

KANSAS FARMER

For the improvement  of the Farm and Home

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PERMANENCY IN BEEF MAKING

One of Kansas' Industries on an Enduring Basis

INSURING the permanency of the beef-making industry in Kansas is only a question of standards and methods. The resources and prospects are assured. The address of Frank Tomson, editor of The Shorthorn in America, at the forty-eighth annual meeting of the Kansas State Board of Agriculture, on "Standards and Permanency in the Beef-Making Industry," centered around these fundamental statements.

As the cost of growing and finishing live stock rapidly increased, the observing stockman noted that in the market places there was often a wide variation in the prices paid for animals of the same weight and, to all appearances, the same degree of fatness. He soon found this was because of a marked difference in quality which was usually traced to the use of pure-bred sires. Those who failed to observe and to adjust the methods to changed conditions were almost of necessity forced out of the beef-making business.

"On the whole," said Mr. Tomson, "one takes an optimistic view of the trend of practices in beef production as in other business enterprises. We have never before attached as much importance to the value of good breeding in the making of profitable beef as we do at the present time. We have never heretofore understood it so well. This has come about as the result of many interesting and convincing demonstrations. Out in Chase County there lives a man who operates a comparatively small cattle business and usually markets his entire calf crop at Kansas City each year in the form of baby beef. For eight years he has followed the practice regularly and seven years out of the eight he has topped the market; in fact I understand that he really topped it the eighth year when ages and weights are considered. This man's farm is no better than the average farm in his section. His methods are not so very different from those of his neighbors who are also growing beef for the market except that he has attached much importance to the pure-bred sire from the outset. In selecting his cows he adhered as nearly as possible to the type that was in favor at the market places. He picked sires of similar type and made inquiry as to the type of their ancestors in order to perpetuate the particular conformation which he favored.

Plan That Brings Success

"It is very simple—the plan which he has followed. There are many successful men who use methods quite similar. It is just such as a plan as any intelligent farmer may adopt and be assured of satisfactory results. In fact it is this plan that the most successful cattle producers of the country have followed so far as production is concerned. The matter of age at marketing time may be left entirely to the convenience and choice of the individual operator; but whether they go as baby beef, as feeders, or in finished form, the presence of good breeding is essential—it is indispensable.

"Is it not rather suggestive that those men who have become most favorably known or who have been highly successful in the business of producing, growing and finishing beef, have invariably

relied upon good breeding as the basis of their endeavor? A survey of the long list of men who have won a place of distinction in live stock husbandry leads to the conclusion that good breeding obtained through the continued use of prepotent sires has been the chief factor in the making of their success. For lack of an available supply it not infrequently happens that feeders are obliged to put in cattle of an inferior character. Perhaps the price at which they are available is so low as to justify the investment, but how rarely do we find the feeder manifesting any pride or enthusiasm when his feed lots are filled with this class.

Acquiring Ideals

"Did you ever pass your hand over the finished form of a champion or a creditable candidate for such award in the beef class and not feel then and there a desire to produce and finish one of similar merit? This desire has remained with you and if you are now engaged in the production of beef you inwardly hope and plan to some day present for approval one that represents your own handiwork. Be assured that the quality of the animal that made it appeal to your instinct was the evidence of good breeding.

"Your sons are growing up and beginning to take a hand in the affairs of the farm or the ranch. They have taken an animal husbandry course or have watched the ratings at various stock shows, or preference displayed at the market. They have formed definite ideas and if they are permitted to put these into practice you will find their chief source of delight will be in producing and developing types of the better standards and in this delight is the assurance of permanency. We cannot get away from the beauty nor monetary advantage of form and quality in beef production, nor can any other or less

desirable type be incorporated into a permanent beef-making enterprise in the corn belt because the cost of production and maintenance forbids it.

No More Cheap Beef

"The land that was free, or practically free, so very recently in Kansas now ranges in value from \$50 to \$250 per acre and even higher. The corn that used to furnish fuel for those who lived on the Kansas prairies may never again be had for less than 75 cents a bushel, certainly not less than 50 cents. The cost of baling a ton of hay or straw is higher now than the hay used to cost delivered. Pasturage for the season ranges around \$15 per head, whereas we used to regard \$1.50 as a fair rate. These comparative figures are stated to bring to your attention the advance in costs all along the line. Every item that enters into the making of a pound of beef is higher than it used to be, and yet beef must be produced—it will be produced on a basis that will make adequate profits. I recall a significant remark made by the late Senator Harris of Kansas. It was this: "The day of cheap beef is over." I wondered at the time how he could reach this conclusion, but it seems evident now that the day of cheap beef is over. The profit in its production lies in the type produced—it is a question of standard. Nor will the day ever come that the thick-fleshed steer with broad loins, full quarters, short legs, compactly built and furry-coated will fail to do his part in the making of profits to the producer.

Statistics reveal that in the year 1800 in the United States one family in thirty lived in cities of 10,000 or more population. In 1850 the percentage had advanced to one family in thirteen; in 1900, one family in three, or exactly one-third of the population lived in cities of 10,000 or more. In 1916 the records show one-half of the families re-

siding in cities above the size indicated. The continuous trend of the grouping of the population in congested centers suggests to the farmer engaged in the producing of food that his market is assured. Just in proportion as the tendency of the population is toward the city, so the advantages incline countryward.

High Production on Stock Farms

We have noted the upward trend of values, and we have no reason to doubt their continued advance. You will be interested in results obtained in an investigation made down in Indiana by the animal husbandry department of Purdue University when Prof. W. A. Cochel, whom all Kansas stockmen are now proud to claim as a resident, was connected with that institution. The investigation embraced the entire state and it was found that on those farms where beef production was carried on the producing power of the land on the average was nearly double that of the farms where beef production was not conducted. It was found, too, that the value of these farms was almost 100 per cent higher than that of the farms where beef-making was not a part of the program. So striking were these results that it occurred to the investigators that the beef-makers had selected the best lands in the state, and so the investigation was carefully reviewed and it was found that the conclusions held good and applied similarly to every congressional district and every county within the state.

