was sown generally by the middle of the month and came up to splendid stands, especially in the western part, where volunteer wheat was rank and furnished excellent pasture for stock. Corn and grain sorghums matured before the first killing frost and cribbing corn was under way where there was enough of the crop to make it worth while.

and every effort of the beekeeper which produces more bees at the right time means more money in his pocket.

Fall Pigs Profitable

Despite the fact that the fall pig requires more labor and more feed to each hundred pounds gain, results of a feeding test at the Kansas Experiment Station given below indicate that there is more profit in raising the fall pig than the spring pig. The extra labor required to raise fall pigs is offset by the fact that there is more extra time to care for them in the fall and winter than in the spring and summer. The fall pig will need more feed than the spring pig because he requires food to keep up the bodily warmth, and also he has no grass upon which he can run.

The fall pig market, which runs from April to September, is nearly always higher than the spring pig market, which includes the months of January, February, March, and October, November, and December.

The experiment quoted below was conducted in 1914-1915. H. B. Winchester, who was in charge, states that he considers the prices given more nearly normal, and more nearly what may be expected in the future, than are the present ones.

Spring pigs (alfalfa until out of season):

Shelled corn and meat meal, both self fed.

Number days on feed.....180

Average daily gain.....1.22 lbs.

Feed eaten daily.....4.43 lbs.

Total feed per 100 lbs. gain....364 lbs.

Cost per 100 lbs. gain, corn at 50c...\$3.83

Return per bushel corn with \$6.00

hogs.....0.83

Fall pigs:

Shelled corn and meat meal, both self fed, plus limestone, charcoal and rock salt, free choice.

Number days fed.....100

Average daily gain.....1.59 lbs.

Cost per 100 lbs. gain, corn at 70c...\$5.14

Return per bushel corn, with \$8.00

hogs.....1.14

"There are other advantages derived from raising fall pigs," Mr. Winchester said. "One of these is that the cost of keeping the sow is reduced. Also the pigs are about the best size to follow sows."

"Naturally, fall weather is not as favorable for raising pigs as is the spring weather, consequently buildings for fall pigs should be warm and dry."

"The quarters should be well bedded, sunlight, facing the south, with side walls about two and one-half to three feet in height at the back and about five to six feet high at the front, and have a floor space of approximately six by eight feet. Each pen of this type will accommodate comfortably six to ten fall pigs through the winter."

Feed the suckling sows with a liberal supply of skim milk, also meat meal and tankage, peas and corn, and turn them out on good pasture such as alfalfa, rape, or succulent fall bluegrass, as Mr. Winchester's advice.

"Fix a creep for the pigs so there will be corn, meat meal, tankage, and wheat middlings ready for them when they learn to eat apart from their dam," he says.

"Push them along with a little milk now and then, and it may be well to soak the corn for them. The fall pig that does well later on when prices are high is the one that gets a good start."

"Give them every opportunity to develop into marketable 235 or 250-pound pigs by April when the market usually is good."

Ration for Dairy Cows

Few dairy cows are producing as well as they should because their feed is not properly balanced. Protein and energy (carbohydrates and fat) are the main things to be considered in a balanced ration. They must be in the right proportion in order to feed most economically. The ordinary farm roughages are lacking in protein. This protein must be supplied in the grain, unless the

dairyman has plenty of clover, alfalfa, soy bean or cow pea hay, and even then some protein must be supplied with the grain.

Protein is therefore the main consideration in buying grain for dairy cows. Buy the feed which supplies the most protein for the least money. Cottonseed meal, even at its present high price, supplies the cheapest protein. Next in order come linseed oil meal, gluten feed, dried brewer's grains and wheat bran. These are the feeds to buy and mix with the home-grown grains.

For a thousand-pound cow producing twenty pounds of 4 per cent milk a day, the following balanced ration will be found good. It will keep up the milk flow. It is also economical. It furnishes the required food nutrients in just the right proportions:

Thirty pounds silage, eight pounds clover or alfalfa hay, two pounds wheat bran, one pound corn meal, two pounds cottonseed meal.

Silage and clover or alfalfa hay is the best and cheapest roughage. It should be the aim of every dairyman to grow an abundance of these feeds on his farm. If he does not have these roughages, but does have silage, timothy hay, mixed hay, corn, cane or kafir fodder, or a combination of them, he must vary his grain mixture to supply more protein. A good grain mixture to supplement such roughages would be corn meal, cottonseed meal or oil meal, and wheat bran mixed in equal parts by weight. Another mixture might be made up of 100 pounds each of corn meal and ground oats, and 200 pounds each of cottonseed meal and wheat bran.

If the roughage is entirely of clover, alfalfa, soy bean or cow pea hay, reduce the protein in the grain mixture somewhat as follows: Three hundred pounds corn meal, 200 pounds ground oats, 100 pounds each of cottonseed meal and wheat bran.

In buying cottonseed meal for feeding, see that the analysis on the sack shows 36 to 41 per cent protein.

Keep grass and weeds away from the apple and plum trees if you expect them to have a whole hide next spring. Mice like to nest in weeds or rubbish near soft bark trees, because they furnish them easy meals during the winter.

Raisin men paid \$40 a ton for wine grapes this fall, a higher price than they ever brought for wine purposes. Apparently fruits and grains will bring more under prohibition conditions than under "wet" conditions.

The dairy farmer not only studies how to feed his cow, but how to feed his land. He is not a soil robber, as he realizes that the farmer who reduces the fertility of his land robs without reason, since he steals from himself.

If on the market for pure-bred stock, read **KANSAS FARMER** live stock advertisements. You will find what you want.

THE STRAY LIST.

TAKEN UP—BY A. W. TRAVIS, WHOSE residence is 721 Pottawatomie Avenue, Manhattan, Riley County, Kansas, on the 3d day of May, 1919, one Shorthorn cow with horns, color red, size medium, brand slight cut or notch in right ear. Appraised at \$60.00. W. R. Yenawine, County Clerk.

TAKEN UP—BY AUGUST WEGE, OF Westmoreland, Pottawatomie Township, Pottawatomie County, Kansas, on the 1st day of May, 1919, one yearling heifer, light red, V-shaped notch or possible wire mark in right ear; also one yearling heifer, red with white spots. J. B. Claywell, County Clerk.

HELP WANTED.

WANTED—A COMPETENT MAN TO successfully conduct a small herd of registered Jerseys and small farm. Must have clean habits and a willing worker anxious to get ahead. State experience and wages expected. Eagerdale Jersey Farm, Beaver Crossing, Nebr.

SHETLAND PONIES

BLUE RIBBON WINNER SHETLAND, age 4, weight 300, broke single, double, saddle. John Berry, Waterville, Kansas.

Don't worry, dear; it doesn't pay. The cheerful heart makes light the way. —Selected.

Classified Advertising

Advertising "bargain counter." Thousands of people have surplus items of stock for sale—limited in amount or numbers hardly enough to justify extensive display advertising. Thousands of other people want to buy these same things. These intending buyers read the classified "ads"—looking for bargains. Your advertisement here reaches over 60,000 farmers for 5 cents a word per week. No "ad" taken for less than 60 cents. All "ads" set in uniform style, no display. Initials and numbers count as words. Address counted. Terms, always cash with order.

SITUATIONS WANTED ads, up to 25 words, including address, will be inserted free of charge for two weeks, for bona fide seekers of employment on farms.

AGENTS WANTED

AGENTS MAKING \$200 WEEKLY: Everyone wants it. Formulas for 200 beverages to be made at home. Book form. Send \$1 for copy and territory proposition. Act quickly. Buyers' Export Agency, 487 Broadway, New York.

MISCELLANEOUS.

WANTED—WORK ON AN UP-TO-DATE farm. Have had experience on dairy, stock and grain farm. Can start work December 25. Address Firth Jones, Miltonvale, Kan.

REAL ESTATE.

FOR SALE—GOOD DAIRY FARM, 154 acres close in. G. W. Savage, Winfield, Kansas.

WALLACE COUNTY, KANSAS, CAN show the best soil, water and grass, crops of corn, maize, kafir, wheat, barley and alfalfa. Live agents, bring or send your men. \$18.00 to \$45.00 per acre. Thomas & Thomas Land Co., Sharon Springs, Kan.

SOUTHWEST ARKANSAS—UNUSUAL bargains in low-priced farms with comfortable buildings, offered at startling prices for quick sale. We have scores of properties that will please you and make you a good investment; large collection of farm bargains listed in our large farm bulletin. Write Stuart Land Company, DeQueen, Arkansas.

FARM LANDS—TEXAS.

BIG CROPS IN NORTHWEST TEXAS ON the new line of the Santa Fe. The Federal Railroad Administration has authorized the completion of the new Shattuck branch of the Santa Fe Railroad to take care of this year's big crops—wheat, oats and sorghums. This will open for immediate settlement and development a large block of my land in a wheat and stock farming section of Ochiltree and Hansford counties in Northwest Texas near Oklahoma state line, where the first crop has in a number of cases paid for the land, and where cattle and hogs can be raised at low cost. Land is of a prairie character ready for the plow, no stone, stumps, no brush to be cleared, at attractive prices on easy terms. Climate healthful, rain falls during growing season. Write for free illustrated folder, giving experience and results settlers have secured in short time on small capital. T. C. Spearman, 927 Railway Exchange, Chicago, Ill.

