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CO-OPERATION FOR HOGMEN

Pork Producers Find Community Action Desirable and Profitable

By F. D. FARRELL, Director Kansas Experiment Station

BECAUSE of the relative ease with which a farmer can get started in the hog business and the rapidity with which hogs can be increased in numbers, there is usually a quick response to changes in market conditions. When prices for pork products are high, in relation to those of other live stock products and to the cost of feed, large numbers of swine growers make increases in the number they handle and many other farmers enter the hog business. In this way the demands, sooner or later, are satisfied and prices fall. The lower prices tend to discourage production, swine holdings rapidly decrease, many farmers go out of the business, the supply again gets short, and prices again rise.

This condition results in serious loss to individuals, and particularly to those who go into and out of the business entirely, in response to price fluctuations. These farmers buy their breeding stock at high prices and later sell out at low prices, frequently losing money in both transactions. On the other hand, farmers who stay in the business continuously and develop a fair degree of efficiency find the business reasonably profitable. These farmers are the backbone of the great American swine industry.

Tendencies in Swine Production

With the exception of a relatively few cases in which hogs are grown in great numbers as a specialty, the swine industry in this country is coming to be based on small herds. A large part of the feed of a small herd of hogs is made up of by-products of other industries of the farm and of waste products. This tends to cheapen the cost of production. As a herd increases in size the part played by by-products and waste materials becomes less and less important. Moreover, many farmers who grow hogs do so as a part of the diversification of their farm enterprises—a wise procedure through which farm risks are distributed and the likelihood of serious loss materially reduced. Chiefly for these reasons we probably shall see a continuation of the tendency to relatively small herds; that is, a few hogs grown by each of a very large number of farmers rather than a large number of hogs grown by each of relatively few farmers.

The comments and suggestions which follow are intended chiefly for swine-growing communities in which the swine growers are to be in the business continuously and where the herds are to be relatively small and the farmers are to engage in one or more other farm industries besides swine production.

Opportunities for Co-operation

When we take this view of the situation we see at least four important phases of swine production in which a group can work together advantageously: breeds and breeding, the securing of feed, the control of diseases and pests affecting swine, and marketing. Co-operation is not new in any of these lines. There are numerous instances of success in each, either in this state or in other states. Nevertheless, there are many communities in which co-operation in one or more of the above phases of swine production could well be adopted or extended beyond its present scope.

The character of the co-operative activities vary widely in different communities and under different conditions. They might range from co-operative ownership of a portable dipping vat by three or four farmers, for example, to a large marketing organization covering several townships or even counties. Each particular enterprise may have its own set of opportunities for advantage of co-operation.

Co-operation in Breeding

One of the best established agricultural doctrines with reference to live stock industries is that it is decidedly advantageous for a community to engage in the production of a single breed. There are numerous advantages in having but one breed of hogs in a community. These advantages include, chiefly, better marketing opportunities and the stimulus and other advantages of friendly competition which nearly always exists when a number of persons in one locality are striving to excel in the same line. The selection and development of a uniform breed in a community is impossible without some co-operation. Once the breed has been decided upon, co-operation can be made effective in the matter of securing and using breeding stock. A group of farmers might, for example, agree on the kind of stock they wanted, and then delegate one or more of their own number to locate and perhaps select the kind of animals desired. In this way one or two men, if properly chosen, can frequently do the work which, without co-operation, would require the individual services of a large number, and they can do the work better because of their greater skill. There are also opportunities for co-operation in swine breeding in the matter of exchanging sires to prevent inbreeding. Without co-operation of some kind it commonly happens that an exceptional sire is sent to the market simply because his owner, as an individual, has no further use for him because of wishing to avoid inbreeding, while other farmers in the same community could make good use of the sire, with resulting advantage to the swine industry and the community. Still another

matter is that of concerted action in reference to the time or times of breeding. Such action could be made very helpful in a swine-growing community in assuring in advance carloads or larger lots of hogs of uniform age to be marketed at intervals throughout the year. These are only a few of the phases of breeding in which community co-operation could be followed to advantage.

Community Interests in Feeds

From time to time there come to our attention instances which greatly emphasize the rather general neglect of concerted action among swine growers in the matter of securing feeds. These instances are usually numerous when feeds are scarce, as they have been during the past six months. The farmer who keeps only a small number of hogs frequently is not in a position to buy his feed in lots as large as a carload. There are many communities in this state in each of which there are a large number of such individual farmers. Where groups of such farmers consider their feed problems together, it is possible for them to arrange to buy feeds in large quantities. In this way material savings can be made both in quality and price of feeds. In various sections of the country it is common for large quantities of feeds to be shipped out of a given community during one season of the year, and an equal quantity of the same feeds to be shipped into the community to be used by another set of farmers (or sometimes by the same farmer) at another time of the year. It is obvious that much could be saved to all concerned if there were sufficient community co-operation in such places so that arrangements could be made whereby farmers who were short of feed could buy from farmers in the same community who had a surplus. This matter of mobilizing the feed supplies of a community is one of the most important matters in which co-operation seems desirable among swine growers. Co-operation could also facilitate securing prompt and adequate inspection of feed materials so as to insure good quality.

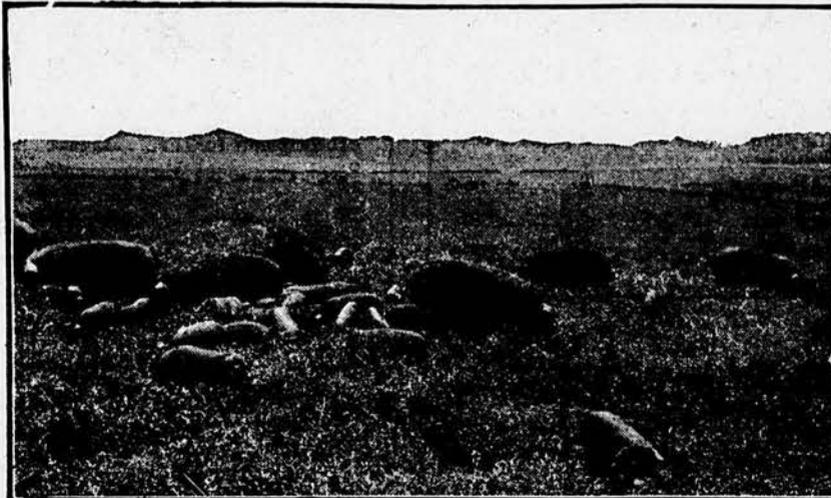
I have often thought that groups of

swine growers might well work together in securing more definite information than they now commonly have regarding the results of their various feeding enterprises. There are comparatively few farmers who are adequately equipped with weighing outfits so that they can secure the weights of their hogs periodically. Because of this fact, there is a really surprising amount of guesswork among swine growers as to the efficiency of different kinds of feeds and feeding methods which they practice. In the life of one generation of pigs the owner frequently uses a variety of different feeds, or combination of feeds, at different periods. Some of these feeds or combinations are economical and others are not. The farmer without facilities for weighing his hogs at times which correspond to changes in feed or feeding methods can only guess as to the results secured with a given feed or combination. Differences between feeds frequently are rather small, but an accumulation of small differences over a period of months or years may mean success or failure. In order that these differences may be ascertained, it seems desirable that swine growers be prepared to secure accurate weights of their hogs. Periodical weighing of hogs on practical farms has been tried out in a number of localities in the northwestern states, and the farmers concerned have been very enthusiastic about it. A weighing outfit consisting of steelyards with a light portable frame and a portable weighing crate can be secured for a small sum. Such an outfit can be used for years without serious deterioration and at trifling cost if a group of farmers own the outfit. The use of such equipment would pay for the cost in a few months and it would be a strong factor in the elimination of guesswork as to the returns secured from different feeds and feeding methods.

Controlling Diseases and Pests

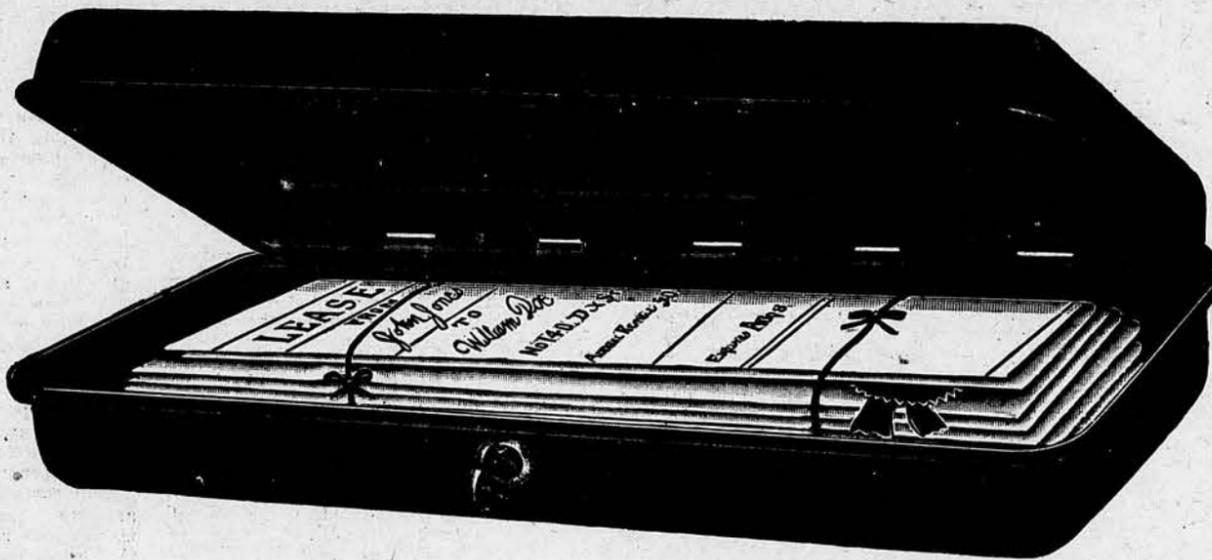
The control of diseases and pests affecting swine is one of the phases of swine production in which community co-operation has been highly developed in many places. This probably is because of the fact that certain swine diseases, particularly hog cholera, when epidemic in a community, can be combated effectively only by group action. The working together of a group of farmers with a view to seeing that cases of swine sickness are reported promptly and to enforcing quarantine regulations is a part of the very foundation upon which successful methods of hog cholera eradication rest. There have been numerous instances also in which farmers in a community have co-operated in securing and storing a supply of serum and virus and in securing veterinary service. In at least one community, in Colorado, the swine growers employed a competent veterinarian on full time for more than three years. The swine growers numbered about 300 so that they were able to secure the services of a high class veterinarian at a relatively small cost per farmer. This is one of the most striking instances of community co-operation in the control of swine diseases, and it is interesting to note that the venture was entirely successful. Veterinarians, county agents, progressive

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FARMERS AND PEACE CONFERENCE

On another page of this issue appears an article by A. A. Elmore, president of the Washington State Farmers' Union, making a plea for greater farmer representation in Washington. He believes that we should have a Peace Industries Board which should have the same relationship to peace time reconstruction as the War Industries Board had to the war time period. It is also being urged that a Bureau of Agriculture be created as a permanent part of the constitution of the proposed League of Nations. The idea has been presented in Paris, and C. S. Barrett, national president of the Farmers' Union, who left for Paris February 15 and has since returned, reports that both Lloyd George and Clemenceau favorably considered such action. In speaking of the creation of this Bureau of Agriculture, Mr. Barrett said:

"The great vital demand of our farmers was the inclusion in the League of a special body having the international interests of agriculture directly in charge. This is exactly the thing that labor has asked for and has been granted. Labor would not be satisfied with anything less than a just and proper recognition for its great service during the war. The service of the farmers has been at least as vital as that of labor. The farmers likewise will be satisfied with no smaller recognition than labor has secured, and they ought not to be. They know that such an opportunity for reconstruction has never come before and in my judgment they will now press their demands, knowing that their program can be secured with the aid of their President.

"I met Clemenceau, France's prime minister, and had a very satisfactory conference. He assured me that he not only had no objections but was in favor of the demands being granted. I saw England's prime minister, David Lloyd George. In a most satisfactory interview he promised to do his best for our demands. He had no objections, and our own secretary of state, Mr. Lansing, said the demands were just and that he did not see how anyone could object to them. The thing is practically settled that the farmers will have their requests granted if President Wilson will ask for their inclusion. If the farmers do not get this recognition they will want to know the reason why."

The National Board of Farm Organizations, to which organization Mr. Barrett made his report, immediately cabled as follows to President Wilson:

"The National Board of Farm Organizations on behalf of American farmers most respectfully and urgently renews its request that the Peace Conference create a Bureau of Agriculture as a permanent part of the constitution of the League of Nations. Charles S. Barrett, our representative, has just returned from Paris and reports that both Lloyd George and Clemenceau have favorably considered such action. We hold that the protection of agriculture is as much the duty of any League of Nations as the protection of labor."

The agricultural interests of this country are certainly entitled to such representation, and if it is not granted it will probably be because the farmers of the country are not as compactly and effectively organized as the various labor interests.

HANDLING 1919 WHEAT

The Department of Agriculture will not have the handling of the 1919 wheat crop under the government guarantee. If Secretary Houston had desired or expected to have his department handle the job, he has changed his mind. In fact it has been announced by the Department of Agriculture that many statements being circulated misrepresent the attitude of the Department toward the proposition of administering the marketing of the crop under the guaranteed price plan. It was up to the President to designate some agency for the administration of the law making

effective the government guarantee. The Grain Corporation and the Food Administration would have ceased to exist with the signing of the peace treaty, but President Wilson has cabled from Paris directing that the Grain Corporation, which is headed by Julius Barnes, be continued as the agency for handling wheat until the 1919 crop covered by the guarantee is all marketed.

The decision to continue this well organized and effective agency for handling the crop will be generally commended. The Government Grain Corporation as organized and conducted by Mr. Barnes has had the experience of the past year and can be depended on to render the best possible service in winding up this last feature of government control.

MR. CRABTREE RESIGNS

P. E. Crabtree, who for the past eleven years has been connected with the extension division of the agricultural college, has resigned to devote his time exclusively to plant breeding work in Western Kansas.

In point of service Mr. Crabtree is the oldest member of the extension division, having begun under Superintendent J. H. Miller, who was the first man to head extension work eleven years ago. He has lectured on various farm problems all over the state, has judged at many fairs and shows and organized and directed farm demonstrations of all kinds. For four years he was superintendent of the agricultural department of the state fair at Hutchinson, and for three years superintendent of the same department of the Topeka Free Fair. At both of these fairs he performed valuable services in systematizing the classifying of exhibits. For the past three years he has been district agricultural agent at Scott City and has given special attention to variety test work, having tested several hundred varieties of field crops in studying their adaptation to Western Kansas conditions. Eighty-four varieties of corn and sorghum were planted on the three state irrigation farms in Western Kansas last year, and some most valuable information was obtained. More than 3,000 persons visited the demonstration plantings made by Mr. Crabtree last year in his district. He is retiring from the public work of the extension division with considerable regret, but feels that he can be of great service to the western part of the state by devoting himself exclusively to the problem of breeding and developing crops specially adapted to the conditions of that section. He is expecting to cooperate to the fullest extent possible with the agricultural college in his plant breeding work.

FARM MANAGEMENT HEAD

An appointment of special interest to farmers is that of Dr. H. C. Taylor, head of the department of agricultural economics at Wisconsin University, to the position of chief of the office of farm management of the United States Department of Agriculture. This position, which was formerly filled by W. J. Spillman, has been vacant for some months. The charge has been made by Mr. Spillman that he was virtually forced out of office and that it was against the policy of Secretary Houston to extend and develop the work of agricultural economics and particularly that having to do with the cost of crop production. A series of charges and counter charges have been made, and the controversy is being exploited in the press in a manner that cannot be otherwise than harmful to the work of the agricultural department, of which Secretary Houston is head. Whatever the merits of this unfortunate controversy, nothing is gained by the sort of statements being given out. If Secretary Houston has been inclined in the past to hold back the development of the farm management work, the new appointments and the announced plans indicate that an effort is to be made to place farm man-

agement and farm economics upon a satisfactory basis.

Doctor Taylor, the new chief, recognized authority on agricultural economics. A committee of specialists in this field, of which he was a member, has been studying for the past three months the activities of the farm management division in the Department of Agriculture. A report has been submitted which will be published in the near future. Upon the basis of this report the work in farm management is now being reorganized.

In addition to teaching agricultural economics and conducting investigations which have attracted attention all over the country, Doctor Taylor has lived on a farm and personally directed its management for the past eight years. He comes to the Department unusually well qualified to handle the important task of directing the farm management and agricultural economic work.

Francis W. Peck has been appointed to the position of farm economist under the immediate direction of Doctor Taylor and will have charge of the studies and investigations relating to the cost of producing farm crops. For the past seven years Mr. Peck has been instructor and assistant professor of farm management at the University of Minnesota. He has also had farm experience and is specially fitted for the work of directing the activities of the Department in production costs of farm crops.

The farmers of the country are vitally interested in this feature of agricultural work and are demanding that more attention be paid to such matters as production costs and marketing problems. It is to be hoped that this feature of the departmental work will be developed to such an extent as to become most useful in making the business of farming more profitable and generally satisfactory.

COMMUNITY HOUSE AS MEMORIAL

Already the question of how best to commemorate the noble deeds of our soldiers and sailors in the great war is being raised in various communities. No more fitting memorial could be erected than a community house or hall dedicated to the boys of the community who gave their lives a sacrifice for the great cause of righteousness and justice. Walter Burr, director of the rural service department of our agricultural college extension work, reports that the idea of erecting community buildings as memorials is spreading rapidly, and he is receiving many requests for suggestions and plans and specifications. We wish to commend this plan and hope that in many Kansas communities buildings will be erected which will serve the whole community and be a constant reminder of the ideals that inspired the boys they are to commemorate. "These social service stations are certainly much better as memorials than marble shafts would be," says Mr. Burr. "It has been feared by some that there is danger in this movement in that it will proceed as a fad and result in the erection of a number of poorly equipped, mismanaged buildings, which will be perpetual problems in the communities when the war enthusiasm has passed. Such a calamity can be avoided by following certain methods in financing, erection, and maintaining these buildings.

"In the average Kansas community the building should be financed on the taxation basis. This is the only democratic way to handle community enterprise. It is unfair to place the burden of financing such an institution upon the shoulders of a few enterprising citizens who might donate the money.

"Wherever possible the project should be developed on the basis of a bond issue for a new school building, or where such a building is not needed, for an added building on the school grounds.

"Coincident also with this plan must be the voting of a sufficient salary to some member of the school faculty who will be employed for the entire twelve

months and will, among other duties, be given the supervision of the social-national activities of the community conducted from the school center.

"The building should provide for an auditorium and a gymnasium—combined if necessary—shower baths for men and women, a reading room, rest rooms for men and women who come into town to trade, and if in a county seat town, an office room for the county agricultural agent, the county Y. M. C. A. secretary, and any other executives of country-wide organizations.

"One can find community houses that came in on a wave of temporary enthusiasm and that are lying as stranded and abandoned wrecks, but no service center established as recommended here, as a part of the school plant, has ever met such a fate."

MAKE BUILDING PLANS AT ONCE

A general building campaign is about to begin. Building operations have been sidetracked except as they contributed directly to the winning of the war. The opportunity has now come to go ahead with contemplated buildings. Prices of building materials are steady and the indications are there will be no material change for some time.