"It would seem that the foregoing would be an unanswerable argument in favor of the permanency of the industry just as the purchaser of beef on the hoof invariably favors the typey, well-bred steer is the evidence of desirability—the imperative necessity—of the higher standard.

"There is today more than ever before an inclination to discard the inferior standards and even well-bred grades and substitute therefor purebreds. In so doing, the consumption of feed is materially reduced, for lesser numbers could be maintained. Because of the larger returns, not in quality alone but in added weight also, the individual pure-bred yields as compared with the maximum returns available from the grades. This is a tendency that will continue, and its continuance offers further assurance of the permanency of the beef-making industry.

"We have witnessed the transition from the days when the land was farmed and the stock carried through the varying seasons to make a living for the owner, to the time when farming and stock-raising—meat-making especially—has become a substantial business conducted for profit—a business of more than local interest and import. I am hopeful of a further systematic improvement in the affairs of our vocation. Our people are not lacking in genius, in energy, in experience nor financial resources. The problems that are yet to be solved will find a solution. The standards that are required to assure maximum results will be adopted and a great and useful industry, on which the very life and welfare of many millions rely, will endure.



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Weight and Tractive Power

WHAT is the minimum weight of a tractor that will develop 3,000 pounds drawbar pull without slipping on stubble ground that is dry and firm when the proper lugs are used, or when the tractor is of the caterpillar tread type? It seems to me that tractors, as now generally designed, are heavier than necessary for the drawbar pull they develop. In other words, why not substitute speed for weight? I have a three-bottom plow and a four-plow tractor weighing 8,000 pounds. It has just power enough for the three bottoms, but does not lack traction. Its plowing speed is so slow as to make its use impracticable, so far as the time-saving element is concerned. If it had double the speed, of course it would have to have double the power, but it would not need extra weight. Would it not therefore be less expensive to plow with than to add to its weight and allow the speed to remain constant?

If there is a tractor on the market, in the 5,000 to 6,000-pound class, that has a drawbar pull of not less than 3,000 pounds at a plowing speed of three miles per hour, I should be glad to know who manufactures it. In the two-plow tractors there are some that are light and speedy enough, but I do not know of one in the three-plow class, taking into consideration that one must generally, if he actually plows, pull one less bottom than the manufacturer recommends.—O. C. C., Smith County.

W. H. Sanders, assistant professor of farm engineering at the agricultural college, answers the points raised as follows:

"There are several factors that have a direct bearing on the tractive power developed in addition to weight. First of all, a motor of sufficient power to develop this pull at the designated speed is essential. This engine power is in direct ratio to speed, because horsepower is the product of load pulled times feet traveled in a given time. So the greater speed, the larger motor.

"With ample power, the next important question is traction without slipping. Traction depends entirely on friction between the wheels and the ground. This friction can be held at its maximum in two ways—either by excessive weight, or by sufficient grouters to actually stop the motor before the driver can slip. The first method is undesirable, for many reasons. The second method depends on either spikes or angle bars that actually are drawn deep enough into the ground to hold all the motor can pull—or the application of the crawler principle of ever extended surface in contact with the ground, which produces like traction as the proper spikes.

"Some very desirable results have been obtained with very light weight of tractor. Records of 2,000 pounds drawbar pull have been made with a total weight of a 3,000-pound tractor at speeds as high as three miles per hour. These machines were not of the conventional front steering, rear driving type, but were a modification either front pull four wheel drive or caterpillar types.

"Most tractors are heavier than the weights given. This is largely a result of clinging to earlier successful types, when the requisite strength of parts could only be obtained by using more metal. Today the builders have improved materials that can be used which reduce the necessary weight of material needed very much. Probably one very good reason tractors are not more generally constructed of these lighter materials is because the purchasers cannot see that such a machine, even at a much higher price, will last longer and cost less for operation and repair than the heavier machine. Manufacturers are in the game to supply the demand as it exists today. They will continue to build a heavier tractor than necessary so long as that is the kind they can sell.

"The second point—why not substitute speed for weight?—is all right if the whole problem is faced squarely; but plow design must be revised. Plowmen frequently say that their plows do not increase in draft with increase of speed only in direct proportion. This is not true. Repeated experiments in marine practice have clearly demonstrated that increase in the speed of boats was not in a direct ratio with power requirements. For example, a boat equipped with a ten horsepower motor might be able to travel at ten miles an hour. Putting a twenty horse-

power motor in the same boat does not mean a speed of twenty miles. The power necessary increases in the ratio of the square of the speed increase. To get the twenty miles an hour, not twice but four times the power will be required. Such a ratio of increase would soon call for prohibitive power. The same idea in a modified form applies to plows.

"Attacking the problem from the other end, it was found that the original ten horsepower motor could and did drive a boat of a different design at twenty miles. The application to the plow problem is as follows: The slower boat could carry a larger tonnage at a slow speed for ten miles. The faster carried a very small load at a high speed twenty miles in the same time. The slow boat pushed a small amount of water out of its way slowly; the fast one a very small amount of water very fast. The total work done by the engine was at a ten horsepower rate in either case.

"This is the nub of the whole matter—our plows are of the slow boat type. We turn several furrows at once, the total acres in a given time being fairly large. To go at a higher speed we must do one of two things: increase tractor power as the square of the speed, or redesign our plow and be content to pull fewer bottoms and still get the same acreage plowed.