IDAHO LANDS

IDAHO IRRIGATED FARMS—GOVERNMENT project. Martin & Son, Rupert, Idaho.

BUSINESS CHANCES

RAISE CALIFORNIA FUR—BEARING rabbits. Quick profits easily made. Something new. We pay \$3.50 to \$7.50 each and expressage when three to eight months old. Fur farming book for stamp. Sunset Fur Co., 507 Lankershim Bldg., Los Angeles, Cal.

FARM LANDS—KANSAS.

SOUTHWEST KANSAS IS DEVELOPING fast. Farmers are making good profits on small investments. It is the best place to-day for the man of moderate means. You can get 160 acres for \$200 to \$300 down, and no further payment on principal for two years, then balance one-eighth of purchase price annually, interest only 6 per cent—price \$12.50 to \$20 an acre. Write for our book of letters from farmers who are making good there now, also illustrated folder with particulars of our easy purchase contract. Address W. T. Cliver, Santa Fe Land Improvement Company, 405 Santa Fe Bldg., Topeka, Kansas.

WANTED—TO BUY.

WANTED—100 WHITE ESKIMO-SPITZ puppies, about six weeks old. Brockway's Kennels, Baldwin, Kansas.

TANNING.

LET US TAN YOUR HIDE—COW, HORSE or calf skins for coat or robe. Catalog on request. Crosby Frisian Fur Co., Rochester, New York.

FARMS WANTED.

IF YOU WANT TO SELL OR EXCHANGE your property, write me. John H. Black, 15th St., Chippewa Falls, Wis.

WANTED—TO HEAR FROM OWNER OF good farm for sale. State cash price, full description. D. F. Bush, Minneapolis, Minn., 1E.

CATTLE.

FOR SALE—CAR LOAD CHOICE REGISTERED Holstein-Friesian two and three-year-old heifers at a bargain. Some heavy springers. Ezra E. Beard, Derby, Kansas.

REGISTERED HOLSTEIN BULL, READY for service. Two of his dams averaged 105 pounds milk one day, 40.67 butter seven days; four averaged 37.52 pounds officially. \$200. Wisconsin Live Stock Association, Appleton, Wisconsin.

PRACTICALLY PURE-BRED HOLSTEIN calves, either sex, beautifully marked, six weeks old, from registered sire and choice heavy milking Holstein cows; \$30.00, delivered to any station by express. Paid here. Send orders or write. Lake View Holstein Place, Whitewater, Wis.

HONEY.

PURE EXTRACTED HONEY—SIXTY-pound can, \$12.25; two, \$24.00. Frank H. Drexell, Crawford, Colo.

PURE EXTRACTED HONEY, 120 LBS., \$22.80. W. F. Morley, Producer, Las Animas, Colo.

FOR SALE—EXTRA FANCY COMB AND extracted honey at low prices for thirty days. Write at once for prices. Manitou Honey Co., Manitou, Colo.

PURE STRAINED, DARK—GOOD FOR cooking or table. 120 pounds, \$20. Frank H. Drexell, Crawford, Colorado.

DOGS.

RABBIT HOUNDS, FOX HOUNDS, COON, opossum, skunk, squirrel dogs. Setters. Pointers. Brown's Kennels, York, Pa.

FOR SALE—HIGH CLASS COON, OPOSSUM and skunk hounds. J. M. Horn, Cassidy, Missouri.

BEAUTIFUL WHITE ESKIMO SPITZ pups—Males \$12.00, Females \$10.00, also Brood Matrons. Earl Scott, Belvidere, Kan.

FOR SALE—HIGH CLASS COON, SKUNK and Opossum dogs. If you want the kind that delivers the goods, I have it. Stamp for reply. A. F. Sampey, Box 27, Springfield, Mo.

AIREDALES, COLLIES, AND OLD English Shepherd dogs. Trained male dogs, brood matrons, pups all ages. Flemish Giant, New Zealand, and Rufus Red Belgian rabbits. Send 6c for large instructive list of what you want. W. R. Watson, Box 128, Oakland, Iowa.

SPORTSMEN—TRAINED BEAGLES, rabbit, fox, coon, skunk, squirrel and opossum dogs, bird dogs, pet and farm dogs, swine, rabbits, pigeons, pheasants, goats—100 varieties blooded stock. Circulars 10c. Violet Hill Kennels, York, Pa.

POULTRY.

"BEAUTILITY" SILVER WYANDOTTES, \$3 up. Mrs. Edwin Shuff, Plevna, Kan.

BIG BLACK LANGSHANS—SATISFACTION guaranteed. Osterfoss, Hedrick, Iowa.

LARGE DARK RED ROSE COMB REDS, guaranteed. Highland Farm, Hedrick, Iowa.

PUKE BARRED ROCK COCKERELS, farm raised, \$2 each until January 1. Mrs. H. Buchanan, Abilene, Kansas.

MAMMOTH WHITE EMDEN AND Brown Chinese Gander \$5.00. Earl Scott, Belvidere, Kansas.

S. C. BUFF ORPINGTON COCKERELS—\$2.00 each. Mrs. W. M. Scherman, Olathe, Kansas, Route 3.

MAMMOTH BRONZE TURKEYS—TOMS, \$8; pullets, \$6. J. W. Wade, Brinkman, Okla.

ROSE COMB RHODE ISLAND COCKERELS Carver Strain. \$2, \$3, and \$5. Mrs. S. H. Nash, Kinsley, Kans., Motor A.

MAMMOTH PRIZE WINNING EMBDEN and Toulouse geese, unrelated pairs \$10. Floyd Ellis, Beaver Crossing, Neb.

PURE-BRED WHITE WYANDOTTE cockerels, \$2.50 each. Mrs. Chas. Mills, Plainville, Kansas.

BARRED ROCK COCKERELS, \$4, \$5 each. Close blood to my sweepstakes pen at Kansas State Fair, 1919. Guaranteed satisfactory. Hiram Patten, Hutchinson, Kan.

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Germozone is sold by most drug, seed and poultry supply dealers, or mailed postpaid in 25c, 75c and \$1.50 packages from Omaha. Book on treatment of diseases free with each package.

GEO. H. LEE CO., Dept. 461, OMAHA, NEB.

Roosts for the hens should be on the same level and thirty inches from the floor. The dropping board should be two inches below the roosts. The roosts should be two inches wide, flat on top, with rounded edges. The nes should be so arranged that the hens will be in the dark while they are on them.

A house for hens should be wind tight on three sides and the roof, with all openings on the south. With all openings on one side, ventilation can be given without draughts. Cold, unless very severe, does not affect hens, but draughts are often fatal and always hurtful.

In the September summary of the tuberculosis eradication work of the Bureau of Animal Industry in co-operation with the state, four accredited herds are listed for Kansas. During September twenty-five Kansas herds were tested by the men in charge, or a total of 464 animals. Ten reactors were found. A good many Kansas herds are listed for this work and probably a number of additional herds have successfully passed the second test since September, and have been added to the accredited list. This effort to wipe out tuberculosis should be vigorously backed by every breeder of pure-bred stock in the state.

HELPFUL POULTRY HINTS

Practical Ideas on How to Fill the
Egg Basket and Increase Profits

The matched board floor in a poultry house may appear warmer than a concrete floor, but in reality it is not, unless the air beneath is not allowed to circulate. In the latter case the floor would be short-lived. If the boards are not seasoned properly when laid, there will be cracks and the floor will be cold and draughty. When the rats once get beneath a board floor they have a safe and comfortable harbor from which to prey on the poultry. Furthermore a matched board floor with the sills, nails, etc., is almost as expensive as a cement floor.

White Leghorns in Contest

The White Leghorns demonstrated their ability to lay during the hot weather by outlaying all other breeds during August in the Missouri Farm Flock Laying Contest, conducted by T. S. Townsley of the Extension Service of the University of Missouri College of Agriculture. The 1,436 White Leghorn hens in 8 different flocks laid a total of 17,781 eggs for the month or an average of 11.7 eggs for each bird. Their nearest competitors were the White Rocks, with an average of 10.8 eggs from each of the 440 hens in 5 flocks reporting. The Brown Leghorns ranked third as a breed with an average of 10.5 eggs from each of the 856 hens belonging to this breed.

The total production for the 7,350 hens for August was 68,146 eggs or an average of 9.2 eggs per bird. This is only 0.4 of an egg less than the July average. First honors for the highest flock average for this month goes to O. E. Jones, a blind poultryman of Cole County, who got 164 eggs during August from nine hens and one laying pullet. Geo. V. Hinkle, of Holt County, whose flock of White Leghorns have been near the top for several months, captured second honors with an average of 15.8 eggs from each of 94 birds.

The excess of income over feed continues to show a healthy profit on most of the demonstration farms. The average income per farm from poultry and eggs for August was \$59.87. The feed cost for this month for the average farm was \$22.99, leaving a net profit of \$36.68 per farm. The net profit over feed cost on the average farm from November 1, 1918, to September 1, 1919, amounts to \$268.19. The average egg production for each hen in the contest from November 1, to September 1, is 91.4 eggs. The prediction made a few months ago that the average egg production would pass the one hundred mark for the year now appears certain to be realized.