Competition in building is especially brisk between city and country. During the war both have suffered because little building was done. In the cities, especially, the population needs have not been adequately cared for. On the farm the needs of increased production have not received the additional building that was necessary.

So now, all at once, country and city are rushing into the market to procure their necessary building supplies. Is there a sufficiency of building materials in the country to meet this demand? This is the question. Each day the demand grows stronger. The cities, in particular, are doing their best to get themselves supplied with materials.

Here is where the farmer may lose out unless he acts quickly and makes his building arrangements at once. Delay for a few months, and just when you decide to have your building done you may have difficulty in getting your order filled. The best thing to do is to decide now what you will need in the way of buildings and get in your order to some reliable firm. If there should be a short delay, you will suffer no disadvantage or loss.

The point we want to make is that a few months from now there can be no assurance that building orders will be filled immediately after they are received. Get your buildings up now while a good supply of material is available, and provide against the time when you must have them.

The meeting to be held on the big experiment farm at Hays Saturday of this week is the sixth annual round-up and is the occasion for giving out full details of the feeding tests of the past winter involving 379 head of cattle. The attendance at these round-up meetings has increased from a few hundred in the beginning to more than two thousand last year. The program for this year's round-up includes a report of the year's work of the Fort Hays Branch Experiment Station by Superintendent Charles R. Weeks, an analysis of the results of the live stock feeding tests of the winter by Dr. C. W. McCampbell, professor of animal husbandry at the agricultural college, addresses by President W. M. Jardine, Dean F. D. Farrell, Dr. H. J. Waters of the Kansas City Weekly Star, C. E. Yancey of the Federal Food Administration, and other prominent men. Next week we will report the results of the feeding tests.

At no time do pigs make pork more cheaply than while sucking the sow. It is a paying proposition to take good care of the brood sow while the pigs are running with her. Increase the feed as the pigs grow older.

WINDMILL IRRIGATION PROJECT

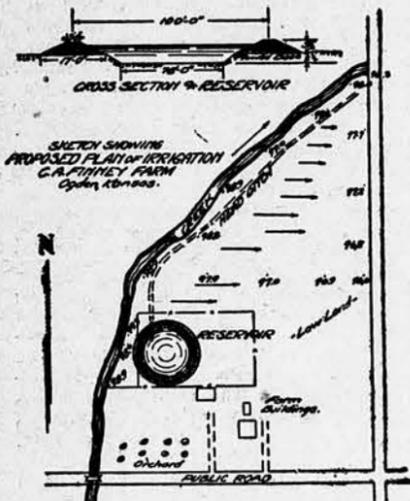
Pumping Water from Underflow Into Storage Reservoir

TWO miles east of Ogden, Kansas, is a typical Kaw Valley farm which is owned and farmed by C. A. Finney. To increase the income and also to add to the attractiveness of the farm, Mr. Finney decided to build a reservoir and windmill to irrigate a somewhat isolated tract of three acres. The soil is considered the very best quality for the production of general crops. It is a loose sandy loam which is underlaid with a more dense semi-clay, which is in turn underlaid with an undetermined depth of sand. This sand is water-bearing throughout practically the entire Kaw Valley, and it is from this sand that it is proposed to get the water for irrigation.

What is locally known as Seven Mile Creek cuts off about six acres on the southeast corner of this farm. On this six acres are located the farm buildings, feed yard, family orchard and garden, and the three-acre tract which it is proposed to irrigate.

The crops to be grown will consist of strawberries for the most part, although potatoes and commercial garden truck will also be grown. For the successful growth of each crop it is essential that water be provided at the time.

A survey was made on March 12, 1919, for the location of the reservoir and ditch, and elevations were also taken to determine the general slope of the three-acre tract. The general location of the farm buildings, orchard, reservoir site, head ditch and tract to be irrigated is shown on the accompanying map. The figures show the elevation at the various points and from these elevations it is seen that there is a slope to the east of a little less than one foot to the hundred feet. This is almost ideal for the irrigation of garden products. Some



leveling of high spots will be required, but it is not probable that the leveling cost will exceed \$35 or \$40.

In the use of a windmill for irrigation it is necessary that a reservoir be constructed, if the area to be irrigated exceeds a few square feet. The reservoir is necessary to hold a supply sufficient to give a head of water which can be spread over the land and thus avoid a mere trickling stream which will be absorbed by the ground before it spreads to the roots of the growing crop.

The reservoir is located on the highest spot so that the water can be carried to the field by gravity. It was decided to construct a reservoir which has a diameter of 100 feet from center to center of the top of the embankment. It was also decided to make the embankment of the reservoir three and one-half feet above the natural ground surface. A top width of three feet, with side slopes two feet horizontal to one foot vertical, are the minimum dimensions for safety. An embankment with these dimensions for a reservoir with a diameter of 100 feet requires 450 cubic yards to fill. A shrinkage of 12 or 15 per cent must be provided for so that it is necessary to make the embankment about four feet high.

The dirt for the embankment is to be taken from the inside of the reservoir, which will require a maximum excavation of about two and one-half feet. By taking the excavation from the inside

of the reservoir the capacity is increased, although the water below the surface of the ground will not be available for irrigation. In this connection it is proposed to propagate fish for family use. A test hole was dug in the center of the reservoir site to see how deep it was to sand and to find if the semi-hardpan extended at least one foot below the necessary excavation depth. At the depth of about three and one-half feet no sand was found, so it was assumed there would be little loss from seepage in the bottom of the reservoir.

Before excavation was begun, the base for the proposed embankment was plowed, so that the chance for seepage between the natural soil surface and the

excavated material would be reduced to a minimum. The excavation work is now being done with the ordinary slip scrapers and runways are made about every fifty feet.

As mentioned, it is proposed to raise fish in connection with the irrigation scheme, and with excavation of two and one-half feet below the natural surface there will be 100,000 gallons of water available for this purpose. If the reservoir is filled four feet deep it will have a capacity of 165,000 gallons, or 65,000 gallons for irrigation. If it is filled five feet deep the reservoir will hold 214,000 gallons or 114,000 gallons for irrigation. It will not be safe, however, to hold a depth of five feet of water

for any length of time, as this leaves only one foot of free board and in case of high wind may cause waves sufficient to cause a washout. The use of 114,000 gallons of water will cover one and one-half acres three inches deep, which is sufficient for one irrigation.

The water is to be drawn from the reservoir through a fifteen-inch corrugated galvanized iron pipe with a closely fitting valve at the upper end. This pipe is to empty into a head ditch, which is to be sixteen inches on the bottom with a depth of six to eight inches. This ditch will have a grade of one-fourth inch to the rod and a capacity of between 360 and 400 gallons per minute. The velocity will be comparatively slow, as it will only be about one foot per second. This will allow, however, for the easy handling of the water and there will be little loss in the ditch, as the ground to be irrigated lies adjacent to the reservoir.

At a rate of 360 gallons per minute it will require five hours to use the 114,000 gallons or to empty the reservoir to the natural ground surface. This is about the right time required to distribute this amount of water over the land and it will, as stated, cover about one and one-half acres to a depth of three inches.

It is proposed to use a fourteen-foot windmill. The depth to water is twenty-two to twenty-five feet, which plus the reservoir embankment height will make a total lift of about twenty-eight feet. It is proposed that sixty gallons per minute of water will be pumped. The theoretical power required to raise sixty gallons per minute a height of twenty-eight feet is 0.42 horsepower. To this must be added the power lost in the pump and pipe by friction and slip. It is possible to attain a pumping efficiency of only about 50 per cent under usual field conditions; that is, one-half of the power will be lost in overcoming friction or useless work, so that it is necessary to have a mill capable of developing 0.84 horsepower.

It has been found by testing that a fourteen-foot windmill operating in a wind with a velocity of eleven to fifteen miles per hour will develop approximately 0.85 horsepower. It has also been found that a windmill of this size will run about thirty revolutions per minute in a wind of the above-mentioned velocity. To pump sixty gallons of water per minute with a windmill revolving thirty revolutions per minute will require a pump cylinder having a capacity of two gallons or 462 cubic inches. The usual stroke for windmills of this size is about ten inches, hence the diameter of the cylinder must be eight inches.

To pump 214,000 gallons at the rate of sixty gallons per minute will require sixty hours, or two and one-half days. If, however, the wind blows only one-half of this time at a velocity of between eleven and fifteen miles per hour, it will require five days to fill the entire reservoir. At the same rate with the wind blowing one-half the time it will require about sixty-four hours to fill the reservoir with 114,000 gallons, which is to be used for irrigation. In the first few fillings of the reservoir it will probably require at least 25 per cent more than the calculated amount of water on account of seepage, settling and the like.

If the wind blows so that the windmill will operate only one-fourth instead of one-half of the time, the reservoir will provide a reserve supply sufficient to irrigate the entire tract of three acres every twenty days. Ogden receives normally about thirty inches of rain per year and if the rain furnishes one-half of the necessary moisture, the irrigated area could easily be doubled.

No attempt is made to keep the cost of this improvement, as the work is largely done by the owner and his son when not otherwise employed. A second-hand windmill has also been purchased so that the actual outlay in money will probably be less than \$150. It is anticipated that the net return from one acre of strawberries will be at least three times this amount and in addition there will be the remaining two acres which can be devoted to the growing of commercial garden products.

By J. B. MARCELLUS
Drainage and Irrigation Engineer, K. S. A. C.

SPRING CARE OF BEES

By J. H. Merrill, State Apiarist

IF THE bees went into the winter with ample stores and were properly packed and protected from the wind, the spring management will be very simple. If there is any doubt as to their condition, the first examination should be made soon, selecting some warm day after the bees have been flying for at least three days.

Two things should be looked for at this time. First, queenless colonies, and second, those in need of food. An examination of the combs will show whether there is any brood present. If brood is found, it may be taken for granted that a queen is present, although she may not be located on the first hasty examination. If the bees do not have enough stores, then a heavy syrup made of two and one-half parts sugar to one part water, by measure, should be fed them. The best method of feeding this syrup will be by putting it into a friction-top pail, in the cover of which a number of holes have been punched. A cloth or cover of some sort with a hole in the center should be placed over the top of the frames, and the pail of syrup inverted over this hole. An extra hive body, or super, should then be placed on top of the hive. If any of the colonies are found to be queenless it will be much better to unite them with a strong colony rather than to try to induce them to raise a queen for themselves. Good queens can be purchased, but it will be simpler to unite them at this time and later divide them if desired. All weak colonies should be united with strong colonies, as it is not a paying proposition to try to build up a weak colony. It will not become strong in time for the honey harvest, whereas if united with a normal colony this added strength will assist in storing a bumper crop of honey.

If there are a large number of dead bees in a hive, they should be raked out. If the queen is found on the first examination, she should be caught and held

between the thumb and forefinger of the left hand while the wings on one side of her body and clipped off with a pair of fine scissors. This clipping of the queen will help a great deal in controlling swarms later in the season. It will not prevent a swarm from issuing from the hive, but the fact that the queen is clipped and cannot go with them will cause the bees to return to the hive, where they may be easily taken care of.

Great quantities of food are necessary during brood rearing, and not only food but water, therefore water places should be provided near every bee yard. These may be of many patterns, the chief requisite being that the bees can get water from them without drowning. A tub or vessel filled with water, with a lot of chips or pieces of broken cork floating on the surface, will make a suitable drinking place.

If after the first bloom of flowers there comes a dearth of bloom before the main honey flow, it may be advisable to practice stimulative feeding. For stimulative feeding, a thin syrup made of equal parts of sugar and water, by measure, should be fed to the bees. This may be fed them by means of the friction-top pail, or by any feeder that can be so regulated as to allow but little syrup to be obtained at a time. If the friction-top pail is used, the flow may be cut down by punching only one or two holes in the cover. In all cases where feeding is practiced, the food should be put into the hive at night so as not to cause the bees to become excited, rush out of the hive, and begin robbing.

If the above manipulations are practiced, the result should be an abundance of workers in the hive when the honey flow begins, a vigorous queen, and plenty of food. Such a colony is ready to store the maximum amount of surplus honey, which is the thing to be desired in beekeeping.



EDWIN COLLINS OF LYON COUNTY BEE CLUB IN HIS APIARY WITH W. A. BOYLE, CLUB LEADER

GENERAL FARM AND STOCK ITEMS

Something of Interest for All—Overflow from Other Departments

IN MAKING your cropping plans for the coming year, do not fail to give alfalfa due consideration. On many a farm in Eastern Kansas more alfalfa could be profitably grown. Preparation for seeding alfalfa takes time, so it is necessary to make plans well in advance. "The thing we need most in growing alfalfa," says A. C. McClymonds, extension soils specialist of our agricultural college, "is a determination to find out what we need to do to get a stand, and then to do it. Do not be discouraged by failures; we all make mistakes. The benefits from growing alfalfa are so great that it is worth every effort."

Mr. McClymonds points out that we cannot expect success on wet, poor, sour, weedy soils. Wet ground should be tilled. Sour soil should be limed. Poor land should be manured and enriched. Alfalfa is often grown on poor land, but it is best in getting a start to have the land rich. If the land is weedy, put in a cultivated crop the year before sowing to alfalfa and keep clean of weeds, or summer fallow until the last of July. Wait until the ground has plenty of moisture before seeding. In fall seeding it is best not to sow alfalfa after the tenth of September.

Sudan Grass for Pasture

We have been asked if Sudan grass is a good pasture grass. It cannot be considered a pasture grass in the sense of making a permanent pasture. It is an annual crop, a member of the well known sorghum family. On every farm there is a place for annual pasture crops grown to supplement the permanent pastures. For this purpose Sudan grass is likely to supersede the commonly grown annual pasture crops. It is a comparatively new crop, but has increased very rapidly in popularity and has already demonstrated its superiority to such crops as rye, rape or others grown as supplemental forage crops. Being a sorghum, it is drought-resistant and is especially adapted to growing in the regions of light rainfall in this state. It comes on at a time when the permanent pastures are failing. Thus a pasture of Sudan grass will often enable a livestock farmer to carry the stock over the dry season without loss. It is also a most excellent hay crop and in fact will probably be used even more widely as hay than as pasture.

Azoturia from Mismanagement

The disease of horses known as azoturia is likely to occur during the beginning of the working season. An understanding of its causes and the conditions under which it is most apt to occur will aid in its prevention and successful treatment. The disease nearly always attacks horses while at work following a day or two of idleness during which time they were fed the usual working ration of grain. The veterinarians explain that the blood and tissues of the horse so fed during an idle period become charged with nitrogenous and other nutrient material. When the horse starts to work these materials in the blood decompose, producing waste matter more rapidly than the excretory organs can eliminate it. This waste matter acts as a poison, causing a more or less complete paralysis.

The first symptoms of azoturia are excessive sweating, stiffness, and a staggering gait. When a horse shows these symptoms he should be unhitched at once and not moved, not even to the stable. A veterinarian should be called if it is possible to get one. If the horse is moved even a short distance a complete paralysis will often result and it is very difficult to treat a horse successfully when that stage has been reached. By way of prevention, the logical method is to feed working horses a lighter grain ration during rest periods and give them exercise. The disease is sometimes called "Monday morning sickness" because it so frequently occurs when horses are put to work after standing idle in the stall over Sunday.

Growing Rhubarb

Rhubarb is one of the necessary "fruits" required by the human family. It will grow in almost any of our nu-

merous soils, but for best results should have a fertile sandy loam with a well drained subsoil. It is a gross feeder and must have a porous and very fertile soil.

For a few plants, deep holes may be dug and partially filled with rich soil and any old bones which may be gathered about the place. Vigorous plants having one strong eye supported by a healthy root of five or six inches in length is the ideal one to plant. When properly planted the eye will be about one inch below the surface of the soil.

The first year's growth should not be pulled at all. Moderate pullings may be made during the second year, after which time you may pull all that the plant will produce. Care should always be exercised to prevent injury to the crown, for when this is seriously damaged many small stalks is the result. It is best to renew the rhubarb about every five years, although some pull from the same patch for ten or twelve years.

Red Polled Cattle

A reader asks about the origin and early history of Red Polled cattle and their special claims to merit. This breed of cattle is probably among the oldest breeds in existence. The records of Suffolk and Norfolk counties of England for hundreds of years back refer to polled cattle from which the modern Red Polled cattle originated. In the latter part of the eighteenth century in a "Survey of Suffolk" special reference is made to the breed. The report says:

"There is hardly a dairy of any consideration in our district that does not contain Red Polled cattle which give in the height of the season eight gallons of milk a day and six are common among many for a large part of the season."

Red Polled cattle were introduced into America at the time of the early English settlements. Reference is made to a heifer of the breed presented to the captain of the vessel Jamestown, taking provisions to Ireland to relieve famine in 1607. This heifer became the foundation animal of a very superior

strain of cattle known in Massachusetts as the Jamestown cattle.

Probably no other breed can make greater claims to being dual-purpose in type and general characteristics than the Red Polled cattle. Annual milk records running as high as fourteen thousand pounds have been made. They also have merit as beef animals. They are medium in size, bulls of the breed ranging in weight from eighteen hundred to twenty-two hundred, an occasional animal running as high as twenty-four hundred. At the Smithfield show in England in 1889 two Red Polled steers two years old showed the largest gain of any animals on exhibition of that age, or an average daily gain of 2.18 and 2.29 respectively. A Red Polled steer at the same show dressed 73.72 per cent.

The Red Polled breed has suffered some in later years because of variations in the standards of breeders. Some have leaned too strongly to beef type and others to milk. It has been difficult to have Red Polled cattle judged properly at the big fairs, because most of the men placing animals in the ring are judges either of dairy cattle or of beef cattle. Those who have given most thought to the breed insist that their dual-purpose qualities and characteristics must always be given proper consideration.

Results of Double Taxation

The article by Prof. Theodore Macklin on farm tenancy problems which appeared in the March 22 issue of KANSAS FARMER brought the following interesting letter from J. N. W., an Allen County reader. He says:

"Professor Macklin divides the tenants, very properly, into two classes: First, one that is 'faithful and thrifty as well as reliable and capable, this retiring farmer is glad to finance him and even to sell the place to him on first and second mortgage arrangements.' This owner being 'well along in years,' on giving up his farm to the 'tenant' would naturally move to town and, provided the farm was worth \$10,000, would hold these mortgages and later find that by Kansas' double taxation system he

would be required to pay taxes of 2½ to 3 per cent on these mortgages, taking half of his income from interest on the \$10,000, and this after the tenant was required to pay the usual taxes. This condition is worse than renting to a tenant, even though it assumes that the purchaser is all that he should be.