"If a tractor goes so slow that it does a poor job of plowing, it may be possible that a slightly increased speed would do a better job. Don't forget what this increase of speed means in extra power.

"Your tractor gives evidence of not living up to its rating, but it can most likely be adjusted so it will overcome this. Unless you have exceptionally bad ground, it will pull the three plows successfully.

"Average plowing results in about four pounds pull for each square inch of furrow slice. Assume then that we plow five inches deep with a fourteen-inch bottom, we then require five times four times fourteen, or 280 pounds, for each bottom. Three bottoms would be but 840 pounds or pull. These figures are based on a speed of two miles an hour. Increasing the speed with the same plow increases the draft as the square of the speed very nearly. You can see that with the above pull and speed the tractor is only developing about four and a half horsepower at the drawbar. A proportionate increase in speed or draft would call for more power. Four-bottom plow tractors are usually rated not less than fifteen drawbar horsepower. If you have a tractor of such rating, pulling no greater load than 1,000 pounds and traveling about two miles an hour, something is wrong with the motor."

A service man from a machinery company tells of being called by an Arkansas farmer to repair a tractor. The only trouble seemed to be in getting the tractor started. The owner said he had cleaned the magneto in an effort to get the machine going. The service man, in looking over the magneto, asked what had been done with the metal bar which made connection from the magneto winding to the center of the distributor. "Oh, you mean that brace in there?" said the owner; "I have that in my pocket. I saw no need of putting that on until I found out whether or not it would start."

At present more than a million farmers of the United States are members of organizations assisting the county agent in his work. Through these organizations the American farmer and his family are now in close personal touch with a large corps of well-trained men and women so linked with federal and state institutions for the promotion of agriculture that farming people can readily avail themselves of the results of scientific research and practical experience the world over to aid them in their work on the farm and their life in the home.

Dutch Cleanser

The "Dutch Cleanser" division is the name earned by the 35th division of Kansas Guardsmen in six days' hard fighting last September. "The boys sure made a cleaning of the Dutch those days," says one member of the division.

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ROAD-BUILDING PLANS

Road-building operations seem certain to occupy a prominent place in Kansas in the months ahead of us. In this issue we give the tentative program of the Kansas Good Roads Association, also the general attitude of the Grange on road building as expressed in the proceedings of the National Grange and in the message of the Master of the Kansas State Grange as delivered at the annual meeting just held in Newton. There apparently is not much harmony between the two plans. We believe the Grange is right as regards assuming a heavy bonded indebtedness to build roads unless the plans for meeting the obligation are most carefully worked out. It is not good business to go heavily in debt simply because one has the necessary credit standing, but the proposal to make the automobile license pay the bonds and interest puts the proposition to issue bonds in a different light.

The Grange, however, through resolutions passed, went on record generally against the present plan of handling road building in Kansas. It proposes that all township roads be absolutely under the control and supervision of township boards, county roads to be under the control and supervision of the county commissioners, and only state and cross-county systems under the control and supervision of the state. It favored placing the appointment of the county engineer and the full control and supervision of his work in the hands of the county commissioners. The resolutions favored building and maintaining a comprehensive system of hard-surface roads, but only on a cash basis, also that benefit districts for building and maintaining hard-surface roads should include towns and incorporated cities on and along such roads.

The Grange program is decidedly reactionary as regards our present Highway Commission Law. We cannot say whether it fully reflects the attitude of agricultural interests of the state or not. From the discussion it would appear that there was a division of opinion on these points among the delegates at the State Grange meeting.

We believe it well to keep an open mind on the important questions confronting us. For that reason we have given in this issue the rather conflicting ideas on road building, hoping that our readers will give them fair and unbiased consideration, testing their truth or fallacy by their own thinking. We most assuredly need more good roads and some plan should be worked out whereby we can have such roads at a minimum cost.

THE 1919 WHEAT PRICE

The question of the 1919 guaranteed price on wheat provoked rather warm discussion during the agricultural convention of the State Board of Agriculture held in Topeka last week. It seems to us that there is much unnecessary alarm being expressed concerning the government guarantee. There were those present who took the position that the guarantee was worthless in view of the insistence of industrial classes for cheaper bread; that consumers of bread constitute 100 per cent of our population and wheat producers only a comparatively small per cent, so the government would be influenced by the many and repudiate the contract entered into with the farmer guaranteeing a price on the 1919 crop. These alarmists seem to think the wheat would in all probability be thrown on the market and sell for what it would bring. It must be admitted that in the event of wheat under open market conditions going lower than the government guaranteed price, money will have to be appropriated by Congress to make the guarantee good, but the contract was entered into by the government as definitely as the promise to pay interest and eventually the principle on government bonds.

The winter wheat farmer has already fulfilled his part of the contract and in

Kansas over 11,000,000 acres is sown to wheat. At the present time conditions are exceptionally favorable and there is the possibility of an enormous crop, perhaps in excess of 200,000,000 bushels. The spring wheat farmer has done comparatively nothing as yet to fulfill his part of the contract. It is generally expected that there will be a record-breaking sowing of spring wheat, and if the worldwide food needs of Mr. Hoover are correct there will be need for all the wheat grown. This world demand, if as strong as Mr. Hoover predicts it will be, will relieve our government from spending any money making its guarantee good. Here is what Mr. Hoover has to say on the cereal demand for the coming year:

"If finances can be arranged and equality of distribution prevails, it seems safe to assume that the surplus stocks of grain accumulated in various parts of the world will be almost entirely consumed this year and safely out of the way when the next harvest comes in. An increase in food production is to be expected for the coming harvest. However, it seems improbable that the entire increase will more than equal the surpluses which were released when the armistice was signed. Therefore the total amount of food from the coming world harvest will probably only about equal that of the last harvest plus the accumulated food supplies released in India, Australia, and the Argentine."

