

KANSAS FARMER

For the improvement  of the Farm and Home

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DEVELOPMENT TEST ENDS

Practical to Grow Beef Heifers on Roughage by Delaying Breeding

THE Hays Experiment Station studies in the development of breeding beef heifers which have been made during the past few years indicate that ordinarily the best practice is to develop the heifers with the low grade rough feeds and prevent their dropping calves until they are three years old. In actual practice this is seldom possible and to avoid stunting the heifers it may be necessary to push them in their development so the early calving will not reduce their size or result in bad losses or inferior calves.

Costs \$71 to Produce Beef Cow

The report of the test in developing breeding heifers at the Hays Experiment Station was an important feature of the round-up meeting held on the station farm April 12. Dr. C. W. McCampbell of the animal husbandry department of the agricultural college, analyzed the figures which were presented by Superintendent Weeks. Doctor McCampbell referred to the importance of getting at the cost of producing and maintaining the cow herd. This is one of the big questions confronting the western cowman, and the experiment station is trying to answer it for him. Doctor McCampbell told of the purchase of a hundred head of high grade Hereford heifers in the fall of 1913, the purpose being to find what it cost to develop the breeding cow under range conditions, bringing her up to three years of age when the first calf was supposed to be dropped. This cost, including the original purchase price, feed, labor, taxes, interest, service fee, losses and use of equipment, was found to be \$70.97. During the development period the heifers received a light feed of cottonseed cake during the first two winters as the only concentrate. This cost on an average \$38 a ton. They were also charged \$9 a ton for alfalfa, \$3.50 a ton for cane and kafir silage, \$2 a ton for kafir butts and \$1 a ton for straw. Aside from the alfalfa, the roughages fed had practically no commercial value.

Out of this test for finding the cost of developing a breeding cow grew another question, namely, whether it might not be possible to breed heifers to calve at two years of age without retarding their development, thus having the income of an additional crop of calves. The frequency with which this question was asked prompted a test to determine the practicability of breeding range heifers at the earlier age and still not bring about the usual results.

Test in Heifer Development

To carry out this test, eighty high grade heifer calves were selected during the fall of 1915 and divided into two groups, one being designated as the optimum-fed group and the other as the normal-fed group. The plan was to feed the normal group roughage only during the winter, while the optimum group was to receive concentrated feed in addition to the roughage. All the heifers were to run together on pasture during the summer months. Each group was divided into two sections, the heifers of one section being bred to drop their first calves at two years of age and the other section of each group to drop their first calves at three years of age. The heifers in Lot 15, receiving normal treatment, and those in Lot 16, receiving

optimum treatment, produced their first calves in the spring of 1917, being then two years of age.

In discussing this test at the Hays round-up meeting, Doctor McCampbell stated that because of the loss of calves, lack of size in the calves produced and the checking of the development of the heifers in Lot 15, it might be considered as fully demonstrated that it is not practical to attempt to develop heifers on roughage alone and have them produce their first calves at the age of two years. The results with the heifers in Lot 16 receiving the grain-feed during the winter were fairly satisfactory from the production standpoint, as a normal percentage of fair sized calves was produced.

The heifers in Lot 1 receiving the optimum treatment, and those in Lot 2 receiving normal treatment, produced their first calves the spring of 1918, being three years of age. Each of the two lots produced an average crop of calves, as did the heifers in Lot 16, which produced their second calves in 1918. When the cows and calves were brought in from the pastures last fall, however, it was found that the calves from Lots 1 and 2 were larger than those produced by the heifers in Lot 16.

Two Lots Eliminated

"Since there was practically no difference in percentage or size of calves raised last year in Lots 1 and 2," said Doctor McCampbell, we may eliminate from further consideration as a practical

means of developing cows under range conditions the optimum treatment, delaying breeding so that the heifers do not produce calves until they are three years of age. There was no return for the extra feed cost. This leaves only two lots for further consideration as to the most practical methods of development—Lot 2, developed on roughage alone and dropping their first calves at three years of age, and Lot 16, developed on roughage and grain but dropping their first calves at two years of age. When the heifers of these two lots came off the range last fall, those in Lot 2 averaged 1,095.95 pounds each, and those in Lot 16, 1,075.25 pounds, showing that the development in each lot had been practically identical. However, the calves from the heifers in Lot 2 averaged 67 pounds each more in weight than those from the heifers in Lot 16. A bid of \$9.25 was made for these calves, so a difference of \$6.20 might be charged against each cow in Lot 16, the price which their calves would bring being that much less than the price the larger calves would bring. It had also cost \$32.70 more to develop each cow in Lot 16 than it had the cows in Lot 2. To date, then, we may charge each cow in Lot 16 with excess cost of \$38.90 and credit her with one more calf than the cow in Lot 2 has produced at the same age."

Use Less Grain in Future

There are of course other points to consider in deciding which method

would be the most practical one to follow, but Doctor McCampbell pointed out the fact that since concentrates advance in price more rapidly than do roughages in short crop years the method of developing without grain and delaying the breeding so the first calf does not come until the heifers are three years of age, calls for thoughtful consideration. It is also well to note that as our population increases there will be an increasing demand for grains to be used for human food. This will tend to increase the cost of producing meat where grain is used extensively and force a greater dependence on roughage in developing our herds and flocks. The beef cow offers a splendid medium through which to market at a material profit above the cost of production many of the rough feeds of the farm which have no commercial value. The greatest obstacle to following the practice which seems to be the best all around under the conditions prevailing in Western Kansas is the difficulty of preventing heifers from dropping their calves early. Mr. Baker, a cattleman from Wallace County, in commenting on the results of this experiment stated that he had long been convinced that he should not allow his heifers to produce calves until they are three years old, but was unable to follow it in practice because there are so many bulls running at large and many of them inferior in quality to those he uses himself. If he does not breed his heifers to his own bulls, some scrub bull will get to them. Under such circumstances perhaps the better method would be to feed the heifers the extra grain during their early development period and thus counteract the dwarfing effect of early breeding.

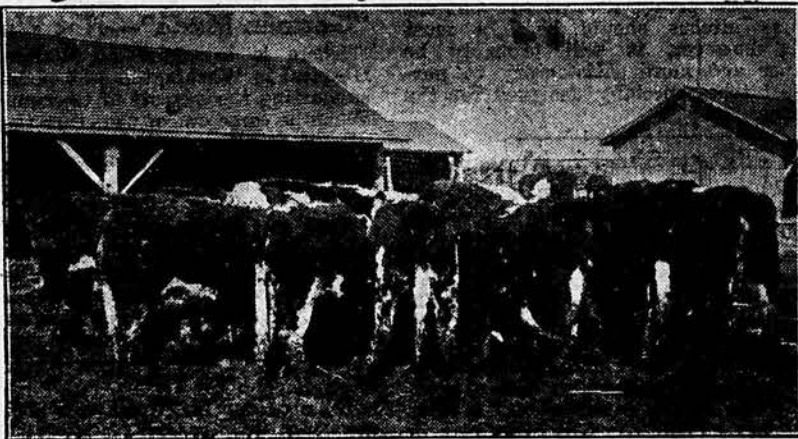
Differences in Calves Produced

During the past winter the cows in all four of these lots have been fed alike, the problem now being to study the effect of different methods of development on present and future productivity, including both number and size of calves. When the cows came in from the pasture last fall the calves from the heifers developed without grain and calving the first time at two years of age were the smallest of all, averaging 352 pounds. Next came the calves from the cows of Lot 16, averaging 356 pounds. The calves produced by the cows of Lot 1 averaged 417 pounds, and the calves in Lot 2 averaged 422 pounds. The smallest cows of the group were those of Lot 15, their average weight off pasture last fall being 998.65 pounds. Those in Lot 1 weighed 1,144.65 pounds; Lot 2, 1,095.95, and Lot 16, 1,075.26 pounds.

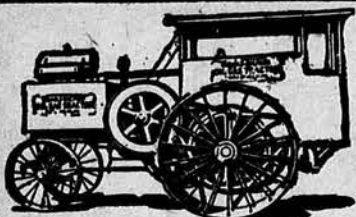
This test of the methods of developing breeding heifers under range conditions has been a most creditable piece of work and has been much appreciated by the cattlemen in need of the kind of information that has been obtained. It would have added to the value of the experiment if individual records could have been kept of each heifer so that it might be known which ones had produced calves each year and which ones had missed. The cuts on this page show the cows in Lots 2 and 16 as they appeared at the time of the round-up meeting.



COWS DEVELOPED ON GRAIN AT EXTRA COST OF \$32.70, DROPPING FIRST CALVES AS TWO-YEAR-OLDS, 1917.—WEIGHT OFF PASTURE LAST FALL, 1,075 POUNDS



COWS DEVELOPED ON ROUGHAGE ALONE, DROPPING FIRST CALVES AS THREE-YEAR-OLDS, SPRING OF 1918.—WEIGHT OFF PASTURE LAST FALL, 1,096 POUNDS



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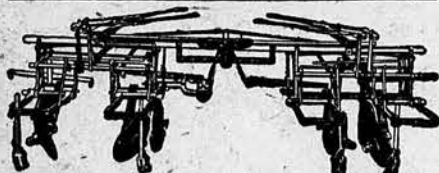
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MECHANICS ON THE FARM

Items of Interest About Automobiles, Engines, Tractors and Motorcycles

Power For Belt Work

ON A great many farms certain operations have been performed in the past by custom outfits. In discussing the farm tractor during Farm and Home week in Manhattan, Arnold Yerkes, of the International Harvester Company, referred to this as a drawback to the introduction and profitable operation of the tractor. In case of threshing, cutting silage, and shredding fodder, the cost of a large rig made it impossible for each individual farm to have its own outfit. As long as the principal source of belt power was confined to large steam engines, this condition was unavoidable. Now that gas tractors of various sizes are available, there is no longer the necessity on a business-sized farm of having to depend on custom outfits to any great extent.

One of the first considerations of a tractor owner is to obtain the necessary machines to do the work which had previously been performed by custom rigs. In the case of threshing and silo-filling it is of the greatest importance to be able to do the work at the proper time. The ability to perform this work when conditions are right is frequently of greater importance in the final returns than the saving which may result from the lesser cost of doing the job with an individual outfit as compared with the cost of the custom outfit.

On many farms there is more or less belt work to be done for which a stationary engine may be already owned. Mr. Yerkes stated that it was not practical to use a large tractor motor for work which requires only two or three horsepower, but a tractor engine can be used to good advantage for quite a number of belt operations which would otherwise require a stationary engine.

A tractor should by all means have a suitable shed or building in which it can be housed when not in use. If a little planning is done in locating this shed, it will often be possible to install a line shaft at slight expense which will enable the tractor to be used for pumping water, grinding feed, sawing wood and other operations without being moved from this building. If a regular practice is made of keeping the tractor in the building whenever it is not in use in the fields, it must be found fully as satisfactory for these operations as a stationary engine. A tractor will not be used for field operations for more than fifty to seventy-five days during the year, and even while it is actually being used in the field it will frequently be practical to return it to its shed at night in case there is belt work to do in the evening or early morning. By such an arrangement a tractor can displace the extra stationary engine and thus save the investment necessary to own another engine.

Tractor Hitches

In doing power farming it is almost as necessary to have properly designed hitches for operating binders, mowers, and other machines behind a tractor, as it is to have the right kind of a machine. In many cases a satisfactory hitch can be made at home providing the tractor owner is handy with tools and has the proper idea as to what the various hitches should be. In most cases, however, it will probably be cheaper and more satisfactory to purchase hitches specially designed for the purpose.

Machinery Shed a Necessity

A 22 per cent return on a \$400 investment pays well. That is the return which the agricultural engineering department of the Wisconsin College of Agriculture says a \$400 machine shed will pay to a farmer who has \$1,000 worth of machinery. This is the way they figure it:

The depreciation for \$1,000 worth of machinery, well housed, is \$90 a year. Poorly housed, the depreciation increases to \$180 a year. The \$90 difference in depreciation is 22 per cent of \$400, the cost of a good tool shed.

A cheaper shed than the one suggested, say the designers, is an expensive in-

vestment in the long run, although it is better than canvas or the open sky. With a concrete foundation, a brace roof, and simple trusses over the wide doors to prevent their spreading and sagging, all of which this \$400 shed has, a permanent building may be constructed. A small repair shop, partitioned off from the rest of the building so that it can be warmed when used in the winter, is another feature of the plan.

Hogs Ride Trucks to Market

Motor trucks are being used more extensively than ever before to haul hogs to market, according to reports by representatives of the Bureau of Markets, United States Department of Agriculture. During the period beginning with October and ending with February, the proportion of wagon and truck hogs in the total receipts at the Peoria, Illinois, stock yards was nearly double that for the corresponding five months two years ago. A total of 50,380 hogs were brought to the yards in wagons and trucks during the five months of the past winter, or about 19 per cent of the total receipts, as compared with 16 per cent for the same period a year ago and 10 per cent two years ago. Increased production and attractive prices no doubt were responsible for some of the increase, the representatives say, but there is a growing tendency to send hogs to market in motor trucks instead of by rail where the distances are not great. This tendency is also shown at other markets. At the Cincinnati yards, for example, 139,972 hogs were brought in by truck and wagon during 1918, as compared with 77,232 arriving in similar conveyances in 1917.

Remember the tractor is an iron horse and requires care the same as does his flesh-and-blood brother. But there is a difference between care and tinkering.

Good roads are a prerequisite to successful motor truck operation. It is believed that few motor truck operators realize the increased expense which results from travel on poor roads.

An Auto Cavalcade

If the plans of the management work out, the coming state Sunday School convention to be held in Wichita May 6 to 9 will bring from every part of the state automobile delegations of Sunday School officers, teachers, and ministers. This is one of the biggest state-wide conventions held, and if these plans work out there will be a great gathering of autos at the coming state meeting. Announcement has just been made by J. H. Engle, general secretary, Abilene, that a widespread concert of action is being asked to bring about this automobile attendance. The city of Wichita will place at the disposal of the convention management the extensive covered inclosure used in connection with the Wichita Fair and Exposition for housing the cars. This will provide the best of accommodations for safe and convenient storage.

"German Made"—Not Wanted

There is a soldier at Walter Reed Hospital in Washington who certainly is supporting the boycott of German goods. When he came out of the ether the other day he found a good-sized bit of shrapnel tied to a button of his pajama coat. "What's this?" he asked in a puzzled way.

"We thought you might like it as a souvenir," smiled the Red Cross nurse. "The surgeon took it from your leg." "Take it away," snapped the dough-boy. "I don't want anything around me that was made in Germany."

Cured

"One of our little pigs was sick, so I gave him some sugar."
"Sugar! What for?"
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WHEAT CROP REPORT

Based on the conditions April 15, as reported by Secretary J. C. Mohler of our State Board of Agriculture, the wheat crop of Kansas may exceed two hundred million bushels. The estimated total acreage of winter wheat now growing is 10,758,000. The acreage sown last fall as reported by the correspondents of the board was 10,826,000. The loss from winter killing has been unusually small, only three-fifths of 1 per cent being so damaged as to be thought worthless. The general average condition of the crop growing is given as 99.32 per cent. The combination of high condition and large acreage points to a crop never before equaled in any state or similar area in the world. The present condition is the highest April condition reported by the board since 1901. That year the 4,269,000 acres of wheat was reported at 99.8 per cent in April and the crop eventually yielded an average of seventeen bushels to the acre for the state. The April condition of the bumper crop of 1914, which was almost 181,000,000 bushels, was 96.5 per cent.

April conditions are not always reliable barometers of yields at harvest time, but this year the ground is so thoroughly water-soaked that the crop seems assured of sufficient moisture to carry it to maturity, and moisture is usually the limiting factor in crop production. Experienced wheat growers are unanimous in their belief that there is now sufficient moisture in the ground to mature this year's crop.

Mr. Mohler's report indicates that wheat generally is unusually well advanced for this time of the year. In fact in some counties the growth is so rank, especially on bottom lands, that it is described as "abnormal." This condition prevails principally in the territory along the Missouri River and south of the Kansas River. Some of the board's crop reporters fear that wheat in these sections may produce too much straw and lodge, thus making the harvest difficult and perhaps causing losses at that time.

The heaviest percentages of loss are in extreme western counties, Logan and Gray counties each showing a probable loss of 5 per cent, the heaviest reported. Grasshopper damage last fall and high winds are the principal reasons given. In Sedgewick County a 1 per cent loss is attributed to the white wheat grub, and this grub also damaged wheat to some extent in Harper, Labette, Morris and Sumner counties. Out of over 1,100 reports received, only twenty-five mention Hessian fly as causing damage. As a whole the wheat is absolutely free from injuries by insect pests. The acreage figures as given are of course subject to revision later on receipt of the official assessors' returns.

INVESTIGATING FARM TENANCY

The fact that farm tenancy in Kansas increased 190 per cent in the period from 1880 to 1910 while the total number of farms increased only 28 per cent, is sufficient excuse for starting an investigation of the causes leading to this great increase in the number of farms operated by tenants. Some weeks ago we printed an article on the problems of farm tenancy by Theodore Macklin, head of the agricultural economics department of our agricultural college. We wish to commend the creation of this department. The economic questions involved in agricultural production and distribution have not been given sufficient attention. We cannot ignore or cease considering questions of efficiency in production, but there is need for earnest study of the many economic questions involved in the farm business, and the building up of a strong department of agricultural economics at our agricultural college should be encouraged in every way possible. To make such a department practical and helpful, it must study things as they are, and that means the field of investigation must be state-wide and not confined to the four

walls of an office or laboratory.