"Now, for the second example, one of the man who considers himself 'faithful and thrifty as well as reliable and capable.' His landlord is induced to sell him the farm—as proposed by Professor Macklin, Governor Allen and others that indorse this system—and accepts of a payment of \$1,000, taking 'first and second mortgage' for the balance of \$9,000, and then discovers that the 'tenant' intends to get what he can out of it, whether from failure of crops, 'bad luck,' mismanagement, or whatever the cause, it is all the same to Mr. Mortgageholder, and he will learn that he not only has to pay the taxes, insurance, and repairs, but will have to pay the taxes on the mortgages and the first payment of \$1,000, not for one year only but for three years, because of the eighteen months stay law. If the deed is made March 1, 1919, his ledger will show the following expenses: Taxes for 1919 on mortgages and cash paid by purchaser, \$250; taxes for 1919 on farm, \$60; insurance and repairs, 1920, \$25; taxes for 1920 on mortgages and notes, \$250; taxes for 1920 on farm, \$60; insurance and repairs, 1921, \$25; lawyer's fee—foreclosure, \$50; court expenses, \$30; taxes for 1921 on mortgages and notes, \$250; taxes on farm, \$60; mortgages cancelled, \$9,000; insurance and repairs, 1922, \$25, or a total expense of \$10,085. During this time he has received from the farm \$1,000 cash, a first mortgage of \$5,000 and a second mortgage of \$4,000, both afterwards cancelled, and \$180 as three years' interest at 6 per cent on the \$1,000 which was paid down—a total of \$10,180. This leaves a balance of \$95 for the three years' use of the farm, because of our double taxation and eighteen months stay law.

"This is a liberal example, as the professor and the Governor do not require even the 10 per cent first payment."

Locusts Will Miss Kansas

The periodical cicada, popularly known as the seventeen-year locust, which will infest a great part of the United States this year, will not touch Kansas, according to calculations made at the agricultural college. Nor will the thirteen-year locust, which this year will appear simultaneously with the others, appear in this state. This variety is entirely unknown to Kansas.

There are different broods of the insect in different parts of the country.

This causes infestations in different years. The next big outbreak in this state will be in 1930, the last one having been in 1913. In the latter year the insects were present in such numbers that in places their weight bent bushes practically to the ground.

Sweet Corn for Garden

By planting several varieties of sweet corn the same day, we have had roasting ears, fresh from the field, during sixty days in Eastern Colorado. And it seems possible to have fresh corn during a longer period in Kansas.

The varieties we used were Golden Bantam, Early Minnesota, White Mexican, Zigzag Evergreen, Stowell's Evergreen, Country Gentleman, Mammoth and Egyptian. These eight furnished a succession, and their dates of maturity overlapped some—especially the larger varieties that came late in the season. Mammoth and Egyptian are large-eared varieties and are both quite late. But they are good quality and are fine for canning whole ears. They furnish a good yield of valuable fodder. Dairymen might find these two varieties profitable if planted for a soiling crop.—J. E. PAYNE, Parsons, Kansas.

If you have a dollar and I have a dollar and we swap, then we still have one dollar each, but if you have an idea and I have an idea and we swap, then you have two ideas and I have two ideas.—A. A. C. Bulletin.

Farm Bureau Programs

THE farm bureaus of Kansas have succeeded in retaining a sane and constructive viewpoint during the past year in spite of the confusion resulting from the war conditions. The members have continued to realize the value of demonstrations as means of introducing better farm practices in the respective counties. In each of these demonstrations some particular method which has been proved, both from an experimental and practical standpoint but which is new to the community, is demonstrated at a local barnyard, field, feed lot or pasture.

These are the words of H. Umberger, state leader of farm bureaus, in commenting on the policies and plans which are to govern the work of the farm bureaus of Kansas the coming year. In a recent issue of KANSAS FARMER we summarized briefly the farm bureau achievements for 1918. The coming year we fully expect to see even greater accomplishments in various lines, and particularly in the disseminating of information concerning well established farm practices.

Definite programs have been outlined in every farm bureau county. Each local community has met and decided upon the things most necessary to aid in realizing more profit and pleasure from its farming operations. The demonstration method is to be employed even to a greater extent than last year.

Considering the state as a whole, at least eight different lines of work have been decided upon by the different farm bureaus. In each bureau at least two of these lines of work will be carried out during the spring, summer and fall and the necessary demonstrations conducted. The projects depend upon the local needs as determined by the officers and members of the different bureaus. In certain counties soil problems may

be paramount and in others it may be live stock. Each community is determining its needs, and the bureau's activities will be centered along the chosen lines.

Eight counties, in addition to those working in 1918, will undertake to work out better methods of handling the soil, and one or two co-operators will aid in each of ten communities in each of the counties chosen. Special attention will be given to methods of restoring humus, preventing soil washing and adding nitrogen. From two to six co-operators in from two to six communities in sixteen additional counties will likely aid in demonstrating better methods of handling seed corn and seed grain sorghums.

In eight more counties than in 1918 co-operators will undertake to improve the beef cattle feeding operations, and similarly two series of demonstrations will be carried on in hog feeding in twelve additional counties this year.

Dairy demonstrations will be staged in twelve additional counties this year, and poultry raisers, in eight new counties, will co-operate with the bureau committees in showing the most desirable methods in poultry production. The benefits of proper pruning and thorough spraying will be shown by demonstrations in twelve new counties.

In all of these demonstrations specialists from the agricultural college and the experiment station will aid the local bureau in carrying on the work. In each of these co-operative projects at least three public demonstrations will be held in each community.

"Do you think early rising is good for your health?" asked the languid city visitor. "I don't know about my health," replied Farmer Cobbles, "but next to sun, rain and fertilizer, it's the best thing there is for crops."



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MECHANICS ON THE FARM

Items of Interest About Automobiles, Engines, Tractors and Motorcycles

Power Rating of Engines

THERE has been some confusion in the power ratings of gas engines. The information supplied in reply to an inquiry along this line by W. H. Sanders, assistant professor of farm engineering at the agricultural college, will be of interest to those using tractors or internal combustion engines. The inquiry is for the power ratings on two kerosene-burning tractors and the formula for figuring the horsepower. One has a four-cylinder engine of five and one-half inch bore and six-inch stroke. It runs 650 revolutions per minute. The other is a four-cylinder engine with a bore of five and one-fourth inches, an eight-inch stroke and running at 575 R. P. M. (revolutions per minute).

The Society of Automotive Engineers has adopted the formula D^2 times N divided by 2.5 for calculating the power rating of internal combustion engines. In this formula, D equals the diameter of the cylinder in inches, N the number of cylinders, and 2.5 is a constant divisor. Using this formula for the first engine described, substituting the values of D and N gives the following calculation: The diameter of the cylinder—5.5 inches—multiplied by itself, and then by 4, the number of cylinders, equals 121, and dividing by 2.5 equals 48.4, or the horsepower of the engine. Making the same calculation for the second engine gives it a horsepower rating of 44.1.

The S. A. E. rating, however, is based on a total piston travel of a thousand feet per minute. In neither of the engines described does the piston come up to that rating. In the first, with its six-inch stroke, the piston moves twelve inches, or one foot, to each revolution, or 650 feet in one minute. This is only 65 per cent of the 1,000 feet per minute upon which the formula is based. In other words, the actual power rating is only 65 per cent of 48.4, or 31.4 H. P. In like manner the second engine piston moves sixteen inches to each revolution, or 766 feet in one minute. This is 76.6 per cent of the formula requirement, and 76.6 per cent of 44.1 is 33.74 H. P., that of the second engine as calculated by the A. A. E. rating.

The fuel used brings in another complication. In commenting on this phase of the problem Mr. Sanders says: "It is well to remember that the volumetric efficiency of an internal combustion engine depends directly on the density, or weight, of the air mixed with the fuel in the cylinder. The heavier the air, the greater the weight of oxygen in a given volume. The more oxygen, the more fuel will be burned and, conversely, the less oxygen, the less fuel can be burned, the less heat liberated and the less power from the engine. Now all methods for using kerosene depend upon applying heat to the charge while it is being drawn into the motor. Heated air expands, so a given volume will contain less oxygen and therefore can burn less fuel, the result being that less power for a given bore and stroke will be developed than if a cooler mixture containing more oxygen can be used, as in the case where gasoline is the fuel. There will probably be a further loss of power, varying from 10 to 20 per cent, due to this cause. In the case of the two engines described, allowing a loss of 10 per cent will give the first a rating of 28.3 H. P. and the second 30.4 when using kerosene.

"It is well to remember that the S. A. E. rating is but 80 per cent of the power a gas engine should be capable of developing at maximum load. This margin was adopted in order to provide a safe reserve of power above the sold rating."

Tractor Production

The office of farm equipment control of the United States Department of Agriculture is predicting a production of 314,936 tractors in the United States in 1919. This is based on the reports of manufacturers as a result of a special inquiry made by the department. The reports received show a production of 132,697 tractors in 1918. The manufac-

turers gave the number of tractors of different sizes manufactured last year and estimates of the number of each size that will be made this year. The figures for 1919 are of course estimates, and merely represent the aggregate of the figures submitted by tractor manufacturers in January and February of this year.

The manufacturers reported 15,525 as the number of tractors on hand December 31, 1917. Of the 1918 sales, 96,470 were in the United States, and 36,351 were exported. The number on hand December 31, 1918, is given as 15,401. It is interesting to note the sizes of tractors manufactured in largest numbers. In 1918 there were 72,238 tractors of twenty to twenty-two horsepower manufactured. Next in number came the sixteen to eighteen horsepower—26,629, and next the twenty-four, twenty-five, and twenty-six horsepower—20,616. In the estimates for 1919, manufacturers give 157,671 as the number of twenty to twenty-two horsepower outfits to be made. The sixteen to eighteen horsepower come next—48,545, and the twenty-four and twenty-five horsepower next—40,875. These figures give some idea as to the sizes most in demand.

For the man who does the work about his own car and yet does not care to have his hands look like a garage mechanic's, the following is valuable: Four ounces of grain alcohol, three ounces of glycerin and three ounces of water, shaken up in a bottle. If this liquid is applied to the hands before beginning work, a good washing with soap and water afterward removes all traces of the labor.

Standardizing Tractors

A start has been made toward standardization of farm tractors, says W. I. Drummond in the Agricultural Review. True, it is a small start, but at the National Tractor Show at Kansas City the evidence could not be mistaken. There were far fewer freak machines shown than in previous years. The general impression was that most of the tractors exhibited embodied real efficiency. This show inspired the farmers with more confidence in the tractor than any other ever held. It is clear that the tractor manufacturers are on the right track, and that they should by all means continue this annual show, and also at least one complete plowing demonstration each year. Such shows are costly, but justified.

Type of Ignition

We have been asked if the jump-spark system of ignition is better than the make-and-break system. There is very little choice between these two systems. On tractors and automobiles the jump-spark is more commonly used, while on stationary engines the make-and-break system is more often used. It is important to have all wires well insulated, no matter what system is used, and inclosed in a moisture-proof conduit. Much ignition trouble is due to a failure to observe this important point.

A belt or friction drive is seldom satisfactory for a magneto. A magneto should always be positively driven from the engine by gears.

It requires considerable effort to start a fifteen or twenty horsepower gasoline engine by hand. An easier way than simply rolling on the fly wheel is to set the engine at the end of the power stroke, squirt some gasoline into the cylinder through the priming cock, turn the fly wheel backward as far as possible against compression and quickly trip the igniter.

The cross roads oracle says: We ought to have a law that'd put a man in jail if he'd allow his land to get real poor.

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Big Self-Feeder
A Lyon County hog grower, A. C. Bowman, has a self feeder eighty feet long with a capacity of 900 bushels of shelled corn. Mr. Bowman has become a very enthusiastic exponent of this method of feeding hogs. He successfully finished 800 hogs on this self feeder the past season. He uses tankage to supplement corn and claims to have produced twelve to thirteen pounds of pork from each bushel of corn fed. His farm was included in a tour made by members of the boys' and girls' pig clubs of the county, and his methods were of special interest to the party. These pig club members in Lyon County are planning some big things for the coming season.

Boy Writes of Manhattan Visit

OUR readers are familiar with the achievements of the Linwood Dairy Calf Club. They will be interested to know that three members of this club were sent to Manhattan to attend the Farm and Home week program, the expenses of one being met by the Kaw Valley Interurban Railway Company, through its manager, W. R. Taylor, and the expenses of the other two by the Leavenworth Chamber of Commerce and the Agricultural College. The three club members making the trip were Hattie Tudhope, Orville Hughey, and Henry Burdorf, the basis for the selection being the character of the work they did last summer in caring for their calves and keeping their records.

I. N. Chapman, the county agent of Leavenworth County, asked these club members to write a report of their experiences on this trip for publication in



ORVILLE HUGHEY AND HIS CALF

the Farm Bureau Bulletin. Orville Hughey's letter follows:

"I was at Manhattan, Kansas, from the fourth till the seventh of February during Farm and Home Week. I was one of the members of the Linwood Dairy Calf Club and all the time that I was at Manhattan I had my expenses paid by the Kaw Valley Interurban line, and I sure had a fine time.

"My mother went with me, but of course she had to pay her own expenses, so I was that much ahead of her. The first night we were in Manhattan we went to a banquet and had a fine supper. They had the banquet in one of the barracks that the soldiers used while they were in camp out there. After everyone got through eating there were a few men who gave talks. The first speaker was Harry Umberger, state county agent leader; the second, Vice-President J. T. Willard; the third, Prof. S. A. Beach; the fourth, Dean A. A. Potter; the fifth, Capt. Dan D. Casement, who has been in France. When he got about half way across the ocean the ship that he was on was torpedoed, but he was taken off before the ship sank. The sixth speaker was G. T. Cristy. There were three others, but I did not get their names. Each one gave a talk about agriculture and a few other things.

"Each day after that we found something to go to. There were guides who took the crowds around to different places. We went to see the poultry yards and the chickens; we also went to the dairy barns.

"I found out when to plant different garden products. I will give a list of the vegetables and when to plant them: Beans, May 6; beets, April 6; lettuce, April 1; onion sets, April 1; radishes, April 1; peas, April 1; cucumbers, May 15."

The cut here shown is from a picture of Orville taken last summer by the editor of KANSAS FARMER. He was showing us his calf. It is evident he is beginning right in the handling of dairy cattle.

Testing Association Reports

Four cow testing associations were actively at work in Kansas on March 1—the Dickinson County Association, the Arkansas Valley, the Oswego, and the joint Lyon and Morris County Association. We have just received a letter from William W. Castillo, secretary of the Montgomery County Cow Testing Association, stating that this association has been reorganized and began its work the first of April. It was compelled to discontinue its activities during 1918 because of inability to secure a tester while the war was on. Every member of this association is the owner of purebred cattle. Eleven are breeders of Holsteins, and six are breeders of Jerseys.

We have just received a summarized report from W. E. Peterson, extension agent in dairying, of the February work of the four associations first mentioned. The high cow for the month was found in the herd of Eugene Swinehart of the Arkansas Valley Association with a record of 84.12 pounds of butter fat and 2,108 pounds of milk. In all 246 cows were tested in this association. In the Dickinson County association 179 cows were tested, the high cow being one in the herd of Louis Koenig, with 66.2 pounds of butter fat and 1,980 pounds of milk. The Lyon and Morris County Association fails to report the highest cow, but has fifty-one cows with records above thirty pounds of butter fat for the month. In this association eleven out of the thirteen herds tested are either all or in part pure-bred. Six members of the association are using milking machines. This is the first report for the Oswego association. There were 149 cows tested, the highest record being found in the herd of Williams Brothers—44.22 pounds of butter fat and 1,005 pounds of milk.

The herd averaging highest for the month was that of Louis Koenig, with a record of 48.8 pounds butter fat per cow and 1,367 pounds of milk. The next was the Appleman Brothers herd in the Arkansas Valley Association, the average butter fat production per cow being 40.9 pounds and the milk 1,381 pounds. Herman Hurst of the Oswego Association came third in the herd averages with an average butter fat record of 31.3 pounds and 873.6 pounds of milk.

Plan Silo Construction Now

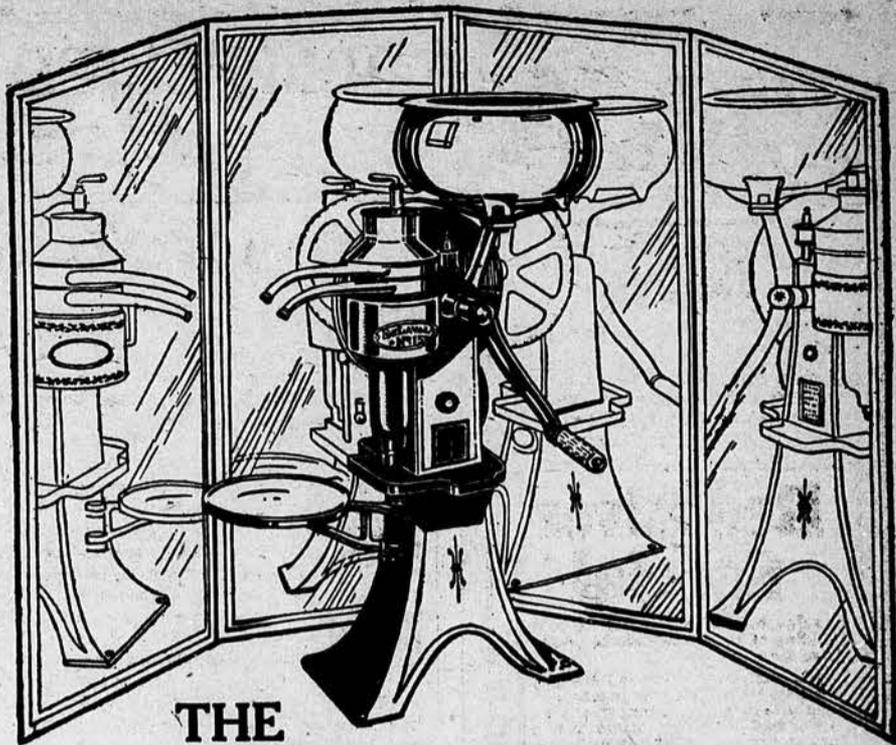
Profitable live stock feeding, due to the unusual conditions, and particularly to the high prices of hay and grain, has become largely a matter of utilizing roughages to the fullest extent. Farmers who have or contemplate building a silo are fortunate indeed, for they will be in a position to meet the situation and produce the maximum amount of milk, beef and mutton most economically. Evidence that the silo has become an actual necessity in most sections of the country for the production of these staple food products is not only borne out by the many experiments conducted by the different experiment stations throughout the country, but by the experience of thousands of farmers everywhere who have changed from old to the new way of utilizing the corn crop.

There are many advantages in the use of the silo, but the principal one is that silage is the cheapest and most profitable form in which a succulent feed for winter may be provided. Being a succulent, palatable roughage, it permits the use of the oil by-products, such as cottonseed meal, oil meal, peanut meal, velvet beans, etc., which are among the cheapest sources of protein. Owing to the nature and feeding value of silage, cheap and practically unusable roughages may be used profitably for wintering live stock. It has been found that straw and cottonseed meal when fed with silage are superior to timothy hay fed with silage. Its value is equally as great when fed in combination with the commonly produced legume hays. The cost of practically all rations for ruminants may be greatly cheapened by the use of silage.

Perhaps one of the greatest values of silage lies in the fact that it enables the farmer to greatly increase the carrying capacity of his farm. It ordinarily takes the production from one acre of meadow to carry a 1,000-pound steer or cow through the winter. The same area, if planted to corn or sorghum and put into the silo, would carry three or more such animals, the same being true when fed to fattening cattle or for the production of milk. Approximately the same amount of feed may be produced from one-third the area of crop land thus used, or three times as many animals may be fed from the same acreage.