Skunks Are Easy to Trap

In the wilds, the more ferocious animals will politely pass the skunk by unless they are ravenously hungry. For they wish to take no chances with the unpleasant scent that he can eject when attacked. Thus the skunk has always counted on his smell to keep enemies away from him. In fact, he counts upon it too much, and is therefore easy to trap.

Being unsuspicious, he will usually walk into unbaited traps, but where there are a number of dens, or where dens are hard to find, it is best to use bait—tainted meat with scent added to it.

If you are making a den set, place the trap just inside the entrance to the den with the jaws lengthwise of the hole. Placed this way the trap is more likely to land the skunk, since he will be more likely to step between the jaws than over them.

Usually it is not necessary to cover the trap, for the skunk is not so wary of steel objects as some of the others of the animal kingdom.

In den sets it is a wise plan to place

just a bit of bait beyond the trap in the den entrance. When there are a number of skunks about they are likely to pass the hole by with merely a sniff or two if there is no bait in it. But if they smell the bait the chances are they will investigate and step into the trap.

If you are trapping in the open, find a sandy spot, place the trap in a small hole and cover it with sand. Then sprinkle bait all around the trap.

Another plan followed by many is to build an artificial den if a natural one isn't to be found, placing the trap and bait as explained in the paragraph on den sets.

Anything like a hollow log, a hole in a fence, wall, bank, or mound is a good place to set a trap.

New Year for Poultrymen

The new year for poultrymen begins November 1. On that date the spring pullets should be in permanent winter quarters and well started on the year's production. If flock records have not been kept in the past, now is an excellent time to begin. Are your birds re-turning good interest on the money you have invested in stock and equipment or are you keeping them at a distinct loss? Throughout the year strict account should be noted of every expense: feed, repairs, stock purchased, etc. Credit the flock with market eggs sold, hatching eggs sold, eggs used on the table, chickens eaten, and all market poultry and breeding stock sold.

Have you been feeding your birds too much in the past or haven't you been feeding enough? About seventy-five pounds of feed to the hen is all that is necessary for a good producer for the year, says G. W. Hervey of the Missouri College of Agriculture. Have you been feeding four times as much scratch food as you have dry mash? Twice as much grain as mash is all that is necessary. Frequently inefficient flock practices may be quickly remedied by a glance at the record book. Keep records and you may be surprised to find at the end of the year that your hens have been returning from 15 to 18 per cent on the money you have invested in the flock.

Use canvas in the poultry house windows. The canvas will allow light to pass through and a constant change of air, without draughts. Set the house in a dry location, facing the south.

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31x4	8.00	36x5	14.50
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THE HOME-MAKER'S FORUM

ETHEL WHIPPLE CROOKS, Editor, Frankfort, Kansas

Letters from readers are always welcome. You are urged to send in helpful suggestions, to give your experiences, or to ask questions. Address the Editor of this Department.

THE UNSEEN CORD

There is an unseen cord which binds the whole wide world together. Though every human life it winds—this one mysterious tether. Links all races and all lands; throughout their span allotted; death alone unites the strands which God himself has knotted.

Never humble be your lot, however your hands are fettered, cannot think a noble thought but all the world is bettered. But every impulse, deed or word with love blends with duty, message speeds along the cord that gives the earth more beauty.

Our unkind thought, your selfish deed, is felt in farthest places; there are no solitudes where greed and wrong can hide their faces; there are no separate lives; the chain too subtle for our seeing, ties us all upon the plane of universal being.

—Ella Wheeler Wilcox.

Washing Woolen Garments

The action of the common laundry and washing powders on the different types of clothing materials must be noted by the housewife who wishes to obtain the best results in cleaning clothing at home. Cotton and linen, vegetable fibers, are not injured by alkali solutions such as are found in strong washing soaps or powders. Silk, wool, the animal fibers, are affected by strong soaps on account of the alkali. Used in washing woollens, flannels, or silks, strong soaps or washing powders make these materials yellow and harsh and injure the fiber. A dilute solution of household lye in water will completely dissolve woolen material.

Great care must be taken in washing woollens because of the character of the fiber. The outer surface of the wool as seen under the microscope consists of little overlapping scales. These scales hold the fibers apart so they inclose the air in their meshes giving wool of great value as a warm-keeping fabric.

When the wool is immersed in hot water, especially when a strong soap is used, these scales rise and stand out like the scales on a pine cone. In this position the scales are easily locked or matted and when rubbed the fibers draw together or shrink.

The alkalis which are found in soaps and washing powders may help to make woolen fiber swell and become felted. This must be very carefully used. The same is true in all wash waters and in drying. Differences in temperatures will shrink wet woollens.

Soap jelly can be used with great success in washing flannel garments and corset waists. To make the soap jelly, take one cake of mild soap into one quart of warm water. Cook gently until dissolved. Then put into a two-quart crock and fill with soft water. This is the way to be used as needed.

For washing flannel garments or linen waists, add borax and soap jelly to the water. If the water is soft, add one heaping tablespoon of soap jelly and one tablespoon of borax to two quarts of water. If the water is hard use twice the amount of borax and soap jelly. Dissolve the borax in a little hot water and add the soap jelly. The rest of the water may be cool. Place the materials to be washed in the solution and let them stand over night, or until it is convenient to thoroughly rinse and dry them.

Colored woolen dresses are washed in somewhat different way, as they should not stand in the washing solution any length of time on account of the color. Woolen dresses are usually washed when they are to be made over.

After the material has been carefully washed it should be washed in soft lukewarm water to which enough soap jelly has been added to make a good lather.

The soap should never be rubbed directly on the goods.

Borax or household ammonia may be added to the water before the woolen material is immersed, if the water is hard. Household ammonia is a dilute solution and can be made very cheaply and easily by the housewife. To make it, mix one-half cup of concentrated ammonia, which may be purchased at drug stores, with three cups of soft water. As ammonia gas is lighter than air, it will rise when the bottle is opened. When diluting the ammonia hold the bottle above the level of the eyes to avoid discomfort. Use four tablespoons of ammonia and two tablespoons of borax to every gallon of water. Mix the ammonia or the borax and the soap jelly with the water while it is quite warm and let the solution cool until lukewarm before adding the goods. The material is worked up and down gently with the hands, especial attention being given to the soiled spots, which have been outlined by basting thread before wetting. When clean, place in rinsing water of the same temperature.

In washing woolen material it is best not to rinse it in entirely clear water, since the water tends to remove from the wool the natural oils which give it luster or dressing and to leave the wool rather harsh and stiff. This difficulty may be overcome by leaving a small amount of lather in the rinsing water. The soapy odor will disappear from the material after it has been hung in the wind.

Another way to overcome the harshness is to replace the oil which washing removes from the wool by adding in the last rinsing one tablespoon of glycerine to two gallons of water. The material should be run through the wringer and hung out until partially dry. When the material stops dripping, it may be rolled lightly and allowed to stand for an hour or so and then ironed while damp.

The best method in ironing woollens is to place a muslin cloth over the right side of the damp woolen material and press until dry. It is best to pull the basting thread which locate the stains before pressing in order to avoid thread marks. If any stains remain after the material is washed they are probably obstinate grease stains which can be removed by the application of gasoline. —Wisconsin Circular 113.

Worth While Education

I like to believe that any kind of education is worth while that increases a man's ability to work effectively and usefully. It does not matter much whether the education is obtained in school, or on the farm, or in the shop; it is worth while if it increases the man's ability to work effectively and usefully.

Most of us need to earn our bread by the labor of our hands, guided by our intelligence. This earning of bread for ourselves and our dependents is a high service, and when we increase our ability to earn bread we are able to live better, which is a good thing for ourselves and others.

"The education, limited though it may seem, which enables a woman to bake good bread and to keep her house in proper order, is a kind of education that is very much worth while. Good bread promotes good health; so also does a clean house. Good health and clean houses make the world richer and better.

The teaching that prepares a man to raise more corn at a decreased cost per bushel is a good kind of education, for it increases the wealth of the man and of the country and promotes comfortable living, while it also enlarges the oppor-

tunities of children to go to school.—D. W. Working in The Southwestern Stockman-Farmer.

Steamed Carrot Pudding

- 1 pound carrots
- 1 pound suet, chopped
- 1 cupful sugar
- 1 1/2 cupfuls flour
- 1/2 pound currants
- 1/2 pound raisins
- 1 teaspoonful salt
- 1 teaspoonful ground cinnamon
- 1 teaspoonful nutmeg
- 1/2 teaspoonful ground cloves
- 2 teaspoonfuls baking powder

Weigh the carrots after peeling and grating. Mix the suet, chopped fine, with the fruit, then with carrots, then add the baking powder, spices, and flour sifted together. Steam in a mould three and one-half hours. Serve with hard sauce made as follows:

- 1/2 cupful butter
- 1 cupful powdered sugar
- 1/2 teaspoonful vanilla
- 1/2 cupful cream.

Cream butter, add sugar, and gradually vanilla, and cream beaten until stiff. The cream may be omitted.

Caramel Pudding

- 1 cup light brown sugar
- 1 cup water
- 1 level tablespoon corn starch
- 1/2 cup nut meats
- 1 teaspoon vanilla

Boil sugar and water briskly for about three minutes; mix corn starch with a little water and add this to syrup. Boil just long enough to cook corn starch. Add vanilla and stir in nuts when pudding has cooled a little. Serve with plain or unsweetened whipped cream. This quantity is enough to serve four people.