W. L. Brown, of Kingman County, Kansas, who is a member of the agricultural advisory committee, asked the delegates at the Board of Agriculture meeting for instructions as to his policy in representing Kansas in this matter of the wheat price guarantee. After much discussion, by a rising vote the body virtually instructed him to stand for having the guarantee carried out exactly as made. A resolution had already been proposed and adopted, reading as follows: "The guaranteed price of the government, aided by a spirit of patriotism, caused the wheat raisers of Kansas to plant over eleven million acres of winter wheat, the largest acreage in its history, by this action fulfilling their part of the contract as offered by the government, and while we have no fears of the government trying to abrogate the contract, we do insist that congress pass the necessary appropriation for the revolving fund so that the guarantee can become operative."

KANSAS AND CORN PRODUCTION

John Fields, of Oklahoma, in his address before the agricultural convention in Topeka last week, charged the Kansas farmer with not believing or accepting the records he himself is writing, or else with being a most cheerful gambler with the odds decidedly against him. In brief he proved by the records of our State Board of Agriculture that as a grain crop corn in Kansas is a failure. He went back over the records for eighteen years, comparing the acre value of corn with that of kafir in order to show that it was the usual thing and not the result of a bad year or two. A study of these figures—and KANSAS FARMER readers will recall that they have many times had their attention directed to these statistics—shows that corn is a most uncertain crop in Kansas, only a comparatively small part of the state producing corn profitably. The State Board of Agriculture reports furnish abundant proof that the sorghums are far safer than corn over most of our state, but a feeling of pride in being considered a corn state seems to keep us from facing the facts. Kansas could easily stand at the head of the list as the best of the kafir belt states if we would only systematically and seriously make the effort to give these crops a fair chance. Instead we seem to have adopted the policy of treating kafir as a sort of Cinderella to be given as little opportunity as possible, planted on the poorest land, given the least attention in the matter of seed selection, cultivation,

harvesting, etc. In spite of this attitude, these crops have demonstrated their value over the state, even though we are not as yet willing to forget corn and boast of our state as the great kafir belt state. We fear the general feeling along the line of an editorial in a Kansas daily paper commenting on Mr. Fields' remarks, which, while admitting that the figures must be correct, goes on to say, "But just wait until Kansas shall be blessed with rain enough in the proper season to make a corn crop and there will be a different story to tell. Time was when a corn failure in this state was rare, but the elements have been against the corn grower for ten or a dozen years. The farmer could not anticipate this condition. Guided by the past, he has hoped every spring that there would be sufficient rain to make a crop. Every summer he has been disappointed. If the old-time season shall return this year, the Oklahoma editor's figures will need much revision."

Why not face the situation, accepting the figures obtained by our State Board of Agriculture as setting forth the real facts? We could then start in seriously to further develop the types of kafir or other sorghums needed, working out plans and rotations, tillage methods, and ways of using the sorghum crops that will make them return even more money to the acre than our records show is now being produced.

WICHITA STOCK SHOW

The citizens of Wichita have shown their faith in the educational and general uplifting value of a great live-stock exposition by erecting the largest and finest municipal exposition building in the United States. The whole population of the big Southwest territory tributary to Wichita is awake to the possibilities of such an exposition and series of live-stock sales as will be held in that city the week beginning February 24.

The Kansas National Live Stock Exposition and Horse Show is just approaching its third birthday. In only three years' time it has attained a standing which many such shows of five times its age have not reached. The show of a year ago was a genuine surprise to those who were not familiar with the Kansas way of doing things. The showing of Percheron horses was the best made in the Middle West in ten years, surpassed only by the International.

Last year the exposition was held in the Forum and four temporary buildings. These temporary buildings have been replaced by new fireproof steel and concrete construction, furnishing room for hundreds more animals than could be housed a year ago. This exposition bids fair to become one of the educational features of the southwest territory. No live-stock farmer, large or small, should overlook it if it is possible to attend.

GRANGE AND MILITARY TRAINING

The Kansas State Grange went on record against any proposal to start this country on a career of militarism through a scheme of military training. The resolution adopted was short and to the point and left no doubt as to the attitude of this organization on militarism, branding it as a forerunner of autocracy. The delegates and members of the State Board of Agriculture, which met in Topeka the same week the State Grange was meeting in Newton, adopted a similar resolution. It closed with these words: "That it is the wish and prayer of this body that the terms of the final treaty of peace shall make any future war impossible and shall be so worded that the great motto and guide of all nations shall be embodied in the words first heard by the Wise Men of the East on the plains of Judea, 'Peace on earth and good will to men,' and that we desire to go on record as being unalterably opposed to compul-

sory training and militarism as a national policy."

There can be no doubting the attitude of organized agriculture in Kansas on this point, but many of our papers are still printing extensive arguments in favor of universal military training. The point most dwelt upon is the splendid effect of the training in making the men physically fit, developing habits of self-discipline and moral control and the spirit of co-operative effort in working for the common good. No one who has seen the results of this sort of training would question this argument, but why couple up with a military program such splendid training for citizenship? Increasing the efficiency of our man power as applied to the arts of peace is a legitimate program, but we would hold up our hands in horror at a proposal to spend any such sums of money in physical training or in the training of men for better citizenship as have been spent in maintaining our army camps. We have learned many things in connection with our participation in the war. Why not look forward to a time when every boy and girl can have in connection with their school life all the good things associated with what we commonly think of as military training?