While it is true that all farmers do not need a silo, yet it is imperative that those having as many as ten to fifteen mature cattle or their equivalent should carefully consider the building of a silo at once. Co-operation with neighbors will make it possible to purchase silo-filling machinery at minimum cost and to fill the silo quickly, economically, and in a satisfactory manner.

Lots of times a pasture is a piece of land that won't grow grass, with a pretty good fence around it.



THE DE LAVAL CREAM SEPARATOR

Every Reflection Shows Perfection

VIEWED from every angle, the De Laval is distinctly in a class by itself. It has a business-like appearance. It looks as if it were well made, and it is. It looks sturdy, and it is. There is no make-believe about it anywhere, from the wide-spreading substantial base to the solid, seamless, symmetrical supply can.

It's no wonder that big dairymen and creamerymen who have for years made a careful study of dairy methods and machinery refuse to consider any other separator but the De Laval. They know that from every angle—clean skimming, ease of operation, freedom from repairs, durability—there is no other cream separator that can compare with the De Laval.

They know that it has a record of 40 years of service behind it. They know that it can be depended upon. They know that they can't afford to take chances with any other cream separator—

And neither can you.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

THE DE LAVAL SEPARATOR COMPANY

165 Broadway, New York

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EVERY NEW DE LAVAL IS EQUIPPED WITH A BELL SPEED-INDICATOR

Stock Raising in Western Canada

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In Western Canada Grain Growing is a profit maker. Raising Cattle, Sheep and Hogs brings certain success. It's easy to prosper where you can raise 20 to 45 bu. of wheat to the acre and buy on easy terms.

Land at \$15 to \$30 Per Acre
—Good Grazing Land at Much Less.

Railway and Land Co's. are offering unusual inducements to home-seekers to settle in Western Canada and enjoy her prosperity. Loans made for the purchase of stock or other farming requirements can be had at low interest.

The Governments of the Dominion and Provinces of Manitoba, Saskatchewan and Alberta extend every encouragement to the farmer and ranchman.

You can obtain excellent land at low prices on easy terms, and get high prices for your grain, cattle, sheep and hogs—low taxes (none on improvements), good markets and shipping facilities, free schools, churches, splendid climate and sure crops.

For illustrated literature, maps, description of lands for sale in Manitoba, Saskatchewan and Alberta, reduced railroad rates, etc., apply to Superintendent of Immigration, Ottawa, Canada, or

F. H. HEWITT, 2012 Main St., Kansas City, Mo.

Canadian Government Agent

WESTERN CANADA
Farm Lands
at
Low Prices
—Best Belt—America



Keep Setting Hens Free from Lice

Put Dr. Hess Instant Louse Killer in the nests before adding the litter and eggs, then the brood will come off free from vermin. Put it in the dust bath—that's always a good thing to do. All fowls will sit it into the feathers and the lice will be quickly killed. Just as good for animals as for poultry. With one hand stroke the hair the wrong way, with the other sift in Dr. Hess Instant Louse Killer. Especially good for lousy colts and calves right now.

GUARANTEED

The dealer who sells you Instant Louse Killer is authorized to refund your money if it does not do as claimed.

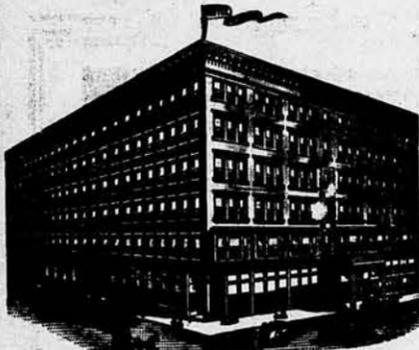
1 lb. 30c, 2 1/2 lbs. 60c (except in Canada)

Dr. HESS & CLARK
Ashland Ohio

DR. HESS Instant LOUSE KILLER Kills Lice

HOTEL KUPPER

Eleventh and McGee Streets
KANSAS CITY, U. S. A.



Located in center of shopping district, convenient to car lines, stores, and all points of interest. Direct car line to stock yards.

The hotel of quality, comfort and refinement. European Plan, \$1.00 to \$2.50 per Day.

Cafe in Connection.
KUPPER-BENSON HOTEL COMPANY
Walter S. Mars, Manager

Easier Shearing

Shear with a machine—get more and better wool—save you tired arms or swollen wrists. Do it quickly without scarring the sheep. Machine shearing gets 15% more wool and leaves a smooth open stubble that will increase next season's growth. Get a Stewart No. 9 Ball Bearing Shearing Machine. Price \$14. Send \$2—pay balance on arrival. Write for catalog. CHICAGO FLEXIBLE SHAFT COMPANY
apt. 122, Twelfth Street and Central Avenue, Chicago

Real Estate For Sale

SACRIFICING well-improved 700-acre farm, 2 miles out, ideal home, 260 wheat half with sale, possession now, some for spring crop, fenced, cross fenced, every acre tillable, best buy in county, carry \$10,000. Be quick, see or wire R. C. BUXTON
Utica, Ness County, Kansas

GOOD FARM FOR SALE

320 Acres in Scott County, Kansas, on main highway near town. Half under cultivation, balance equally good. Permanent water supply capable of irrigational development. Reasonable terms to responsible parties who desire to purchase. No trades wanted. Address E. S. KELOGG, 18 E. Forty-First Street, New York City.

THE STRAY LIST.

TAKEN UP—ON THE 8TH DAY OF November, 1910, by Emil Rosander of Smoky Hill Township, McPherson County, Kansas, one white faced steer, long yearling, no marks or brands. Also one red yearling steer, both ears trimmed and small slit in right ear. Appraised at \$75. A. J. Cedarhelm, County Clerk, McPherson, Kansas.

If you think the home garden doesn't pay, just try going to market with less than \$5 in your pocket.

HELPFUL POULTRY HINTS

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

Use Standard Poultry

STANDARD poultry, as the phrase is commonly used in America, is poultry bred to the standards established by the American Poultry Association. The object of making standards for poultry is the same as the object of making standards of weight, volume or quality for any product or commodity; i. e., to secure uniformity and establish a series of grades as a basis of trading in the article.

In making standards for poultry which apply in the process of production the principal points considered are size, shape, and color.

Breed Characters

Size and shape are breed characters and largely determine the practical values of poultry. Many standard breeds are divided into varieties differing in color, but identical in every other respect.

Color is not a primary utility point, but as a secondary point often comes in for special consideration. For example, a white variety and a black variety of the same breed are actually identical in table quality, but because black birds do not dress for the market as clean and nice looking as white ones, it often happens that they are not as salable.

When a flock of fowls is kept for egg production only, uniformity in color is much less important than approximate uniformity of size and type, yet the more attractive appearance of a flock of birds of the same color justifies selection for color as far as it can be followed without sacrificing any material point.

When a poultry keeper grows his own stock year after year he ought by all means to use stock of a well established popular standard breed. By doing so and by selecting as breeders only as many of the best specimens of the flock as are needed to produce the chickens reared each year, a poultry keeper maintains in his flock a highly desirable uniformity of excellence in every practical quality and with little extra care and no extra cost can have a pleasing uniformity in color.

Each Breed Has Its Place

To the novice in poultry keeping it often appears that there is no real necessity for so many breeds and varieties as have been standardized in America. Further acquaintance with them, however, shows that although color differences are in most cases made merely to please the eyes of persons having different preferences for color, the differences in shape and size which make breed character have been developed with a view to adapting each to particular uses or particular conditions.

Leaving out of consideration the breeds kept as novelties, most of which originated before industrial progress created a large demand for poultry products, all the standard American breeds of fowls have been made and developed on the general principle of practical quality the foundation of breed character and value.

Classification of Useful Breeds

In harmony with this principle the common classification of breeds according to their place in the general scheme of poultry production, divides them into three principal classes, namely, laying breeds, meat breeds, and general-purpose breeds; that is, breeds that are not as ready and persistent egg producers as the laying breeds, yet combine in one individual fowl very good laying capacity with very good table quality.

The Leghorn, Minorca, Andalusian, Ancona, and Campine are well known breeds of the laying class; the Brahma, Dorking and Cornish of the meat class; the Plymouth Rock, Wyandotte, Rhode Island Red and Orpington of the general-purpose class.

Characteristics of Egg Breeds

The breeds mentioned as of the laying class, with the exception of the Minorca, are relatively small, very energetic and lively, mature early and are easily kept in good laying condition. The Minorca is of larger size and modified somewhat in the other particulars mentioned, yet has more the character of

the laying class than of any other.

Characteristics of Meat Breeds

In the meat breeds there is not the same uniformity of type that is found in the laying breeds. The three mentioned are all quite different. The Brahma is most popular because it is at the same time the largest and the most rugged in constitution. The Dorking excels in quality of meat but is generally considered somewhat lacking in hardness. The Cornish is rather hard-meated but being very short-feathered has its special place as a large meat-producing fowl in southerly sections where the more heavily feathered Brahma does not stand the summers well.

General Purpose Breed Characteristics

Among the popular breeds of the general-purpose class there are also differences in type, adapting breeds to different uses. The Plymouth Rock is generally regarded as the type meeting the widest range of requirements in the general-purpose class.

The Wyandotte is a little smaller and earlier maturing but still very well meated and easy to fatten.

The Rhode Island Red has nearly the same standards of weight as the Wyandotte but is a more active bird, not putting on fat so readily; consequently it approaches the laying type and is popular with those who want eggs and meat, but want eggs most.

The Orpington is at the other extreme in the general-purpose class, being a heavier, meatier fowl than the Plymouth Rock.

A Breed for Everyone

Such a list of breeds affords so wide a range of choice that poultry keepers can always select a standard breed better adapted to their locality and their purpose than any non-standard stock they can procure, and having the further advantage of reproducing true to type.

Treatment for Chicken Pox

A poultryman says his chickens have small black warts on their combs and wattles, and asks what the disease is asks how to cure it.

The disease is chicken pox, and the warts not only appear on the comb and wattles, but also on the bodies of the fowls. The feathers, of course, hide most of these warts on the body, unless they are examined very closely.

This disease is not necessarily fatal, but it will play havoc among the flock if not looked after in time. Chicken pox is generally followed by canker and roup, and for that reason the disease should not be allowed to get any headway. It is generally caused by the birds being allowed to roost and stay in damp houses and where things are not kept in a sanitary condition. When you first notice the disease the best thing to use is creolin or permanganate of potash in the water and give them no other drink. Remove the sores and apply pure dioxygen to the raw surface until the sore becomes quiet, after which you can apply pure creolin to these parts. In a few days, with careful treatment, the birds will be well.

Dioxygen and creolin are two of the best remedies that can be used, although pure kerosene is often used in place of them, with good results.

The best preventive of chicken pox is to keep things clean, keep the houses dry, feed pure grain and clean water, and you will not likely be troubled again.

Money from Capons

T. E. Quisenberry, of Leavenworth, tells of a farmer's wife in Nebraska who has been clearing about \$1,000 or more a year on capons. She annually hatches and raises about 2,000 chickens. Approximately half of this number are cockerels. Is she to sell these when they are only two months old at little more than the cost of production? No, she caponizes the cockerels and carries them through the summer on range, or on a maintenance or growing ration, or in the cheapest and easiest possible way. In the fall and winter she lets

them follow her husband's fattening cattle. They are housed in large temporary straw sheds. She places these birds on the market when they are fat and when prices are highest; the result being that she nets about \$1,000 a year from capons alone, which is more in proportion to the amount invested than anything else produced on the farm. The pullets are kept for layers and breeders.

"Too often the young males are allowed to grow staggy," says Mr. Quisenberry, "and are then placed upon the market at a price which does not cover the cost. The caponizing of a large portion of the surplus cockerels is going to aid, to a great extent, in the solution of this problem and the saving of this loss. In proportion to the amount invested, the caponizing of the surplus cockerels is going to prove more profitable than the castration of male calves and the production of beef cattle.

"The capon industry in the poultry business corresponds to the beef cattle industry in the live stock business. We unhesitatingly recommend this practice among all farmers or commercial poultrymen. Whenever you cannot secure as much as 25 cents per pound for your cockerels, you can better afford to caponize them.

"Thousands of cockerels are likely to be marketed this fall at a price that hardly pays for their feed, to say nothing of the care and trouble required to raise them. There is no reason why young males that are intended ultimately for market should be held until they become staggy, develop small spurs, weigh from four to six pounds and then only bring from 15 to 40 cents each on the market, depending on their size, quality and the general market conditions. These same cockerels as capons would weigh eight to twelve pounds each and would bring 18 to 25 cents or more per pound, live weight. If such cockerels are not going to be caponized they should be sold as broilers or friers."

Soda fountains pay winter prices for eggs furnished through the summer. Many of the "soft drink" establishments use one to four cases of eggs daily, and the larger establishments use many more. A spoiled egg will kill the best trade. An egg for this trade should be large and clean, with the bloom of freshness on the shell. The yolk and white must come up to the best table standard and the eggs should be of one color and of uniform size. The soda fountain egg trade is very profitable to the poultryman who has the skill and is careful enough to meet the requirements.

Experience has proven that it does not pay to put too many eggs under a setting hen. Being anxious to get as many early chicks as possible, the breeder often puts fifteen eggs under a hen. It takes a large hen to cover fifteen eggs, and the nest is often too small for that number of eggs, with the result that several are broken. The remaining eggs are smeared and the result is that very few will hatch.

SAVES THE LITTLE ONES

Here it is—the one sure, safe, scientific chick feed. The feed that brings them through the first two weeks—the critical period. Don't permit roup, dysentery and other diseases to kill off your chicks when for a few cents you can keep them well. You will lose hardly more than 5 or 10 chicks out of every hundred—if—right from the start—you will feed

OTTO WEISS CHICK FEED

For "new" chicks. A natural food, prepared by poultry raisers who know how to mix the right ration of cereals, beef, bone and grit.

A pound feeds 50 chicks one week. Ask your dealer for it.



THE OTTO WEISS COMPANY
Wichita, Kan.

Fine For Little Chicks

"Please send me your White Diarrhea Remedy. I used it last year and it is fine." Mrs. C. D. McMurray, Ansonville, Pa. If you want the same kind of success, write for free Poultry Book to P. J. Kelly, 57 N. 2nd St., Minneapolis, Minn.

Chickens Sick or Not Laying?

Most poor layers are "OUT OF CONDITION" or have Cold, Bump, Bowel trouble, Bone head, Chicken pox, etc. GERMONE is the best remedy for all these disorders. At dealers or postpaid 75c, with 5 book Poultry Library. GEO. H. LEE CO., Dept. 415, OMAHA, NEB.

Co-operation for Hogmen

(Continued from Page One)

farmers, and all others who have had experience in the control of cholera epidemic are practically unanimous in saying that the primary requirement for success in such work is whole-hearted community co-operation, and that without co-operation success is impossible.

There are other diseases and some pests affecting swine which might well be given community consideration and attention. The need for such attention is less acute than in the case of highly contagious diseases, but there are nevertheless some advantages in it. The character which such co-operation might have includes co-operative ownership of such equipment as portable dipping vats and also co-operation in purchasing disinfecting materials so as to get high quality goods at wholesale prices. These are only a few instances to indicate possibilities.

Regular Marketing

The question of marketing and the need for co-operation in connection with it have received so much consideration in recent years that I shall not devote much attention to it here. The advantages of group action of some kind in marketing fat hogs or stockers and feeders are obvious, particularly where individual farmers produce relatively small numbers of hogs. It frequently is desirable to combine small holdings of individual farmers in car lots or several car lots. Such combination attracts buyers to the community or commands attention at central markets in case the co-operating farmers ship direct to central markets. In either event it is possible to obtain better prices than ordinarily can be secured where individuals attempt to market their small holdings by themselves. The efficiency of co-operative marketings, however, goes back to the other matters which have been mentioned, particularly co-operation in breeding and in securing feeds. The existence of but one breed in a community is a very important step in securing success in co-operative marketing. It is also important that car lots or a larger number of hogs to be marketed co-operatively be uniform in age and finish. Co-operative marketing, therefore, to be successful in every way, involves continuous co-operation in production as well as in selling.

There is another advantage in group action with reference to marketing, and that is that it facilitates securing accurate market information. One or two members of a swine growing community might well be designated to pay particular attention to this matter. One or two men especially designated for this purpose could secure and distribute information of this character to the general advantage of the entire community and at the same time reduce materially the time and trouble which otherwise would be necessary on the part of individual growers. Where co-operative marketing enterprises have been permanently successful they have ordinarily been operated through organized marketing associations. There are in this country at present a large number of successful hog marketing associations, and there might well be more of them.

Selling Surplus Breeding Stock

The marketing question which often is more difficult than the marketing of finished hogs or stockers and feeders is the question of disposing of surplus breeding stock. Breeders in order to be successful must stay in the business year after year, as it requires years of time to develop a strain of hogs and the requisite reputation. There are frequently periods when individual breeders are unable to dispose of their surplus stock at a profit. These periods are likely to occur in a particular district when prices for pork products are low or when hog feed is scarce. Either of these conditions tends to discourage swine breeding. By community co-operation, however, it is nearly always possible to secure information as to where a particular kind of breeding stock is desired. Oftentimes when there is a temporary depression of breeding activities in one section, there is an increase in the same activities in another section. Such a condition is accompanied by a surplus of breeding stock in the first locality and a shortage in the second. A community of breeders by investigating conditions and by judicious advertising can usually tide over such periods. Co-operation is particularly effective with reference to advertising. Buyers of breeding stock like to buy

animals from well established and reputable breeding associations. I have in mind one instance of a swine breeders' association in the Northwest in which it was never possible for the members to fill all the orders received as a result of their co-operative advertising. They frequently found it necessary to discontinue their advertising for a time in order to avoid getting the reputation of always being unable to fill their orders.

Some General Requirements

Co-operation in itself is not a cure-all. The word is only a name after all, and it is a name which is very commonly misused. Co-operation in pork producing communities cannot be made successful if certain fundamental general requirements are neglected. Hog growers must first recognize the possibilities of group action. They should canvass each situation to see if it can be handled more effectively by group action than by individual action. Before they attempt group action they should be fairly well convinced that that is the thing to do. A further fundamental requirement is continuity of enterprise. Only those who stay in the business year after year can get the best out of the business either through co-operation or otherwise. It ordinarily is futile to attempt much co-operation in a community where swine growers are constantly either going into the business or going out of it. It requires time to develop a successful co-operative method, and all of you who have tried it know that it requires patience. It also requires time to build up a reputation, and to maintain a good reputation requires continuous service.

There must also be a willingness of each of the individuals concerned to do his part. Each man must be willing to do the task that is assigned to him and to do it promptly. Negligence by one individual may make good work on the part of ten other individuals ineffective. Co-operators also must be willing to designate one or more men to represent the entire group in certain transactions and activities. The men designated must be loyally supported. Any community of swine growers contains men of widely varying temperaments. Some are more selfish than others and some are more individualistic than others. In practically all agricultural co-operation, particularly during the early stages, a few individuals in the community must be willing to do somewhat more than their share of the work. It is necessary that the co-operators have foresight. They must be able to see some distance into the future so as not to sacrifice permanent welfare for apparent immediate profit. It is necessary to recognize the time requirements of co-operation, and co-operators must have courage in difficulties. They must have what is commonly known as "stick-to-it-iveness."