"Eat More Lamb" Bulletin

"Whetting Uncle Sam's Appetite for Lamb" is the title of a little pamphlet just issued by the National Wool Grower's Association. It is elaborately illustrated by photogravures in four colors showing in detail the various cuts of lamb. It gives in detail the reasons why the American public may be expected to consume more lamb, and explains how to buy and cook the meat to the best advantage, concluding with forty special recipes of which lamb is the basis. If you are especially interested in this pamphlet write to the association at its headquarters, Salt Lake City, Utah.

FASHION DEPARTMENT

Price of All Patterns, 10 Cents



No. 2694—Girl's Dress: Cut in four sizes—6, 8, 10 and 12 years. Size 10 will require 3 1/2 yards of 40-inch material. No. 3017—A Pleasing Dress: Cut in three sizes—16, 18 and 20 years. Size 18 will require 6 1/2 yards of 38-inch material. Width of skirt at the lower edge, about 1 1/2 yards. No. 3007—Junior's Dress: Cut in three sizes—12, 14 and 16 years. Size 14 will require 3 1/2 yards of 44-inch material. No. 3015—Ladies' Dress: Cut in six sizes—34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 requires 6 1/2 yards of 44-inch material. Width of skirt at lower edge is about 1 1/2 yards.

Pattern Notes

Design No. 2694 is a smart, comfortable, and easy-to-make school dress.

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Cattle from this ranch have taken the grand championship at Chicago several times and last fall cattle from this ranch topped the market in Denver.

At present there is on the ranch 102 horses; 1,490 high grade Hereford and Shorthorn cows; 420 two and three year old steers; 60 bulls and the 1919 crop of calves. The ranch and cattle can be sold as a whole or separate.

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Suitable materials are: serge, corduroy, gabardine, voile, crepe, plaid and mixtures. Blue serge could be trimmed with tan satin or silk, braid also would form an attractive finish. The sleeves may be in elbow or wrist length.

A becoming dress for a young girl is 3007. This is a nice model for satin, taffeta, jersey cloth of serge. It may be finished without the fold on the skirt, and with short or long sleeves. With serge, one could have matched satin or moire, for trimming.

For a slender, youthful figure, No. 3017 is an attractive design. As shown, mixed woolen in brown and green tones is combined with ecru taffeta. Satin and serge, or georgette and satin would also be effective. The tunic may be omitted. The foundation skirt is a two-piece model.

In the ladies' dress illustrated, brown serge and moire were combined. The blouse is mounted on a lining, which may be omitted. The facings on blouse and skirt, may also be omitted.

Get the raspberry and blackberry patches cleaned out before cold weather. To prune, remove all of this year's fruiting wood. Next year berries will be borne on the wood produced this year.

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A show bull—a breeding bull—guaranteed to please you or your money back—\$250. A younger bull, few cows and heifers will be sold at your own prices. Tuberculin tested. Write.

R. J. LINSOTT - HOLTON, KANSAS

FOR SALE

Four registered Jersey bull calves. Age, three months to one year. Financial Counters Lad and Stockwell breeding. Will sell cheap or will trade for females of equal good breeding.

Eagardale Jersey Farm
BEAVER CROSSING, - - - NEBRASKA

SPOTTED POLAND CHINAS.

SPOTTED POLANDS.
Last call for early boars. Order gilts early.
T. T. Langford & Sons, Jamesport, Mo.

AUCTIONEERS.

LIVE STOCK AUCTIONEER—Fifteen years' experience. Wire for date.
JOHN D. SNYDER, HUTCHINSON, KAN.

BREEDERS' DIRECTORY

ANGUS CATTLE.
Geo. Dietrich, Carbondale, Kansas.
RED POLLED CATTLE
Mahlon Greenmiller, Pomona, Kansas.

RED POLLED CATTLE.**RED POLLED CATTLE**

For Sale—One 2-year-old herd bull, two yearling heifers and a few cows. Come and see my herd.

J. H. FERGUSON - GYPSUM, KANSAS

FORT LARNED RANCH

200 Head of Registered Red Polled Cattle. A number of choice one and two-year-old bulls and heifers from one to three years old.

E. E. FRIZELL & SONS, FRIZELL, KAN.
RED POLLS, BOTH SEXES, BEST OF BREEDING.
Charles Morrison & Son, Phillipsburg, Kan.

POLAND CHINAS**Poland China Boars**

FOR SALE—A few extra good spring boars, and will offer a few spring gilts. Will sell open or breed them for spring litter. Write or come and see us.

Hill & King

Phone Rural 8104 F5 Route 28, Topeka, Kan.

POLAND CHINA BOARS AND GILTS

10 spring boars, 15 spring gilts, priced \$35 to \$50. First check gets choice. Satisfaction guaranteed or money back.

Willis R. Coleman,

Route 5. Lawrence, Kansas.

Barnsdale Polands

For Sale—Poland China gilts bred to Wonder Price and Jumbo Ulan. Also a few choice spring boars, priced reasonable. Write or come and see my herd.

R. L. Barnes, Grenola, Kansas

DEMING RANCH**POLANDS**

The blood that breeds on hogs that make good. Strong in the blood of Big Bob Jumbo. For sale, a lot of early boars. Come and see us.

Deming Ranch, Oswego, Kan.
H. O. Sheldon, Herd Manager

25 POLAND CHINA BOARS

A splendid lot of spring boars at farmers' prices, sired by Giant Bob, Wonder Timm and Big Buster, priced to move them quickly. First check or draft for \$50 gets choice.

ADAMS & MASON - GYPSUM, KANSAS

MYERS' POLAND CHINAS

Large spring pigs in pairs or trios, priced to sell. Write your wants. Annual fall sale October 14.

H. E. MYERS - GARDNER, KANSAS

POLAND CHINA BOARS

Sired by Buster Price out of King Joe's Lady 4th. Herd prospects. Come and see my herd.

H. O. MOTT - WHITE CITY, KAN.

PIONEER HERD POLANDS

Black Buster and Columbus Wonder at Head of Our Herd

Two great sons of Giant Buster and Big Bob Wonder. For sale, a few choice gilts bred for September litters. Annual bred sow sale February 12, 1920.

F. Olivier & Sons

DANVILLE - KANSAS

When Writing to Advertisers.
Please Mention Kansas Farmer

HORSES AND MULES.**PERCHERON HORSES**

For Sale—Three 3-year-old mares, two 2-year-olds, three aged mares with spring colts. Two yearling stallions priced to sell.

L. E. FIFE, NEWTON, KANSAS



Percherons--Belgians--Shires
My stallions have been again awarded premier honors at the State Fairs. Show horses and real herd-heads for sale. **FRED CHANDLER, Rte. 7, Chariton, Iowa.** Above Kansas City.

GUERNSEY CATTLE.**GUERNSEY BULL**

For Sale—Registered Guernsey Bull Calf, age four months, whose dam has a creditable A. R. record and granddam of calf holds second place in Class D, 818 pounds fat.

C. R. Kissinger & Sons

R. F. D. 9 - Ottawa, Kansas

Kansas Shorthorn Breeders' Association

PARK E. SALTER, Pres.
Humboldt, Kans.

G. A. LAUDE, Sec'y.
Wichita, Kans.

SHORTHORN CATTLE

For Sale—A few young bulls and a few choice spring boars and gilts. We hold February bred sow sale and annual Shorthorn sale in June, 1920. Write us your wants.

C. S. NEVIUS & SON

CHILES, KANSAS

WANT SHORTHORNS THAT COMBINE BEEF AND MILK

We receive many inquiries for Shorthorns that combine beef and milk. We urge that all who are hand-milking Shorthorns join the Milking Shorthorn Cattle Club of America, J. L. Torrey, Secretary, 13 Dexter Park Avenue, Chicago. Grass-fat Shorthorn steers have topped the Chicago market. In the Record of Merit there are listed \$30 Shorthorn cows of all ages whose records average over 8,000 pounds of milk annually. Send for literature.

AMERICAN SHORTHORN BREEDERS' ASS'N
13 Dexter Park Avenue Chicago, Illinois

PEARL SHORTHORNS

Bulls, Scotch and Scotch topped, six to 18 months, for sale. Reds and roans. Can ship over Rock Island, Santa Fe, Missouri Pacific and Union Pacific.

C. W. TAYLOR, ABILENE, KANS.
DICKINSON COUNTY.

SHORTHORN CATTLE

Herd Bull, Sultan Seal.

175 in herd, Scotch and Scotch-topped. For Sale—Ten choice bulls, yearlings to 18 months. A few choice heifers and bred cows, priced reasonable. Come and see our herd.

Barrett & Land

Overbrook - Osage County - Kansas

SHORTHORN CATTLE.

Herd Bull, Nell's Goods by Silk Goods by Choice Goods. For Sale—A few young bulls, reds and roans. Come and see my herd.

FRANK GRAGG - DENISON, KANSAS

Snowdon Herd Shorthorns

For Sale—One herd bull and eight young bulls. Reds and roans. Priced reasonable. Write or come.

D. N. PRICE - BAILEYVILLE, KANSAS

SCOTCHSHORTHORNBULLS

FOR SALE.

Lavender King and Red Stamp

IN SERVICE.