Professor Macklin has some theories on the causes of the great increase in tenancy during these recent years, one being that the young farmer is finding the time required to pass through the various stages of working and saving is becoming discouragingly long. As a preliminary to finding out something definite about farm tenancy in Kansas, Professor Macklin is asking 20,000 farmers throughout the state to report on the successive steps they have taken or are taking in acquiring farm ownership. We would urge the heartiest cooperation with him in his efforts to set at the facts underlying farm tenancy in our state. It will require some effort to answer the lists of questions submitted, but the information obtained will be of doubtful value unless a large number of replies are received. When the lists of questions are returned the answers will be carefully studied and analyzed. It is Professor Macklin's belief that the conditions which make it difficult for farmers to acquire ownership of the farms they cultivate are at once responsible for a great deal of tenancy and for the fact that frequently farming does not result in sufficient profit. This does not mean that there are no good points about a tenant system. Neither does it mean that ownership in all cases is better than tenancy. The replies to the questions sent out should show how many steps farmers have taken and how many years they have spent in each step during their period of working and saving to become farm owners. This will be helpful information.

In commenting on the information obtained in a series of questions sent out in a group of corn belt states, the details of which were given in the article in KANSAS FARMER referred to above, Professor Macklin said:

"On an average those farmers who worked without pay on the home farms served in this capacity to ages of from 19 to 26 years. Those who worked as hired men did so from five to six years. Farmers who worked as tenants averaged nine to ten years in this capacity and at the time that these figures were gathered the farmers had owned their farms from eleven to twenty years.

"An analysis of these figures indicates that a prospective farmer must expect to put in long years of continuous hard work if he would become the owner of a farm. It also indicates that practically two-thirds of those who have gained farm ownership have done so by virtue of their ability to pay either in the form of cash or credit. The other one-third of the farmers were assisted by inheritance, marriage, or free land. The day of free land has largely passed. The day of commercialized agriculture is full of promise. Opportunity for assistance of one kind and another for the prospective commercial farmer of today is largely confined to the extent of his credit relations.

"Through information, which these questions to farmers will bring back, more will be known about the importance of each of the methods which Kansas farmers have utilized in becoming farm owners and the length of time which they have remained on each of the steps of the ladder. It will then be possible correctly to study all of the important conditions which must be known in order to answer the question, 'What are the characteristics of farm tenancy and what are its causes in Kansas?'"

MEAT PRODUCERS' CONFERENCE

The tentative plan of a joint committee of producers and packers agreed to at the Chicago conference of March 10 and 11 was considerably changed at the Kansas City meeting of live stock representatives held April 12. At Chicago the tentative agreement entered into provided that a conference committee should be created consisting of ten representatives of the packers, ten rep-

resentatives of producers, two representatives of the live stock commission organizations, and one representative from the Bureau of Markets of the Department of Agriculture. This tentative plan was at least a starting point for the creation of the necessary machinery for bringing about a closer co-operation of producers and the big packing interests, which create the first market for the raw product of the feed lot and put it into the hands of the consumers. There is certainly need for a better understanding between producers and this meat industry which handles live stock products, but after all we cannot ignore the fact that packers and producers have conflicting interests, each looking at his interests from his own viewpoint.

The Kansas City meeting, which had been called by J. H. Mercer, secretary of the Kansas Live Stock Association, representatives of some eight or ten different states were present. The Chicago plan was placed before this meeting of live stock producers and the discussion soon waxed warm. Two distinctly different viewpoints developed and for some time there seemed little hope that any agreement between these two groups could be brought about. A conference committee finally drafted a plan which was accepted by a majority of those present, this plan being the creation of a producers' committee of fifteen members to confer with committees of packers and other interests whenever such conferences seemed advisable to promote the interests of producers. Most of the representatives of the range cattle business and the representatives of Iowa and Nebraska feeders were very much opposed to the joint committee tentatively proposed at Chicago, the argument being that the neutrals on the committee would be controlled by the ten packer representatives and also that congress might get the impression that producers and packers had come to such an amicable agreement on their differences as to make legislation along the line of that embodied in the Kendrick bill unnecessary.

The plan agreed upon calls for a permanent committee to treat with packers, the members of which will be named by the various live stock organizations at their next annual meetings. Since these conventions will not be called for several months, the committee of fifteen which was provided for in the agreement was authorized to act for the producers in conferring with the packers regarding differences and grievances which might arise. The text of the conference report as adopted follows:

It is the sense of those participating in the conference that it would be to the mutual benefit of the live stock industry, the packers and the consumer that steps should be taken to bring about a closer co-operation between the various interests concerned.

Realizing that the live stock industry is on the threshold of an era of reconstruction, and with the prospect of removal of such control as has been exercised by the Food Administration during the war period, we are impressed with the importance of reaching a better understanding of the problems affecting the whole industry and of effecting, if possible, more economic methods of production and distribution to the end that our businesses may be placed on a sounder basis and in order that the finished product be furnished the consumer at a minimum price compatible with cost of production.

It is recommended that these ends may be promoted through the formation of a committee of live stock producers which shall meet from time to time as may be found necessary and counsel with similar committees representing the packers and other interests. Said producers' committee shall be selected at a national meeting composed of delegates from the several states, said delegates to be selected at state meetings attended by representatives of the various producers' organizations, and the members to represent the range cattle indus-

try, the cattle feeding industry, the hog industry and the sheep industry, the proportion of representation and the number constituting the committee to be decided by the national convention. Said convention shall be planned and called by the committee of fifteen which it is now proposed to create.

Pending said national convention, a producers' committee shall now be formed as follows: The committee shall consist of fifteen members, of whom four shall represent the range interests, eight the feeding states, two the hog industry, and one the sheep industry. Those representing the range interests shall be selected, two by the American National Live Stock Association, one by the Cattle Raisers' Association of Texas, and one by the Southern Cattlemen's Association. Those representing the feeding interests shall be selected one each by the associations of the states of Kansas, Missouri, Illinois, Iowa, Nebraska, and Indiana, and two by the associations of the states in territory east of Indiana. The two representatives of the hog industry shall be named by joint action of the various national swine associations, and the one representing the sheep industry shall be named by the National Wool Growers' Association. The committee thus created shall have full authority to meet with committees representing the packers and other interests and to do whatever may seem to it to be necessary to promote the interests of the producers, by taking such measures as may tend toward the stabilization of the live stock industry and for the further purpose of studying one another's problems, of adjusting grievances and of inaugurating such systems as will be helpful to the producer, the packer and the consumer.

The various associations are requested before May 10 to select their representatives to serve on this committee of fifteen, and the committee shall meet at Chicago on May 15, at which time it shall organize, elect its own chairman and secretary, and provide for such subcommittees as it may deem necessary to carry out the purposes for which it is created.

To effect the proposed organization a committee of six, in addition to himself as chairman, shall be chosen at this time by the chairman of this meeting to put this plan in effect without delay, to notify the various state producers' associations and to invite the packers and other interests to co-operate with the producers' committee thus created in promoting the meat industry of the nation.

PIG CLUB LEADER RETURNS

Paul R. Imel, State Pig and Baby Beef Club Leader, is on the job again in Kansas. Mr. Imel recently returned from France, where he served in the 325th Field Artillery of the Eighty-fourth Division.

Although Mr. Imel had been in the club work in this state only ten months before going into military service, he is known in many communities on account of his efficient work, and the news of his return will be welcomed by club members and others interested in boys' and girls' clubs.

Agricultural clubs have a distinct place in the farming business. Through these clubs farm boys and girls are becoming keenly interested in those things on the farm which too often have meant only hard and never-ending work to them. The club member who raises a litter of pigs or feeds a baby beef, remembers the information gathered about breeds, types, methods of handling, and profit made, rather than the work necessary to produce the pork or beef.

The fact that more than 800 Kansas boys and girls belonged to the State Pig Club last year is an index to the interest shown in these clubs.

Mr. Imel is employed co-operatively by the Division of Extension of the Kansas Agricultural College and the U. S. Department of Agriculture.

STANDARDIZED DAIRY MANGER

Uniform Type Expected to Save Money and Be More Satisfactory

THE United States Department of Agriculture has developed a standard dairy manger. The need of such a standard has been apparent for some time. Thirty-five firms which make and sell equipment for dairy barns manufacture mangers of similar design and construction, except for minor modifications. Each manufacturer turns out a design just a little different from those of his competitors. Cement associations and lumber associations have also developed special designs.

At little expense and trouble all these mangers could be standardized and made uniform. After a careful study of the existing mangers, the Division of Rural Engineering of the Department of Agriculture learned that the better forms, which have been successfully used for years, were so nearly alike that there is no valid excuse for not adopting a standard. Popularization and use of such a manger would be equally advantageous to manufacturers and to dairymen.

Successful dairymen agree that in order to get best results cows must be fed separately. This is usually accomplished by using manger divisions, which are made removable or hinged so as to facilitate cleaning the manger. Their use is rapidly increasing and the standardization of mangers will undoubtedly result in a similar standardization and improvement of the divisions.

Better Work at Less Cost

Some companies furnish manger templates or patterns to their customers in order to avoid mistakes in measurement and to aid in construction. They are prepared to furnish templates for each of their different forms of mangers. The universal use of the proposed manger would avoid mistakes made in sending wrong templates which cause delays and misunderstandings. With one set of templates, the builder is able to make a manger suitable for the requirements of the dairyman and can build a barn for any equipment. As a consequence the contractor can use better forms, do better work, and reduce the cost.

The advantages in the adoption of such a standard by the manufacturers are that it permits the use of one manger template, decreases the likelihood of mistakes in construction, lessens misunderstandings, and leads to the standardization and perfection of manger divisions and ultimately decreases the cost of production.

The accompanying illustration shows the construction of the standard manger

suggested by the Division of Rural Engineering. The manger under consideration meets all the requirements found in an average dairy barn. It gives definite measurements necessary for construction and eliminates the confusion likely to result from the use of numerous forms, while at the same time it permits sufficient variation to fit the individual needs of any dairyman.

Features of Feed Alley

The feed alley may be flush with the top of the manger or twenty-four inches below it. The claim is made that where the floor is flush with the manger it is a simple matter for the attendant to sweep back into the manger all the grain nosed out by the cows. On the other hand, big knees and cases of abortion are attributed to this style of manger, because cows have strained to reach grain on the feeding floor. Furthermore, this style adds to the cost of construction, as it requires extra filling and makes different floor levels in the barn. When a wide manger is used and where the manger wall is twenty-four inches high there is little liability of any grain being thrown out of the manger or wasted. The front of the proposed standard manger slopes in at the bot-

tom, which results in saving concrete and permits space for passage of feed truck wheels close to the manger.

Drawings B, C and D show the finished appearance of three of the sizes. A is a combination drawing showing relative shapes and dimensions of the four sizes that are recommended. Mangers made continuous and of the same form as the twenty-four-inch manger shown in A are preferable. Mangers should be free from cracks and crevices, with smooth surface, and have all corners rounded to aid in cleaning. The bottom of the manger should be curved and with sufficient slope—one and one-half to two inches in a hundred feet—toward one end to drain well. The curb should never be less than six inches higher than the bottom of the manger and four inches wide at the top if not over seven inches high. If a twelve-inch built-up curb is used the width across the top should be five inches or more. Any column coming within the curb should be surrounded by at least one inch of concrete, reinforced so as to prevent cracking at this point.

The present time is favorable for standardizing mangers, as all stocks are low because of the scarcity of steel and

other war conditions. Manufacturers are said to favor a standard form. There appears to be no reason why the change should not be made. The universal use of a standard type would benefit dairymen, manufacturers, contractors, and others interested. The American Society of Agricultural Engineers adopted this manger as a standard at their recent convention.

Nurse Cow to Raise Calves

The nurse cow is a familiar sight on the show circuit. There these cows are seen only in connection with the feeding and fitting of beef animals for showing. The use of a nurse cow to raise two calves is a good practice in regular farming operations and even in purebred dairy herds at times. The animal husbandry department of Cornell University advocates the use of nurse cows as the safest method of raising purebred calves.

The second best method, they claim, is to feed the calf skimmed milk, supplemented with hay and grain, after the first three weeks.

A third method suggested is to feed the calf, after it is four weeks of age, a good commercial calf meal or a home-made calf meal mixed according to the following modified Purdue formula: 250 pounds soluble blood flour, 500 pounds hominy, 500 pounds red dog flour, 500 pounds oil meal.

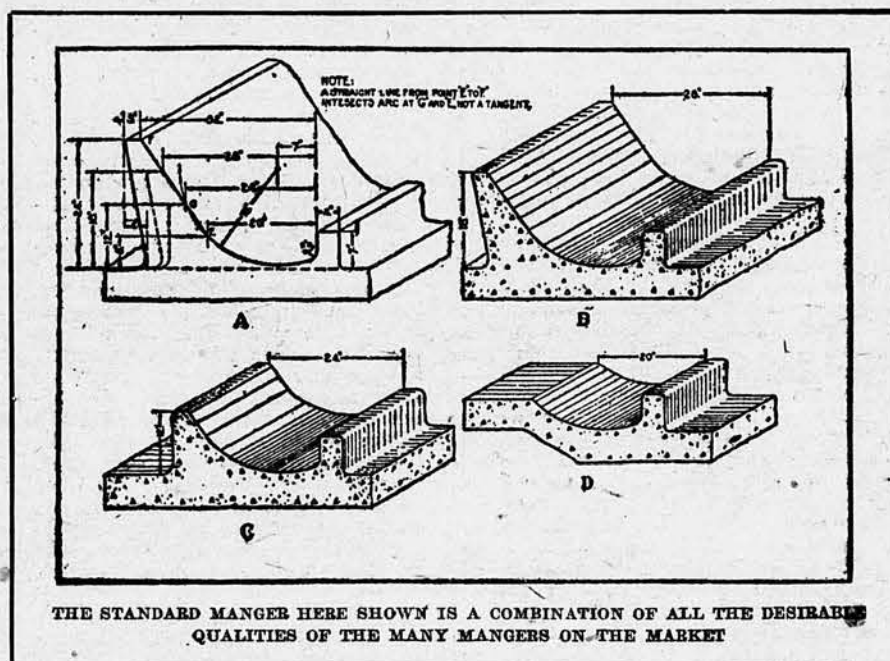
The home-mixed calf meal should be mixed with water at the rate of one pound of meal to eight pounds of water. In feeding a commercial calf meal the directions should be followed carefully. No matter what calf meal is fed, the Cornell workers strongly advocate the use of one pint of whole milk to each calf with each feeding of calf meal gruel.

Whatever method of feeding you decide upon, you will do well to let the calf have all it will eat of the following mixture, fed after the calf gets the liquid food: Thirty pounds wheat bran, thirty pounds hominy or corn meal, thirty pounds ground oats, ten pounds oil meal.

Calves should also be fed all the good hay they will eat at all times and they should have access to clean, fresh water.

Apt

"Why do they call the baby 'Bill'?"
"He was born on the first of the month."



Keeping Help on the Farm

THERE is one major rule for keeping help on the farm—the Golden Rule. This is a deduction made from the investigations of the Department of Agriculture to learn from farmers themselves the best methods of holding farm help both during the war and in ordinary times. The Department investigators visited thirty-seven farms in Indiana and Ohio, on some of which they found the same men had been employed for ten to fifteen and even twenty-five years.

"I deal with my men as I would want to be treated." This statement is credited to farmers in many of the reports and is indicated in others. The farmers who have kept their help have made life on the farm so livable that their workers were not lured away by the attractions of the city nor by high wages offered by other industries.

It is also noticeable that practically without exception the farmers who have little trouble in keeping the same help year in and year out are general farmers, growing live stock as well as raising grain. The live stock keeps the men busy when crops do not call for attention, and makes it profitable for the farmer to pay steady wages throughout the year.

Of course, there are two sides to the story. Not only is it shown that the farmer must do his part, but it is just as plain that the hired man has definite duties to perform. The reports emphasize that teamwork and pleasant re-

lations on the farm mean real efficiency. Married workers, paid good living wages and supplied with a house, a garden, and other conveniences, seem to be the ideal helpers where the farmer himself can not conduct his own operations.

Here is a report from one of the farms visited by the Department of Agriculture investigator:

This is a 320-acre grain and stock farm in Madison County, Indiana. The principal crops are corn, wheat, rye, and clover. This farmer hogs off from thirty to forty acres of corn each fall, uses rye for fall, winter and early spring pasture, pastures from thirty to forty acres of clover each year with cattle and hogs, and feeds corn, corn silage, and clover hay, often buying grain from neighbors and purchasing hogs and cattle to feed.

He keeps from eight to fifteen brood sows, raising two litters a year, raises an average of seven to eight pigs per sow per litter, and often buys from thirty to forty shoats each year. He buys one to two carloads of steers each year to put in his feed lot, and raises from eight to ten calves each year from stock and milk cows.

His live stock operations are conducted so that there is a minimum of labor expended during the busy season and so that profitable employment is furnished for labor during the winter months.