Finally, I am convinced that one of the greatest requisites for successful co-operation is fairness. Another is efficiency. Co-operators must be determined to be fair with each other and also with those with whom the group deals. If co-operation is attempted for the purpose of securing greater efficiency, for eliminating waste, and assuring fairness to all concerned, one of the greatest steps toward success is taken. Without such determination success is impossible.

There are a large number of details as to how co-operation is to be affected. Workable plans of organization are necessary, either formal or informal, and simple but adequate business practice. Helpful suggestions concerning all these can be secured at the agricultural college or from its representatives, the county agents and extension specialists, in the field. When the swine growers in a Kansas community have a will to co-operate, they can rest assured that the college will gladly help them in every way possible.

Cane for Silage

No man can get the best results in milking cows without silage. Milk cannot be produced economically without the silo, and there is no more profitable silage crop to grow for Kansas conditions than cane. There seems to be a prejudice against cane silage, however, which is somewhat hard to overcome. Every man who gives it a fair trial sticks to it. Probably the most important point in making good silage from cane is to allow the crop to become fully mature before putting it into the silo. Linn & Son of the Linndale Dairy Farm want

Increase Land Values

"Men have been for years going by those waste lands that were lying idle without realizing the potential value which may be brought about by a *little fertilizer*, a little care, a little sweat."

Editor Collingwood of The Rural New-Yorker.

Fertilizers are an investment; they increase land values as well as crops. Invest this year in

Empire Fertilizers

These fertilizers supply quickly available plant food. They increase yields and improve the quality of grain and other crops. They make legumes and cover crops flourish on depleted soils. They encourage the growth of helpful bacteria—"the good little bugs"—that make available some of the inert plant food which is *already in the soil*.

Our Agricultural Service Bureau exists for your benefit. Don't hesitate to consult us on any soil problem. Write for our book, "How to Make Money with Fertilizers", and learn what others have accomplished. It's free if you mention the crops you intend to grow.

If we have no agent in your town, we want one. Write for our nearest agent's address or ask for an agency for yourself.

The American Agricultural Chemical Company

EMPIRE CARBON WORKS

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Use Only Pure Yucatan Sisal Binder Twine

It operates smoothest in the machine, cuts cleanest, ties tightest, and is *not* affected by insects. Your binding remains tied. Use only the PURE YUCATAN SISAL TWINE. Do not use mixtures, for insects will destroy the mixed parts. Insist on the PURE YUCATAN. It costs less and saves labor and expense.

If you cannot get it from your dealer, we want to know it, because we are the co-operative organization of the Yucatan farmers who grow Sisal. We control and sell the whole Sisal production of the States of Yucatan and Campeche.

Write for sample of Pure Yucatan Sisal Twine, so you can know the real Yucatan twine when you see it.

Comision Reguladora del Mercado de Henequen

Merida, Yucatan, and 190 Broadway, New York



WRITE FOR GALLOWAY'S 1919 SEPARATOR BOOK



Get Galloway's new low 1919 price. Learn latest features of new improved Galloway 1919 Sanitary Separators. Thousands now in use. Over 4000 new 1919 models ready for immediate delivery. Skins closer, is easily cleaned than any other. Never gets out of alignment. All working parts run in oil spray. Has all rounded corners—no breaking up of butter-fat globules—and many other great features. All told in big new 1919 book. Send for it.

DIRECT FROM GALLOWAY—FACTORY PRICE

You can get a Galloway new improved 1919 Separator at a big saving because it comes direct from factory. The cost is less than wholesale. Four sizes, 375 lb., 500 lb., 750 lb., 950 lb. at four low direct factory prices. SEND A POSTAL TODAY Get your copy at once. Start factory dealing and save money at once. Goods shipped from points near you to save freight. Write!

WM. GALLOWAY CO., 212 Galloway Station, Waterloo, Iowa

no other crop for their silos. As the result of a careful trial Mr. Ackerman of Anderson County reports that he is convinced that cane is the best silage

crop for his conditions. His neighbors, who have been watching his work, have fallen in line and plan to use cane this year as their main silage crop.

Classified Advertising

AGENTS WANTED

WANTED — REPRESENTATIVE FOR manufacturer. Address E. F. Bornemann Corp., Paterson, N. J.

LIVE AGENTS WANTED IN UNOCCUPIED territory for Western Kerosene Carburators for Ford cars. An all-year-round seller. Biggest corporations equipping exclusively. Thousands in use. 35 per cent fuel saving, money-back guarantee. Big profits. Write for agency today. Western Carburator Company, Alma, Michigan.

SEEDS

YELLOW DENT GRADED SEED CORN, \$2.75 per bushel. Send sacks with order. Nick H. Muller, Howells, Neb.

SEED CORN, \$3.00. NINETY-BUSHEL kind. I return all cash unless satisfied. Wiltse, Rulo, Nebraska.

SUDAN GRASS SEED, \$14 A HUNDRED, my station. Clifford Swank, Route 3, Sedgwick, Kansas.

CHOICE BLACK AMBER CANE SEED, \$3.75 per hundred. Gus Herfert, Julesburg, Colorado.

FOR SALE—RECLEANED, HIGH GERMINATION test, Darso seed, \$3.00 per bushel. Sacks extra. Silver Seed Store, Winfield, Kansas.

FOR SALE—KAW VALLEY WHITE Seed Corn. Large, medium to maturing. Test 98%. \$2.50 per bushel. Bar corn only. C. V. Cochran, Route 6, Topeka, Kansas.

GOOD PINTO BEANS, RECLEANED, \$7.40 per cwt. We ship from Lamar. We pay freight on car load lots. Also black amber cane seed, \$3 per cwt. In new bags. J. W. Hoover, Joycoy, Colorado.

SWEET POTATO AND TOMATO PLANTS—Standard varieties, 100, 55c; 1,000, \$4.00; 10,000, \$35.00. I pay express and postage. Plants ready April 20. C. W. Sheffer, Box 23, Okmulgee, Okla.

BLACK HULLED WHITE DWARF kafir and yellow dwarf maize seed, grown especially for seed of big yielding types, \$5 per hundred pounds, graded and sacked L.O.B. Elk City, Okla. Chas. C. Miller.

NANCY HALL, YELLOW YAM, SOUTHERN Queen, Early Triumph, Pink Yam potato plants, \$3 thousand delivered. Pepper and egg plants, 15c dozen; \$1 hundred. Get catalog. Adams & Son, Fayetteville, Ark.

NANCY HALL, PORTO RICO, TRIUMPH, Southern Queen, Yellow Yam, 100, 55c; 500, \$2.25; 1,000, \$4; postpaid. A short haul is a big item. Satisfaction guaranteed. Ozark Nursery, Tahlequah, Okla.

FOR SALE—NANCY HALL, BRADLEY Yam sweet potato plants, tomato plants, 100, 55c; 1,000, \$3.75. Frost proof cabbage plants, 100, 50c; 1,000, \$3.75. Delivered. S. & H. Plant & Truck Farm, North Blvd, Oklahoma.

HARDY, OPEN-GROWN PLANTS—NOW shipping, leading varieties sweet potatoes, tomatoes, postpaid, 500, \$2.00; 1,000, \$3.50; hot and sweet peppers, eggplant, beets, 500, \$2.50; 1,000, \$4.75. Cabbage, Bermuda onions, 500, \$1.25; 1,000, \$2.00. Write or wire for catalog and wholesale prices. Order early and notify us when the ship. Liberty Plant Company, Crystal City, Texas.

DWARF AND STANDARD BROOM corn seed, Red Top and Early Golden cane, feterita, Schrock and pink kafir, darso and common millet, \$6; orange, sourless, black and red amber, cane, cream and red dwarf and standard maize, and dwarf kafir, \$5.50. Sudan seed, \$15; alfalfa seed, \$17. All per 100 pounds, freight prepaid. For prepaid express, \$1 more. Claycomb Seed Store, Guymon, Okla.

SWEET POTATO PLANTS—BEDS Government inspected and all plants shipped from disease-free beds. Porto Rico, Nancy Hall, and Middle Buster. Tomatoes: Earliana, Paragon, Stone, and Globe. Prices by mail prepaid, 100 for 50c; 250 for \$1; 500 for \$1.75; 1,000 for \$3. By express, 1,000 for \$2.25; 5,000 to 10,000 at \$2 per thousand. Over 10,000 at \$1.75 per thousand. Shipments prompt after April 15. Bruce Wholesale Plant Co., Valdosta, Ga.

TESTED SEEDS — ALFALFA, \$8.50; kafir, \$2.00; Amber cane seed, \$1.90; Orange cane seed, \$2.25; Sumac, \$3.00; Schrock, \$3.25; Milo, \$2.50; common millet, \$2.00; Hungarian millet, \$2.25; Siberian millet, \$2.75; Reid's Yellow Dent seed corn, \$3.00; Bloody Butcher, \$3.50; Calico, \$4.00; Sudan, 15c lb. We have a complete line, and can make prompt shipment. Sacks free. Satisfaction or money back. We accept Liberty bonds at par. Ship from four warehouses, save you freight. Order from this ad. Meier Seed Co., Russell, Kansas.

FARMS WANTED.

I HAVE CASH BUYERS FOR SALEABLE farms. Will deal with owners only. Give description, location and cash price. James F. White, New Franklin, Missouri.

RABBITS

NEW ZEALAND AND BELGIAN RABBITS, pedigreed and utility. Prices reasonable. Stamp for reply. C. A. Nothstein, Hennessey, Oklahoma.

CATTLE.

FOR SALE—GRADE HOLSTEIN COW and heifers, good producers. Tuberculin tested. Edwin Nelson, Superior, Nebraska.

FOUR PURE-BRED HOLSTEIN BULL calves, Korndyke blood, and one service bull, Segis blood. Come early and get your choice. D. L. Higgins, Winona, Kansas.

HIGHLY BRED HOLSTEIN CALVES, either sex, 15-18th pure, from heavy milkers, five to seven weeks old, beautifully marked. \$25, crated and delivered to any station, express charges paid here. Send orders or write. Lake View Holstein Place, Whitewater, Wisconsin.

HOLSTEIN BULLS AND HEIFER calves, thoroughbred, registered, foundation stock. "Bred in silk." Finest lot we ever raised. Milk fed from the start. Health guaranteed. Best blood of the breed. Beware of cheap Holsteins. Ask for salesman. States your wants. Pres. Johnson, Kimberlin Heights, Tenn.

DOGS.

PURE-BRED COLLIE PUPS, 1117 Kansas Avenue, Phone 319, Topeka.

AIREDALES, COLLIES AND OLD English Shepherds. Pups, grown dogs and brood matrons. Large instructive list. So. W. R. Watson, Box 128, Oakland, Iowa.

REAL ESTATE.

LISTEN—IMP. 160, \$2,800; CREEK 160, \$1,600; imp. 40, \$950. McGrath, Mountain View, Missouri.

FOR SALE—320-ACRE FARM OR 180, \$35 an acre. Write for description. Joe Fox, Greeley, Anderson Co., Kansas.

SOUTHWEST KANSAS IS DEVELOPING fast. Farmers are making good profits on small investments. It is the best place today 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%—price \$10 to \$15 an acre. Write for our book of letters from farmers who are making good. There is now, also illustrated folder with particulars of our easy purchase contract. Address W. T. Oliver, Santa Fe Land Improvement Company, 405 Santa Fe Bldg., Topeka, Kansas.

WANTED

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

SEEDS WANTED—SEND SAMPLES OF high grade field seeds. Just now we could take on some more good alfalfa. The D. O. Coe Seed & Grain Co., Topeka.

WANTED — COMPETENT MAN AND wife for general work on a grain and stock farm, \$800 per year and some extras. Do not apply unless you can qualify. L. C. Walbridge, Russell, Kansas.

HORSES AND MULES.

REGISTERED PERCHERON STUDD COLT coming two years old, black-gray, weight 1,550. Will make a 2,200-pound horse. Well proportioned with fine action. Priced for a quick sale at \$275. P. A. Wempe, Seneca, Kansas.

MISCELLANEOUS.

ONE-MAN SLING. CHANGES HEAVIEST hay racks. F. Lovering, Fremont, Neb.

EVERY THRESHING OUTFIT FOR sale, cheap. Herbert Lessmann, Wayne, Nebraska.

HONEY.

HONEY—VERY FINE ALFALFA, 120 lbs. net, \$25.00; 60 lbs., \$13.00. Bert W. Hopper, Rocky Ford, Colo.

DELICIOUS EXTRACTED HONEY ON approval quality guaranteed. Thirty pounds, \$7.85; sixty pounds, \$14.90; 120 pounds, \$29.75. Sample, 15c. Wesley Foster, Producer, Boulder, Colorado.

DELICIOUS, LIGHT-COLORED, EXTRACTED honey gathered by our own bees from alfalfa and sweet clover. Guaranteed pure. Write for prices. Will accept Liberty Bonds at par in payment for honey. Frank H. Drexel, Crawford, Colorado.

Few gardeners realize the importance of pulverizing the soil as deeply as it is plowed. No matter how perfectly the surface is prepared, if the soil is coarse and lumpy below, the plants will not thrive. Large air spaces in the soil are a detriment, but a large number of very small air spaces in the soil are a benefit.

Duck, to Neighbor Pig: "I tell you it pays to advertise. Look how that rooster crows; and now they've put his statue on the barn!"

THE HOME-MAKER'S FORUM

ETHEL WHIPPLE, Editor

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.

What Music May Mean in Our Homes

By Doris M. Bugbey, Kansas Agricultural College

THE cultivation of the fine art of music, the one art most completely shared by all mankind, has been in America very largely left to the trained few to be exploited in the concert halls and various public places. Visiting European artists have often wondered with the leading musicians of this country how soon the people at large would cherish an intimate acquaintance with music of the highest standards, and when they would manifest a genuine desire to make music themselves. The recent impetus given to musical activity in this country through realizing the true significance of music among men during the crises of war has brought us to the threshold of a golden period in genuine self-expression through the art of song.

Sudden emergencies are the real test of character after all, and the recent flood of events, of almost inconceivable import, has brought to the surface in almost every race on earth the undercurrents of vital feeling which find their most natural expression in music. As the times of crisis pass, these emotions gradually slip back into the realm of subconsciousness to await, forgotten, the next urgent call to action. But they are not gone. They are genuine and alive in each one of us, though often submerged in the common tasks and interests of everyday life, and they represent the very best of our natures. What joy is comparable to that of an honest give-and-take with our fellow men of these deep-rooted human feelings through the medium of art? Words fail us in some of the most vital places and just here does music step in and carry the message for us with quick and penetrating power. So community singing has suddenly sprung up as a direct result of spiritual need during the war period. If this splendid movement is to continue through normal conditions it must spring from the desire of the average American to express himself individually and socially in song. How can this desire be better aroused than through the subtle and persistent influence of home life?

The greatest good of course can be accomplished by providing an atmosphere of beauty and fineness for the children who are as susceptible to these qualities as flowers are to sunlight. In order to bring about such an environment, however, we must first realize the difference between the cheap, the good, and the best standards ourselves.

There is a very prevalent notion that is grossly deceiving and I want to do all in my power to discourage it. It is this, that "high class" music is serious for the most part and quite unintelligible to the average person. The power of music lies in its swift and sure suggestiveness. It lends itself to one mood as readily as to another. If ever you have ugly, coarse thoughts, music will transmit them like a flash, even as it will express your rarest moments of noble aspiration and vision. So, music, when animated by a spirit of fineness, can reflect the whole range of human emotions from rollicking good humor to the deepest tragedy, and will throughout be on a high plane of beauty and truth. At times a composer burdens his music with intellectual philosophizing that does not perhaps belong to the world of art; but such music is not of the greatest that is universally known and loved. Sorrow and distress touch the deepest and best in every one, but fun is often considered a license to ugliness and vulgarity. The best music is happy as often as it is serious or contemplative, but such buoyancy takes the form of rare and clever wit or a pure and noble joyousness. Music even at times expresses a supreme, intense happiness that strikes as deep as the seriousness of tragedy.

How then shall we define the good, the bad, and the best in music? Fortunately

it cannot be arbitrarily put into a sentence any more than we can explain why a sunset is beautiful or why we are fascinated by the subtleties of moonlight. Such discrimination must come from within us, instinctively, we say; hence the crying need of giving definite guidance and training to children's emotions as well as to their mental processes. Experience again proves to be the best teacher. Listen attentively to all the music possible for you to hear and your ear will become more and more discriminating.

There is a distinct practical advantage in giving music a high place in our home life. Above all else it provides a means for relaxation from exertion and strain in the presence of something beautiful, good and true, instead of something unworthy. If our leisure moments are wholesome, our whole life will be so. (Out of this conviction, you know, the national playground movement has sprung. Would that we might have some supervised play-time for grown-ups also.) So many of us tear down body, mind and soul in worthless if not harmful recreation and thereby lay an increasingly heavy burden on the hours of work and achievement. Bear in mind also that every cheap, ugly impression our senses receive is a shadow hard to erase from the memory. When we think of this in connection with the keen susceptibility of children and the lasting qualities of even their earliest impressions, we can understand the tragedies we see frequently in the days of youth. A normal, free, unwarped soul finds no greater delight than in the kind of fun which leaves at least something of value after the sensations of pleasure are gone. This is the real meaning of recreation. There is no balm for a bruised, discouraged soul, no tonic for jaded nerves, no finer companion in play, no source of inspiration greater and more easily available than that offered us by the goddess of music, the faithful ministrant to our every need.

Such relaxation has conspicuous social power even if one only listens to music. The members of a family are more likely to appear at their best, instead of worst, in each other's company, and, regardless of age, will have a common and elevating interest holding them together. This will grow stronger when listening is coupled with an expanding musical intelligence and when the younger ones of the household, especially, begin singing and playing instruments themselves.

And there is a great spiritual advantage in cultivating music in our homes. One possesses a certain distinction and poise in having ready access to the realm of art. It gives us a bigger share in the world's life, makes us comrades with the finest people of all countries and of all times. We are thus enabled to render a higher service in our community and, all unconsciously perhaps, may set in motion an ever-broadening circle of influence toward a beauty and richness of life that is limitless.

In closing I must mention a book I often refer to, called "The Making of Personality," by Bliss Carman. It has a stimulating message essentially for eager, high-minded youth, or better, for those charged with the spirit of youth. To some of you it may seem extremely idealistic and visionary, but—it has the vision, and that, after all, is what we all need above everything else.

Sewing Buttons on Coats

"Although it is necessary to sew the buttons very securely on coats and cloaks, there must be no marks or stitches on the under side of fronts or collar to even suggest the location of the buttons except in a few cases where a small button is used on the under side as a stay," says Charlotte E. Carpenter, of the Colorado Agricultural College.

"Tie a small knot in the end of strong

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double waxed thread. Take a small stitch through the upper thickness of the garment at the point marked for the position of the button; take a second stitch through the shank of the button or put the needle up and down through the holes. In the latter case a pin should always be laid across the button and under the thread so there will be a space left for the thread shank. Repeat six or eight times, keeping the same tension and alternately taking a stitch in the material and then carrying the thread through the shank or holes of the button. While sewing, the button should be tipped a little to one side so the needle can be brought out from the under side of the button before it is carried through the material. If the button has holes, the pin is removed and the working thread wrapped four times around the other threads and then fastened by taking three or four back stitches on the right side of the garment close to the thread shank.