HARRY T. FORBES, R. 8, Topeka, Kansas

SHORTHORN CATTLE

For Sale—Ten bulls, serviceable age. Twenty females from heifers and mature cows with calves at foot. Priced reasonable. Come and see me.

J. R. ELY - MARION, KANSAS

ALL SCOTCH SHORTHORNS

Herd headed by Walnut Type, a grand son of White Hall Sultan, and Silver Plate, a son of Imp. Bapton Corporal. A few young bulls for sale. **Robert Russell, Muscotah, Ks.**

HICKORY POINT FARM SHORTHORNS

Herd bull, Oxford Prince No. 756979. For Sale—A few young bulls. Come and see me.

JOHN W. SHERWOOD, Dunavant, Kansas
Jefferson County

SHORTHORNS FOR SALE

My herd bull, White Goods Model, and 12 of his get, whites and roans, ages 8 to 18 months. **H. W. ESTES, Sitka, Kansas.**

SHORTHORN CATTLE

For Sale—Five young Scotch bulls and ten head of females, bred or calves at foot.

H. H. HOLMES, R. F. D. 28, Topeka, Kan.

MARKS LODGE

Shorthorn Cattle. Reds Exclusively. Fifty cows and calves—Lancaster, Diamond and Scotchman dams. Clipper Dale 652041 and Butterfly Lad 448517, herd bulls. A few Diamond bull calves and tried cows for sale at this time. Milk and beef prospects. **M. F. MARKS, Valley Falls, Kansas.**

SHORTHORN BULLS

For Sale—Six Pure Scotch Bulls. Four are sired by Prince Valentine 4th, one Queen Beauty, two Butterflies, one Cumberland, one tracing to Lady Susan. The dams of these bulls are all on my farm, also three Scotch-topped bulls 10 to 15 months old. Come and see our herd.

A. L. & D. HARRIS, OSAGE CITY, KANSAS

SHROPSHIRE SHEEP

Black-faced big, hardy bucks, lively rustlers, and right ready for business. Registered Shropshires. Crated or in car-lots. Everyday prices.

HOWARD CHANDLER,
Chariton, Iowa.

Registered Shropshire Rams

Two-year-old rams, \$45; yearlings, \$40; lambs, \$35. All choice stock, no culls.

GEO. W. MUELLER, Rte. 4, St. John, Kan.

Better Sires and Better Feeding

There is now in progress throughout the United States a better sire drive and it is gratifying to note that this drive is making excellent headway. Surely such a movement is to be commended. In no other way can the livestock of the country be improved so quickly and easily. The old saying that the sire is half the herd is enough to warrant such a movement, but the many good things which will come from improving the stock are so numerous that it seems impossible there can still be men who would use scrub sires. With the new order of things we must have greater efficiency in every line of endeavor; more production and more economy in production to match the high land values and labor costs, to say nothing of the feed. Blooded or improved stock is the result of the work of many men over a period of many years and surely this is free and should be used. The average production of the average cow in terms of milk and butter fat cannot be called good, in fact it is poor, and what man desires to conduct a poor business? His time is short, his land is high and the good feed which he uses should be put to the best possible use. The scrub bull has been tabooed. He has been with us too long, he is a slacker and altogether obnoxious. The time has come when we must use the best, which is none too good.

Along with this better sire movement let us keep in mind something which is almost as essential, and that is better feeding. The best of stock will make poor returns on poor feeding, although I will say they will do better than scrub stock. There is another side to this feeding question which, especially at this time, should be given careful consideration. Every animal requires what is known as a maintenance ration; that is sufficient food to sustain life and keep up body weight, heat, energy, etc. The man who would save on the feed bill too often gives merely a maintenance ration. When fed to dairy cows such a ration means no production, or, if the animal be especially good, it is a small production and a loss in body weight. It comes pretty nearly throwing money away and, sad to say, the majority of cow keepers use such a ration. Remember the profit which you get from feeding is that which you feed over and above a maintenance ration. Like an engine which is simply given enough fuel to produce a little steam but not enough to pull the train. The time, the fuel and the investment are lost for the sake of a little extra coal which might be applied. If only such rations can be fed it would be more profitable to sell the stock and the feed. Make your animals work to capacity, and this means feeding to capacity. Economic feeding is liberal feeding; use the silo to its limit, it is the cheapest source of carbohydrates. The legumes, as clover, alfalfa and cow peas, furnish our cheapest protein. Use liberally these food products and you will feed economically. If you have the right machine, which means stock which are bred for the purpose, you will get greater returns for your money. Let us taboo the scrub bull and also reform in our method of feeding. With improved stock well cared for and fed, we have a sure profit and a pleasant and enjoyable occupation.—A. HAECKER.

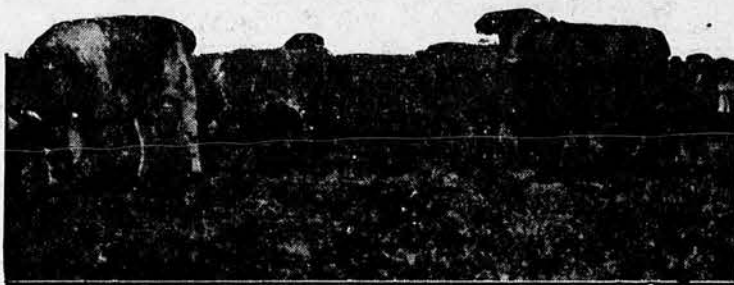
SHORTHORN SALE

By the Northwest Kansas
Shorthorn Breeders' Ass'n.

Concordia, Kansas, November 26th, 1919

Eighty head of cattle consigned by members of the Association. Sixty-five females, consisting of fifty cows bred or with calves at foot. Fifteen yearling heifers, fifteen bulls ten to eighteen months old, several of pure Scotch breeding. These cattle are selected for this sale from the well known herds of S. B. Amcoats, Joseph Baxter, and P. L. Borland, Clay Center, Kansas; Wales & Young, R. R. Walker & Son, and L. M. Nofsinger, Osborne, Kansas; Thos. Olson & Son, Lincolnville, Kansas; B. M. Lyons and H. B. Huls, Oak Hill, Kansas; A. A. Tenyson, Lamar, Kansas; E. A. Ostland, Clyde, Kansas; Elmer Goods, Kensington, Kansas; C. H. Williams & Son, Hunter, Kansas; T. L. Caldwell, Glasco, Kansas; Elliott & Lower, Courtland, Kansas; E. E. Booker & Son, Beloit, Kansas; E. A. Campbell, E. A. McKinsey and O. A. McKinsey, Wayne, Kansas; E. A. Cory & Son, Talmo, Kansas; R. B. Dunham and J. B. Sherwood, Talmo, Kansas; A. C. Jewell and J. E. Frazier, Concordia, Kansas; C. W. Taylor, Abilene, Kansas; J. F. Angle, Courtland, Kansas.

We are consigning a lot of useful cattle that will make money. The catalogs give complete pedigrees. They are now ready to mail out. Please send for one and arrange to attend the sale. Write E. A. CORY, Talmo, Kansas, Sale Manager. The Commercial Club at Concordia, Kansas, will tender a banquet the evening of November 25. All are invited to attend.



FARM AND HERD NEWS NOTES

G. C. Wheeler, Live Stock Editor
W. J. Cody, Manager Stock Advertising
O. W. Devine, Field Representative

Address All Communications to
Kansas Farmer, and Not to
Individuals

Personal mail may have to be held
for several days, or be delayed in
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for mistakes occurring thereby

CLAIM SALE DATES.

Herefords.
Feb. 9—W. T. Homan & Son, Ness City,
Kan. Sale at Kansas City, Mo.

Shorthorns.
Nov. 26—North Kansas Shorthorn sale, Con-
cordia, Kan.
Nov. 26—Northwestern Kansas Shorthorn
sale at Concordia, Kan. E. A. Cory, Tal-
mo, Kan. sale manager.
Dec. 12—W. A. Forsythe & Sons, Pleasant
Hill, Mo.

Nov. 26—During week of Kansas National
Live Stock Exposition and Horse Show,
Wichita, Kan.: Kansas National Purple
Ribbon Sale. Kansas National Shorthorn
Breeders' Sale. F. S. Kirk, Manager.

Poland Chinas.
Jan. 21—H. B. Walter & Son, Effingham,
Kan.
Feb. 11—Ross & Vincent, Sterling, Kan.
Feb. 25—Clarence Dean, Weston, Mo. Sale
at Dearborn.

Durocs.
Feb. 11—John W. Pettford, Saffordville, Kan.
February 20—B. W. Conyers, Marion, Kan.
Feb. 22—Sisco & Doerschlag, Topeka, Kan.
Feb. 24—Gordon & Hamilton, Horton, Kan.
Feb. 25—Kempin Bros., Corning, Kan.

Chester Whites.
Feb. 12—Henry Murr, Tonganoxie, Kan.

Spotted Poland Chinas.
Feb. 14—R. W. Sonnenmoser, Weston, Mo.
Nov. 28—George G. Eakin & Son, Delta,
Kan.

Volume Sixty-one of the National Duroc
Record is now ready for distribution. This
volume contains the pedigrees of Males from
No. 28891 to 28899 and the pedigrees of
females from No. 699800 to 719998 and other
information of interest to Duroc breeders.