FARM BUREAU ENDORSEMENT

It would be difficult to express in money the value of a farm bureau organization with a good, live county agent as its executive. In his address at the State Grange meeting last week State Master B. Needham closed his remarks on the farm bureau as follows: "We must look to our colleges for new ideas, for the education of our boys and girls, and for much experimental work, and in a large measure we must look to our county agent to interpret the results of these experiments and apply them to our local conditions. We want skilled men to help us with our problems. We want practical, broad-minded men to work with us. There is a large future for the county agent who is thoroughly trained for his work, has an abiding faith in his calling, and feels a genuine human relationship with those with whom he is closely associated." This is putting the work of the farm bureau on a high plane. Mr. Needham also had some words of criticism and the State Grange did not formally approve of the farm bureau work at this session. Indirectly, however, it recognized the value of the work in the passing of a resolution asserting that the farm bureau should assist practical farmers in making an investigation of the cost of production of the various agricultural products. This is a line of work that is being pushed by the farm bureau organization in Kansas. Scores of farm surveys have been made in the past few years, and probably the best figures now available on the cost of wheat production have been obtained in Kansas counties through the agency of the farm bureaus. President Jardine of our agricultural college is strongly backing this feature of the work.

There is a feeling that the United States Department of Agriculture is not in sympathy with the effort to get at the cost of crop production. In fact there seems little doubt as to Secretary Houston's disposition to ignore this feature of agricultural work. Since the farm bureau movement eventually heads up at Washington, perhaps the Secretary's position explains the suspicion cast upon the bureau work in various parts of the country. Kansas is fortunate in having state leadership thoroughly in sympathy with farm problems. Mr. Umberger, the present state leader and now acting dean of the division of extension, is a farmer himself and still manages his Chase County farm in addition to the duties of his state office.

When life proved too hard for poor human nature, Heaven sent humor to ease the burden.—Youth's Companion.

Probable Strong Demand for Agricultural Products at High Prices

Birds of prey, including eagles, hawks and owls, may be included in the list of flesh-eating animals that on the whole are more useful than harmful, because their chief economic function is to destroy noxious rodents.

ROAD BUILDING PROGRAM

Kansas Good Roads Association Outlines Legislation and Road Plans

THE Kansas Good Roads Association, of which J. Frank Smith is manager, submits the following legislative program for the coming session:

Submission of a constitutional amendment giving the state the right to engage in road building; authorizing the state to begin in 1921 and push road construction till at least 5,000 miles of hard surfaced roads have been completed, making a complete state system; authorizing the legislature to increase the auto license fees, graduated according to horsepower, and exempting them from all other forms of taxation; authorizing the state to issue twenty-year serial bonds, bearing a low rate of interest, to pay for the roads, the bonds and interest to be paid from the auto license during a period of twenty-five to thirty years; providing that where any paved road, which has been built during the past two years or may be constructed in the future and paid for by any county or by any county, township and benefit district, and the road is taken into and utilized as a part of the state system, the state is to refund to such counties, townships and benefit districts the cost or value of said roads.

In addition a few amendments to the present road laws which two years of application have found to be needed to make them more nearly perfect, should be passed, and a law to aid the people in small towns, that have no paving, to finance and build a hard surface on the streets that form a section of an improved county road.

The above is the plan outlined by the directors of the Kansas Good Roads Association. A special meeting of the association will be held in Topeka Tuesday, January 28, 1919, to secure an endorsement of the above program by the entire membership and all others interested; also to consider any other matters that may be presented.

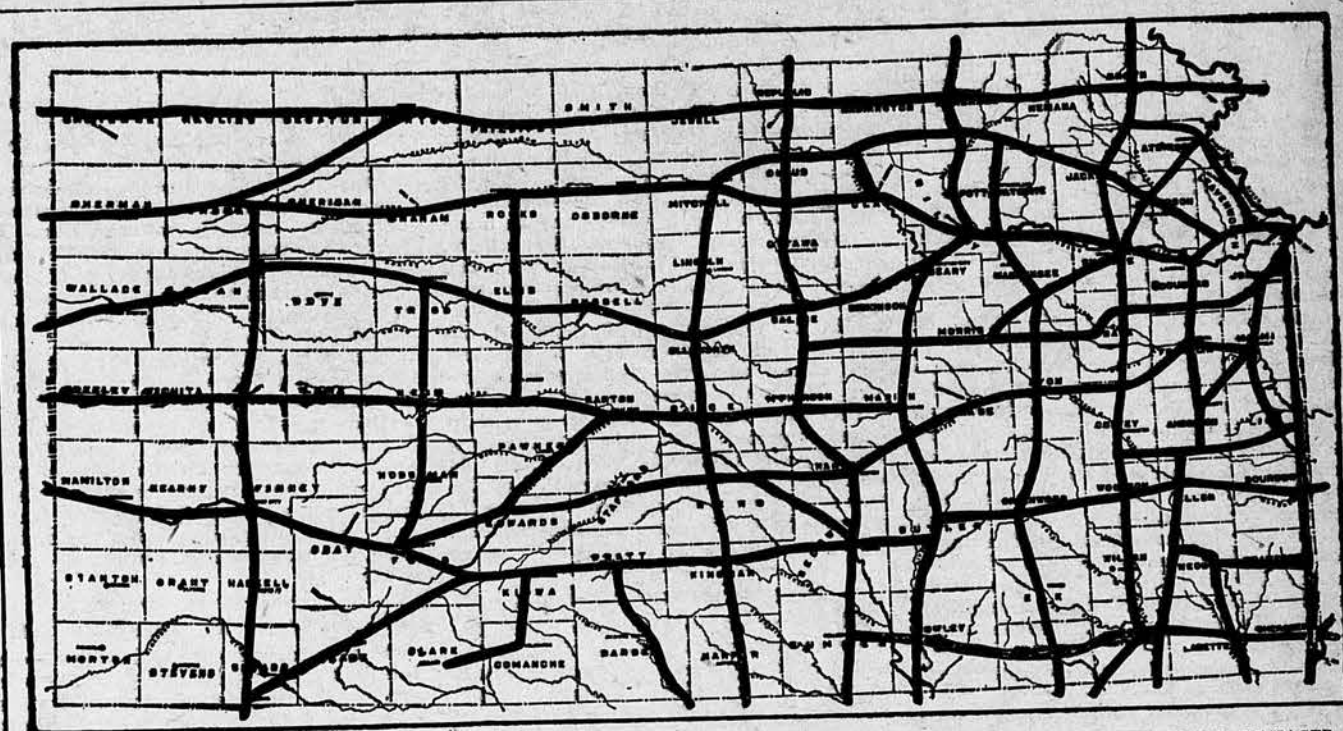
In discussing the proposed plans Mr. Smith points out that building good roads promises to become the principal industry in Kansas during the next few years. With practically every farmer in the state and most of the business and professional men demanding better means of transportation, in order to more closely link the producer with the consumer, the Kansas Good Roads Association and the state highway commission are planning a comprehensive system of roads that will reach all the principal towns and cities, and a majority of the population of the state.