His buildings are centrally located and handy to the fields. The silo and arrangements of lots and sheds eliminate

steps in feeding and caring for stock.

Windmills and gasoline engines furnish power for pumping, wood-sawing, grinding, and other chores. An acetylene plant is used for lighting. By using a tractor this man figures he supplants from three to four horses. Both the farmer and his hired man operate the tractor successfully. He keeps twelve horses on the farm and three of these are brood mares, raising from two to three colts each year. All horses are of draft type. Two mules are kept to do heavy work. He prefers mares for farm work and finds hands are successful with mares.

Work on this farm is planned to increase the work done by one man and to eliminate horsepower if possible. Such tools as the hay loader, tandem disk, two-row cultivator, gang plow, sulkies, big harrows and rollers, eight-foot binder, seven-foot mower, and manure spreader are in the equipment. This farmer also has lightened the work of his wife by installing a furnace, cement walks, running water for kitchen and bath, gas for lighting and cooking, and a power washing machine.

His present hand, who has been with him four years, is a married man and is furnished a good four-room house. The wage is \$25 a month straight time the year round. In addition the hand receives one-fourth acre for garden and truck, all the chickens he cares to raise, feed for one cow and one horse, 400 pounds of hogs, and all the fruit and

potatoes he needs for his family's use from the farm orchard and a common potato patch. The farmer gives his man \$50 each Christmas.

When asked how he seemed to be able to hold help so well this farmer said: "We have never had a word of fuss. I find my hand thoroughly reliable at all times. I follow the Golden Rule with my help. They never have trouble as long as they work steadily and carry their share of the load. Good living conditions and good teams and tools help in making satisfied help. One must take pride in his farm and put this same spirit in the man. Keep him employed at all times and cut out drudgery where possible. Until I changed from grain to stock farming I had trouble keeping good help."

Extra help is employed to the equivalent of a man for two months. The near-by city industries have not greatly affected the supply of this labor. Such hands are being paid at the rate of \$2 to \$3 a day and are boarded by the farmer. They must make a place for themselves in the home and in the community and are treated as one of the family. This extra help is recruited in small towns and the neighborhood. The neighbors co-operate well in threshing, silo filling, shredding, harvest, clover hulling, and other work.

Why not shade your back porch with a screen of lima beans? The crop may surprise you.

FEDERAL INSPECTION OF MEAT

Task of Assuring Healthful Meat Requires Army of Trained Men

IF an American consumer could see spread out before him on the butcher's marble counter all of the meat and meat products he consumes in one year, he would be astounded. And if a foreigner, other than a Britisher, were a bystander, he would be flabbergasted at the sight of such an exhibit of red victuals, for we are the greatest consumers of meat in the world, not excepting the burly Briton who is a rather bad second. The average for every man, woman and child in the country is more than 150 pounds in twelve months, and that includes only beef, pork, mutton and lard. Poultry, fish and game are extra.

We can get another point of view on this big meat appetite by taking a look at the Chicago stock yards, the largest institution of the kind in the world, but only one of many large ones in the United States. At this great central market there are 500 acres of cattle, sheep and hog pens; twenty-four railroads pour the live stock produced on the farms of the Mississippi Valley into the mighty hopper. The stream grows steadily. In 1918 this one center slaughtered 2,563,572 cattle, 6,692,697 hogs and 2,601,867 sheep—a total so enormous as to make steers seem like pebbles and shotes like grains of sand. Yet there are many more markets drawing in their millions. The total of animals slaughtered last year in all plants on which records are available amounted to 58,629,612.

With such numbers careful inspection of each individual would seem impossible, nevertheless, each animal is carefully inspected when alive and again at the time of slaughter. There are a great many individuals who give their personal attention to a certain part of each animal. And one individual who leaves his mark on every carcass is the inspector detailed by the Bureau of Animal Industry of the United States Department of Agriculture. He is the gallant knight in white uniform who protects the public against the ever-threatening dragon of disease. How many of us when we make a purchase of the meat man take note of the little circle of indelible ink on the quarters of beef or on the hog or sheep carcasses? Yet it is one of the most important things about that meat. Inside that circle in the same kind of ink appears the statement "U. S. Insp'd & P's'd"—meaning the United States inspected and passed. That is our assurance that a trained federal veterinarian has examined the animal before and after slaughter and has found it fit for human food. Sometimes the government stamp appears in a different form. On hams and sides of bacon it is a mere straight-line statement. It appears on the labels of package goods and every label used on meats and meat products that go into interstate or foreign commerce must be approved by the Meat Inspection Division of the Bureau of Animal Industry. These labels are equivalent to the "Go Ahead" signs at busy street crossings. They mean safety—that the animals were healthy, that they were handled in sanitary packing houses and that chemical preservatives and colorings were not used.

It has not been very long since Uncle Sam became so watchful of the meat supply, but he now has the best inspection system in the world and it has brought him business from across the seas. The first law providing for inspection was passed back in 1891. Certain foreign governments that were desirous of shutting off our growing trade in meat had put up prohibitions and restrictions, claiming that much of our product was unsafe for human consumption. The establishment of federal inspection at that time saved a large part of our export trade in meat and since that time American meats and meat products sent to other countries have been received with good grace and a good appetite.

The meat inspection law which now protects American consumers and foreign buyers as well and which is of inestimable benefit to the live stock industry, was passed by congress in 1906. It is administered by the Bureau of Animal Industry, which issues new rules and regulations from time to time as

changing conditions require. The law applies to all slaughtering, meat canning or similar establishments that do an interstate or foreign business. Inspectors, who are graduate veterinarians, make ante-mortem and post-mortem examinations of cattle, sheep, swine and goats. Inspectors make an examination of all meat food products prepared from these animals. If upon examination before slaughter an animal is suspected of being unfit for human food it is sent to a special place for special examination. Such carcasses and parts of other carcasses that are found undesirable as food are "tanked," which means they are denatured, cooked up under steam pressure and made into such products as hog feed and fertilizer. Condemned carcasses are always plainly marked by the inspectors and great care is taken to see that they are disposed of as the law provides.

Since this improved and extended inspection service was established in 1906 a great improvement has been brought about in the construction of packing houses, in their equipment and in the methods of handling and putting up meats. Wood construction was replaced by impervious concrete; rough surfaces gave way to smooth, facilitating cleaning; artificial light was supplanted by natural light so far as possible; better drainage systems were put in; ventilation was improved so as to do away with odor-laden air; the water supply is regularly examined in laboratories; excellent facilities have been provided to enable the workers to keep themselves clean.

The benefit that the public receives from this government inspection of animals and meats is obvious as we all know that animals have diseases and we feel instinctively that meat from them is undesirable as food. But from what are we protected? Where do the inspectors draw the line? They certainly would not be guilty of wasting valuable time simply because a pig had the snuffles or a steer had a mild case of lumpy jaw. If such were the case our friends the vegetarians would soon have more company than they ever expected. A brief list will show what some of the causes of condemnations are. Such serious diseases as pneumonia, hog cholera, rabies, blackleg and septicemia often throw animals out on examination before slaughter. There are some other causes also.

When it comes to the examination of carcasses at the time of slaughter the list of causes of condemnation is long.

It includes tuberculosis—the most common; pneumonia, injuries, emaciation, hog cholera, Texas fever, inflammation, contamination and many more that only a veterinarian would understand. A glance at the list, however, is sufficient to convince the layman that a veterinarian who holds one of these inspection jobs, even though he is working for less than a packing plant butcher, must know considerable about animal diseases and conditions and must be wide awake all the time.

Much of the meat packing is done by a few large concerns, but, nevertheless, there are many small ones and at each one of these if it does an interstate or foreign business there is one or more federal inspectors. Last year inspection was carried on in 884 establishments in 263 cities and towns. Close to sixty million animals were examined both before and after slaughter. The total was made up of more than 35,000,000 hogs, 11,000,000 cattle, 3,300,000 calves, 8,770,000 sheep and 150,000 goats. Out of this large number the inspectors threw out as unfit for food more than 200,000 animals or carcasses and more than 500,000 parts of carcasses. That much unfit food kept from American tables or from the tables of our European customers! Does anyone doubt that careful well-trained men are needed on this health-protecting work?

In addition to this direct examination of animals and carcasses the government inspectors saw to it that the materials used were of the permitted kind. Their inspections and reinspections aggregated eight billion pounds of meat and meat products. There was also inspection of public markets in forty-three cities. Large quantities of meat were certified for export. Some fifty-nine million pounds of imported meats were inspected. Expert veterinarians were loaned to the War and Navy departments during the war. The Bureau placed inspectors at seventy-one camps to protect the meat supply of the soldiers and at forty-five places to inspect the meat that was taken by the navy. At the laboratories in Washington and six other cities examinations are made of meat food products to determine whether they are properly labeled or whether or not they contain deleterious substances. Tests are also made of substances that are used in any way in the preparation of meats and products—water, spices, salt, and even such things as disinfectants, insect exterminators and rat poisons that are used around the plants. In 1918 more than 64,000

samples of various kinds were examined. The work done to protect the food supply of the army and navy swelled the total considerably. The search for poisons and powdered glass took precedence over all other work.

But not all the benefit of this work of the inspectors falls to the consumer. The producer also gains. This protective agency which employs from 2,600 to 2,800 men is the most effective means we have for locating animal disease. Serious outbreaks are prevented through the close watch kept at stock yards. The origin of diseased animals found at these yards and in the packing plants may be traced even to the farm where they were raised or fed. Such information is of inestimable value in fighting the plagues and pests of live stock.

In our efforts to reduce the costs of food production the elimination of disease is one of the first factors to be considered. But to do that the country needs the services of the best men it can get. Success will not come while veterinarians who have been trained in this special work are being lured into various commercial fields even though they are valuable there. It is nothing unusual to find federal inspectors working for \$1,800 a year or less suddenly leaving to take positions with the packers or with municipalities at salaries ranging from \$2,500 to \$3,500 a year.

For the sake of the public health and the welfare of the live stock industry wouldn't it be wise to invest a little more in what amounts to insurance?

Russian Thistle Hay

The Hays Experiment Station put up thirty tons of Russian thistle hay last year. This was produced on a field which had failed to make a stand of alfalfa. The Russian thistle is always ready to spring up in this section of the state when something happens to some regular farm crop. Many Western Kansas stockmen have at times used the thistle when no other feed was produced. Chemical analysis showed that Russian thistle hay was very similar in food nutrients to alfalfa hay. The test made at Hays last winter confirms the result of the chemical analysis. Forty cows were divided into two groups of twenty cows each. The cows in one group were fed Russian thistle hay, straw and silage. In the other group alfalfa was substituted for the thistle hay. Each cow in both groups received an average allowance of fifteen pounds of silage. In the alfalfa lot the cows consumed 11.4 pounds of straw daily, and in the thistle lot 11.9 pounds. In the alfalfa lot the average daily consumption of alfalfa per cow was 9.6 pounds and the cows in the other lot consumed 9.4 pounds of thistle hay. At the beginning of the test the cows in the thistle lot weighed on an average 1,066 pounds, and those in the alfalfa lot 1,065.8 pounds. The final weight of the alfalfa-fed cows was 1,028 pounds, and the final weight of the thistle-fed cows was 1,028.45 pounds. These results would indicate that a pound of Russian thistle hay had the same feeding value as a pound of good alfalfa hay when fed with silage and straw. It is hardly likely, however, that the Kansas stockman who has good stands of alfalfa on his bottom lands will plow up his alfalfa and seed the land to Russian thistles. As a matter of fact in the wheat country the land is always seeded to thistles. Apparently they only await a chance to germinate when other crops fail because of adverse conditions. The lesson from this test is that the stockman in an emergency when all other feed fails can mow the thistles that have sprung up spontaneously and put them up as hay. Superintendent Weeks was asked as to the proper time for cutting this thistle hay. He replied that the best results seemed to come from mowing it just before the thistles began to change color, but that the stock ate the hay even when it was not cut until the spines had become fairly well developed. The thistle hay which was being fed to these cows was most unattractive in appearance, but the visitors to the feed yards noticed that the cows were eating it, and even little calves only a week or two old were nibbling at the thistle hay with a relish.

THE PIG CLUB PIG

By Ruth Marion Mateer, Assistant State Club Leader

ONCE upon a time there lived a pig named "Reddy." Now Reddy was not a common every-day pig, no indeed. He was a Pig Club pig, and everything about him was as balanced, scheduled and important as his name.

John—that was Reddy's master—had reasons for naming his pig as he did. First, because he was red in color; second, because he was always ready to eat; and third, because he was always ready to be eaten.

Reddy was a pure-bred Duroc Jersey. He had his own private house, a neat comfortable place which John had built for him and which he could walk into as stately as any king.

Then there was the self-feeder. It was rather a formal affair at first, but Reddy soon found that he much preferred it to his funny old trough. It was so nice and clean and he could eat just what he wanted instead of having it all slopped together. There was the back scratcher, too—My! but how Reddy could scratch and scratch. And clean water, all he could drink any time. During the summer John gave him shower baths with a garden sprinkler and this always made Reddy grunt with pleasure. Whenever he saw John coming with the can he would stick his

little snout through the wire fence and wriggle it with delight. Then his curly tail would spin around three times and he'd be all ready to be sprinkled.

Perhaps now there are some bad little boys who would not treat their pig as John did, but listen and I will tell you how Reddy repaid his little master.

In the fall when the state fairs were held, Reddy went down and stood all day—yes, many days—with a tag on his collar which said he belonged to John. Then because he had eaten just what John had given him and was all nice and plump, he took the blue ribbons at two fairs. This was a great honor for John and Reddy was so pleased over the whole affair that Farmer Brown came along and said he was the best looking hog in the county and offered John \$100 for Reddy.

So Reddy went to live with Farmer Brown. Although John missed him very much, he put the \$100 in the bank and later went away to college, where he learned much more about pigs in general and some pigs in particular. For, like Reddy, he was always up and coming, and thus it was that one boy and one pig, all because of their kindness to each other, grew to be quite famous through all the land of ranches and farms.

GENERAL FARM AND STOCK ITEMS

Something of Interest for All—Overflow from Other Departments

WRITING a letter to the Missouri Agricultural College recently, a farmer raised this question: "If I furnish a farmer with the hogs and buy the feed, the farmer furnishing lots, buildings, and labor, and we share other expenses half and half, how should receipts be divided?"

A just division, of course, would be based on the share of the expenses that each party contributes. This will differ somewhat on different farms. For instance, one farmer taking the hogs to raise on shares may furnish more and better pasture than another. This means that the owner of the hogs will have to buy less feed. He could then afford to give a larger share.

The experience of some Missouri farmers who have been keeping cost accounts in co-operation with their agricultural college shows about what to expect on the average from such an arrangement as the above.

The records of these farmers on the cost of producing pork during the years 1913, 1915, 1916 and 1917 show that for two years—1913 and 1915—three-fourths to the owner and one-fourth to the farmer was a fair division of returns. These were years of lower corn prices than obtained the other three years. For 1914, 1916 and 1917, four-fifths to the owner and one-fifth to the farmer was nearer a fair division of receipts.

Rent Pastures at Record Prices

Cattle pastures in Kansas this season were rented at new record prices, a few instances of \$20 a head a season having been recorded, and many contracts were made at from \$13 to \$18 a head, while none were obtainable below \$10. Ranchmen in Texas are in better position this season to handle their cattle at home, but because of the prolonged drought in that state much grass was killed out, which means that for another season at least cattlemen from Texas must seek pastures in Kansas and surrounding territory. It is expected that more than a normal number of cattle will be pastured in Kansas this season because of the numerous rains here and the large number of cattle wintered in Oklahoma, which will be shipped into Kansas. Most of the cattle usually go on grass soon after April 15 and many remain on pasture as late as October 15, although ordinarily most of them are marketed by October 1.

Poisoning Cutworms

Cutworms attack garden plants and field crops of almost every sort. They destroy plants by cutting them off near the surface of the ground. Being voracious feeders, they are capable of destroying several plants in a single night. Not only this, but the young plants will be subjected to injury from two to four weeks before the cutworms reach maturity and enter the ground to pass into the pupal stage.

Tomatoes, cabbages, sweet potatoes and other plants that are started under glass and transplanted are more liable to serious injury than other plants. Of the field crops, corn that is grown on sod land or on land that was grown up with grasses and weeds the previous season is most seriously injured. The first few rows of corn growing adjacent to alfalfa, clover or grass land are usually badly injured. Some years the cutworms appear in alfalfa and wheat fields in such large numbers as to take on the habits of the army worm, and after destroying the crop in one field will migrate to another.

"Cutworms are not difficult to control," says Geo. A. Dean, entomologist to the Kansas Experiment Station, "and while there are several methods by which this may be done, the most effective and the most practical method is to poison them with poisoned bran mash. The formula for a small quantity is as follows: Bran, 1 pound; paris green or white arsenic, 1 ounce; syrup or molasses, 3 ounces; one-fourth of a lemon or orange, including peel, and one and one-half pints of water.

"For a large amount the following formula may be used: Bran, 20 pounds; paris green or white arsenic, 1 pound; syrup or molasses, 1 gallon; lemons or oranges, including peel, 3; water, 3½ gallons.