Earl Eager of Beaver Crossing Nebraska,
owner of a choice herd of richly bred Jersey
cattle reports his herd making a good
record, a feature of his herd at this time
is the fine lot of young stock including some
of the young bulls of Financial Countess Lad
and Stockwell breeding.

J. P. Mast of Scranton, Kansas, owner of
the famous Butter Bred Holstein herd re-
ports his herd making a fine record. Mr.
Mast owns one of heavy producing herds of
Holsteins now assembled. A feature of his
herd at this time is the fine lot of Record
bred young stock, including young cows, just
fresh and some choice bulls.

The Poland China Sale of Bruce Hunter,
Kansas, advertised for November 6th
was held as advertised and resulted in the
disposal of 35 head of sows and spring gilts
at an average of \$86.50. 18 spring boars
were sold at an average of \$59.75. No
sensational prices figured in the auction
and the averages were very fair. The sale
was one of the good sales of the season and
Mr. Hunter reports were very satisfactory to
him. Hunter who owns one of the good herds
in Central Kansas.

The Shorthorn breeders' sale at Peabody,
Kansas, was held as advertised on November
6th and resulted in the disposal of eleven bulls
at an average of \$133. Thirty-one females
averaged \$179. The top price of \$500 was

paid for No. 1 in the sale, going to F. S.
Kirk, Wichita. A large crowd of farmers
and breeders was present. While no sensa-
tional prices figured in the auction, the av-
erages were very fair. The sale was one of
the good ones of the season and much credit
is due to O. A. Homan in the management
of the sale.

The Shorthorn sale of Fremont Leidy of
Leon, Kansas, was held as advertised and re-
sulted in the disposal of thirty-six females
at an average of \$231.25. The cattle were
presented in splendid breeding condition and
were competed for at good prices by farmers
and breeders. No sensational prices figured
in the auction yet the averages were very
fair and low enough to permit of liberal in-
vestments by local farmers and breeders.
The total returns of the sale were very sat-
isfactory to Mr. Leidy who owns one of the
good herds of Shorthorns of Kansas.

The annual Shorthorn sale of Ed Stunkle
of Peck, Kansas was held on the farm as
advertised, November 5th, and resulted in
the disposal of thirty-six females at an
average of \$177.40. The cattle were sold at
a little disadvantage not being well broken
to halter, but were a useful lot of breeding
cows and heifers that will make money for
the buyers. 10 young bulls sold for an
average of \$170 and were real bargains at
that price. The Stunkle farms are well
known all over the corn belt for producing
good cattle. They have a large herd and
grow them in a way that insures good
breeding stock. Scotch bulls have been at
the head of the herd for the past fifteen
years and a large number of the herd cows
are Scotch and it is probably one of the
largest herds of shorthorn cattle in South-
east Kansas.

The sales of pure bred live stock to be
held during the week of the Kansas National
Live Stock Exhibition and horse show
at Wichita, January 26th to 31st, will be
of more than usual interest to live stock
breeders. The sales will be under the
management of F. S. Kirk, the well known
sales manager. The Hereford sale will in-
clude animals sired by Repeater, Avmore,
Bocardo 6th and Pt. Comfort, each of them
have been Grand Champions at the Inter-
national. Practically every animal entered
in this sale will either be sired by or bred to
a State Fair Grand Champion. The Short-
horn sale, includes a number of Imported
Bulls and females, now enroute from Scot-
land. It will also include females bred to
and young bulls sired by Village Marshall,
Imp. Bapton Corporal, and other famous
Grand Champions. The Aberdeen Angus
sale, will be featured with five females,
sired by the 21 times Grand Champion with
five females, sired by the 1 times Grand
Champion Ben Hur of Lone Dell, and bred
to the great prize winning Angus Bull,
Flowman, winner of 47 purple ribbons. The
Holstein-Friesian sale, has been filled with
75 of the best cattle that the Holstein-
Friesian Association of Kansas could as-
semble. The Poland China sale, includes
the Grand Champion sow at two State
Fairs the past season, and no less than 40
gilts, each and everyone sired by a Grand
Champion, and most of them bred to Grand
Champion boars, including such boars as
the Hutchinson, and Oklahoma City, Grand
Champion, Black Buster, Big Bob Jumbo,
and Caldwells Big Bob. The Percheron
sale, includes one son and ten grandsons of
the International Grand Champion Carnot,
also one daughter and six Grand daughters
of Carnot, and two mares bred to him.
Also one son and grandson of the St. Louis
Worlds fair Champion, Casino, two daugh-
ters and six grand-daughters of Casino. The
sale also includes Hector, a State Fair
Champion stallion and a son of the Grand
Champion Scipion. The Shropshire sheep
sale, includes a number of State Fair prize
winners. The larger part of the Hamp-
shire offering will be imported sheep.

At a recent meeting of the directors of
the Standard Jack and Jennet Registry of
America, it was decided to close the Regis-
try June 1, 1920. After that date no Jack
or Jennet can be registered unless the sire
and dam are both registered in this Registry.
Jacks 14 1-2 hands high, 63 inches heart
girth, 7 1-2 inches front cannon bone, and
jennets 14 hands high, 61 inches girth and
7 inches bone can be registered now. Noth-
ing can be registered on measurements after
June 1, 1920. If your foundation stock is
not registered by that time it will be forever
barred and so will be the offspring.

THE KANSAS NATIONAL DAILY PRO-GRAM

Wichita, Monday, January 6 to Saturday,
January 31, 1920.

Sheep—Judging will commence at 9 a. m.
Monday.

Banquet for Sheep and Swine
Breeders, Monday evening. Sale of 50 Hamp-
shire Sheep 10 a. m. Tuesday. Sale of 50
Shropshire Sheep, 1 p. m. Tuesday.

Herefords—Judging will commence at 9
a. m. Tuesday. Banquet for Hereford
Breeders Tuesday evening. Purple Ribbon
Sale of 65 Show Cattle 9 a. m. Wednesday.
Breeders Sale of 100 Choice Breeding Cattle,
1 p. m. Wednesday.

Shorthorn—Judging will commence at 9
a. m. Wednesday. Banquet for Shorthorn
Breeders Wednesday evening. Purple Rib-
bon Sale of 65 Show Cattle, 9 a. m. Thurs-
day. Breeders Sale of 100 Choice Breeding
Cattle, 1 p. m. Thursday.

Duroc Jerseys—Judging will commence at
9 a. m. Wednesday. Sale of fifty head at
9 a. m. Friday.

Poland Chinas—Judging will commence at
1 p. m. Wednesday. Sale of fifty head at 9
a. m. Saturday.

Holstein-Friesian—Judging will commence
at 9 a. m. Thursday. Banquet for Holstein-
Friesian breeders Thursday evening. Sale
of seventy-five selected Holsteins 1 p. m.
Friday.

Aberdeen-Angus—Judging will commence
at 9 a. m. Thursday. Banquet for Aberdeen-
Angus breeders Thursday evening. Sale of
fifty selected Aberdeen-Angus at 2 p. m.
Friday.

Jacks—Judging will commence at 9 a. m.
Thursday. Sale of Jacks, Belgian and Road
Horses 9 a. m. Friday.

Percherons—Judging will commence at 9
a. m. Friday. Banquet for Percheron &
Jack Breeders Friday evening. Sale of 100
Stallions and mares at 9 a. m. Saturday.

Roberts Leaves Kansas

Professor H. F. Roberts, late Profess-
or of Botany at the Kansas State Agri-
cultural College, has accepted a position
with the Department of Botany in the
University of Manitoba. The work is
largely of an advanced character and
involves chiefly investigation. Profess-
or Roberts has been connected with the
agricultural college of Kansas for eigh-
teen years. Two and a half years ago,
after the death of his wife, he had an
attack of nervous prostration and spent
a year in hospitals and sanitariums. Up-
on returning, he decided, upon the ad-
vice of physicians, not to go into teach-
ing immediately, and devoted the past
year to publishing the results of his in-
vestigations, getting out his scientific
papers, and working upon text-books.
This fall, the University of Manitoba
offered him a research position, which he
decided to accept. Professor Roberts will
be remembered for his efforts to secure
better seed for the state of Kansas, for
his endeavors to secure the passage of a
reasonable pure seed act, and for his
investigational work.

The wheat breeding experiments at
the Kansas Experiment station began in
the department of botany, and it is of
special interest to recall that the head
selections from which the now famous
"Kanred" wheat was later developed,
tested and widely distributed by the
agronomy department, were made during
the period when the plant breeding work
was handled by Professor Roberts in
his department of the experiment sta-
tion.

KANSAS FARMER COMBINATION OFFERS



Kansas Farmer

With McCall's Magazine	1 yr. \$1.60
With People's Home Journal	1 yr. 1.70
With Today's Housewife	1 yr. 1.55
With Amer. Poultry Advocate	1 yr. 1.30
With Pictorial Review	1 yr. 2.35
With Christian Herald	1 yr. 2.55
With Red Book	1 yr. 2.70
With American Boy	1 yr. 2.60
With Review of Reviews	1 yr. 4.05
With Pathfinder	1 yr. 1.90
With Current Opinion	1 yr. 3.05
With Popular Science Monthly	1 yr. 2.35
With The Delineator	1 yr. 2.60
With Modern Priscilla	1 yr. 1.85
With Everybody's	1 yr. 2.60
With Literary Digest	1 yr. 5.00
With Etude (Music Magazine)	1 yr. 2.35
With Illustrated World	1 yr. 2.40
With American Magazine	1 yr. 2.65
With Hunter-Trapper-Trapper	1 yr. 2.10
With Woman's Home Comp'n	1 yr. 2.65
With Little Folks	1 yr. 2.00
With Illustrated Review	1 yr. 1.35
With Youth's Companion	1 yr. 3.15

Use This Coupon When You Order

KANSAS FARMER, Topeka, Kansas.