"When using the small button on the under side, begin in the same way, but each time put the needle up or down through the garment and the upper and under buttons. The under button should have the same number of holes as the upper one and the holes should be large. A pin should be laid across the upper button and the thread shank and the fastening should be made in the way described above."

Changing Linen in Sick Room

The linen on the bed of a sick person should be changed every day if at all possible. A bath in the morning, clean garments, and fresh bed linen go far to rest the one who is sick and help him through the day. If plenty of sheets are not available and if it is necessary to keep laundry down to the minimum, a small draw sheet may be used at the head of the bed over the under sheet. If this is changed daily, the sheet below may be used for a longer time.

The under sheet may be changed with little inconvenience to the patient by this method: Have the clean sheet in a lengthwise roll. Roll the sick person to one side of the bed and beginning at the far side of the bed roll the soiled sheet up to the patient, then place the clean sheet on the bed and unroll it up to him. Tuck in the clean sheet smoothly around the mattress, folding in the corners so as to keep it from wrinkling. Now roll the patient to the other side of the bed on the clean sheet, remove the soiled sheet, and unroll the clean sheet to the front of the bed, tucking it in securely around the mattress on that side. This is much easier for the nurse than lifting the sick person and is not nearly so tiring to the patient.

To Destroy Ants

In Nebraska Horticulture, the official organ of the Nebraska State Horticultural Society, W. W. Wilmore gives the following simple method of exterminating ants:

Get a few sticks of hard candy, break into pieces two inches long and drop around the ant hill or run. Visit the candy once every twenty or thirty minutes with a kettle of boiling water and pour a spoonful on the mass of ants that collect on the candy. It can be worked over and over as long as the candy lasts or any ants are left.

Get the Habit

If you are a person of good manners you will cough and sneeze into your handkerchief.

It is not only a health precaution to use a handkerchief, but it is a sign of good breeding.

You don't want to cough or sneeze another person's life away.

But that is exactly what you may do unless you cough and sneeze into your handkerchief.

A Baby Pen

A movable pen which can be placed on a rug or quilt is a great help in keeping a baby warm and clean. In warm weather it may be carried to a comfortable place on the porch or in the yard. As the child grows older the sides afford a support for the wee hands to cling to while the first toddling steps are taken.

Such a pen is easily made. A few slats, planed smooth, and four corner pieces about two inches square and two and a half feet long, are all that is necessary. A pen four feet square gives a small child plenty of room to play and is easily moved if made from slats one and one-half by three-fourths inch.

Entirely Too Much

"I survived the shock all right," said Jones, "when I discovered that the marble was faked, and the mahogany imitation, the butter colored, the oriental rugs made in Hackensack, and the panama hats in Philadelphia—but this is too much."

"What is too much?"

"Why, Sis has just told me that mother made those great pumpkin pies of hers out of squash."—Judge.

Baked Oatmeal with Cheese

- 4 cups cooked oatmeal
- 1 cup grated cheese
- 1/4 cup soft bread crumbs
- 1 teaspoonful fat
- Salt and pepper.

Put into an oiled baking dish a layer of left-over oatmeal, then a sprinkling of grated cheese, pepper and salt, another layer of oatmeal, then cheese and seasonings. Continue until the dish is full. Melt the fat and mix with this the bread crumbs. Sprinkle over the top of the dish. Bake in a moderate oven until the crumbs are golden brown.—Recipes of New York City Food Aid Committee.

French Toast

Beat up together one egg, one cup of skim milk or whole milk, and salt to taste. Place a small quantity of butter, bacon fat or other suitable fat in a broad-bottom frying pan. Dip slices of stale bread into the egg and milk mixture until they are thoroughly moist and fry on both sides until a golden brown. Serve hot with or without syrup.

Apple Sauce Cake

- 1 cupful sugar
- 2 tablespoonfuls butter
- 1 cupful apple sauce
- 2 cupfuls flour
- 1/2 cupful raisins
- 1 teaspoonful soda
- 1/2 teaspoonful cinnamon
- 1/2 teaspoonful cloves
- 1/4 teaspoonful nutmeg

Sift together the soda, spices, salt and flour. Cream the butter, add sugar, apple sauce, dry ingredients and seeded raisins. Bake in a moderate oven.—Food Bulletin of Life Extension Institute, New York City.

Why are books your best friends? Because when they bore you, you can shut them up without a row.

The Everlasting Answer

Who made the seasons come and go,
The rain to fall, the wind to blow,
The sun the source of light and heat,
The grass so green beneath our feet?
God so loved the world!

Who placed the stars in azure blue,
And clothed the morn in pearly dew,
And led the brook to find its way
Through rock and glen from day to day?
God so loved the world!

Who taught the lark its morning song,
And caused the rose to bloom at dawn,
And gave to Mother Earth the skill
To send the seedling forth at will?
God so loved the world!
—Phoebe A. Keith in Epworth Herald.

Right Mood.

Before entering the army this rookie was a peaceful lad, but rising at 5:15 went against his principles. On this particular morning, as he fell in line by the light of the full moon, his bunkie heard him mutter:

"It's clear to me now. Why didn't I think of that long ago?"

"What's clear to you now?" asked his puzzled bunkie.

"The reason why all the great battles begin at daybreak is that when a fellow has to get up at that time of day he feels in the mood for fighting."

HISTORY OF THE WORLD WAR

By
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WHITE ROCK EGGS, \$5 PER HUNDRED. Nora Lamaster, Hallowell, Kansas.

CHOICE BARRED ROCK COCKERELS, Parks 200-egg strain. Eggs for hatching. Gem Poultry Farm, Haven, Kansas.

SIMS' BARRED ROCKS—KANSAS CITY winners. Pens mated. Write for mating list. George Sims, LeRoy, Kansas.

BEAUTIFULLY MARKED "RINGLET" Barred Rocks. Eggs, fifteen, \$1.75; hundred, \$8. S. R. Blackwelder, Isabel, Kan.

PURE BUFF ROCK EGGS—FIFTEEN, \$1.50; fifty, \$3.50; hundred, \$6.50. Mrs. Geo. Mortimer, Route 4, Manhattan, Kansas.

BARRED ROCK EGGS—BLUE RIBBON stock, barred to skin. \$3.50 for forty-eight or \$5 seventy-two. Valley View Poultry Farm, Concordia, Kansas.

BARRED PLYMOUTH ROCKS—PURE-bred selected, farm raised stock. Eggs for hatching, 6c each. Mrs. W. C. Bocker, Solomon, Kansas.

BARRED PLYMOUTH ROCKS—RANGE, \$1; pen, \$1.50 for fifteen eggs; \$5 and \$8 per hundred. A. E. Mendenhall, Garden City, Kansas.

BARRED PLYMOUTH ROCKS—THOMPSON Ringlet strain. Pen and utility flock eggs for hatching at live and let live prices. A. F. Siefker, Defiance, Missouri.

BUFF AND WHITE ROCKS—WON TWO first prizes at Topeka State Show. Eggs, \$1.50, fifteen; \$6 hundred. W. H. Beaver, St. John, Kansas.

PARK'S 200-EGG STRAIN BARRED Rocks, perigreed bred, one setting \$2.25; 100 eggs, \$9.00; utility, one setting, \$1.75; 100 eggs, \$7.50. R. B. Snell, Colby, Kansas.

IF YOU WANT BARRED ROCK EGGS from trap-nested pedigree laying stock, send to Farnsworth, 224 Tyler Street, Topeka, for mating list. Free.

BARRED ROCK EGGS FOR HATCHING—Light and dark matings. Good layers. Special matings, \$5 per fifteen; range, \$6 per hundred. C. C. Lindamood, Walton, Kansas.

BARRED ROCKS—STATE FAIR AND Chicago winners. Eggs, \$2 per fifteen; \$8 hundred. Exhibition pens, \$5, fifteen. Guaranteed. Hiram Patten, Hutchinson, Kansas.

PURE-BRED BARRED PLYMOUTH Rock eggs from range-raised hens, fifteen years breeding, winter laying strain. Eggs guaranteed fresh and fertile, true to type. \$1.50 setting, \$7 hundred. Mrs. Jno. P. Rilly, Emmett, Kansas.

WHITE PLYMOUTH ROCKS, NO BETTER anywhere. Have bred them exclusively for 26 years and are extra good layers. Eggs, \$3 per fifteen, from five pens; \$5 per fifteen from first pen. Expressage or parcels post prepaid. Thomas Owen, Route 7, Topeka, Kansas.

TURKEYS.

NARRAGANSETT TURKEYS, STOCK and eggs for sale. Mrs. John Mitchell, Lafountain, Kansas.

FANCY BRED BOURBON RED TURKEYS from selected stock, unrelated, \$10 a pair. Mrs. J. W. Harshbarger, Milo, Kan.

BOURBON RED PRIZE STOCK EGGS, fine markings. \$5, eleven. Forrest Peckenaugh, Lake City, Kansas.

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S. C. BLACK MINORCA EGGS FOR SETTING. Extra layers. Eggs from pen birds, \$2 per fifteen eggs. Mrs. E. G. Tharp, Protection, Kansas.

LEGHORNS

PURE-BRED BUFF LEGHORN EGGS for hatching, \$1.25 per setting, \$6 hundred. P. A. Wempe, Seneca, Kansas.

BUFF BOOK FREE. ORDER EGGS now. 120, \$10; 50, \$5; 15, \$2. Pens, trap-nested, settings, \$3, \$5. Postpaid. Haines Buff Leghorn Farm, Rosalia, Kansas.

ANCONAS.

FOURTEEN ANCONA HENS LAID 24 dozen eggs in one month for me. Send \$2.50 for two settings. Seven settings, \$6. Joe Partsch, Route 3, Humphrey, Neb.

PURE-BRED MOTTLED ANCONA breeding pen for sale to make room for young stock. Fifteen hens and a No. 1 cockerel. D. G. Krudop, Manhattan, Kan.

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EGGS FROM MAMMOTH PEKIN, FAWN and white, and pure white Indian Runner ducks, \$1.50 per setting, parcel post prepaid. Jacob Lefebvre, Route 2, Havensville, Kan.

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PURE-BRED LIGHT BRAHMA EGGS for hatching, \$1.50 per setting of fifteen; \$6 per hundred. C. C. Nagner, Elgin, Neb.

EGGS FROM PURE-BRED LIGHT Brahmata. Setting of fifteen, \$1.25; 100 for \$7. Albert Reetz, Tobias, Nebraska.

LIGHT BRAHMA EGGS, \$2.50 AND \$3.50 per fifteen eggs; \$4 and \$8 per thirty eggs. Geo. W. Craig, 2031 Wellington Place, Wichita, Kansas.

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CHICK-KO MEANS CHICK FEED MADE by Coe. We say it's the best feed for chicks on the market. Your dealer will order it for you if he hasn't it. The D. O. Coe Seed & Grain Co., Topeka.

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THOROUGHbred CHOICE SINGLE Comb White Leghorn cockerels, \$2 each. J. C. Powell, Nelson, Nebraska.

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WINTER LAYING S. C. W. LEGHORN eggs, \$1.25, fifteen; \$5 hundred. E. N. Montgomery, Dennis, Kansas.

EGGS—S. C. W. LEGHORNS, \$7. CHICKS, 20c. Famous Young strain, costing \$20 setting. Elsie Thompson, Mankato, Kansas.

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ROSE COMB BROWN LEGHORN EGGS—Fifteen, \$1.50; hundred, \$7. D. L. Higgins, Winona, Kansas.

ROSE SINGLE COMB BROWN LEGHORNS, bred for eggs and exhibition qualities. Eggs, \$7 per hundred; \$10, \$10. Prepaid. Plainview Poultry Farm, Lebo, Kan.

BUFF LEGHORN EGGS FROM CHOICE pure-bred heavy layers, \$6 hundred; \$6.50, parcels post prepaid. Mrs. J. L. Dignan, Kelly, Kansas.

FOR SALE—SINGLE COMB WHITE Leghorn eggs from extra good laying strain, \$6 per hundred. I. H. Gnagy, Hutchinson, Kansas.

ROSE COMB BROWN LEGHORN EGGS for hatching. Range stock. Extra layers. Fourteen years' breeding. \$7.00 per hundred. Blue Grass Stock Farm, Onelda, Kan.

S. C. W. LEGHORN EGGS FROM Young's strain, hens mated to Baron and Hillview cockerels. \$6.00 hundred, \$1.50 fifteen. Mrs. Ethel Miller, Langdon, Kan.

S. C. BROWN LEGHORNS, BRED 23 years; 222 to 266 egg lines. Eggs, fifteen, \$2; thirty, \$3; fifty, \$4; hundred, \$7. Gorsuch, Stilwell, Kansas.

SINGLE COMB BUFF LEGHORN EGGS, \$6.00 per hundred, \$2.50 per fifty. Satisfaction guaranteed. Alf Johnson, Leonardville, Kansas.

FOR SALE—LAYING UTILITY SINGLE Comb White Leghorn hens. Hatching eggs, pure-bred cockerels, \$2 each. Katie Skelley, Delia, Kansas.

CAREFULLY SELECTED RANGE-RAISED pure-bred Rose Comb Brown Leghorns—Eggs for hatching, fifty, \$3; 100, \$5. Infertile eggs replaced. Mrs. R. L. Rossiter, Hollis, Kansas.

BETTER BROWNS, SINGLE COMB home champions, Federation and Gold Special winners. Eggs from best matings, \$3 per fifteen. Write for mating list. L. D. Dougherty & Sons, Claremore, Okla.

SINGLE COMB WHITE LEGHORN EGGS for hatching. Only choice hens mated to pure white Tom Barron cockerels, \$7 per hundred, \$2 per fifteen. High fertility guaranteed. Harry Givens, Manhattan, Kan.

YOUNG, PRANTZ, FERRIS, YESTER-laid S. C. White Leghorn eggs from show winners and heavy laying stock. Free range, \$6 per hundred. Satisfaction guaranteed. L. O. Wlemeyer, Route 1, Anthony, Kansas.

PURE SINGLE COMB BROWN LEGHORNS, Tormohlen strain. Winter layers. No better farm flock. Eggs, range, 100, \$7; pen, fifteen, \$3, postpaid. Mrs. D. A. Wohler, Hillsboro, Kansas.

SUNNYSIDE EGG FARM—BARRON Single Comb White Leghorn eggs, \$1.50 fifteen, \$8 hundred. Fertile eggs guaranteed. Choice cockerels. Sunnyside Egg Farm, Box F, Hallowell, Kansas.

PURE-BRED SINGLE COMB WHITE Leghorns. Pure white, low-tailed males mated to heavy laying females. Active, beautiful, profitable. Eggs, \$6 per hundred; setting, \$1.50. Order now. E. D. Allen, Inland, Nebraska.

QUALITY HILL FARM—SINGLE COMB Write Leghorns (Barron strain, world's greatest layers), farm raised. Bred for high egg production up to 287. Price eggs, \$1.50 per fifteen, \$7 per hundred, prepaid. Satisfaction guaranteed. Mrs. F. N. Bieri, Onelda, Kansas.

S. C. BROWN LEGHORNS—BEAUTY and utility. Fourteen first prizes and two sweepstakes in state fairs in two years. Eggs, \$7 hundred. Baby chicks, \$15 per hundred. Exhibition birds, \$5 per set. Order now. Mrs. C. Boudoux, Carona, Kansas, Paradise Poultry Farm.

EGGS FROM HEAVY WINTER LAYING S. C. W. Leghorns, bred for winter laying for years. Won third and fourth pen for monthly record, second pen for monthly record, and fourth pen for yearly record, at American egg-laying contest at Leavenworth, Kansas. Write for prices. H. M. Blaine, Sylvia, Kansas.

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EGG CATALOG FREE—WYANDOTTES, Brahmata, Reds. Six kinds of ducks. Fred Kucera, Clarkson, Nebraska.

BABY CHICKS.

LEADING VARIETIES, 20c DELIVERED. Request folder. McCune Hatchery, Ottawa, Kansas.

RHODE ISLAND REDS.

S. C. REDS—EGGS, \$2.50. MRS. JOHN Linn, Manhattan, Kansas.

SINGLE COMB REDS—WRITE FOR CIRCULAR. P. H. Thiel, Renwick, Iowa.

PURE-BRED R. C. R. I. RED EGGS FOR hatching, \$1 per fifteen, \$5 per hundred. L. F. Hinson, Stockdale, Kansas.

SINGLE COMB RED COCKERELS, \$5 TO \$10. Eggs. Maple Hill Poultry Farm, Lawrence, Kansas.

DARK VELVET RED ROSE COMB eggs, \$1.25 setting, \$7.50 hundred eggs. Forrest Peckenaugh, Lake City, Kansas.

EGGS—SINGLE COMB REDS—DEEP RED under color, \$2 per fifteen. Clyde Karel, Clarkson, Nebraska.

ROSE COMB RED EGGS, \$1.25 FOR FIFTEEN; \$3 for fifty; \$5 per hundred. Tom Cranshaw, Route 2, Maple Hill, Kansas.

S. C. RED EGGS—PEN, FIFTEEN, \$2; flock, fifteen, \$1; hundred, \$5. Geo. Haines, Pawnee, Nebraska.

PURE-BRED ROSE COMB RHODE ISLAND Red hatching eggs, \$2.50 per fifteen; \$6 per fifty. Gertie Freeman, Craig, Neb.

SCORED DARK RED ROSE COMB cockerels, \$5 and \$10 each. Eggs, \$5 for fifteen; \$15 for fifty. Highland Farm, Hedrick, Iowa.

CARVER'S EXTRA FINE R. C. REDS—Eggs, utility, \$7 per hundred; pen, \$5 per setting, prepaid. Mrs. S. H. Nash, Route 1, Kinsley, Kansas.

FOR SALE—ROSE COMB RHODE ISLAND Reds, good bone, dark red, good layers and setters. Eggs, \$1.50 fifteen, \$6 hundred. Mrs. Geo. Schultz, Trousdale, Kansas.

SINGLE COMB RED EGGS FROM sweepstakes pen and other state show winners, \$2, \$3, \$5, \$10 setting. Order from this ad. W. G. Lewis, 622 N. Market, Wichita, Kansas.

DISPERSION SALE, ROSE COMB REDS. Cause, death of Mrs. Huston. Mated pens, hens, cockerels, cocks, bred by roosters costing \$50 to \$75. Sacrifice prices. W. R. Huston, Americus, Kansas.

PURE-BRED ROSE COMB REDS—Three extra good pens direct from Meyer's famous trap-nested strain. Fifteen eggs, \$1.25, \$1.50, \$2.00; thirty eggs, \$2.00, \$2.50, \$3.50. Fertility guaranteed. M. L. Van Ornam, Superior, Nebraska.

HATCHING EGGS—S. C. R. I. REDS OF the famous C. P. Scott's strain direct. Winners at the World's Fair and 200-egg strain at the American Egg Laying Contest at Leavenworth, Kansas. Flock range as they run, \$2.50 per fifteen eggs, \$6 per fifty, \$10 per hundred. Address Mrs. M. W. Scott, Proprietor Edgewood Farm, Route 5, Topeka, Kansas.

ORPINGTONS.

S. C. BUFF ORPINGTON EGGS, \$6 PER hundred. Mrs. Walter Nelson, Axtell, Neb.

SINGLE COMB BUFF ORPINGTON eggs, \$6 per hundred. Mrs. Henry M. Schumaker, Clifton, Kansas.