"Mix the bran and poison thoroughly in a pan or tub while dry. Mix the syrup or molasses and the finely chopped lemons or oranges in the water. Pour the liquid over the poison bran, stirring thoroughly to wet it evenly.

"As soon as cutworms appear, sow or scatter the poisoned bran mash thinly along the rows or near the plants to be protected. In case the plants are growing in beds, the bran mash should be sown broadcast over the plants. The application should be made well toward evening or at dusk, since the cutworms feed only at night or on dull, cloudy days. The bait is always more attractive when fresh. If the cutworms should reappear, repeat the application. These worms are coming in from adjoining grass lands.

"To protect corn or other field crops, sow the poisoned bait broadcast over the entire field where infestation is general. The amount of poisoned bran mash made by using twenty pounds of bran is sufficient for four or five acres of corn, alfalfa or wheat. If the cutworms are coming in from some adjoining pasture, alfalfa land or turn-row, the corn can be protected by sowing broadcast a narrow strip of the poisoned bait along the edge of the field nearest the source of infestation. In order to protect the corn along the edge of these grass lands, it may be necessary to make two or three applications of the bait at short intervals.

"Remember that this mixture is poison and should never be left around where children, live stock or chickens might get to it. With proper care there is no danger."

Destroying Potato Beetles

If the Colorado potato beetles are attacking potatoes just as they are coming through the ground, the adults should be picked off by hand. The plants may later be sprayed with a mixture consisting of four pounds of arsenate of lead paste or one pound of paris green to fifty gallons of water. If paris green is used, two pounds of freshly slaked lime should be added for each pound of paris green. If the potato patch is not large enough to warrant the purchasing of a spraying apparatus, good results may be obtained by dusting the plants with paris green or powdered arsenate of lead by means of a perforated tin can. A heaping tablespoonful of paris green or two of powdered arsenate of lead should be mixed with one quart of flour or hydrated lime and dusted on the plants while the dew is still on them.

The Colorado potato beetle is the worst insect pest with which potato growers have to contend. It spends the winter in the ground as an adult, emerging in the spring when the potato plants are very small. The adults feed on the young plants and the females deposit their yellow eggs on the under

surface of the leaves. These eggs hatch in about a week and the resulting larvae eat an amount of food out of all proportion to their size. In from two and one-half to three weeks the larvae become full grown, enter the soil to pupate and emerge as adults in a week or two to lay eggs for the second generation. —Geo. A. Dean, Entomologist, Kansas Experiment Station.

Pays to Feed Sow Carefully

At no time do pigs make pork more cheaply than while suckling the sow. Hence it is a paying proposition to take good care of the sow. No one is wise enough to know exactly what and how to feed, but in general a sow for the first three weeks after farrowing will need one to two pounds of grain daily for each hundred pounds of her weight. From three weeks to weaning time she will need from 3.5 to 5 pounds. In general it is desirable after a sow farrows to feed her a ration which has enough bulk to satisfy her and yet not rich enough to greatly increase the milk flow and scour the pigs. As the pigs get older the ration may be gradually changed to remove the bulk and supply more concentrated feed. The following ration is suggested for the first two or three weeks after farrowing: A mixture of corn, 60 pounds; bran or ground oats, 35 pounds; tankage, 5 pounds; alfalfa hay. From two to three weeks after farrowing to weaning time: A mixture of corn, 60 pounds; shorts, 35 pounds; tankage, 5 pounds; alfalfa hay or pasture.

Decline in Meat Production

Boycotts of meat such as have been urged and practiced by consumers in various parts of the country are futile as a means of combating the high cost of living. Decreasing consumption will in the long run still further reduce the supply. Dr. C. W. McCampbell in addressing the live stock men at the Hays round-up reminded his hearers that any material increase in our per capita meat supply would be largely determined by two factors—more stable market conditions and cost of production.

The violent and unreasonable fluctuations in prices which have taken place at our central markets tend to retard meat production and we shall probably see an even further curtailment in production unless the markets become stabilized so that the producer is reasonably sure that his business of producing meat animals will be profitable providing he follows efficient methods.

The meat situation in this country is worthy of thoughtful consideration by both the consumer and producer. In the course of his talk Doctor McCampbell stated that in 1900 there were 660 beef cattle, 850 hogs and 800 sheep for each 1,000 of population. By 1910 there were only 450 beef cattle, 700 hogs and 575 sheep to the thousand of population, and

on January 1, 1919, there were approximately 350 beef cattle, 600 hogs and 450 sheep to the thousand of population. These figures furnish some indication of the status of our meat production business.

Attention to Soil Problems

It is evident that farmers of Kansas are keenly alive to the soil problems on their farms. H. J. Bower, soils specialist in the extension service of our agricultural college, has his time in the field dated up for several months ahead. During March he spent a week in Bourbon County and a week in Sumner County. In Bourbon County most of the week was spent in checking up on the demonstration tests of lime in alfalfa. In Sumner County nine meetings were held during the week with an average attendance of twenty-one persons, the subject for discussion being "Humus and Sweet Clover." Getting organic matter into the soil is becoming an important problem on many a farm in Eastern Kansas. In Sumner County Mr. Bower also visited twenty-one farms where field demonstrations were held.

Mr. Bower finds time to direct the work on a farm of his own in addition to his field work, and this farm is responding to skillful soil management. He has asked to have his vacation from the state work during wheat harvest so he can rest by helping to harvest his own crop.

One Year's Toll of Plant Food

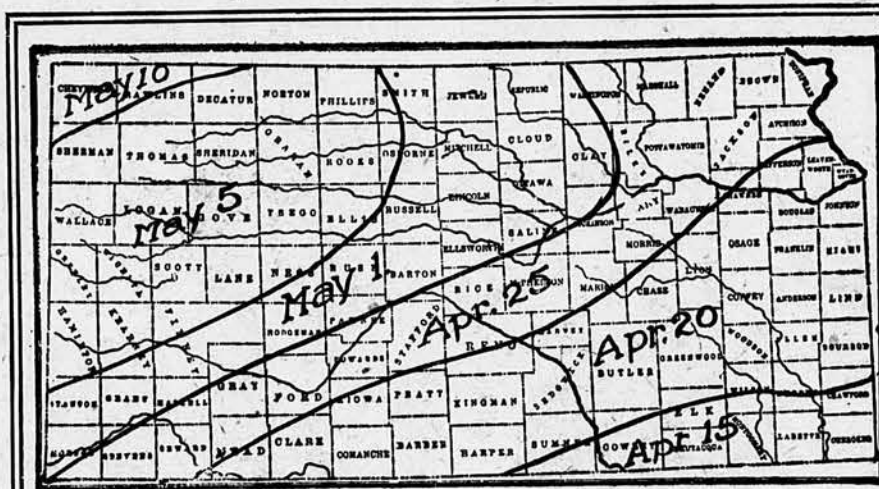
Few of us realize the enormous value of the plant food the crops of a single year remove from the soil of our state. Prof. R. I. Throckmorton estimates that at present prices of fertilizers this value amounts to \$365,000,000. This amount of plant food would produce 200,000,000 bushels of wheat, the estimated yield for Kansas this year. Our soils are gradually but surely becoming less productive and the maintenance of soil fertility is becoming a matter of concern to every farmer, and particularly the wheat farmer. "It was pointed out a England long ago," said Professor Throckmorton, "that Americans dispose of their crops and live stock at even less than fertilizer value. In the face of the large number of abandoned farms and the rapidly increasing population, it is high time we began to do our work more scientifically."

Suitable crop rotation systems in which legumes play an important part, the keeping of more live stock and the returning of all organic matter to the soil must be given consideration in our efforts to maintain the productivity of the soil.

Farm According to Conditions

The only way to farm successfully in any locality is to adapt methods to existing conditions. Farming methods in Kansas have undergone great changes in the past twenty-five years. Too often the new settler brought with him and attempted to use the methods and practices found most successful in other states. At a farmers' meeting in another state Prof. W. A. Cochel, for a number of years head of the animal husbandry department of our agricultural college, was called upon to defend Kansas in an after dinner speech following several other speakers who had exercised their wit and sarcasm in holding Kansas up to ridicule. Professor Cochel simply said: "Kansas is God's own country. When the settlers who could not get their wives' relatives to finance their return to the states from which they came learned how to farm in God's way and forgot the Iowa way, the Illinois way or the Missouri way, they turned disaster into success." Around this statement hinges the development of the great agricultural resources of Kansas, and there is yet much to learn in the way of adapting crops and methods to conditions as they exist.

W. E. Grimes of our agricultural college is authority for the statement that the area devoted to corn in the state has decreased by nearly half during the past twenty-five years. The decrease in flax production has also been great. The acreages devoted to sorghums and



THE map here shown gives the average date of the last killing frost in the spring for the different sections of Kansas. A study of the dates when the first killing frost in the fall can be expected shows that the growing period varies from 140 days in the extreme Northwest to 190 days in the Southeast. The kinds and varieties of crops to grow and date of planting depend largely on such facts as are shown by studying the climatology of the different sections of the state.

alfalfa have increased fourfold. The dairy industry has increased very rapidly in importance during the past few years. There are a great many more dairy cattle in the state, while beef cattle have tended to decrease.

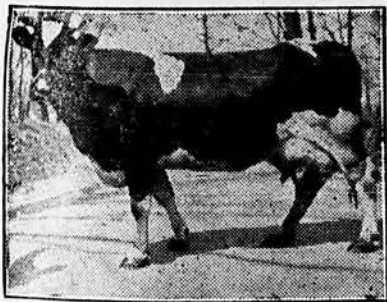
Feterita was practically unknown to the average farmer ten or twelve years ago. In certain sections it is now being extensively used, both as a forage and grain crop. Sudan grass is another of the sorghums which has come into use during the past ten years and is destined to be one of the most valuable of the sorghums ever introduced. The

changes in crops and methods are but the logical result of progress in agriculture. The unprofitable types of farming have been dropped and the more profitable practices retained. Crops that have not proven themselves to be fully adapted to the conditions that can be expected in a series of years have been replaced by better adapted crops. The sorghums have been replacing corn over certain sections of our state because corn seldom made a paying crop. There is still too much disposition to grow corn in sections where it seldom will equal the returns from the sorghums.

Kansas Has Thirty-Pound Cow

QUEEN Easle Korndyke Hengerveld, a Kansas cow owned by the United States Disciplinary Barracks, Fort Leavenworth, has the honor of being the first thirty-pound cow in the state. In seven days under official supervision she produced 534.4 pounds of milk and 24.174 pounds of butter fat, which is equivalent to 30.21 pounds of 80 per cent butter. This record, which is reported by F. W. Atkeson of the agricultural college dairy department, makes this cow the queen of all dairy cows in Kansas in the seven-day division. She was four years three months and two days old when the test began. Her seven-day production is 4.75 pounds of butter fat above the highest junior four-year-old record and gives her the state record for all ages and all breeds, displacing the Ayrshire cow, Canary Belle, with her seven-day production of 29.87 pounds of butter, made in 1916.

This new state champion is not a freak or the result of forcing, but a natural development of careful, constructive breeding. She was bred by John B. Irwin, of Minnesota, widely known as the man who owned and developed Duchess Skylark Ormsby, the only cow in the world producing fifteen hundred pounds of butter in a year. The sire of this new Kansas champion is King Korndyke Colantha Ormsby, a young bull but with six advanced reg-



FIRST THIRTY-POUND KANSAS COW,
QUEEN EASLE KORNDYKE HENG-
VELD

istry daughters to his credit already. His sire is Colantha Johanna Champion, a bull with forty-five tested daughters and sixteen proven sons. Five of his daughters have made over thirty pounds in seven days, one making thirty-four pounds of butter as a senior four-year-old. One of his senior yearlings has made 799 pounds of butter in a year and two junior two-year-olds have records of over 845 pounds in a year. The sire of Colantha Johanna Champion is Sir Payne Concordia, a bull with twenty-seven advanced registry daughters and nineteen proven sons. His dam is Colantha 4th's Johanna, whose seven-day record is 35.2 pounds of butter and year's record 1,247.8 pounds of butter. She is the only cow that ever held all the world's records, from seven days to a year.

The granddam of this new Kansas queen on her sire's side is Miss Korndyke Maid Ormsby, whose seven-day record is 30.75 pounds of butter, thirty-day record 128.1 pounds, and year's record 25,418.3 pounds of milk and 1,255.6 pounds of butter. She has two advanced registry daughters and one advanced registry son. Her dam is Pietertje Maid Ormsby, a thirty-five pound cow and dam of two advanced registry cows and two advanced registry bulls, including the great bull, Sir Pietertje Ormsby Mercedes. Miss Korndyke Maid Ormsby's sire is Sir Korndyke Hengerveld De Kol, whose offspring includes twenty-one proven sons and forty-one advanced registry daughters, four of which have made over thirty pounds. One has a

seven-day record of 39.56 pounds, and two have made over one thousand pounds in a year. One has 1,255 pounds of butter to her credit as a year's record.

The dam of this first thirty-pound cow in the state is Easle Korndyke Hengerveld De Kol, whose seven-day record is 519.5 pounds of milk and 27.523 pounds of butter. She is a daughter of Sir Korndyke Hengerveld De Kol, mentioned above. Her dam is the twenty-one-pound cow, Easle Johanna De Kol, sired by Johanna Rue 2d's De Kol, a bull with thirty-three advanced registry daughters and thirty-two proven sons. This cow is the dam of a twenty-six-pound cow, a twenty-seven-pound cow, a thirty-pound cow and an advanced registry bull.

Not only is every animal in Queen Easle Korndyke Hengerveld's pedigree to the fourth generation in the advanced registry, but they have all produced animals in the advanced registry. She has a right by inheritance to be a record breaker. She has produced as much in a day as eight or nine average Kansas cows. She was milked four times a day, producing more than a pound of butter at each milking. Two such cows milked four times a day would equal in production fifteen average Kansas cows milked twice a day.

Dairying and Soil Fertility

It is possible to get wrong ideas about farm methods from the constant repetition of certain facts without giving proper consideration to other facts with which they are vitally related. We say dairy farming builds up and enriches the soil, but as a general statement it might be reiterated until we came to believe that the mere keeping of cows insures a farm from becoming depleted in soil fertility.

Maintenance of the productivity of soils is by no means a simple problem. Even a dairy farmer must use his head and study most closely the various problems involved in keeping up the fertility of his land. There is food for thought in the following, taken from a statement of the Ohio Experiment Station:

"Dairying, when the milk is sold off the farm, is more exhaustive of soil fertility than any other form of live stock husbandry, and unless the drain of phosphorus and calcium be met by the restoration of these elements in purchased feeds or fertilizers the time will come, sooner or later, when the land will fail to respond to the demands made upon it.

"The milk from an average cow will carry away from the farm in a year practically as much phosphorus as will be found in twenty bushels of wheat or thirty bushels of corn, considering the grain only, and as much calcium as would be found in 250 bushels of wheat or 375 bushels of corn.

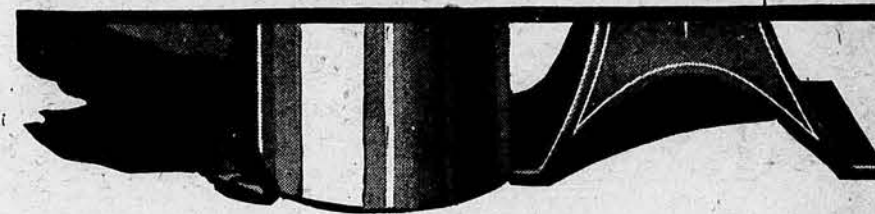
"For phosphorus exhaustion, therefore, we may compute one cow as equal to an acre of wheat, and for lime exhaustion as equal to twelve acres of wheat or corn. This calculation, it must be understood, is based on the assumption that on the one hand all the manure produced is carefully saved and returned to the land, and on the other, that all the straw and stover are returned.

"This point is dwelt upon because it has been so generally assumed that dairy farming promotes the maintenance of fertility, when the fact is that if the dairy farmer depends wholly upon his own farm for his feeds and purchases no fertilizing materials he will exhaust the fertility of his soil as certainly, and almost if not quite as rapidly, as the grain farmer."

If sunshine will keep milk buckets clean and fresh, it wouldn't hurt to let it into the barn.



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MOST any kind of cream separator will do fairly good work the first few months, when it is new.

But if it is a cheaply made or inferior machine, after the first few months your trouble will begin.

And the worst of your experience with such a machine will not be the fact that it wears out quickly or that it runs hard, or that you are piling up repair expense, but that you are losing a lot of butter-fat that is worth 50 to 60 cents a pound.

And that is what you really buy a separator for—to save this valuable butter-fat.

Any time you buy a cream separator—no matter who makes it or what claims are made for it—that has not behind it a long record of satisfactory service, a record known to all, a record that is in itself a guarantee of satisfactory service, you are taking a gamble with all the odds against you.

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It is the best cream separator that money can buy

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 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.

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No better way to avoid contagious diseases. Use it also about the poultry house, pig pen and stables. One gallon makes 100 gallons of disinfectant.

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The saving on a single purchase may equal ten times the cost of membership, and even the \$1.00 is merely held in trust as a guarantee of good faith, to be returned on demand. In sending your application to the above address give make of car.—(Adv.)