Gentlemen: I enclose \$.....to
pay for Kansas Farmer and.....
.....both one year.

Name

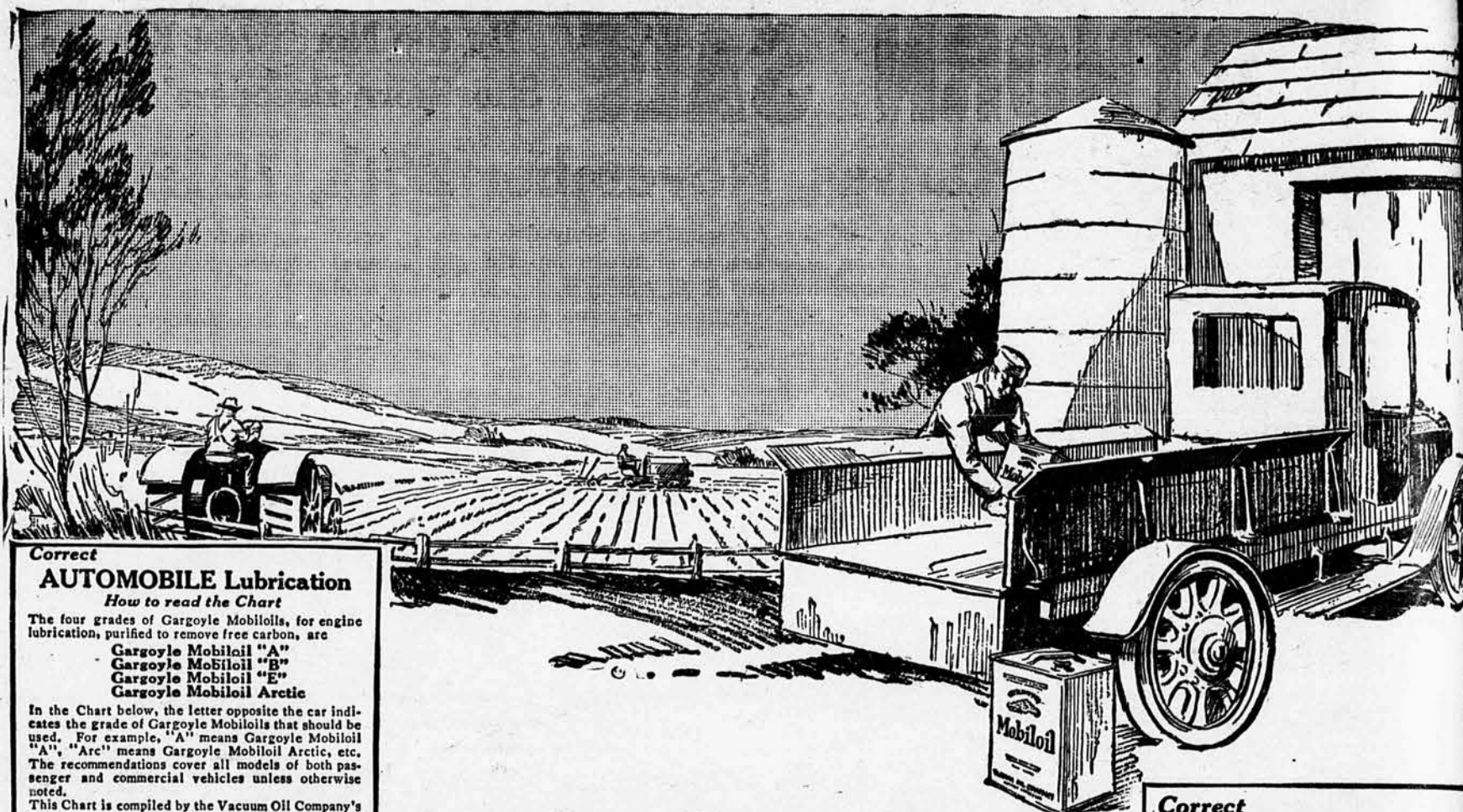
Post Office

R. F. D. State.....

The Kansas friends of Professor Rob-
erts wish him well in his new work.

A light covering of straw on the
strawberry bed will protect the foliage;
more can be put on later. As a rule
but one covering is put on and that
when the ground is frozen hard enough
to hold up a team. Four or five inches
of straw is enough.

A poultry house 14 feet wide, 16 feet
long, 7 feet high in front and 4 1-2 feet
high at the back, with a shed roof, is
large enough for 40 hens allowed free
range and for 25 kept in a yard.



Correct
AUTOMOBILE Lubrication

How to read the Chart

The four grades of Gargoyle Mobiloils, for engine lubrication, purified to remove free carbon, are

Gargoyle Mobiloil "A"
Gargoyle Mobiloil "B"
Gargoyle Mobiloil "E"
Gargoyle Mobiloil Arctic

In the Chart below, the letter opposite the car indicates the grade of Gargoyle Mobiloils that should be used. For example, "A" means Gargoyle Mobiloil "A", "Arc" means Gargoyle Mobiloil Arctic, etc. The recommendations cover all models of both passenger and commercial vehicles unless otherwise noted.

This Chart is compiled by the Vacuum Oil Company's Board of Engineers and represents our professional advice on Correct Automobile Lubrication.

AUTOMOBILES	1912 Models		1913 Models		1917 Models		1918 Models		1919 Models	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Allen	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
Auburn (8 cyl.)	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	A	Arc.
Auburn (6-8)	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
(6-50) (Tentor-25)	A	A	A	A	A	A	A	A	A	A
Autocrat (8 cyl.)	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
Biacore	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
(8 cyl.)	A	A	A	A	A	A	A	A	A	A
Buick	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
(8 cyl.)	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
Cadillac	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
Chalmers	A	A	A	A	A	A	A	A	A	A
(6-40)	A	A	A	A	A	A	A	A	A	A
Chandler Inc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
Chevrolet	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
(8 cyl.)	A	A	A	A	A	A	A	A	A	A
(F.A.)	A	A	A	A	A	A	A	A	A	A
Cole	A	A	A	A	A	A	Arc.	Arc.	Arc.	Arc.
(8 cyl.)	A	A	A	A	A	A	A	A	A	A
Cunningham	A	A	A	A	A	A	A	A	Arc.	Arc.
(8 cyl.)	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
Dart	A	A	A	A	A	A	A	Arc.	Arc.	Arc.
(Model C)	A	A	A	A	Arc.	A	A	Arc.	A	Arc.
(3 and 3 1/2 ton)	A	A	A	A	Arc.	A	A	Arc.	A	Arc.
Dodge Brothers	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	A	Arc.
Dodge	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	A	Arc.
Federal	Arc.	Arc.	A	A	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
(Model 5-X)	A	A	A	A	A	A	A	A	A	A
Federal (special)	Arc.	Arc.	Arc.	Arc.	A	A	A	A	A	A
Flint	A	A	A	A	A	A	A	A	A	A
Ford	E	E	E	E	E	E	E	E	E	E
Franklin	A	A	A	A	A	A	A	A	A	A
Grant	A	A	A	A	A	A	A	A	A	A
(8 cyl.)	A	A	A	A	A	A	A	A	A	A
" (Model 12)	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
Haynes	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
(12 cyl.)	A	A	A	A	A	A	A	A	A	A
Hudson	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
" Super Six	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
Hupmobile	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
Kelly Springfield	A	A	A	A	A	A	A	A	A	A
(8 cyl.)	A	A	A	A	A	A	A	A	A	A
" Commercial	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
Klasi Kar	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
(Model 68)	A	A	A	A	A	A	A	A	A	A
(12 cyl.)	Arc.	Arc.	A	A	A	A	A	A	A	A
Lanzetta	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
Lippard Stewart	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
(Model M)	A	A	A	A	A	A	A	A	A	A
" (Mod. MW)	A	A	A	A	A	A	A	A	A	A
Locomobile	A	E	A	E	E	E	E	E	E	E
McFarlan	A	A	A	A	Arc.	Arc.	A	Arc.	A	Arc.
Medison	A	A	A	A	Arc.	Arc.	A	Arc.	A	Arc.
(8 cyl.)	A	A	A	A	A	A	A	A	A	A
Marmox	A	A	A	A	A	A	A	A	A	A
Maxwell	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
Mercer	A	A	A	A	A	A	A	A	A	A
Mitchell	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
(8 cyl.)	B	A	B	A	A	A	A	A	A	A
Moline-Knight	A	A	A	A	Arc.	Arc.	E	E	A	A

Avoiding Engine Trouble

How correct lubrication improves engine performance

WHEN the engine won't start or it misfires; when it knocks heavily; when the cylinders mar and score and compression weakens—when any of the common engine ailments occur, look to lubrication first.