POSTPAID BUFF ORPINGTON EGGS—Blue ribbon. Pen, \$3.50 fifteen; range, \$2. John Oiler, Adrian, Mo.

BUFF ORPINGTONS, STATE FEDERATION and Gold Special winners. Eggs, \$3 per fifteen. Write for mating list. Marie Dougherty, Claremore, Okla.

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BUFF ORPINGTON EGGS—\$1.50, FIFTEEN; \$6, 100. Toulouse geese eggs, 30c each. Ganders, \$4.50. No geese. Mrs. Frank Neel, Beverly, Kansas.

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SINGLE COMB BUFF ORPINGTONS, exclusively. Cockerels scoring 93-94 points, standard bred. Eggs from pen, \$3 per fifteen; range, \$5 per hundred. Warner strains. Mrs. Charles Brown, Parkerville, Kansas.

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RUNNER DUCKS WANTED—TOULOUSE goose eggs, 55c each. Emma Ahlstedt, Lindsborg, Kansas.

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FARM AND HERD.

Central Shorthorn Association Meeting About 300 Shorthorn breeders from Missouri, Kansas and Oklahoma were in attendance at the annual meeting of the Central Shorthorn Association which was

WYANDOTTES.

SILVER WYANDOTTE EGGS—FIFTEEN \$1.75; fifty, \$4; hundred, \$7. Mrs. Edna Shuff, Plevna, Kansas.

WHITE WYANDOTTES—BIRDS DIRECT from John S. Martin. Eggs, \$2.50 and \$4.00 per fifteen. L. A. Moore, Hiawatha, Kan.

ROSE COMB WHITE WYANDOTTE eggs from good laying strain. Fifteen, \$1.25; hundred, \$7. A. H. Fry, Paxico, Kansas.

PURE-BRED WHITE WYANDOTTE eggs, fifteen, \$1.25; hundred, \$6. Ed. Acheson, Falco, Kansas.

EGGS FROM MY PRIZE WINNING Royal White Wyandottes, \$1.50 per fifteen. Mrs. Gomer T. Davies, Concordia, Kansas.

PRIZE WINNING PARTRIDGE WYANDOTTE eggs, \$1.50 fifteen, \$8 hundred. R. R. Montgomery, Dennis, Kansas.

ROSE COMB BUFF WYANDOTTE EGGS for hatching, \$1 for fifteen. G. G. Wright, Langdon, Kansas.

EGGS—WHITE WYANDOTTES, KEELER strain. Utility, \$1.50 fifteen, \$4 fifty, \$8 hundred. Pen extra good, \$2 fifteen. Mrs. M. M. Weaver, Newton, Kansas.

WHITE WYANDOTTE EGGS FROM MY prize winning stock, always took first, \$1.50 forty-eight; \$5, seventy-two. Valley View Poultry Farm, Concordia, Kansas.

QUALITY ROSE COMB WHITE WYANDOTTES, great winter laying strain. Eggs, fifteen, \$1.75; thirty, \$3; fifty, \$4.50; hundred, \$8. Satisfaction, safe arrival, guaranteed. Garland Johnson, Mound City, Kan.

WHITE WYANDOTTES—THE WORLD'S greatest laying strains. Eggs, fifteen, \$1.00, \$9, prepaid. Farm raised. Female mated with males from trap-nested hens with annual records of 227 to 272 eggs. E. A. Dressler, Lebo, Kansas.

BUFF WYANDOTTE EGGS—VERY beautiful, high class, Gold-Dust strain; results of ten years careful breeding for type, color and eggs. \$2 per fifteen, \$5 for fifty, \$9 per hundred. Address Nettie M. Peterson, Route 5, North Topeka, Kansas.

LANGSHANS.

BLACK LANGSHAN EGGS, 10c; CHICKS 20c. Mrs. G. W. King, Solomon, Kansas.

EGGS FROM SCORED BIG BLACK Langshans, \$5 for fifteen, \$20 per hundred. Best layers. H. Osterfoss, Hedrick, Iowa.

PRIZE WINNING WHITE LANGSHAN eggs, \$2, fifteen; \$4.50, fifty; \$7, hundred. Poultry Judge Ellis, Beaverly, Neb.

BLACK LANGSHANS—EGGS, FIFTEEN \$1.50; hundred, \$6.00; one-fifth more by mail. Baby chicks, 16c each. Mrs. J. A. Stein, Smith Center, Kansas.

PRIZE STOCK—BIG 13, 14-LB. BLACK Langshans. Pen headed by \$75 cockerel, 261-egg strain; fifteen eggs, \$5. Second pen, fifteen, \$2.50; hundred, \$10. E. Stewart, Henderson, Iowa.

HENS WANTED

Will pay 29c per pound for fat hens, 10c dozen for fresh eggs delivered before April 20, 1919. Other poultry at market prices. Coops and cases loaned free.

"THE COPES"

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held in Kansas City, Missouri, on the evening of Wednesday, April 2. An outstanding feature of the program was the talk by W. A. Cochel, field representative of the American Shorthorn Association, on the establishment of a Kansas office of the association. This office will serve as a center for promoting the interests of the breed throughout the central and western states.

Addresses were also delivered by a number of the leading Shorthorn breeders attending the meeting. The membership of the Central Shorthorn Association, according to the report of Secretary J. A. Foy, is now about 260. This number was increased during the meeting and the annual report of the past year's work showed this association to be in a flourishing condition with a good balance in the treasury.

The following officers were elected for the ensuing year: Park E. Salter, Topeka, Kansas, president; H. H. Holms, Topeka, Kansas, vice president for Kansas; F. L. Heberling, Ponca City, Oklahoma, vice president for Oklahoma; A. T. Lewis, Fayetteville, Arkansas, vice president for Arkansas; C. Merry, Kansas City, Missouri, vice president for Missouri; W. A. Cochel, Manhattan, Kansas, sales manager, and John A. Foy, Pleasant Hill, Missouri, secretary and treasurer.

Park E. Salter, of Wichita, Kansas, has announced May 16 for his annual Shorthorn sale to be held in the new Forum at Wichita. On this date he will offer sixty head of imported and home-bred Scotch and Scotch-topped cattle, including a number of choice females from the very best families of Shorthorn cattle, representing several families of the milking strains that are the profitable kind for any farmer to buy. These offering promises to be one of the best ever sold from the Salter herd and will probably be the best lot to go through any sale this spring sale season.

WHEN WRITING TO ADVERTISERS PLEASE MENTION KANSAS FARMER

The Farmer and Reconstruction

By A. A. Elmore, President Washington State Farmers Union

ARE the farmers of the nation thinking about the program and problems of reconstruction? I am wondering if they feel that there is a great responsibility resting upon them in the proper solution of the great problems that will be settled upon and adopted within the next few months. I am wondering if they are making any preparations to definitely outline a policy on their own behalf and a permanent agriculture for the United States.

It is universally admitted that agriculture is the fundamental business upon which all of our industries in America depend. It is possible to destroy the greatest cities of the United States by some great cataclysm or by the horrors of war and, if the agricultural interest is unmolested, build other cities to meet the needs and requirements of the people. But if you destroy agriculture in this great nation, the grass will grow in the streets of our most beautiful cities.

Plenty of food in this country is the greatest bulwark against the advance and encroachment of the red-handed Bolshevik. But the farmers of the nation cannot produce plenty of food unless they are given a square deal in the cost of production. There is a widespread propaganda throughout the United States that would have you believe that the farmers are reaping immense profits as a result of the war and that they are getting entirely more than their share. It is true that some farmers, in some particular parts of the United States, who are very favorably located with suitable climatic conditions and so forth, have made a good deal of money the past two years; and unfortunately such farmers are held up as an example by which to judge the earnings of the entire farming population of the United States. Such an assumption is unfair and misleading. As a matter of fact, farmers generally throughout the United States are making less money than perhaps the lowest paid mechanic in any line of endeavor in this great country of ours. A statement was made in the city of Baltimore a few days ago by Dean Davenport, one of the leading economists of the state of Illinois, that the farmer of the nation received for his work during the season of 1918 the magnificent sum of 30 cents an hour.

The business men of the nation, including bankers, merchants, manufacturers, and transportation men, have representatives in Washington at this time presenting their ideas and their programs on the problems of reconstruction. In fact they have gone so far as to create a Peace Industries Board which shall bear the same relationship to peace-time reconstruction that the War Industries Board bore to the war-time period destruction. To be more specific, the Peace Industries Board is intrusted with the question of fixing prices on American products by agreement. It has announced recently a 10 per cent reduction in the price of steel and the next day stock advanced \$4.25 per hundred on the steel market. They have already announced that they are soon to take up the question of determining prices on food products with a view to lowering the cost of living.

Labor has its representatives in the capitol of the nation and they are knocking on the doors of the House and Senate to ask for more humane conditions for labor. They also have their representative on the ground at the Peace Conference. They have been able to put a clause in the constitution of the League of Nations creating an International Bureau of Labor to function with the Secretary General under the constitution of the League of Nations. But where, oh where! do the farmers come in? I might say they have not come in. I am wondering if they are going to make an attempt to come in.

Organizations representing the farmers of the United States propose to build in the national capital a Temple of Agriculture which is to become the national headquarters for the farmers of America and in which we invite all the farmers of the United States to become interested to the extent of subscribing a few dollars for their own interest and for the welfare of the farmers in their particular state. We are proposing a federation of the various farm organizations in order that we may present a united front and a united program to Congress and to the various departments

that have to do with agricultural interests.

The farmers of the nation have been asked to subscribe to all kinds of schemes, but usually it is the other fellow's scheme. They have been asked to invest in all kinds of business ventures but usually the other fellow figured out the basis of representation and the voice that farmers should have in controlling the thing they put up for. But we are asking that you put up some money for your own organization in your own state and in which you can have a voice as to who shall be your representative in this great move and who will act on behalf of the farmers in matters of legislation and protection.

Soon Congress will be in extra session and soon the mill is to start to grind out our laws on the great questions affecting the economic interests of the nation. Business is here, labor is here—in an organized way. Will the farmers come? If they do, they will have to come quickly.

Hogs Need Minerals

A sufficient amount of mineral or bone-making material is absolutely essential in the diet of a hog. Certain minerals are required constantly in connection with the healthful operation of the various bodily functions. If these are not supplied in the feed of the hog, it draws on its own body for them. This is dangerous, for leg weakness, cramp and other symptoms may develop. It has been found that a hog fed a ration supplying absolutely no mineral matter will die more quickly than one fed nothing at all. The following are some of the minerals found in the body of the animal: Potash, soda, lime, magnesia, oxides of iron, phosphoric and sulphuric acid, and chlorine.

Chlorine and sodium aid in the digestion and assimilation of feed. Sodium chloride, or common salt, makes feeding stuffs more palatable and stimulates the

flow of the various digestive juices. Lime, magnesia, and phosphoric acid are present in the bones and also other parts of the body. Potassium is found in cell walls, in muscles, and in the blood corpuscles. Sodium is present in the blood, in the saliva, and in the gastric juice.

Hogs, and particularly the young pigs, are more apt to suffer from a lack of sufficient mineral matter because they are too often limited in the variety of feed supplied. Cattle, sheep and hogs consume a great deal of roughage, and in this material get an abundance of the various necessary minerals. If hogs are supplied with an abundance of forage and pasture, they are not likely to suffer from a lack of mineral matter. Lime is found in abundance in clovers and alfalfa, phosphoric acid is contained in slaughterhouse by-products, bran and potatoes. Inorganic phosphorus and lime can be supplied in the form of precipitated potassium phosphate, burned bone or ground rock phosphate. There will be, however, little need for supplying the inorganic matter if the hogs are given plenty of range and have access to a variety of forage crops.

Live Stock and Fertility

At a big live stock rally held in Indiana recently, some of the sessions being attended by 2,000 farmers, G. I. Christie, assistant secretary of agriculture, emphasized the importance of good live stock in saving soil fertility. "It is estimated," said Mr. Christie, "that last year farmers in Indiana sold corn, rye, oats, barley, hay and straw fertility valued at \$30,000,000. To replace this they bought only approximately \$5,000,000 worth of commercial fertilizers." Similar statements undoubtedly could be made in connection with crops sold from Kansas farms. Mr. Christie further emphasized the importance of more and better live stock. Work done by the farm management department of Purdue University shows that the farmers of the state are marketing more and more of their products through live stock. A survey of one hundred farms in the central part of Indiana in 1913 showed that 54 per cent of the total

farm receipts were from live stock and 40 per cent from the sale of crops. Four years later 70 per cent of the total receipts were from live stock and 25 per cent from crops.

Another interesting feature of this series of farm surveys was that showing that the farmers who had scrub live stock got a smaller income than the farmers who had good live stock. The survey of the hundred farms showed that the labor income where scrub live stock was kept was only \$339 in 1917. On the farms with good live stock the labor income for the same year was \$1,201.

More Profit in Docked Lambs

Docking lambs is a matter of economy and profit. It saves worm trouble around the rumps on account of the collecting of foreign matter at the base of the tail. Docked lambs also thrive better and bring considerable more money when they reach the market.

Two methods are commonly practiced. One man may dock by holding the lamb's head between his legs, allowing the animal to stand on the ground. With the left hand find the second tail joint from the body. Grasp the tail firmly. Place a sharp knife under the tail and pull up, cutting it off quickly and clean. In case of severe bleeding, tie a piece of sterilized string around the tail near the end. Do not leave the string more than ten hours or it will cause swelling.

The second way of docking is the hot iron method. The red-hot docking iron burns off the tail with a rapid stroke. This method sears the wound, and hence is growing in popularity. The best lamb docking age is from seven days to three weeks.

Chilled lambs can usually be saved by taking them in by the stove and wrapping them in sacks, or putting them first in warm water, then drying them off and wrapping them up by the stove. If a lamb shows any signs of life at all it may be saved, and an effort should always be made. Infinite care at lambing time means money.

PLANT THIS HOME APPLE ORCHARD



and in just a short time—a very few years—you'll have apples by the barrel from your own Home Orchard. And the trees will add to the value of your home. You can plant them in your yard, or in a row along the fence or road, or in the chicken run, where the growing trees will provide shade for the flock. Accept our offer and order your trees NOW!

WE'LL SEND TWELVE GRAFTED APPLE TREES, POSTPAID

Each little tree is produced by grafting together a "scion" (branch) from a selected tree of heavy-cropping record, to a healthy one-year root. Each little tree is about a foot high. They take root at once, make rapid growth, and bear large crops of choice apples even sooner than larger trees planted at the same time.

TWO EACH OF THE SIX MOST POPULAR VARIETIES

Two Genuine Delicious The finest and most beautiful apple grown. Very large, inverted pear-shape. Color dark red, shading to golden yellow toward the tip. A fine keeper, sweet and juicy. The tree is strong, hardy and productive.

Two Stayman Winesap Deep, rich red in color. It is a marked improvement over the old Winesap, in both quality and appearance. Flavor rich sub-acid. The tree is a thrifty grower and an abundant bearer.

Two Yellow Transparent A very early and an abundant bearer. Often bears some apples the first year, even in the nursery row. A summer apple. Flavor acid and very good. Skin clear white, turning to pale yellow.

Two Wealthy A native of Minnesota, where it has proved hardy, vigorous and productive. The fruit is of medium size, red, streaked with white. Excellent quality and flavor. One of the best and most productive apples grown.

Two Jonathon A general favorite, and always in good demand at fancy prices. Of medium size, roundish; skin nearly covered with dark red. Fine-grained, tender, and of exquisite flavor. Tree slender and spreading.

Two Winter Banana A fine, vigorous grower, with large healthy foliage. A very early bearer of large, beautiful apples, golden yellow, with a red blush. The flesh is rich, aromatic, and of the highest quality. A good keeper.

OUR GRAFTED APPLE TREE OFFERS

OFFER NO. 1: One set of these 12 Grafted Apple Trees will be sent you postpaid with a one-year subscription to Kansas Farmer for only \$1.35.

OFFER NO. 2: Two sets of these trees (24 trees, four of each variety), will be sent you postpaid for two yearly subscriptions to Kansas Farmer at \$1.00 each, provided one of the subscriptions is a new one. On this offer one of the subscriptions may be your own, but one must be a new subscription.

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Twenty Polands



FORTY HEAD

Twenty Durocs

COME, RAIN OR SHINE, APRIL 23, 1919

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FRED G. LAPTAD - - LAWRENCE, KANSAS

AUCTIONEERS—RULE BROS., OTTAWA; C. M. CREWS, TOPEKA

Keep Hogs Free From Worms

IT IS poor business to let worms and other internal parasites appropriate all the profit from growing hogs. Unless the hogman is everlastingly at it and understands how best to combat worms and other parasitic enemies of the hog, they take a heavy toll. It has been claimed by some that in the aggregate worms cause as much loss to the hog industry as cholera, although not so noticeable because so uniformly distributed.

In Kansas only one of a number of intestinal parasites of hogs is of very much consequence, says T. A. Case in a leaflet of the extension service of our agricultural college. This is the common round worm. It is a white or pinkish worm six to ten or twelve inches long and tapering at both ends. They are very common, being found in nearly all hogs. Unless they are present in considerable numbers, they appear to cause little trouble in grown-up animals, unless a worm gains entrance to a bile duct, and then trouble is noticed. If they are present in large numbers, and especially in pigs, they are very harmful. They live in the intestinal canal, absorbing the nourishment from the food that should nourish the hog. It is thought that they also give off a poison which causes a catarrhal condition of the lining of the intestines, this further interfering with the health of the affected animals. Since feed has become so extremely high in price it is a most serious mistake to permit a herd to become badly infested.

When pigs are badly affected with worms they show a more or less unthrifty appearance, depending upon the number of worms present, and it seems that no matter how much they eat, they make very poor gains. The hair appears rough and they become potbellied and have a generally dejected appearance. There is quite often a cough and also diarrhea due to the irritation of the mucous linings of the intestines.

There are several drugs recommended to rid animals of worms, but different kinds of worms require different treatments to destroy them, and the surest plan is to have a competent veterinarian examine the hogs. There are various commercial worm remedies on the market, some of which are absolutely worthless. Others probably have considerable virtue, but have been condemned frequently because they were not properly used or because the quarters were not cleaned up and other methods used to prevent reinfestation. For best results treatment for worms should be administered to each hog separately. Hogs are very difficult animals to treat, as there is considerable danger of strangling them in administering medicine. Unless the owner is sure he can treat his hogs with safety himself, it is advisable to have a skilled man prescribe and administer the necessary medicine.

In the way of prevention much can be done to keep down the worm infestation. Clean and sanitary quarters are necessary. While treating the herd, the hogs should be kept in reasonably close quarters and all the litter and manure gathered frequently and burned. Disinfectants should be used liberally so as to destroy all eggs discharged. The female worms deposit the eggs in the intestines of the hog, and they are discharged and hatch in the filth about

the pen if they are not destroyed by burning or by the use of disinfectants. Unless constant effort is made to keep the quarters clean and disinfected, the hogs can become infested with worms again in a very short time.

In combating the ravages of worms and all parasites, the supply must be cut off. Only pure fresh food and water should be supplied and the hogs should not be permitted to go to stagnant mud holes. The eggs of the common round worm of hogs have been known to live as long as two years under proper soil conditions. A rotation of quarters and pasture will be helpful in controlling worms and other parasites. Infested lots should be broken up and put into crops.