Farm Bureau for Peace League

A BUREAU of agriculture as a permanent part of the League of Nations machinery is a feature of this great world-wide program which should by all means be adopted. As a matter of fact, agriculture has had very little recognition in the deliberations of the peace commission, while labor has had a voice and it has been announced that the League of Nations covenant will recognize the rights of the laboring man throughout the world. In our issue of April 12 we quoted from a statement made by C. S. Barrett, president of the National Farmers' Union after his return from Paris, where he conferred with both Lloyd George and Clemenceau on the matter of giving agriculture a place in the League of Nations covenant. Kenyon L. Butterfield, president of the Massachusetts Agricultural College, now in France as a member of an educational commission working under the Y. M. C. A., submitted to the peace delegates on March 15 the following memoranda setting forth the fundamental importance of agriculture as related to world progress and welfare:

"The important interests of trade and labor have already been recognized in the plans for international co-operation. The equally significant interests of agriculture apparently have, thus far, not been considered.

"In the present crisis the farmers of nearly all countries are practically voiceless in the councils of the nations. They have no international organization, no world conference, no co-operating delegations to speak their need and to contribute their mind to solving the common problem. Yet no question before the Peace Conference is more fundamental to world welfare than the rural question. This is true because:

"1. An adequate supply of food for all the people of the world is an essential item in a program of permanent world peace. A hungry nation, or even a hungry group within a nation, forms a breeding ground for discontent and revolt; a hungry world means chaos.

"2. This necessary food supply must be furnished by the farmers of the world. Together with other soil-grown products that comprise a significant portion of the raw materials of industry, this supply depends completely upon the toil, the effectiveness, the intelligence of those who actually work upon the land.

"3. The conservation and improvement of the soil should be one of the chief concerns in world statesmanship. No other natural resource compares with the maintenance of soil fertility and its bearing upon the future of the race. But no fiat of government, nor resolution of conferences, can ensure the proper use and care of the soil; only as each individual farmer intelligently tills his land and carefully and conscientiously husband his resources can future generations as well as the present population of the nations of the earth be assured their food. It is necessary, therefore, to provide adequate means of training, stimulating and encouraging the masses of farmers in every land.

"Living Wage" to Farmers Essential

"4. In all justice, the working farmer must have the equivalent of a 'living wage.' Merely to grow a meager sustenance for himself and his family, with a scant surplus to sell in the market, as a result of employing all the daylight hours in hard physical labor, does not meet the terms of permanent social justice. The farmers must have a reasonable reward; at the very least they must have fair play in the world's economic arrangements.

"5. The possession and use of the land by those who actually till it give guarantees of public peace, of intelligent citizenship, of human welfare, hardly acquired by any other means. Therefore, the land should be controlled by those who use it. Access to ownership should be made easy; land leases should favor the worker; land proprietorship should be encouraged to the utmost.

"6. The farmer and his family are of more consequence even than the farm. Education, both industrial and cultural, is necessary to intelligent farming, and to development of mind. Good local government, health, recreation, conveniences, artistic appreciation, morality, are essential elements in a democratic community. The farmer must have these fundamental requirements of man-

hood or become practically a slave to unending toil.

Democracy to Farmers of World

"7. If the world is to become truly and fully democratic, it is necessary that the farmers of the world should not only understand and appreciate democracy, but they should fully share in all its advantages—economic, political and social. More than four-fifths of the huge populations of Russia, India, China, live on the land. Poland, the Czechoslovak territories, Jugo-Slavia, Asia Minor, Mesopotamia, Persia, all are dominantly rural. Africa, South America, Australia are agricultural rather than industrial areas. In the United States nearly half the people live under rural conditions. In France 48 per cent of the people are farmers. Even highly urban nations, such as England and Belgium, are finding the farm problem acute and significant.

"8. A wise plan of international co-operation in agriculture will provide the mechanism whereby adequate and accurate facts may be obtained, organized and interpreted; means by which governments may co-operate in spreading popular education for farming and country life and in training an effective rural leadership; legislation which protects the interests of the farmer as a producer, and simplifies and cheapens the process of distribution of soil grown products; and arrangements whereby the exigencies and uncertainties of climate and weather and the attacks of plant and animal diseases and pests may be guarded against so far as humanly possible.

Encourage Organization of Farmers

"9. No plan of agricultural co-operation on an international basis will suffice, unless it encourages to the utmost the free organization of the farmers themselves, for whatever ends they may desire—economic, social, political. Only so can agriculture be fully democratized, only so can farmers express their convictions, voice their experiences, seek an answer to their needs, and contribute their part to the rebuilding of the world. Organization for co-operative buying, selling, and credit especially, should be encouraged in every nation. The effective organization of local farming communities for both industrial and social purposes is fundamental to the larger rural democracy.

"10. It is vital to the maintenance of the world settlement that an instrumentality be created to promote international co-operation among those who till the soil. Therefore the League of Nations should make provision for the establishment and perpetual maintenance of means whereby the working farmers of the world should be enabled to co-operate constantly and fully, in furnishing the world with food, in securing just rewards for their labor, in improving their methods of farming, in enriching their land, organizing an active and satisfying community life, and in maintaining a high degree of democratic citizenship."

On the Way "Overseas"

Over 300,000 pounds of used clothing, in 2,100 bales, were started to Europe April 7, as the first shipment of over ten tons of clothing collected by the Red Cross on its recent country-wide drive. Two thousand additional bales lie at the docks awaiting transportation.

Two shipments will be sent out each week until the total of well over 10,000 tons has been shipped. Clothing is sorted, packed and baled for shipment in 150-pound bales. Fifty workers at the Brooklyn warehouse, where these garments are handled, keep them pouring through a funnel into the assorting chamber, where they are divided, made into bundles and enclosed in burlap. The electric press turns out a bale every five minutes.

The enormous success of this garment drive is largely due to the active and generous co-operation of editors, who not only gave space for its publicity, but used their personal efforts to make the notice conspicuous and attractive.

The American Red Cross wishes to express to them and to the public who responded so promptly, their cordial and appreciative thanks.

If the hens are not to be used for hatching, break them up and get them to laying again.

A live wire won't get stepped on.



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as any safety revolver. Keen steel blade, handle nicely pickled plated. When closed, 3 1/2 in. long. Cartridge chamber and trigger when not in use lie concealed in knife handle, just like knife blade. The price is \$4.85 and 25c for postage extra. Don't send the money. Send 25c in stamps for postage and we ship the huntsman knife-pistol C. O. D. to your address. Try this wonderful double utility implement 10 days. If you don't like it, return it and we'll refund your money.

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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

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FOR SALE AT A BARGAIN

1,280 Acres of Seward Co. Land, well improved, 900 acres of good wheat, one-third delivered. Will sell on good terms. Price, \$27.50 per acre.

875 Acres Ford Co. Land, well improved, 200 acres of good bottom land, 40 acres of good alfalfa, 300 acres good wheat, one-third delivered. Price, \$45.00 per acre, on good terms.

320 Acres Ford Co., well improved, 200 acres good wheat, one-third delivered; only three miles from Bucklin. Price, \$17,000, on good terms.

320 Acres, five miles from Bucklin, fine modern house of nine rooms and all other good buildings, 100 acres rough pasture land, balance good. Price, \$52.50 per acre, on good terms.

480 Acres Ford Co., four miles from Kingsdown, seven miles from Bucklin; 250 acres good wheat, one-third delivered. Two sets fair improvements. Price, \$52.50 per a.

Have several more good quarters and half sections in this same neighborhood at about the same price. Address

Mirt Newhouse, Pratt, Kansas

640 Acres—Four miles market, half grass, small improvements, \$2,000 cash, balance 6 per cent. Bargain.

160 Acres, all to wheat, one-third goes with place. \$40.00 per acre.

1,280 Acres, 700 good grass, balance good black loam, seven-room stone ranch house, partly modern, double garage, large barn and sheds, 150-ton silo, small tenant house, two miles out; an ideal ranch. \$50.00 per acre, terms.

E. A. FORD - WALDO, KANSAS

EIGHTY ACRES
Near Emporia; alfalfa land, well improved, good orchard, possession at once. \$115 per acre. Write for list of farms.

T. B. GODSEY - EMPORIA, KANSAS

Safe Price for Farm Products

Consumers have many false ideas concerning prices of farm products. Fredrik Rasmussen, the Pennsylvania secretary of agriculture, in discussing the future of agriculture, stated a most profound truth when he said that for the welfare of the people of the country there is but one safe price of farm products—a price which will maintain the industry and keep up the production of food this price must be such as to give the farmer a fair return on his investment and a living wage. "The only safe plan of agricultural development," said Mr. Rasmussen, "is one which results in a normal increase in agricultural production to meet the demand for food from an increased population."

"There should be no greater production of food in the world from year to year than can be consumed, allowing for margin of safety. An overproduction of food invariably results in the price of farm products falling below the cost of production. Although this to many looks like cheap food, for the working man the fallacy is that at such a period there is always a great surplus of labor. When the farmers of this country, representing approximately 33 per cent of the total population, are not receiving a just price for their products which will give them a living wage for their labor, their purchasing power is very much reduced. They do not buy pianos, carpets or automobiles, they make no improvements on their houses, they use their old machinery, they hire a minimum amount of labor and the result is a great decrease in industrial activities and bread lines in our cities."

"In normal times the world is living from hand to mouth. Generally there is no more food produced during a year than can be consumed. Agriculture is under the need for food of a constantly increasing population is an ever changing industry. As long as new lands, easily put under cultivation, are available, changes take place effecting the economic condition in older agricultural sections. A typical example of this is the opening up of the great Midwest which produced food so abundantly and at a cost so low that agriculture was made unprofitable not only in the eastern part of the United States, but in many sections in Europe. When there are no great areas of new land to be put under cultivation changes in economic conditions and in methods of farming are slower. Each section of the country develops specific types of farming depending upon soil, climate and market. Each farm must be studied and developed. There is a certain economic relation on each farm of the acreage of each crop to grow and the amount of live stock to keep depending upon the character of the farm and the transportation and marketing facilities. The yield per acre of the crops grown must be increased. The live stock must be improved so as to decrease the cost of production of live stock products. In other words the increased production of food products will come not by expansion of our agriculture into new areas, but through a greater production on land already under cultivation brought about by greater efficiency on the farm."

"The great need of agriculture in this country today is not expansion but increased efficiency on the farms already under cultivation. It is important, more than ever, to improve our live stock, to make more careful selection of seeds, to protect our animals and plants from diseases and pests and provide better marketing facilities. Every improvement made along these lines gives a greater return for an equal amount of labor expended, and money appropriated and well spent for such purposes will be of benefit to the people and the state."

Mr. Rasmussen was addressing himself especially to the people of his own state, but the facts and principles pointed out are of nation-wide application.

Rye Acreage in Kansas

Rye is not very generally grown in Kansas, but its popularity is apparently increasing. Edward C. Paxton, field agent for Kansas of the Bureau of Crop Estimates, reports that we have in the state 187,000 acres of rye this year, its

condition being given as 101 per cent of normal. This is almost three times as much as was grown in 1916. In the wheat sections rye is in disfavor because of the danger of getting it mixed with wheat. It is largely as a winter forage or pasture crop on live stock farms of Eastern Kansas that rye is being used. For this purpose it is a most valuable crop. In a recent visit to the experiment station farm at Manhattan we noticed a fine field of rye being grazed by sheep. We learned that this field of not more than twelve or fifteen acres had practically carried 200 head of sheep all winter.

Shrinkage of Grain in Storage

Ear corn loses from 5 to 20 per cent of its weight in the first year of storage, the loss being greater with poorly matured than with well matured corn, and with dry fall weather than with rainy weather. Exceptionally soft corn may shrink as much as 30 per cent. Most of the loss occurs in the first six months. After corn is thoroughly air-dried its weight fluctuates with the moisture in the air, varying as much as 3 per cent. The shrinkage is largely water, but there is some loss of dry matter.

Wheat loses 2 to 3 per cent during the sweating process and afterward fluctuates in weight with the humidity, the extreme variation being about 6 per cent from the original total weight.—Missouri Experiment Station.

Dairy Specialists at Work

The dairy specialists of the extension division of our agricultural college, W. E. Petersen and H. E. Dodge, have been kept busy the past few weeks responding to the calls for dairy organization work. Either co-operative bull associations or co-testing associations have been organized in Leavenworth, Bourbon, Miami, Montgomery, Kingman and Shawnee counties. Special meetings were held in Wabunsee and Butler counties and in other localities. Seven associations are now completely organized and four more are ready for testers. These dairy organization meetings have all been well attended, the average being twenty for each of the meetings held during the month of March.

Market Demands Butcher Hogs

The city housewife who goes to her butcher and asks for "a nice little slice of ham—not too much fat, please," or "a half dozen pork chops, not too large," or "a ten or twelve-pound ham for baking; oh, no, not that big one," is fixing the type of hog that will be demanded on the market. Consumers may not know the difference between a 250-pound hog and a 400-pound hog, but they know what they want when it comes to buying the different cuts on the block, and they most certainly are discriminating against the heavy hog, no matter how fine a specimen it might have been on foot. The heavy hog will of course bring the producer more money than the 250-pound hog, but pound for pound the latter is nearly always worth more and the relative marketability of the various cuts is the deciding factor. The heavy hog yields more pounds of meat, lard and by-products, but the cuts are too heavy for the average retail trade. The high price at the present time is also a factor. A twenty-five pound ham represents a considerable investment for the average family.

It is pointed out by packers that the difference in price between butcher stock and the heavies varies according to supply and demand. There is a certain demand for the heavier types for lard and for boiled hams. Just at the present time very few heavy hogs are being marketed because producers generally rushed their hogs to market on account of the high price of feed. This has caused the price of the heavy hogs to advance to a point closer to the quotations for butcher grades than is normal. Under normal conditions the butcher hog will almost invariably sell for a higher price per pound than will the heavy hog.

A weed is any plant in the wrong place. Vegetables too close together are as injurious to each other as weeds. Thin them out before they are large enough to crowd.

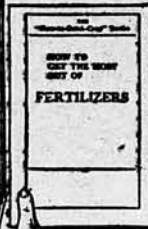
All Soils

sooner or later need some sort of fertilizer, for crops cannot be produced indefinitely without plant food.

Empire Fertilizers

are prepared under careful scientific direction from agricultural and chemical standpoints. They are prepared with reference to good drilling condition as well as high availability and proper proportioning of plant food.

How to Get the Most Out of Fertilizers



contains sixty pages of information concerning the practical use of fertilizers,—how they should be used on different soils and under varying climatic conditions. Directions for using fertilizers and lime on all kinds of crops are included. Any farmer may have this book free. It was written by one of the foremost authorities on the use of fertilizers, and will prove a valuable addition to your library. Consult our free Service Bureau on soil, crop or fertilizer problems.

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.

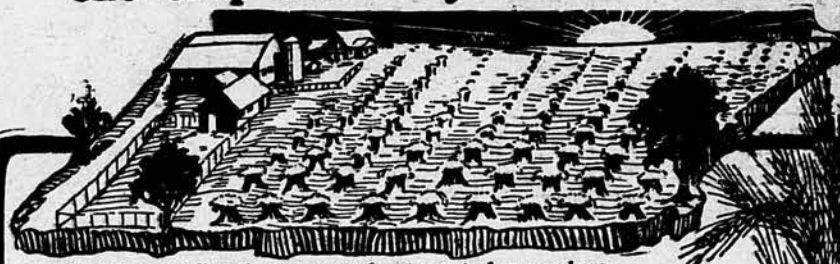
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land similar to that which through many years has averaged from 20 to 45 bushels of wheat to the acre. Hundreds of cases are on record where in Western Canada a single crop has paid the cost of land and production. The Governments of the Dominion and Provinces of Manitoba, Saskatchewan and Alberta want the farmer to prosper, and extend every possible encouragement and help to Grain Growing and Stock Raising.

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For particulars as to location of lands for sale, maps, illustrated literature, reduced railway rates, etc., apply to Supt. of Immigration, Ottawa, Can., or

F. H. HEWITT, 2012 Main St., Kansas City, Mo.
Canadian Government Agent.



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ONE OF THE FINEST FARMS IN SHAWNEE COUNTY

155 ACRES, part creek bottom and second bottom, cultivated to alfalfa for fifteen years, soil very productive. 105 acres in wheat in choicest condition; on macadam road, four miles from center of Topeka, Kansas, 1 1/2 miles from Washburn College grounds. Two large hay barns 60 tons capacity each, barn for six or eight horses and three cows, large corn crib and granary, implement sheds, wash house, six-room dwelling with large yard and plenty of shade trees, buildings newly painted, well and wind mill of never failing finest drinking water.

Price, \$200.00 per acre without crop, or \$225.00 per acre with wheat crop. Terms: One-half or more cash, balance mortgage at 6 per cent. Absolutely no trade! Address owner, J. C. HARMON, Drawer 639, Topeka, Kansas.

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Advertising "bargain counter." Thousands of people have surplus items of stock for sale—limited in amount or numbers hardly enough to justify extensive display advertising. Thousands of other people want to buy these same things. These intending buyers read the classified "ads"—looking for bargains. Your advertisement here reaches over 60,000 farmers for 2 cents a word per week. No "ad" taken for less than 60 cents. All "ads" set in uniform style, no display. Initials and numbers count as words. Address counted. Terms, always cash with order.