Often lubrication is the difference between good and poor engine operation. Too few automobile or tractor owners realize this.

Just a few examples:

Spark Plugs

The engine won't run when spark plugs foul or crack.

Correct lubrication prevents fouling. Often too light an oil (the incorrect grade) or too much oil, causes it.

In either case, oil leaks up past the piston rings and burns in the intense heat of the combustion chamber.

No oil can ever withstand such heat—often 3000° Fahrenheit.

Use the correct grade of Gargoyle Mobiloils and fill reservoir to the right amount, consult the Chart.

**Then fouling of spark
plugs will stop.**

Cylinders

Marked loss of efficiency comes when cylinders wear and score. Correct lubrication prevents wearing and scoring. Wearing and scoring result from lack of lubrication. Of course, the cooling system must work well. The *correct* grade of Gargoyle Mobil-oils will do the rest—by preventing excess friction, by carrying off excess heat.

Gears, clutch, bearings, magneto, timer, self-starter, universals—all operate better, longer, more economically, when correctly lubricated.

Engine lubrication is the most important. Buy Gargoyle Mobiloils *for* their nationally recognized superiority. But use them according to the Charts shown here—the only proved lubricating recommendations, based on the findings of our automotive engineers.

Gargoyle Mobiloils are put up in 1- and 5-gallon sealed cans, in 15-, 30- and 55-gallon steel drums, and in wood half-barrels and barrels.

Write for "Correct Lubrication," the booklet containing complete automobile and tractor charts, and other valuable data.



Mobil oils

In buying Gargoyle Mobiloils from your dealer, it is safer to purchase in original packages. Look for the red Gargoyle on the container.

VACUUM OIL COMPANY, New York, U. S. A.

Specialists in the manufacture of high-grade lubricants for every class of machinery. Obtainable everywhere in the world

Domestic Branches: New York Philadelphia Detroit Minneapolis Kansas City, Kan.
Boston Pittsburgh Chicago Indianapolis Des Moines

Correct TRACTOR Lubrication

How to read the Chart

The four grades of Gargoyle Mobiloil for tractor lubrication, purified to remove free carbon, are:

Gargoyle Mobiloil "A"
Gargoyle Mobiloil "B"
Gargoyle Mobiloil "BB"
Gargoyle Mobiloil Arctic

In the Chart below, the letter opposite the tractor indicates the grade of Goodyear Mobiloils that should be used.

This Chart is compiled by the Vacuum Oil Company's Board of Engineers and represents our professional advice on Correct Tractor Lubrication.

TRACTORS	1926 Models		1928 Models		1931 Models		1934 Models		1936 Models	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Albough-Dever (Square Turn)	A	A	BB	BB	BB	BB	A	BB	A	A
Allis-Chalmers (General Purpose)	BB	A	A	A	A	A	A	A	A	A
All Work	A	A	B	B	B	B	A	B	A	A
Applikon	BB	B	BB	BB	B	BB	B	A	A	A
Armstrong-Taylor	BB	A	BB	BB	A	BB	A	A	A	A
" (15-30)	BB	A	A	A	A	A	A	A	A	A
" (22-45)	BB	A	A	A	A	A	A	A	A	A
" (15-30) (Waukena)	BB	A	A	A	A	A	A	A	A	A
Avery	A	A	B	B	B	B	B	B	A	A
" (5-10 H.P.)	A	A	A	A	A	A	A	A	A	A
" (Louisville)	A	A	B	BB	B	BB	A	BB	A	A
Bates & Sons	A	A	B	A	A	A	A	A	A	A
Bean Tractor Co.	A	A	A	A	A	A	A	A	A	A
Big Bull	A	B	A	A	A	A	B	B	A	A
Buckeye (Ohio)	B	A	A	A	B	B	B	B	A	A
" (10-19)	A	A	A	A	A	A	A	A	A	A
" (10-30)	A	A	A	A	A	A	A	A	A	A
" (12-25)	A	A	BB	BB	A	BB	A	BB	A	A
" (30-40)	A	A	A	A	A	A	A	A	A	A
Cleveland	BB	A	BB	BB	BB	BB	A	BB	A	A
Coleman	BB	A	BB	BB	BB	BB	A	BB	A	A
Common Sense	BB	A	BB	BB	BB	BB	A	BB	A	A
C. O. D.	BB	A	BB	BB	BB	BB	A	BB	A	A
Craig	BB	A	BB	BB	BB	BB	A	BB	A	A
Crawford Corp.	BB	A	BB	BB	BB	BB	A	BB	A	A
Deering-Brantingham (EB-16-18)	BB	A	BB	BB	BB	BB	A	BB	A	A
" (EB)	BB	A	BB	BB	BB	BB	A	BB	A	A
" (Big Four)	BB	A	BB	BB	BB	BB	A	BB	A	A
" (Revere)	BB	A	BB	BB	BB	BB	A	BB	A	A
Flour City	B	A	A	A	A	A	A	A	A	A
" (Heavy Duty)	B	A	A	A	A	A	A	A	A	A
Fordson	A	A	A	A	B	BB	A	A	A	A
Gas Pail (Rumely Co.)	BB	A	A	A	A	A	A	A	A	A
Grain Belt	BB	A	A	A	A	A	A	A	A	A
Happy Farmer	BB	A	A	A	A	A	A	A	A	A
" (Model B)	BB	A	A	A	A	A	A	A	A	A
Hart Parr-	BB	A	BB	BB	BB	BB	A	BB	A	A
Hidder	BB	A	BB	BB	BB	BB	A	BB	A	A
Henson	BB	A	BB	BB	BB	BB	A	BB	A	A
Hollis	BB	A	BB	BB	BB	BB	A	BB	A	A
Holmes	BB	A	BB	BB	BB	BB	A	BB	A	A
" (Cambridge)	BB	A	BB	BB	BB	BB	A	BB	A	A
" (Model 45)	BB	A	BB	BB	BB	BB	A	BB	A	A
" (Model 18)	BB	A	BB	BB	BB	BB	A	BB	A	A
Illinois	B	A	A	A	A	A	A	A	A	A
Indiana	B	A	A	A	A	A	A	A	A	A
K. C. Prairie Dog	B	A	A	A	A	A	A	A	A	A
Le Grout	B	A	A	A	A	A	A	A	A	A
Linnard	BB	A	BB	B	B	B	BB	BB	A	A
Liberty	BB	A	BB	B	B	B	BB	BB	A	A
Lightfoot	BB	A	BB	B	B	B	BB	BB	A	A
MacDonald	BB	A	BB	B	B	B	BB	BB	A	A
Mogul (I. H. Co.)	BB	A	BB	B	B	B	BB	BB	A	A
" (8-18) (I. H. Co.)	BB	A	BB	B	B	B	BB	BB	A	A
Mott (Universal)	BB	A	BB	B	B	B	BB	BB	A	A
National	BB	A	BB	B	B	B	BB	BB	A	A
Nevership	BB	A	BB	B	B	B	BB	BB	A	A
" (30-17)	BB	A	BB	B	B	B	BB	BB	A	A
" (30-18, 10-30)	BB	A	BB	B	B	B	BB	BB	A	A
OB Pull (14-28, 10-30) (Rumely)	BB	A	BB	B	B	B	BB	BB	A	A
" (30-40) (Rumely Co.)	BB	A	BB	B	B	B	BB	BB	A	A
" (12-30, 16-30) (Rumely Co.)	BB	A	BB	B	B	B	BB	BB	A	A
" (Cambridge Co.)	BB	A	BB	B	B	B	BB	BB	A	A
Parrett	BB	A	BB	B	B	B	BB	BB	A	A
Pioneer	B	A	BB	B	B	B	BB	BB	A	A
Play Boy	BB	A	BB	B	B	B	BB	BB	A	A
Low Man-shower	BB	A	BB	B	B	B	BB	BB	A	A
Port Huron	B	A	BB	B	B	B	BB	BB	A	A
Ray	B	A	BB	B	B	B	BB	BB	A	A
Rumely	BB	A	BB	B	B	B	BB	BB	A	A
Rustad	BB	A	BB	B	B	B	BB	BB	A	A
" (Grant)	BB	A	BB	B	B	B	BB	BB	A	A
Sanderson	BB	A	BB	B	B	B	BB	BB	A	A
Titus (I. H. Co.)	BB	A	BB	B	B	B	BB	BB	A	A
Townsend	BB	A	BB	B	B	B	BB	BB	A	A
Turner	BB	A	BB	B	B	B	BB	BB	A	A
Union	BB	A	BB	B	B	B	BB	BB	A	A
Twin City	B	A	BB	B	B	B	BB	BB	A	A
" (Model 18)	B	A	BB	B	B	B	BB	BB	A	A
" (Model 16)	B	A	BB	B	B	B	BB	BB	A	A
" (Model 12-30)	B	A	BB	B	B	B	BB	BB	A	A
Vale	B	A	BB	B	B	B	BB	BB	A	A
Walker Co.	BB	A	BB	B	B	B	BB	BB	A	A
Watson	BB	A	BB	B	B	B	BB	BB	A	A
Watson Boy	BB	A	BB	B	B	B	BB	BB	A	A
Whitney	BB	A	BB	B	B	B	BB	BB	A	A
Wisconsin	BB	A	BB	B	B	B	BB	BB	A	A