FARM AND HERD.

CLAIM SALE DATES.

- Jersey Cattle. June 24—Dr. J. H. Lomax, Leona, Kan.
- Shorthorns. May 16—Park E. Salter, Wichita, Kansas.
- Holsteins. May 12—A. S. Neale, Manhattan, Kan.
- Hereford Cattle. May 12—Kansas Hereford Breeders' Draft Sale at K. S. A. C., Manhattan, Kan.
- May 13—Sam Drybread & Son, Elk City, Kan. Sale at Independence, Kan.

The Manager of the live stock department of Kansas Farmer received a very agreeable surprise a few days ago in the shape of an unexpected present, and as a result is enjoying the sensation of feeling just a little rich for once in his life. A number of our friends who have noted that we assumed a few airs denoting sudden prosperity have been guessing as to the nature of the delivery made at our home by the express company and the guessing has included about everything that make men rich quick, even to the extent that we had received a bunch of oil stock in a new gusher that had just been brought in and that was expected to make millionaires of its stockholders, but all guesses were wide of the mark as to the nature of the present, but not as to the value. In order to relieve the minds of our friends and assure them that our newly rich airs are only temporary (unless our schemes work), we will let the secret out. This present was a big home-cured ham and was from W. R. Crow, of Hutchinson. When it is stated that it was from Mr. Crow, that establishes the fact that it was a Duroc ham, a big one, and a ham of the highest quality. We feel that we are some chance of hams and unless we should have a chance to sample hams from pure-bred herds of other popular breeds, we will be compelled to award first premium to Mr. Crow's Duroc ham. Note.—Receipt of all sample hams promptly acknowledged.

The average for the eighty-seven Short-horn cows sold in the Shorthorn sale held at Cliffville in connection with the annual meeting of the Southeast Kansas Improved Live Stock Association was \$301.83. Several females sold for over \$1,000. The top of the sale was paid by J. A. Burns, Nowata, Oklahoma, for Golden Mistletoe, a six-year-old cow with heifer calf at side. This cow was consigned by Howard M. Hill of Lafontaine, Kansas. The top bull, Victor Dale, calved January 6, 1918, also consigned by Mr. Hill, went to F. A. Dumond of Rose, Kansas, for \$605. The sale was well handled by the manager, G. A. Laude, of Humboldt.

Pleasant View Stock Farm

PERCHERONS AND HEREFORDS

For Immediate Sale
Six-year-old Ton Stallion, black. Have his fillies. Must sell.
One coming three-year-old, weight 1,750 pounds, gray, broke to service.
One coming two-year-old, weight 1,550 lbs., black, ready to use this spring on a few mares.
All of these horses sound and good individuals.
In Herefords Have About Thirty Cows and Heifers
All that are old enough are getting calves this spring from my herd bull, Domineer 566433, a son of Domino, bred by Gudgell & Simpson. A few May bull calves yet.
MORA E. GIDEON, EMMETT, KANSAS

JERSEY CATTLE.

JERSEYS

The PROFIT BREED

WHY waste feed on cows that skin their own milk? Jersey's produce the highest percentage of butter fat at the lowest feed cost.

CHOICE JERSEY BULLS FOR SALE—Four choice young Jersey bulls; two ready for service; all sons of Blue Belle's Owl 79641.

ALLEN CENTER STOCK FARM Registered Jerseys from choice Jersey cows. Sire's dam is the highest producing cow in Kansas.

BROOKSIDE JERSEYS REGISTERED JERSEY BULLS, few old enough for service from Eminent Flying Fox dams, sired by Idalia's Raleigh, a son of the great Queen's Raleigh.

LONGVIEW JERSEYS (Register of Merit Herd) Bull calves sired by champion bulls out of Register of Merit dams, for sale at all times.

Longview Farm LEE'S SUMMIT MISSOURI

SHORTHORN CATTLE.

WHY NOT TRY IT?

Any farmer who raises grades would realize larger profits if he raised pure-bred Shorthorns. They don't require any more room, nor any more feed, nor any better care than the grades should have.

AMERICAN SHORTHORN BREEDERS' ASS'N., 15 Dexter Park Avenue Chicago, Illinois

MARK'S LODGE RED SHORTHORNS For Sale—25 well bred cows and heifers bred, priced reasonable. A few young bulls by Double Diamond by Diamond Goods.

HAMPSHIRE HOGS

Registered Hampshire Hogs—Sows and Spring Gilts, bred or open. Choice spring boars. Double treated. Geo. W. Ela, Valley Falls, Kansas

HEREFORD CATTLE.

Hereford Cows For Sale A Few Choice Registered Hereford Cows, some with calves at foot, bred to double-standard Polled Hereford bull; also my Polled Hereford bull.

DUROC JERSEYS.

HIGHVIEW DUROCS Home of Repeater by Joe Orton King and Golden Reaper by Pathfinder. For sale—spring boars and a few bred gilts. I guarantee satisfaction or your money back.

R. H. DIX & SON'S DUROCS For Sale—One choice spring boar, a real herd leader. Twelve spring gilts bred to Giant Crimson by G. M.'s Crimson Wonder, a prize winning boar. Priced reasonable for quick sale. Write today.

Woodell's Durocs A choice lot of extra well bred gilts bred for late farrow. Few fall boars. G. B. WOODDELL, WINFIELD, KANSAS.

AUCTIONEERS.

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

All pain must be to teach some good in the end.—BROWNING. The cross roads oracle says: Anybody could farm when land was \$40 an acre. With land at \$200, the farmer's got to hitch his muscle an' his brains up to get by.

POLAND CHINAS

Deming Ranch Poland Chinas. Big-Type Poland China Hogs For Sale—Thirty large spring gilts bred for April and May farrow. Write or come and see our herd.

JOHNSON'S BIG-TYPE POLAND CHINAS Herd boar Over There No. 95555, the greatest son of Caldwell's Big Bob. A few bred sow and gilts for sale. Bred sow sale March 8.

Oak Grove Stock Farm Polands The blue ribbon herd of Spotted Polands. Fall pigs sired by O and O 25th, are immune, recorded and the very best of breeding.

LANGFORD'S SPOTTED POLANDS Bred gilts, tried sows, herd boar prospects. T. T. Langford & Sons, Jamesport, Missouri

ERHART'S POLAND CHINAS

Have a few bred sows and bred gilts priced reasonable. All immune. Several fall boars ready for service. Write your wants.

CHOICE LOT OF POLAND CHINA BRED SOWS AND GILTS FOR SALE. A Few Fall Pigs. CHAS. E. GREENE

SHROPSHIRE SHEEP

FOR SALE A bunch of registered Shropshire rams, ready for service. Priced worth the money. Also registered ewes. Howard Chandler, Chariton, Ia.

MULEFOOT HOGS.

KNOX KNOLL MULEFOOTS Orders now booked for February litters. Catalog and prices on request. S. M. KNOX - HUMBOLDT, KANSAS

HORSES AND MULES.

JACKS AND JENNETS 15 Large Mammoth Black Jacks for sale, ages from 2 to 6 years; large, heavy-boned. Special prices for early sales. Twenty good jennets for sale. Two Percheron stallions. Come and see me. PHIL WALKER Moline, Elk County, Kansas

Percheron Stallion For Sale

LAPERSHING NO. 139914, extra good. Black, white star, coming three years old, recorded in Percheron Society of America. Priced reasonable for quick sale.

PERCHERON-BELGIAN SHIRES

Registered mares heavy in foal; weanling and yearling fillies. Ten mature stallions, also colts. Grown ourselves the ancestors for five generations on dam side; sires imported. Fred Chandler, Rt. 7, Chariton, Iowa

JACKS AND JENNETS Registered Jacks and Jennets. Good individuals, good colors. Have some choice young jacks that are priced to sell quick. GEO. S. APP, ARCHIE, MISSOURI

PERCHERON STALLIONS AND JACKS

FOR SALE—A number of Percheron stallions, yearlings and matured horses. All registered in Percheron Society of America. Sound, heavy bone, splendid colors. I have several horses that would have won in all the classes at our state fairs last year and must be seen to be appreciated.

J. C. PARKS - HAMILTON, KANSAS

HOLSTEIN CATTLE.

CHOICE HOLSTEIN COWS FOR SALE

One carload fresh Holstein Cows—One carload heavy Springers These cattle are extra good. A few choice registered bulls.

HOPE HOLSTEIN FARMS - HOPE, KANSAS

ANGUS CATTLE

Dietrich's Aberdeen-Angus Aged bulls, fifteen choice spring bulls. Females, all ages. GEO. A. DIETRICH, CARBONDALE, KAN.

Cherryvale Angus Farm Is offering six choice Angus bulls ranging in age from 9 to 11 months. All sired by Roland L. No. 187320. J. W. TAYLOR Clay Center, Kansas

ANGUS BULLS

For Sale—Seven head bulls from 7 months to 3-year-old herd bulls. Priced to sell. Write your wants or come and see my herd. I mean business. FRANK OLIVIER, JR., Danville, Kansas

GUERNSEY CATTLE.

FOR SALE—GUERNSEYS Two Registered Bull Calves five and seven months old, both sired by imported bull and one dammed by an imported Advanced Registered cow. Price one hundred dollars (\$100.00) and one hundred and twenty-five dollars (\$125.00). Photos furnished to parties interested. Address GUERNSEY DALE FARM, Ottawa, Kansas

AYRSHIRE CATTLE.

MARGINALIA'S BULL IS SOLD TO G. M. PICHELLE, LEON, KANSAS. Write for breeding of Aca 3d's calf by Elizabeth's Good Gift, at \$150. JOHN LINN & SON, MANHATTAN, KAN.

BREEDERS' DIRECTORY

HEREFORD CATTLE F. S. Jackson, Topeka, Kan. RED POLLED CATTLE Mahlon Greenmiller, Pomona, Kansas. POLED DURHAMS C. M. Albright, Overbrook, Kan.

RED POLLED CATTLE.

RED POLLED CATTLE BRED AND PRICED RIGHT. MORSE STOCK FARM NEOSHO, MISSOURI

RED POLLED BULLS

Twelve head coming two-year-olds and twenty head of coming yearling bulls. This is an extra nice and well colored bunch of bulls sired by ton sires. Inspection invited. E. E. FRIZELL & SONS, FRIZELL, KAN.

RED POLLED CATTLE FOR SALE

Young bulls and some extra good young cows to calve in early spring. A few yearling heifers. I. W. POULTON, MEDORA, KANSAS

RED POLLS, BOTH SEXES, BEST OF BREEDING.

Charles Morrison & Son, Phillipsburg, Kan. Please Mention Kansas Farmer When Writing to Advertisers.

HOLSTEIN CATTLE.



A General Purpose Breed

The Holstein-Friesian breed excels in milk production; it is superior for veal production and valuable for beef production.

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information. HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA, Box 114, Brattleboro, Vt.

\$20.00—HOLSTEINS—\$20.00

Practically pure-bred Holstein heifer calves four to six weeks old, the kind that are bred for production, out of 60-lb. cows and sire carrying large percentage of world's champion blood. Write for further particulars. Harris Holstein & Durgo Farm, Sextonville, Wisconsin

HIGH GRADE HOLSTEIN

Calves, either sex, from heavy producers, well marked, 4 to 6 weeks old, 15-16ths pure. \$25 each, crated and shipped to your station. Express and all charges paid here. Highland View Place, Whitewater, Wis.

BRAEBURN HOLSTEINS

Looking for a bull? I can generally offer you choice of half a dozen, by two different sires. That saves time and travel. H. B. COWLES

608 Kansas Avenue Topeka, Kansas

BUTTER-BRED HOLSTEINS

Three choice registered Holstein bulls, ready for light service, and some bred heifers to a 32-pound sire. J. P. MAST, SCRANTON, KANSAS

Holstein Calves

Extra choice, beautifully marked, high-grade calves from heavy milking dams, either sex. Write us for prices and description. W. C. Kenyon & Sons

Holstein Stock Farms, Box 33, Elgin, Illinois

GOLDEN BELT HOLSTEIN HERD

Herd headed by Sir Korndyke Bess Helld No. 165946, the long distance sire. His dam, grand dam and dam's two sisters average better than 1,300 pounds butter in one year. Young bulls of serviceable age for sale. W. E. BENTLEY, MANHATTAN, KANSAS

HOLSTEINS!

We are offering a choice selection of both registered and high grade springer cows and heifers. Also pure-bred bulls and young females. All reasonably priced. Come and see them or write. T. R. Maurer & Co.

EMPORIA - KANSAS

CHOICE HOLSTEIN CALVES

12 Heifers and 2 Bulls, highly bred, beautifully marked, and from heavy producing dams, at \$25 each, crated for shipment anywhere. Safe delivery guaranteed. Write FERNWOOD FARM, WAUWATOSA, WIS.

SEGRIST & STEPHENSON, WOLTON, KANSAS Breeders exclusively of pure-bred prize-winning record-breaking Holsteins. Correspondence solicited.

YEARLING HOLSTEIN BULL—Fine individual. Dam gives 44 to 52 lbs. per day. CASTILLO & SON, INDEPENDENCE, KAN.

REGISTERED HOLSTEINS Well bred bull calf born October 31, nearly white, extra good individual. Have other bulls a little older. O. S. ANDREWS - GREELEY, KANSAS

FARM AND HERD.

The sixth annual sale of the Central Shorthorn Association held at Kansas City April 2 and 3 resulted in the disposal of 183 head of cattle. Ninety-four head of bulls averaged \$258 and ninety-four females averaged \$311. The top price paid for females was \$1,300, while two other heifers sold for a thousand dollars each. The top price paid for bulls was \$850 for Viscout Stamp 2d consigned by H. H. Holmes, Topeka, and sold to J. E. Leneveber, Lee's Summit, Mo. While no sensational prices figures in the auction, the averages were very fair and yet low enough to permit of liberal investments in breeding cattle and at the same time provide a fair profit to the producer. The better class of cattle brought good prices and were in demand, while those poorly fitted or thin in flesh did not bring their real value as breeding stock, but most consignors were well pleased with the sales and the total results were very satisfactory to the Central Shorthorn Association.

Kentucky Jacks at Private Sale

E. P. Maggard, with the firm of Saunders & Maggard, Flemingsburg, Ky., has shipped 21 head of jacks to Newton, Kansas, and they will be for sale privately at Johnson's Barn. This is a well bred load of jacks, and they range in age



from coming three to matured aged jacks; height from 14 to 16 hands. We will make prices reasonable. Anyone wanting a good jack will do well to call and see them. Barn two blocks from Santa Fe depot, one block from Interurban. Come and see me.

SAUNDERS & MAGGARD, Newton, Kansas

REO

"Oh! You'll Get There All Right —With That Reo!"

A CERTAIN LADY—you know a large percentage of Reo owners and drivers are women—a certain Reo Lady was making a long, cross-country trip accompanied by three other ladies.

WEATHER WAS AWFUL—no other word would describe it. Roads accordingly.

(AT MANY PLACES there were detours where modern roads were being built.

YOU KNOW THE KIND—a mile to the south, then a mile to the west, north a mile again to the main road.

HEAVY TRAFFIC on what was never a road, but only a trail, cut ruts hub-deep in the slippery clay and sticky mud.

AND IN THE RUTS were chuck-holes that, concealed from view by mud and slush, had to be ever guarded against.

TO HIT ONE at speed were to throw the passengers out of the seats. To drive at more than a snail's pace were to take risks.

TO MAKE MATTERS WORSE, she frequently had to drive off the road and into the ditch in order to pass other cars that were hopelessly stalled.

AT TIMES OUR LADY was dismayed by the look of things ahead, and as she plowed through, drip-pan awash and gears in low, she would stop and ask other wayfarers if it was any worse ahead.

INVARIABLY—so fond are most folk of imparting bad news!—they would say, "Oh, yes—what you have gone through is good beside that next clay hill!"

THEN, CRITICALLY LOOKING at the car, the informant would exclaim confidently, "But you'll get through all right—with that Reo!"

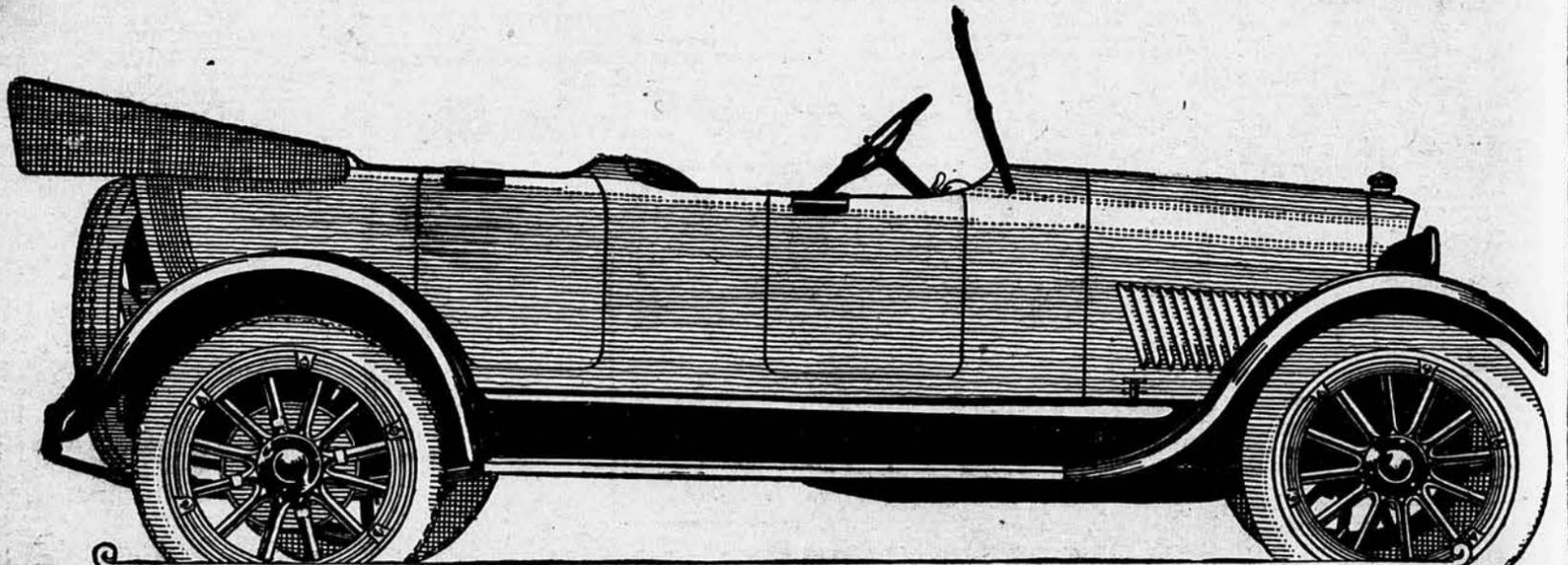
EVERY ONE SHE ASKED knew the Reo on sight—and every one voiced the conviction that, with her Reo, she'd get through all right regardless of how great the distance or how bad the roads.

AND SHE DID, which is merely to chronicle what every Reo owner knows and every owner of every other car concedes.

YOU'LL ALWAYS GET THROUGH—if you have a Reo.

"THERE ARE LOTS of good automobiles—but the man who owns a Reo is lucky."

Reo Motor Car Company, Lansing, Michigan



" THE GOLD STANDARD OF VALUES "