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

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BROOM CORN, EARLY DWARF, 97% pure. If you want good seed, write me for proposition. Len Sanders, Atlanta, Kan.

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

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WATERMELONS—PURE HALBERT Honey, direct from originator, \$1 lb.; Rubbert Rind, \$1; Tom Watson, 75c. H. A. Halbert, Corsicana, Texas.

CABBAGE PLANTS—EARLY JERSEYS and Flat Dutch. Parcels post, 500 for \$1.50; 1,000, \$2.25. Express, \$1.75 thousand. Coleman Plant Co., Tifton, Georgia.

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 f.o.b. Elk City, Okla. Chas. C. Miller.

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

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.

FROST PROOF LARGE WELL ROOTED cabbage and collard plants now ready, early and late, leading varieties. Acme, Stone, McGee tomato plants ready May 1; 200, \$1; 500, \$2; 1,000, \$3, delivered parcels post. Free recipe guaranteed to keep potato vines green all winter to each customer. Am no agent. Grow what I advertise. J. L. Garretson, Box 75, Winfield, Texas.

DWARF AND STANDARD BROOM corn seed, Red Top and Early Golden cane, fetterita, 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, Guyton, Okla.

SWEET POTATO PLANTS—BEDS GOV- ernment inspected and all plants shipped from disease-free beds. Porto Rico, Nancy Hall, and Middle Easter. Tomatoes: Earlham, 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.

MISCELLANEOUS.

HAY RACK SLING—ONE MAN EASILY changes heaviest hay racks and wagon boxes. F. Lovering, Fremont, Neb.

DEHORNING.

BLACK DIAMOND DEHORNING PENCIL dehorn fifty head. Guaranteed. Write or phone J. C. Shimer, 1815 Kansas Ave., Topeka. Phone 471.

CATTLE.

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.

REGISTERED GUERNSEYS FOR SALE, both sexes, all ages. Write for description and prices. W. E. Evans, Jewell, Kansas.

QUALITY HOLSTEIN HEIFER CALVES four to six weeks old by pure-bred sire, \$25, express paid to any station. Write for prices on older stock. Spreading Oak Farm, Whitewater, Wis.

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AIREDALES, COLLIES AND OLD ENG- lish Shepherd. Pups, grown dogs and brood matrons. Large instructive list, 5c. W. R. Watson, Box 128, Oakland, Iowa.

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FOR SALE—EASTERN COLORADO land. A good half section, improved, part in crop. Buy direct from owner and pay one man's price in place of two. O. F. Lovelace, Stratton, Colorado.

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 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—SUDAN AND ALFALFA seed. Send sample and state quantity. The Barteldes Seed Co., Lawrence, Kansas.

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

HONEY.

HONEY—CHOICE WHITE ALFALFA, 120 lbs., \$24; 60 lbs., \$12.50. Amber honey, 120 lbs., \$22; 60 lbs., \$12. Bert W. Hopper, Rocky Ford, Colorado.

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.

THE STRAY LIST.

TAKEN UP—ON THE 8TH DAY OF NO- vember, 1918, 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. Cedarholm, County Clerk, McPherson, Kansas.

The Port of Missing Men

Though the war with its awful holocaust of human life is ended, and the world hopefully resumes the arts of peace, the casualty lists with the long roster of the missing are still breaking the hearts of thousands, and mothers, wives, sisters and sweethearts, swayed alternately by hope and despair, who are eagerly seeking information about the soldiers so close to their hearts.

To ease their sufferings, the American Red Cross has undertaken a search for the missing. Its searchlight, thrown on overseas battlefields, base hospitals, and embarkation camps, has probed the mystery of many a boy's silence and brought news of his whereabouts or death to the anxious family at home.

"Please send me the news of my boy," begged the mother of one private. "I only know he has been missing since July 15. It is worse to be in doubt than to know he is killed." The young man's name and his regiment were immediately filed, and sent abroad to be added to the searcher's list that is published monthly by the Red Cross.

Searchers travel through the base and military hospitals, through rest camps and embarkation camps, carrying with them their book of missing men. Everywhere they go they get into communication with patients and other soldiers stationed at the same command as the missing men. In a recent case a young lieutenant was found in Debarkation Hospital No. 3 who knew one of the missing men and had seen him die. His story as written into the record was that Private Sand, the missing soldier, had been killed on July 15 at the battle of the Marne, while saving the lieutenant's life. The news was immediately wired the bereaved mother. She is now waiting to meet the lieutenant for whom her son went to his death and to learn from him the details of the tragedy. And the lieutenant will make this trip to see the boy's mother even before he goes home to his own family.

A garden that produces only one crop and idles away half of the growing season does only half its duty.

When cows are freshening every day There's money down the milky way. —De Laval Monthly.

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.

The Spring Housecleaning

THE old idea that the annual spring housecleaning must be rushed through with whirlwind speed at the expense of the comfort of the family and the nerves, if not the health, of the housewife, is foolish in the extreme. Trying to do two or three days' work in one is always an unwise practice.

Since help has become so difficult to obtain, even for special occasions, it is doubly important that all work be so planned as to avoid overwork. One room a day is usually enough to be undertaken. The work itself may be classified, the windows being washed one day, curtains laundered on another, and clothing and rugs sunned and aired on a third. All needed supplies should be in readiness beforehand.

No woman should attempt to move heavy furniture or rugs without help. If possible, the one who is doing the cleaning should be free from responsibility for the preparation of meals and the care of children. If there is no one else to prepare the meals, however, time can be saved and substantial food insured by making some provision in advance. Cake or cookies and plenty of bread may be baked, a large kettle of beans cooked and small potatoes boiled in their jackets and then peeled ready to fry or use in salad, so that a good meal can be quickly and easily made ready. Meat may be roasted previously or a small ham boiled to be sliced cold, or canned meats may be opened. This is the time when canned vegetables and fruit can be used to best advantage. It is a mistake to try to get along without plenty of nourishing food when doing heavy work.

The country woman cannot, like the city woman, rent an electric vacuum cleaner, but there are a number of small hand vacuum cleaners which clean more effectively than a broom and do it more easily. If a broom is used, special care should be taken to avoid raising a dust. Dustless sweeping and dusting are possible to all. Damp sawdust or tea leaves or finely torn moistened newspapers with a slightly dampened broom will remove the dust and freshen the faded rug. As good a duster as can be bought is made by wringing a bit of cheese cloth out of hot water and letting it dry. For the highly polished furniture a piece of old soft silk moistened with cedar oil is excellent. It removes the dust without any danger of scratching and at the same time gives an added polish.

Attractive Home Surroundings

What are you doing this spring in the way of beautifying your home surroundings? Look over the house and grounds with the critical eye of a stranger, observing where grass is needed and where vines might soften a rugged outline or cover an unsightly place. Don't forget the back yard. If you are unfortunate enough to have a bare, windswept dooryard, seed it with grass or clover.

Some vine or shrub should soften the corner of every porch and house angle. In vines there are the Boston ivy, wistaria, clematis, Virginia creeper, Madeira vine, and climbing roses for permanence, and the wild cucumber or the morning glory for quick effects. The honey suckle and the red trumpet vine are old stand-bys. In shrubs a spirea bush is one of the most easily grown. Others are the old-fashioned and much-loved lilac, the hydrangea, the snowball and the Japanese barberry. A border of spirea or barberry bushes planted closely around the house makes it look as if it belonged to the landscape instead of seeming merely set down with no relation to its surroundings. The lawn should not be broken by scattered shrubs or flower beds. Flower beds should be up against the house or out at one side. A low hedge or border of shrubs around the yard adds to the general appearance if it is kept trimmed. A climbing rose,

such as the Dorothy Perkins or crimson rambler, may be trained over a wooden frame to form an arch at the entrance. If the yard is fenced, vines may clamber over the fence.

As a general thing a rose bush is a thing of beauty only when in bloom, and it is better to plant only the ever-blooming varieties in conspicuous places. Other varieties may be planted in a bed in the back yard or in some other place where they can be cultivated. A well trimmed rose bush, however, is unobtrusive, and their loveliness in blooming time may be sufficient justification for planting a few good ones where they will be in evidence.

If you do not have a few good shade trees near the house, select varieties adapted to your section of the state and place them carefully.

It will take time to make all these improvements, but it is well to have a definite plan in mind and work toward that plan, adding each year a few permanent features.

THINGS WORTH WHILE

These are the things worth while:
The rainbow after rain,
The peace that follows pain;
The touch of little children's hands,
And sweet affection's subtle bands;
The blue sky up above;
The tender thrill of woman's love;
The sacrifices that are part
And parcel of a mother's heart;
The good, the beautiful, the true,
The melody that stirs anew
Strange yearning after nobler things;
The simple song the robin sings,
The dew upon the garden rose;
The flower that by the wayside grows
To claim a homeless urchin's smile—
All these are things worth while.

—Neill DeWitt Rowell

A Church with a Program

In the next five years the Joint Centenary Committee of the Methodist Episcopal Church expects to spend for social and world betterment the sum of \$105,000,000. Of this, \$40,000,000 will be expended in the United States, and \$5,500,000 is to be devoted to making rural life more attractive and agriculture more profitable.

In the first place, rural pastors are to have special training in agriculture so that they can really help farmers in communities where farming is difficult and unremunerative. To this end the department of rural work of the board of home missions of the Methodist Episcopal Church is co-operating with various educational institutions in the establishment of training centers for rural leadership.

Such arrangements have already been made with Evansville College, Iliff School of Theology, Drew Seminary and Garrett Biblical Institute, and negotiations are under way with a number of others.

In communities not reached by a state agricultural college which furnishes up-to-date information, the church plans to establish demonstration farms where the latest methods of getting good crops out of the average soil, and of improving poor soil, will be shown. A home improvement campaign, to be conducted some time during the year; a course of lectures on housekeeping problems and demonstrations of the latest and most satisfactory methods of canning and preserving, will be given by trained workers in communities where this is desired. If there is no library in the community, the church will endeavor to obtain one of the circulating libraries which can be procured from the state university or state library of most states. Another plan is for the church to procure a stereopticon and give illustrated lectures on current events, life in other lands, and other interesting and broadening topics.

In short, under this new plan the church is to be not merely a place where people meet once a week to listen to a sermon which may or may not bear some relation to their lives, but is to become the center of social life for the community. Social and educational functions of many kinds will be planned to take the place of the singing schools,

elling matches and husking bees of old days, and to revive the community spirit and make for co-operation in regions where individuals have too long lived in isolation. It is hoped that other denominations each district will co-operate with the Methodist Centenary plans in working out a county farm bureau, a county well bureau, a county library system, and girls' club work, and community health campaigns.

Ways of Using Rhubarb

The first fresh fruit that comes in the spring is really not a fruit at all, but a vegetable—rhubarb. It takes the place of fruit with most people, however, on account of its acidity, flavor and abundance of juice when cooked. It is also valuable for its mineral salts which are used in building up the soft tissues and the bones of the body. The tender shoots of early spring make an especially appetizing sauce. The general proportion for sauce is two-thirds as much sugar as rhubarb. This will vary with individual taste and with the acidity of the variety used. The skin should not be removed. A red skin gives the sauce a more attractive color.

Baked Rhubarb is delicious and easily prepared. Place in a baking dish a layer of rhubarb cut in small pieces as for sauce, sprinkle it generously with sugar and alternate in this way until the dish is filled. Sprinkle sugar over the top. Add small pieces of butter and grated lemon rind or cinnamon. Bake slowly until well done. Long, slow baking gives rich red color.

Rhubarb Preserve is made by using three cupfuls of sugar to a quart of fresh rhubarb. A syrup is made with the sugar and a cupful of water. This is boiled until it becomes brittle when dropped into cold water. The rhubarb is then dropped into the boiling syrup and cooked until the mixture is thick.

A One-Crust Pie is a change from the usual one with two crusts and is more wholesome. It may be covered with a fringue of beaten egg whites and sugar, or coconut may be sprinkled over the top. Such a pie may be thickened with cornstarch or a beaten egg stirred into the well-cooked sauce before putting it into the previously baked crust, or it may be made by the following recipe:

- 1 cup sugar
- 2 tablespoons flour
- 1 pint rhubarb cut in small pieces
- 1/2 cup raisins
- 1 tablespoon butter
- 1 tablespoon lemon juice
- 1 teaspoon grated lemon rind.

Line a pie pan with plain pastry. Stick the pastry with a fork. Mix the sugar with the flour and sprinkle one-third of the mixture over the crust. Add the rhubarb and the raisins. Cover the top with the remaining sugar and flour, and the butter in small lumps and the lemon juice and rind. Bake the pie in a slow oven.

Rhubarb Puffs are a change from pie and your family will enjoy them. They are made as follows:

- 1 cup flour
- 1 teaspoon baking powder
- 1/2 teaspoon salt
- 1/2 cup sugar
- 1/2 cup milk
- 1 tablespoon melted butter
- 1 egg, beaten
- Rhubarb sauce.

Combine all the ingredients except the rhubarb in the order given and beat the mixture until it is smooth. Grease individual molds or cups and into each put three tablespoonfuls of rhubarb sauce and then one tablespoonful of the batter. Steam the puffs for twenty minutes and serve them warm with cream and sugar or with this foaming sauce:

- 2/3 cup rhubarb juice
- 1 cup sugar
- Whites of two eggs.

Boil the sugar and the juice until the syrup threads. Pour it over the well-beaten whites of the eggs and beat the mixture until it is smooth and thick. Serve the sauce cold.

Rhubarb Pudding is another dessert which deserves to be better known. A pint of rhubarb sauce, a pint of bread crumbs and one-third of a cupful of melted butter are the ingredients required. Mix the butter with the crumbs. Arrange the rhubarb and the crumbs in alternate layers, having a layer of crumbs on top. Sift cinnamon and nutmeg over the top and bake the pudding in a moderate oven until it is brown. Most of the foregoing recipes are taken from a bulletin published by Cornell University and used in their course at the farm home.

Wild or Garden Greens

Greens not only gratify the desire for something different in the spring, but serve as a tonic and prevent constipation, according to Miss Margaret Haggart, professor of domestic science at the Kansas Agricultural College. Meat and eggs form acids in the body, says Miss Haggart, while vegetables produce alkalies. Both are needed. The iron found in green vegetables is a far more useful tonic than that found in famous mineral waters or in medicine.

Beside the native wild plants commonly used, such as lamb's quarter, wild lettuce, water cress, dock and wild mustard, such cultivated plants as spinach, horse radish, mustard and turnip and beet tops make excellent greens. Mustard or horse radish leaves are often combined with mild greens to add flavor. A piece of bacon or salt pork boiled with greens gives a good flavor. After draining off the water, season the greens with salt, pepper and melted butter and serve them with vinegar. Slices of hard-boiled eggs make an attractive garnish.

Greens may be canned like any other

vegetable. Sort the leaves and wash them thoroughly, then steam in a vessel with a little water under a false bottom or in a regular steamer fifteen to twenty minutes. Remove and plunge quickly into cold water. Cut into convenient lengths, pack tightly in the jar and add one teaspoonful of salt and one teaspoonful or less of sugar to each quart, then add hot water to finish filling the jar, place the rubber and cap in position and partially seal. Sterilize two and one-half hours in hot water bath outfit, seventy-five minutes in steam pressure outfit under five pounds of steam, or fifty minutes at fifteen pounds of steam. Remove jars from the hot water and tighten the covers.

Dried Apricot Conserve

- 1/2 cup dried apricots, or 1 1/2 cups
- 2 cups cold water
- 1 cup raisins
- Juice of one lemon
- 1 whole orange
- 1/2 cupful nuts
- 1 cupful light corn syrup

Soak apricots over night in cold water. When soaked add raisins, lemon juice, orange sliced very thin, with slices cut in small pieces, and corn syrup.

Bring to boiling point and simmer for about one and one-quarter hours. Add nuts fifteen minutes before taking from fire.—Some Sugar-Saving Sweets for Every Day, Teachers' College, Columbia University.

Absolute cleanliness is essential in the sick room. Slightly soiled towels and wash cloths have no place there. The napkin on the food tray should be spotless and unwrinkled. It is important that food not only be wholesome and appetizing, but that it also be attractively served. Small helpings are usually more tempting than large amounts. Sometimes a flower placed on the tray will awaken the interest of the sick person. These small things often have a large influence in keeping up the spirits or the appetite of one who is sick and may be important factors in bringing about a speedy recovery.

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

IF YOU WANT BARRED ROCK EGGS from trapnested pedigreed laying stock, send to Farnsworth, 224 Tyler Street, Topeka, for mating list. Free.

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IDEAL POULTRY FARM WILL SHIP ON day order is received 48 eggs postpaid from our famous barred to skin heavy laying strain Barred Rocks, for \$3, or \$7.50 for 144. Ideal Poultry Farm, Concordia, Kansas.

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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.

BIG BONED IVORY WHITE ROCKS, bred ten years, won five ribbons at 1913 state show and seventeen ribbons, including three firsts, in sweepstakes at Kansas State Fair. Farm range flock eggs, \$6 per hundred; select pens at \$2, \$3 and \$5 per fifteen. Minnie Clark, Haven, Kansas.

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NARRAGANSETT TURKEYS, STOCK and eggs for sale. Mrs. John Mitchell, La-fountain, 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.