The accompanying map illustrates about 4,000 miles of the most important highways in the state. If the big road-building program, as outlined at a meeting last Friday of the directors of the Kansas Good Roads Association, is adopted by the legislature, it is likely that the legislature will lay out a system of roads to be improved of approximately 5,000 miles. Some of the roads on the map might be marked off entirely and others added to make up the 5,000 miles.

Suggestions Invited

The system outlined on the map would place about 80 per cent of the population and taxable property within a very few miles of the paved roads. The system outlined, however, is only tentative and is by no means adopted by the Good Roads Association. It is merely a suggestion for a system that will serve the greatest number of persons with the fewest number of miles. Every person interested in good roads is invited by the association to get out his state map and see if he can improve the system, if possible without increasing the mileage.

If the automobile owners are to pay the cost, as has been suggested by the directors of the association, members of the highway commission, Governor Capper and a large number of prominent road boosters in Kansas, then these roads should be so located as to serve the very best interests of the people who meet the cost. It is estimated that 4,000 to 5,000 miles of hard surface roads could be constructed that would carry over 80



THIS MAP SHOWS A TENTATIVE SYSTEM OF HARD SURFACE ROADS FOR KANSAS, AS OUTLINED BY J. FRANK SMITH, MANAGER OF KANSAS GOOD ROADS ASSOCIATION.—IT HAS NOT BEEN OFFICIALLY ADOPTED

per cent of the automobile and truck traffic of the state.

"There are many good reasons," says Mr. Smith, "why Kansas should build at least 5,000 miles of hard surface roads, to be paid for with a bond issue, the bonds and interest to be met from the state automobile license fees, ranging over a period of twenty-five to thirty years. Twenty-four of these reasons are included in what follows:

"There are now more than 190,000 autos and trucks in Kansas and at an average cost of \$1,000 each they represent an approximate investment of \$190,000,000. These motor vehicles do not and can not be operated economically and efficiently over dirt roads, especially when the roads are muddy.

What Tax Would Bring

"Within four years there will probably be at least 300,000 autos and trucks in Kansas. Assuming that the cost of upkeep and depreciation to each car is \$450 per year it will mean that the car owners of Kansas will be expending annually \$135,000,000 to own and operate their cars. If Kansas had a system of 4,000 to 5,000 miles of paved roads over which to operate these trucks and cars, each owner could save at least \$50 per year, or a total of \$15,000,000 annually.

"The average auto license in Illinois is to be about \$15 per car. It is graduated according to horsepower. If Kansas had a similar law and we had 300,000 cars it would raise a fund annually of \$4,500,000. In twenty-five years it would raise a fund of \$112,500,000, or enough to pay for 7,000 miles of good roads. If each car owner can expend \$15 per year for his license and at the same time have his car exempt from all other forms of taxation as is proposed and with the system of paved roads save \$50 per year in upkeep and depreciation of his car, why would it not be a good business proposition?

Encourage Agriculture

"Kansas needs to encourage more intensive agriculture and to do so the most important need is a system of 365-day roads in each county.

"The trucks and autos are fast becoming essential factors in the life of every farmer and to get the desired service they must have hard roads.

"The government, state, county and city officials and all patriotic and progressive citizens must co-operate with the farmer to get these good roads.

"The plan proposed does not interfere in any way with the present program of the county and townships building and maintaining their roads and bridges as usual except it diverts the auto license fees to building the state system of hard roads. In every county the state would take over from twenty-five to a hundred miles of the important county roads and construct and maintain them,

in lieu of the present auto license fees that are used to drag the dirt roads.

Refund Former Costs

"The plans as outlined by the Good Roads Association proposes to refund to all counties, townships and benefit districts the cost of any hard roads, that have been built during the past two years or may be constructed before the state system is taken over. By this plan there would be no halting in the present program of financing and building hard roads under the benefit district law. If the road was on the state system the money would be repaid. The people who build these hard roads before this state system is taken over will be getting the use of the roads just that long in advance of those built originally under the state plan.

"The plan as proposed by the Good Roads Association contemplates that the construction shall begin in all sections of the state at the same time and that the whole system will be completed as quickly as possible.

"The plan proposed contemplates that the system of good roads will be built under the general supervision of the state highway department.

Soldiers Will Demand It

"A bill is now before congress that proposes to appropriate from \$50,000,000 to \$100,000,000 annually for federal aid to good roads. If this passes it will give Kansas enough federal funds to meet at least 25 per cent of the cost of the whole system. The state should be in a position to match the federal money as fast as it can be obtained, without so much red tape by benefit districts, and this would insure a complete, connected system to be built in the shortest possible time.