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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 Brahmas. Setting of fifteen, \$1.25; 100 for \$7. Albert Reetz, Tobias, Nebraska.

LIGHT BRAHMA EGGS FROM LARGE heavy layers, winners in big shows. Pen, \$3, fifteen; flock, \$7 hundred, \$1.75 fifteen. Mrs. Oscar Felton, Blue Mound, Kansas.

WANTED—TO BUY.

RUNNER DUCKS WANTED—TOULOUSE goose eggs, 35c each. Emma Ahlstedt, Lindsborg, Kansas.

WYANDOTTES.

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

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

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

LEGHORNS.

L. B. RICKETS, BREEDER OF EXHIBITION and utility Single Comb White Leghorns, Greensburg, Kansas.

SINGLE COMB BROWN LEGHORNS—Winners at the big shows. Eggs, \$6.50 per hundred. Wm. Roof, Maize, Kansas.

S. C. BROWN LEGHORN EGGS—FINE matings. Setting, \$1.50; fifty eggs, \$3.50. Mrs. L. H. Hastings, Thayer, Kansas.

EGGS—FROM KEEP-LAYING SINGLE Comb White Leghorns. T. R. Wolfe, Route 2, Conway Springs, Kansas.

PURE-BRED ROSE COMB BROWN Leghorns. Eggs, \$7 hundred, prepaid. C. H. Lessor, Lincoln, Kansas.

ROSE COMB BROWN LEGHORN EGGS and baby chicks. Mrs. John Holzhey, Bendena, Kansas.

EGGS—S. C. WHITE AND BROWN LEGHORN, fifteen, \$1.50; fifty, \$3.50; hundred, \$6. H. N. Holdeman, Maize, Kansas.

S. C. BROWN LEGHORN EGGS FOR hatching. Extra quality. \$4 per hundred. Mrs. L. H. Hastings, Thayer, Kansas.

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

ROSE SINGLE COMB BROWN LEGHORN, bred for eggs and exhibition quality. Eggs, \$7 per hundred; 150, \$10. Prepaid. Plainview Poultry Farm, Lebo, Kan.

PURE-BRED SINGLE COMB WHITE Leghorns, also Silver Wyandottes. Eggs, per fifteen, \$1; \$5 per hundred. A. L. Bowyer, Potwin, Kansas.

FOR SALE—SINGLE COMB WHITE Leghorn eggs from extra good laying strains, \$4 per hundred. I. H. Nagy, Hutchinson, Kansas.

S. C. BROWN LEGHORNS, BRED 23 years; 222 to 256 egg lines. Eggs, fifteen, \$2; thirty, \$3; fifty, \$4; hundred, \$7. Gorsuch, Stillwell, Kansas.

FOR SALE—EGGS FROM PURE-BRED White Leghorns, Brown Leghorns and Buff Rocks, \$5 per hundred. Mrs. P. S. Ralston, Mankato, Kansas.

PURE-BRED R. C. B. LEGHORN EGGS, Kulp strain, \$5 per fifty, \$8 per hundred. Few choice cockerels, \$2 each. Mrs. Griswold, Tecumseh, Kansas.

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.

PURE SINGLE COMB BROWN LEGHORN, 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.

SINGLE COMB WHITE LEGHORNS—Chicks, 100, \$16; eggs, 100, \$8. It will pay you to buy from us. You'll know what you get as we furnish photos of our breeders with order. Express prepaid. Bellevue Poultry Farm, Route 1, Scammon, Kan.

QUALITY HILL FARM—SINGLE COMB White 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. Bierl, Oneida, Kansas.

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ANCONA EGGS, FIFTEEN, \$1.25; 100, \$6.50. Mrs. Ed O'Neal, Box 43, Harper, Kansas.

SINGLE COMB ANCONAS, BEST STRAIN on earth, \$2 fifteen, \$3.50 thirty \$5 fifty. Delivered. C. W. Batten, Medford, Okla.

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

PRIZE WINNING WHITE LANGSHAN eggs, \$2, fifteen; \$4.50, fifty; \$8 hundred. Poultry Judge Ellis, Beaverxing, Neb.

SCORED BIG BLACK LANGSHANS, laying strain, guaranteed. Cockerels, pullets, eggs. H. Osterfoss, Hedrick, Iowa.

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

WHITE WYANDOTTE EGGS FROM MY prize winning stock, always took first, \$3.50, 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, \$2; 100, \$9, prepaid. Farm raised. Females mated with males from trapnested hens with annual records of 227 to 272 eggs. H. A. Dressler, Lebo, Kansas.

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

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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.

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

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

FOR SALE—ROSE COMB RHODE ISLAND and Red, Eggs for hatching, \$6.50 per 100. Mrs. James Rist, Humboldt, Nebraska.

PURE-BRED ROSE COMB RHODE ISLAND and Red hatching eggs, \$2.50 per fifteen; \$5 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.

CHOICE ROSE COMB RHODE ISLAND Whites, fine table fowls, excellent layers. Eggs, \$2, 16; \$3.50, 32. Nellie Silvester, Little River, Kansas.

SINGLE COMB RED EGGS—REALLY red, big boned laying type. One-fifty, fifteen; seven dollars hundred. Mrs. Geo. M. Long, St. John, Kansas.

PURE-BRED ROSE COMB REDS—FIFTEEN eggs, \$1.75; fifty, \$4.25, delivered. Safe arrival guaranteed. Howard Vall, Marysville, Kansas.

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S. C. BUFF ORPINGTONS, OWEN FARM and Cook strain. Setting, \$2, prepaid. Henry Kittell, McPherson, Kansas.

BABY ORPINGTON CHICKS, 15c. Barred ducks, 30c. Eggs, \$1.25 setting. Geo. K. Cleburne, Kansas.

SINGLE COMB BUFF ORPINGTONS, Maris strain. Eggs, \$1.50 fifteen, \$5 hundred. Mrs. Olive Carter, Manhattan, Kansas.

BUFF ORPINGTON EGGS—\$1.50, fifteen; \$5, 100. Toulouse geese eggs, 30c each. Ganders, \$4.50. No geese. Mrs. Frank Beverly, Kansas.

BUFF ORPINGTON EGGS, \$1.50, fifteen; \$7.50 hundred; 90 per cent fertile guaranteed. Mike Meyenburg, David, Nebraska.

EGGS—SINGLE COMB WHITE ORPINGTON. High class eggs for hatching; heavy laying strain; \$1.75 per setting of fifteen, \$5 per fifty, \$3 per hundred. Helton & Ridsen, Callaway, Nebraska.

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

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HELPFUL POULTRY HINTS

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

THE free use of an effective lice powder is always advisable. A dust bath, consisting of road dust and wood ashes, is a great help in ridding fowls of lice.

Sodium fluorid, a white powder which can be obtained from druggists, is also effective. Apply a pinch of the powder at the base of the feathers on the head, neck, back, breast, below the vent, base of tail, both thighs, and on the under side of each wing.

An effective remedy for lice on chicks is a small quantity of melted lard rubbed under the wings and on top of the chick's head.

The free use of kerosene or crude oil on the roosts and in the cracks of the house will help to exterminate mites.

Whitewash is effective against all vermin.

It is possible and thoroughly practicable to keep the poultry flock reasonably free from lice and mites. Such practices should be the aim of every one who is endeavoring to establish a successful flock of poultry.

For complete information on mites and lice, write to the U. S. Department of Agriculture, Washington, D. C., for Farmers' Bulletin 801.

Ten Hens Produce 10,000 Eggs

A remarkable instance of productivity in fowls is found in the record of ten White Leghorn hens at the Ohio Experiment Station which have produced 10,000 eggs. Two of the hens are nine years old, six are eight years old, and two are five years old.

The "ace" of the lot, "C-34," has 1,179 eggs to her credit; she is followed closely by "C-38" with a total of 1,147. The other eight follow closely in production. Two of the hens are from an original lot of pullets purchased in 1909 when the poultry investigational work was begun at the Ohio station.

None of the hens show any particular effects of old age. While their annual production is less than during the earlier laying periods, they still lay regularly during the spring and summer months. Each of these hens has produced approximately \$25 worth of eggs, at ordinary market prices, at a feed cost of about \$10.

American Egg-Laying Contest

In the egg laying contest being conducted at Leavenworth by the American Poultry School, a Buff Orpington and a White Wyandotte pullet won the individual honors for March, each producing an egg every day. Three pullets—a White Orpington, a single comb Rhode Island Red and a White Leghorn—each produced thirty eggs in March.

A pen of five single comb White Leg-

horns from Washington produced 14 eggs in March, which is a wonderful record. Still this fine pen was forced to take second place in the monthly record as five single comb Reds from Nebraska produced 137 eggs. A pen of Brown Leghorns from Indiana produced 12 eggs and a pen of White Orpingtons from Ohio produced 128 eggs. All of these records are uncommon. Most of all, most of the females in these pens are exceptional quality as exhibition fowls. Four of the pullets in the pen of Reds were in a first prize exhibition pen at one of the leading state fairs last fall.

A White Orpington pullet is leading in the race for yearly honors with a record of 111 eggs for the first five months. She is being closely followed with a White Leghorn and a White Wyandotte with 105 eggs each, by a Buff Orpington pullet with a five months record of 108 eggs, a Silver Wyandotte pullet with 109 eggs, a Barred Rock with 100 eggs, and a Buff Minorca pullet with 103 eggs.

The leading pen of five pullets for the first five months are single comb White Leghorns with a total of 462 eggs, while a pen of Barred Plymouth Rocks, White Wyandottes and White Orpingtons have each produced 400 or more eggs since November 1.

In this climate we find March to be a month for high egg production. Pullets, even though they were good producers during previous months, are usually found to perform with a greater degree of regularity in March, and by April and May we can, of course, expect full maximum production.

Late January and most of February gave us open weather, tending toward

Death Rate Lowered 45%

The right feed will save more little chicks—bring them safely through the first two weeks of their tiny downy existence. Beware of the feeds that are just made to sell. Play safe this year. Save more of your little chicks by demanding and getting

OTTO WEISS CHICK FEED

Saves the little ones—45 per cent more by actual tests than are saved without its use. Try it and you'll buy it. Get it of your dealer. Otto Weiss Company, Wichita, Kan.



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Most poor layers are "OUT OF CONDITION" and need a tonic. Cold, damp, bowels trouble, sore head, these are the signs of a sick chicken. GERMONE is the best remedy for all these ills. At dealers or postpaid 15c, with 50c book "Poultry Diseases." GEO. H. LEE CO., Dept. 415, OMAHA, NEB.

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50 Cows with calves at foot or bred, 15 -2-Year-old Bred Heifers, 35 Yearling Heifers, 25 Bulls

Cows include three-year-old to mature cows with calves at foot or bred to Roehampton 1st, Judge Fairfax, a grandson of Perfection Fairfax, Stanway Disturber or Gay Lad. Heifers are bred to one of the above good bulls. Yearling heifers are the get of Roehampton 1st, Gay Lad and other noted sires. Herd bull prospects, such as Stanway Disturber, a son of Bright Stanway, and out of a Disturber dam. Britton Stanway, another Stanway prospect that will give a good account of himself. Perfection Stamp by Harris Prince 16th, out of a Perfection bred dam. Balance include eleven two-year-old bulls, ten 12 to 18-months old bulls, a lot of farm and range bulls in good condition.

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Registered bulls ready for service and bull calves, out of good producing dams. Sire: Rag Apple Korndyke De Kol and Duke by Pontiac Korndyke.
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Extra choice, beautifully marked, high-class calves from heavy milking dams, and sires. Write us for prices and descriptions.

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an early spring resulting in a rather high February average and an extra good average for March. From the looks of the report sheets at this writing, April 10, practically all of these fine pullets are striving for a high April record. Many of them have not missed producing an egg a day this month.

Some pens which contained birds slightly undeveloped at the start or birds which were slow to become acquainted with their mates, or acclimated, have been doing some exceptional laying during February and March and should they continue their present rate of production may still be numbered among the winners at the end of the year.—RUSSEL F. PALMER.

Proper Care of Broody Hens

"Treat your broody hens kindly if you wish them to begin laying in a short time," says J. G. Halpin, poultryman at the Wisconsin Experiment Station. Hens put in a broody coop the first night they wish to sit on the nest, and then cared for properly, will begin laying again in from nine to twelve days, while those allowed to sit for a week will not begin laying for twenty days or more.

The best plan for curing broodiness is to place the hen in a slat bottom coop raised at least one foot from the floor, so that air may circulate freely under it. Feed the hen a good egg-laying ration and give her plenty of fresh water to drink.

The first day a hen becomes broody she has still several partly formed yolks which reduce rapidly in size if she is allowed to remain on the nest for several days. By the time she has been setting a week these yolks will have been absorbed, so that it will take about twenty days to develop an egg. For this reason, the important thing is to catch all broody hens each evening, and remove them from the nests so that they will lose the least possible time before beginning to lay. Hens should be kept in the broody coop for three or more days, and if they still wish to set they should be imprisoned for a longer time. Hens that are chronic setters should be fattened and sold to the butcher.

The Lay of the Hen

An egg a day the old hen lays, with which the housewife blithely pays for books and clothes and children's shoes and Grange and Farmers' Union dues. The old hen pays the rooster's board, she buys the gas to run the Ford; she even buys the old man's cud, and still he meets her with a thud, if in the feed box she should stray, or roost upon his new-mown hay. She buys the soap to clean the kids, the sugar and the family lids. She's up the first one in the morn, she's out and hustlin' in the corn before the old man chucks his snores to call the boys to do the chores. She's always happy at her work, no one can say that she's a shirk. She don't belong to any club, believes in paying for her

grub. She does her work and doesn't care how others curl or comb their hair. She lives to serve and serves to live, gets all she can, is free to give of what the good Lord gives her. A message from the hen to you is that there are but very few so thoughtless for their own reward, and few who sing and work so hard to make this old world a fit place to live in for the human race.—W. E. VAPLON.

Sanitary Drinking Dish.

A good arrangement for a drinking dish in the henhouse is to place a long narrow pan on a low shelf. Over the pan place a board cover supported on pieces of lath about eight inches long, nailed to the cover about two inches apart, the lower ends resting upon the shelf the pan is on. Hinge the cover to one side of the poultry house so that it can be raised to remove the pan for cleaning and refilling. In order to drink from this pan the hens insert their heads between the laths. This also works splendidly for the dry mash. Keep all utensils perfectly clean and everything in its place.

Head lice on chicks is one of the drawbacks from now on. There are many remedies on the market, but a little lard about the size of a pea rubbed thoroughly on the back of the head is sufficient to rid the chick of the pest. After dark, on a dry, warm night, is a good time to apply the lard. Previously the coop, hen or brooder should be thoroughly treated for the lice. Successful chick raising means an everlasting fight against lice.

Boys and girls should be encouraged to start in the poultry business. It requires little money to invest, and the current expenditure may be reduced in part by utilizing farm and home wastes. If the project begins with a laying flock the return begins early, especially by supplementing the food supply of the home.

Allowing fowls to drink impure water is simply inviting disease. It costs but little to have earthen or iron drinking vessels and in these the water can be kept clean and pure. Plenty of pure water should be at the disposal of the poultry flock at all times.

Be sure to keep plenty of fresh water before the hens. A great amount of water is used to form the egg.

There never will be too many good poultrymen, therefore strive to be among the best.

Hens suffer in a damp henhouse, so it is well to keep the floor covered with litter.

No man can raise poultry and produce eggs at so low a cost as the farmer.



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The World's Greatest Pork Hog

Now booking orders for spring pigs. Shipment when weaned. Pairs or trios, no kin.

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Herd boar Over There No. 95555, the greatest son of Caldwell's Big Bob. A few bred sows and gilts for sale. Bred sow sale March 8.

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

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CHOICE LOT OF POLAND CHINA BRED SOWS AND GILTS FOR SALE.

A Few Fall Pigs,
CHAS. E. GREENE
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POLAND CHINA PIGS

55 Spring Pigs, Pairs and Trios, \$35 each, three for \$100. Shipped at weaning time, pedigree furnished. Mostly by Captain Bob by Caldwell's Big Bob and Wonder King. Also three herd boars for sale. Write your wants or come and see my herd.

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Horn Dorset Sheep
H. C. LaTourette, Rte. 2, Oberlin, Kan.

A year ago the farm labor supply in Kansas was estimated at only about 75 per cent of the normal. In a report just issued by the field agent of the Department of Agriculture the present labor supply is estimated to be 81 per cent of normal. The supply is gradually increasing, but the demand seems to be somewhat less than normal. It does not seem that this can be attributed to decreased activity in farming work. It is perhaps due to the fact that tractors are displacing some labor and to the fact that so large an acreage is in wheat that less labor is needed for seeding spring crops. There also seems to be a disposition to hold back on hiring extra labor due to the prevailing high wages being demanded.

How About an Account Book?

Hundreds of farmers have sent to Kansas Farmer for their Farm Account Book. Have you got yours? If not, HURRY!

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Do not delay in starting your records for this year, but get the best and cheapest book. The account book furnished by KANSAS FARMER is small, convenient, easy to understand and easy to keep. ORDER IT TODAY.

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HORSES AND MULES.

Plasant 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 Guggell & Simpson. A few May bull calves yet.

MORA E. GIDEON, EMMETT, KANSAS



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.

LLOYD T. BANKS, Independence, Kansas.



PERCHERON-BELGIAN SHIRES
Registered mares heavy in foal; weanling and yearling fillies. Ton 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.

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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. Dr. McCampbell of Manhattan and O. W. Devine, Topeka, tell me I have as good horses as they see on any farm in Kansas. Come and see them.

J. C. PARKS

HAMILTON, KANSAS

JERSEY CATTLE.

THE Jersey

The investment breed—the profit producers. Richer milk from less feed. Cheese and butter that bring better prices. The facts about the Jersey make other breeds seem extravagant. Let us send them free. Write breeders for prices and pedigrees.

The American Jersey Cattle Club
375 West 23rd Street
New York

CHOICE JERSEY BULLS

FOR SALE—Four choice young Jersey bulls; two ready for service; all sons of Blue Belle's Owl 79641, Register of Merit sire; two from Register of Merit dams, one from imported dam, one dam now on test. Prices reasonable.

Dornwood Farm, Topeka, Kan.

ALLEN CENTER STOCK FARM

Registered Jerseys from choice Jersey cows. Sire's dam is the highest producing cow in Kansas. Prices reasonable.

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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. Write for prices.

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Bull calves sired by champion bulls out of Register of Merit dams, for sale at all times.

Longview Farm
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A bunch of registered Shropshire rams, ready for service. Priced worth the money. Also registered ewes.

Howard Chandler, Chariton, Ia.

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SUNFLOWER HERD CHESTER WHITES
Big type, bred sows. Serviceable boars. Fall gilts open or bred. Booking orders for spring pigs.

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DORNWOOD

FOR SALE—Chester Whites. Choice spring boars and gilts.

DORNWOOD FARM, TOPEKA, KANSAS.

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. FOULTON, MEDORA, KANSAS

RED POLLS, BOTH SEXES, BEST OF BREEDING.

Charles Morrison & Son, Phillipsburg, Kan.

SHORTHORN CATTLE.

It Pays to Grow Shorthorn Beef

H. M. Hill, Lafontaine, Kan., sold 15 yearling purebred Shorthorn steers at Kansas City, weighing 1,300 lbs., for \$224.00 per head.

Two Shorthorn grade calves 6 months old sold at Pittsburg, Pa., March 31, at 18c, weight 605 lbs. each, \$108.00 per head.

Two yearling Shorthorn steers on the Pittsburgh market in December brought 25c, weight 1,350 lbs., price per head \$337.50, and five short yearlings weighing 900 lbs. brought 20c, \$180 each.

You get quality and weight both with the Shorthorn.

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

Ask for a copy of "The Shorthorn in America."

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. Price, \$150. Come and see my herd.

M. F. MARKS, VALLEY FALLS, KANSAS

SHORTHORN CATTLE

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

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

If hens are used for hatching, set them in a dry place where the ventilation is good.

FARM AND HERD NEWS NOTES

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W. J. Cody, Manager Stock Advertising
O. W. Devine, Field Representative

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CLAIM SALE DATES.

Jersey Cattle.

June 2—Central Kansas Jersey Cattle Club, M. A. Tatlow, Secy., White City, Kan.
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 14—I. W. Bowman & Co., Ness City, Kansas. Sale at Hutchinson.

May 13—Sam Drybread & Son, Elk City, Kan. Sale at Independence, Kan.

Durocs.

May 15—Doerschlog & Sisco, Route 2, Topeka. Sale at Topeka Fair Grounds.

H. C. LaTourette, of Hillsdale Ranch, Oberlin, Kansas, owner of one of the choice flocks of Horn Dorset sheep, reports his flock doing well. Mr. LaTourette has been breeding Horn Dorset sheep for years and has found them very profitable. This breed of sheep is rapidly growing in favor and Hillsdale Ranch is drawn upon heavily for breeding stock. A feature of the flock at this time is the choice lot of young stock.

Charles Morrison & Sons, of Phillipsburg, Kansas, owners of the famous Phillips County herd of Red Polled cattle, report the sale of their great herd bull, Cremo 224, to State Hospital No. 3 at Nevada, Missouri. This bull has been in the Phillips County herd for eight years and has proven one of the great sires of the breed, and will head the largest herd of pure-bred Red Polled cows in Missouri. They also report the sale of a very fine bull calf to M. D. Ayers, of Augusta, Kansas. They write that the demand for high class Red Polled breeding stock is growing rapidly.

H. L. Michaelis, of Kinsley, Kansas, owner of a good herd of pure-bred Ayshire cattle, reports his herd doing well. Features of his herd at this time is the choice lot of record-bred high-producing cows and the choice lot of young stock sired by a record-bred bull and out of the best dams in the herd.

The Kansas Hereford Breeders' draft sale to be held at the live stock pavilion at the agricultural college, Manhattan, May 12, will be one of the Hereford sale events of the season. Sixty head of richly-bred Herefords of outstanding individuality have been selected for this sale. The offering comes from the best Hereford herds in Kansas and will be high class in every respect. All thirty-five cows will be catalogued. All will be safe in calf or have calves at side. The offering of bulls will consist of twenty-five head of choice individuals. The sale will be under the management of Dr. C. W. McCampbell of the animal husbandry department at the college.

Homer Faulkner, of Jamesport, Missouri, the well known breeder of the old original Spotted Poland China, shipped out for breeding purposes during 1918, 630 head of registered Spotted Poland Chinas. The shipped animals were distributed from Ohio to California. Mr. Faulkner owns one of the largest herds of this popular breed of hogs in the corn belt and owing to the heavy demand for breeding stock from former customers, he will not hold his usual February sale this year, but has announced a sale May 11, 1920, for his next annual bred sow sale. The herd boars now used on the farm are Bogardus, Spotted Sampson and Spotted Prince. Two hundred fine spring pigs by these boars can now be seen on the Faulkner farms.

Sam Drybread & Sons, of Elk City, Kansas, have announced May 13 for their annual Hereford sale to be held in Independence, Kansas. The offering consists of 100 cows and heifers and twenty-five bulls, including a lot of farmer and range years old or mature, with calves at foot or bred by or to the great breeding bulls, Rockhampton 1st, Judge Fairfax, a grandson of Perfecting 1st, Judge Fairfax, Standard Disturber, or T. Gay Land.

H. Grable, formerly of Dearborn, Missouri, and for years a well known breeder of Duroc Jersey hogs and Jersey cattle, has sold his farm and has located at Agency, Missouri, and has decided to engage in a good auction business. Mr. Grable is a good judge of stock and also of values, and with his years of experience both as a breeder and salesman he is well qualified to render satisfactory service on the block.

HEALTHIER HORSES

Leading veterinarians recommend spring clipping for keeping horses healthy. Unclipped horses get overheated from spring work and their long hair takes hours to dry. While wet they are liable to catch cold and get sick. Long hair also attracts vermin, causing itch and mange. Clip with a Stewart clipper. Only \$9.75. \$2 down—balance on arrival. Write for catalog.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. B122 Twelfth St. and Central Ave., Chicago, Ill.

A calf, a colt, a pig, a lamb, or some chickens, for the farm boys' and farm girls' "very own" may be the simple means of binding the young folks to the soil.

It's all right to buy fertilizers, but not the fertilizers that can be produced on the farm.

PARK E. SALTER Shorthorn Sale

At The Forum, Wichita, Kans., May 16

45 Head of Selected Imported
and Home Bred Cattle

Thirty-seven Females and Eight Herd Bulls—Fifteen cows with calves at foot, mostly by Imported Bapton Corporal, Imported British Emblem and Imported Proud Emblem Jr. by Proud Emblem.

Fifteen Bred Cows and Bred Heifers, bred to the above mentioned herd bulls.

Seven Head Open Heifers.

This is the best lot of cattle I have ever sold, and I invite breeders and all farmers interested in Shorthorn Cattle to attend my sale. I am offering eight richly bred bulls, including one imported bull, six are sired by imported bull and one a Cumberland type bull. All are real herd bulls.

Please send for catalog and come to my sale.

PARK E. SALTER, WICHITA, KANS.

Kansas Hereford Breeders' Draft Sale

SIXTY WELL-BRED, SPLENDID INDIVIDUALS—Thirty-five cows showing safe in calf or with calf at side, from two to six years of age. Twenty-five bulls from sixteen to thirty-six months of age.

Monday, May 12, 1919, Live Stock Pavilion, Kansas Agricultural College
MANHATTAN, KANSAS

CATTLE FOR THIS SALE HAVE BEEN DRAFTED FROM THE HERDS OF

CARL MILLER, Belvue.
C. G. STEELE, Barnes.
O. M. WRIGHT, Ash Grove.
J. M. RODGERS, Beloit.
DAN D. CASEMENT, Manhattan.
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K. S. A. C., Manhattan.
EMERY JOHNSON, Emmett.
J. H. MILLER, Woodston.
HENDERSON BROS., Alma.
E. S. JONES, Emporia.
C. F. BEHRENT, Oronoque.

FRANK SEDLACEK, Marysville.
W. H. RHODES, Manhattan.
J. A. HOWELL, Herkimer.
KLAUS BROS., Bendena.
POOLE BROS., Manhattan.
J. F. O'SHEA, Blaine.



Especial attention is directed to the fact that this sale offers a splendid opportunity to secure the blood of such noted sires as Beau Mischief, Domino, Beau Paragon, Prince Rupert 8th, Caldo 2d, Perfection, Dandy Andrew, Sir Paul, and others. Manhattan is located on main lines of both the Union Pacific and Rock Island railroads. Direct lines to Kansas City, Wichita, Lincoln and Omaha, Nebraska, Denver, St. Joseph, Oklahoma City, and Topeka.

The annual meeting of the Kansas Cattle Feeders' Association will be held at Manhattan, May 13, the day following this sale. Plan to attend both the sale and the Cattle Feeders' Meeting.

Catalogs for the sale may be secured by addressing

DR. C. W. McCAMPBELL, MANHATTAN, KANSAS

Vealing Dairy Calves

What to do with the grade bull calves is a question confronting every dairyman. V. C. Devilbiss, a dairyman living in Franklin County, has been doing some thinking on this problem and has written the following article giving his conclusions:

The average farmer, or dairyman, stops to consider how much it costs to feed a calf from the time of birth until it is six weeks old, or the full vealing age. We ordinarily just get for them and then just take what we can get for them and imagine we have made some profit. A Jersey or Guernsey calf, at birth, weighs about sixty pounds, a calf of any of the beef breeds at eighty pounds, and a Holstein at ninety pounds. These are averages for grade calves.

First, we will take the Jersey and Guernsey calf. Give them credit for a week's feed while the milk is not in, feed them twelve pounds of milk the second week, fourteen pounds

daily the third week, sixteen pounds daily the fourth week, eighteen pounds daily the fifth week, and twenty pounds daily the sixth week. The total amount of milk fed is 560 pounds. Average test, 4.5 per cent; butter fat, 25.2 pounds. Whole milk price at Ottawa is 80 cents per pound butter fat, or \$20.16, which is just the cost of milk only. The calf should have some hay and grain. Average weight at end of six weeks, 195 pounds, at 12 cents per pound, or \$23.40, which shows an actual loss of \$3.81. If you are selling cream at 70 cents, the cost is \$17.64 and the loss is \$5.76.

"The beef calf takes four pounds of milk more per day, which makes 700 pounds of 4 per cent milk, or twenty-eight pounds of fat, at 80 cents, or \$22.40. The calf weighs about 180 pounds, at 12 cents, bringing \$21.60, making a loss of 80 cents on just the milk.

"The Holstein calf takes six pounds more of milk daily than the Jersey, making 770 pounds of milk, testing 3.5 per cent, or twenty-seven pounds of butter

fat, at 80 cents a pound, making a cost of \$21.60. Calves average 190 pounds, at 12 cents per pound, bringing \$22.80, showing a profit of \$1.20, which is easily consumed in other feeds which are very essential in making a 12-cent veal.

"Some may differ with me on weights of calves, but I think you will find these nearly an average. Beef men say their calves will weigh more than Holsteins, but they are mistaken, as no other calf will outweigh a Holstein at birth or vealing time. Others may say my amounts are too large, but I know they are not if you want to produce top-of-the-market veals.

"In my opinion there is just one thing to do with a grade male calf, and that is to kill it and sell the hide, which will bring from \$1 to \$1.50. Somebody says Hoover would make a protest, but I claim that the twenty-five to thirty pounds of butter fat is just as necessary and valuable a food as a 130 to 190-pound veal calf. Another farmer says, 'I put them on skim milk as soon as I can and make some money on my

calves.' Let us figure his cost: One week free, three weeks whole milk, twelve pounds daily, or 252 pounds, value \$9.04; five months on skim milk, sixteen pounds daily, making 2,400 pounds valued at 50 cents per hundred, or \$12; two pounds grain daily for five months, 300 pounds at 3 cents per pound, or \$9; four pounds hay daily for five months, 600 pounds at \$25 per ton, or \$7.50, making a total cost of \$38.54 for a six-months-old calf that is worth from \$20 to \$25.

"If every farmer or dairyman used his pencil and paper along with his labor, the profits at the end of the year would show a decided increase."

Due Recognition

At the conclusion of the school term prizes were distributed. When one of the pupils returned home his mother chanced to be entertaining callers.

"Well, Charlie," asked one of these, "did you win a prize?"

"Not exactly," said Charlie, "but I got a horrible mention."—Harper's Magazine.

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Beautiful Waterproof Apron FREE



This is not an ordinary apron, but is made of beautiful waterproof material which gives the appearance of the finest quality of checked gingham.

EASILY CLEANED

The waterproof material of which this apron is made will keep clean much longer than any ordinary apron, and it can be easily washed with soap and water or cleaned with gasoline without injury to the fabric or color.

COLOR

We can furnish these aprons in either light blue checked or pink checked. In ordering, state color wanted.

SIZE

The aprons are 30 inches long and 28 inches wide, with bib 9½ by 10 inches.

OUR OFFER

We will send this beautiful and useful waterproof apron to all who will send us only two subscribers to Kansas Farmer for one year at \$1.00 each. Send us two subscribers on the blank below, with \$2.00 to pay for them, and we will send you the apron by return mail, postage prepaid.

BEAUTIFUL 12-INCH DOLL

We have only a few of these big beautiful dolls left and can not secure more of them at the same price. So hurry if you want this prize. It is really a fine doll and made by one of our best known doll makers. The doll



will be given free for two subscriptions to Kansas Farmer at \$1 each, and it is well worth the effort of any girl or anyone interested in her happiness. Send us two subscriptions and get a doll before they are all gone.

Many useful and valuable premiums not shown on this page may be secured with Kansas Farmer. Find out about them.



EMBROIDERY OUTFIT

This Embroidery Outfit, just as illustrated, containing needles, crochet needle, floss and patterns, will also be given for two subscriptions to Kansas Farmer at \$1.00 each. You will not be disappointed in this prize.

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KANSAS FARMER, Topeka, Kansas.

Gentlemen: Enclosed find \$2.00 to pay for one year's subscription for each of the following:

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600 PAGES—100 ILLUSTRATIONS

Comprising a Complete History of the World's Great War

Compiled and written as the war was being fought, by
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The book contains 100 illustrations taken at the battle front, and in all 600 pages.

It begins back with the causes of the war, tells of the mobilization measures taken by the different countries, contains descriptions of the battles, personal experiences of soldiers and captured prisoners, relates America's great part in the war, and brings us down to the close of the conflict at the signing of the armistice.

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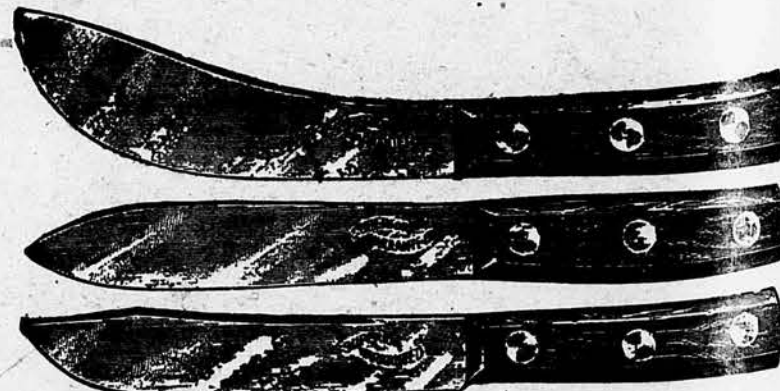
Sterling 500-Shot Air Rifle



Boys, here is your chance to get that air rifle.

This is a real up-to-the-minute Air Rifle. Shoots 500 shots without stopping to reload, and is guaranteed to shoot accurately. We are going to give away several hundred of these guns to boys who will send us only two subscriptions to Kansas Farmer at \$1.00 each and 25 cents extra for shipping charges. Just send us two subscriptions for one year each and \$2.25 to pay for them, and we will send you this fine air rifle free and postpaid. Use the blank for sending us your order.

Our 3-Piece Butchering Set



CONTAINS ONE EACH
Skinning Knife Sticking Knife Butcher Knife
(Double Edge)

All with six-inch high grade blades, carefully tempered, ground and polished. Beech or maple handles and extra large-headed brass rivets. Fully warranted.

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