"The 2,000,000 American soldiers who have been in France and seen the good roads that saved the world from the Huns will soon be back and every one will be a strong advocate of durable roads. Kansas will soon have nearly 100,000 of them back on the farms and in other walks of life and they will insist that this big rich state get out of the mud as soon as possible.

"At the recent election the people of Illinois voted six to one in favor of a \$60,000,000 bond issue for the building of 4,800 miles of hard roads. They have planned to pay the entire expense from the auto license fees. If Illinois can do this, why not Kansas?

Other States Are Busy

"The people of Pennsylvania voted on election day overwhelmingly for \$50,000,000 in bonds to build good roads. Why cannot Kansas?

"The people of Missouri are now arranging a legislative program, that contemplates the issuing of \$50,000,000 in bonds for a state system of roads to be paid entirely from the auto license.

Kansas must not allow Missouri to outdo her in good roads.

"The Wisconsin highway commissioner has recommended to the legislature of that state that it give the people a chance to vote on a constitutional amendment and also a bond issue of \$100,000,000 to build 6,000 miles of paved roads. The plan proposes that the entire cost be paid from the auto license fees. Why not Kansas?

"Indiana is proposing to issue \$30,000,000 in bonds to build hard roads and pay the entire cost from the auto license fees. Jayhawkers can do anything that Hoosiers can do. Indiana now has over 30,000 miles of hard roads and wants more. Kansas has about 300 miles.

"The people of Georgia are planning to have the state issue \$40,000,000 in bonds to build more good roads. They now have 13,000 miles of hard roads. Kansas has about 300 miles. Do Kansans want to be so far behind the people of Georgia?

Spend Money at Home

"The governor of Oklahoma is recommending to the legislature a bond issue of \$30,000,000 for good roads. Does Kansas want the young state on the south to outdo her in the matter of building hard roads? Surely not.

"The building of these good roads will mean that a large percentage of their cost will be expended for labor and material, nearly all of which will remain in the county where the roads are built or at least in the state. The money will circulate at home and the people will still have the good roads and the money that was paid for their construction.

Kansas Must Move

"Kansas people must not stand still. The world is moving forward at a rapid pace. A few years ago \$1,000,000,000 appropriated by congress was subject for a campaign issue. Now our people do not blink or shudder at the expenditure of many billions for things that are necessary. Kansas communities have in the past labored hard and long to raise a few hundred dollars for some worthy purpose. These same communities have, within the past year, raised many thousands of dollars with very little effort. A few years ago the average Kansan was as much afraid of bonds as he was of a snake. Now about every man, woman and school child have bonds in their pockets or laying on the mantels at home like so many coupon books on the corner grocer. The proposition to issue bonds to build paved roads does not frighten anybody at this time. The demands for improved roads is national and the state that does not meet these demands will fail to appreciate the sentiment of the time. The Kansas farmer now has about every modern conven-

(Continued on Page Seven)

GENERAL FARM AND STOCK ITEMS

Something of Interest for All—Overflow from Other Departments

ALLOWING manure to remain in piles in the open after it has been hauled to the field is a wasteful practice in the light of fertility tests at the Ohio Experiment Station. For twenty-one years a comparison of manure handled in this manner with that taken directly from the stable and spread on sod land at the rate of eight tons to the acre has been made to determine the advantage of conserving the fertility in manure.

When the stall manure is spread on the ground at the time it is hauled, there is a gain per acre of 4.1 bushels of corn, 1.3 bushels of wheat and 490 pounds of hay in the crops following as compared with tests when the manure is allowed to remain in piles for several months. With corn at \$1 a bushel, wheat at \$2 and clover hay at \$20 a ton, the gain is worth \$11.60 per acre. The cost of handling the manure is less than that required when the old method of piling in the field is followed. When manure is left in piles, the loss from leaching is very great during a rainy season, while there is also a great loss from heating and the consequent escape of ammonia.

Sweet Clover as Soil Improver

Unlike many legumes, sweet clover will make a good growth on soils too depleted in humus for profitable crop production. In addition to its ability to grow and to produce a considerable quantity of forage on such soils, it will add much organic matter to them. The extensive root systems do much toward breaking up the subsoil, thereby providing better aeration and drainage. The effect of the large, deep roots in opening up the subsoil and providing better drainage is often very noticeable in the spring, as the land upon which sweet clover has grown for several years will be in a condition to plow earlier than the adjacent fields where it has not been grown. The roots are often one-

eighth of an inch in diameter at a depth of three feet, and they decay in five to eight weeks after the plants die. The holes made by the roots are left partly filled with a fibrous substance which permits rapid drainage. Sandy soils are benefited materially by the addition of humus and nitrogen, while hardpan often is broken up so completely that alfalfa or other crops will readily grow on the land. The roots add much organic matter to the layers of soil below the usual depth of plowing, while those in the surface soil, together with the stubble and stems, when the crop is plowed under, add more humus than possibly any other legume which may be grown in short rotations. Not only does this crop add organic matter to the soil, but in common with other legumes it has the power of fixing atmospheric nitrogen by means of the nitrogen-gathering bacteria in the nodules on the roots.

Straw-Spreading Pays

The spreading of straw not only returns organic matter and fertility to the soil, but many times will save a stand of wheat from winter killing. In the Kansas Experiment Station bulletin on soil fertility it is stated that wheat straw is undoubtedly one of the most valuable by-products of the farms of Kansas. At the present time a large quantity of straw is burned or otherwise destroyed. This practice results in a loss that neither the individual farmer nor the state as a whole can afford. This straw, if properly used on the land, would supply the much needed organic matter and add several million dollars' worth of plant food annually. When the straw is burned the organic matter is not only destroyed, but most of the plant food is lost as well.

The most economical way of handling straw is to utilize as much of it as possible for feed and bedding, applying the manure produced therefrom to the soil.

When it is not possible to follow this method, the straw can be applied as a surface dressing on wheat during the winter or as a top dressing on corn or sorghum ground at the rate of 1 to 1.5 tons to the acre. Heavier applications are not advisable on growing wheat. When top dressings of this kind are made the straw acts as a surface mulch and aids in the conservation of moisture. Later, it becomes incorporated in the soil mass and supplies organic matter and plant food.

Straw may be applied by spreading from hay rack by use of fork or it may be spread with a straw spreader. There are several straw spreaders on the market at the present time. Some of these spreaders may be attached to the rear end of an ordinary hay wagon or header barge, while others include the wagon and rack. Regardless of the method used, the straw should always be spread evenly.

Oat Straw in Horse Ration

Mature farm horses and mules, doing the light team work required in the winter months, can be maintained on a ration that includes oat straw in place of hay. This was demonstrated in a feeding test at the Missouri College of Agriculture last winter. Eight head of pure-bred and grade Percherons, averaging 1,439 pounds, were fed for six weeks on a ration in which the roughness was oat straw. The average daily ration was: Corn and cob meal, 14.77 pounds; linseed oil meal, 1.67 pounds; and oat straw, 14.34 pounds. The horses were at light work five and a half hours daily. At the end of the six weeks the horses averaged 1,415 pounds, a loss of twenty-four pounds. "These horses were in sufficiently good flesh at the close of the test to go into the heavy work of spring," says E. A. Trowbridge; "in fact they were in much better condition than are horses and mules on a good many

farms when they go into spring work."

In order to make comparison of oat straw and timothy hay, the same horses were fed for three weeks on this ration, following the first test: Corn and cob meal, 15.42 pounds; linseed oil meal, 1.93 pounds; mixed clover and timothy hay, 16.71 pounds. At the close of the period the horses, which had been worked an average of 6.9 hours daily, weighed 1,404 pounds, showing an average loss of eleven pounds. It is evident that there was no great difference in the feeding value of the oat straw and the hay used.

Farm Delegates to Paris

Last fall the State Department refused passports to the two delegates appointed by the National Board of Farm Organizations to investigate agricultural conditions in Europe, the excuse being that the official investigations of the Federal Department of Agriculture would meet all requirements. Since labor and all kinds of commercial interests had been permitted to send delegations to obtain first hand information, this action was resented. It is now announced that at a recent meeting of the National Board of Farm Organizations in Washington it was decided to send ten delegates to the peace conference in Versailles. There, it is expected, the delegates will meet representatives of agriculture from various countries, and the interests of farmers will be placed before the peace congress with a view to the suppression of food and soil destruction in event of future wars.

The Blessings

The real blessing, mercy, satisfaction, is not in the having or the lack of merely outward things, but in the consciousness that the true sources of life and happiness are deeper than all these. —JOHN WHITE CHADWICK.

A Fortune in an Orchard

By E. E. NICHOLS

HAVING a home, a farm without a mortgage, and a steadily growing income for the rest of his days, are some of the things for which Fred Burre, of Leavenworth County, Kansas, gives credit to his orchard. Not many years ago he was burdened with a big debt which was rapidly increasing, but today he is independent and prosperous. Although still a young man he has won for himself a name as a fruit grower and a financier.

It was a lucky day for Fred Burre when the worm turned and he went into the fruit business. Life had been a hard battle from his earliest days trying to make both ends meet. As a boy he had made his own way and as a man married and with a family, the task of making a small income cover the rapidly increasing cost of living was only intensified. Sickness and misfortune caused the debts to pile up and continually drain his income. Apparently he had nothing ahead.

When well along in the twenties young Burre faced the situation squarely and determined to go into fruit raising. From his youth he had been interested in fruit and had been studying and observing. From old orchardists he had learned the foundation principles of fruit growing, and from his reading he had formed some pretty definite ideas of his own in regard to what makes success in the fruit game. He was firmly convinced that there was a big future for the man with a good apple orchard.

Young Burre was already in debt, but he borrowed \$3,300 to make the start. Today he is convinced that it was the wisest move of his life. In selecting the site for his orchard he chose the best land he could find, realizing that the best was none too good when he had his all at stake and that it would pay for itself many times over in the long run. The soil was a rich, black loam, full of humus and plant food which he knew to be vitally essential to the well being of young trees. The subsoil was open and could be easily penetrated by the

tender roots. He saw to it that the soil was well drained and porous, for he was well aware that "wet feet" cause many failures in apple growing.

"One secret of my success," says Mr. Burre, "is that I chose only old tried varieties. New unreliable kinds have no place in an orchard where everything depends on their success. Try a new variety or two along with the old ones if you wish, but be sure of the reliable ones first." Mr. Burre selected varieties which had been tried and found suited to his neighborhood and only the strongest, healthiest young trees were considered.

After the trees were set they were carefully pruned and sprayed from the very beginning. The young orchardist realized that lots of air and sunlight are necessary for healthy growth, so the heads were made open and the limbs kept low to the ground. With this training the trees developed a form which favored the production of good colored fruit and from which it can be easily gathered since the trees have become

mature. By keeping the tops open, together with careful spraying, scale, scab and canker have been kept out of the Burre orchard and it has never known the severe ravages which are the destruction of many good trees. "It is easier and cheaper," says Mr. Burre, "to keep an orchard clean from the beginning than to clean it out after it has once become infected. If more people would practice prevention in their orchards they would find it much more economical than trying to drive out disease after it has once gained entrance and many of them would not have to swallow the bitter pill of failure because of their neglect."

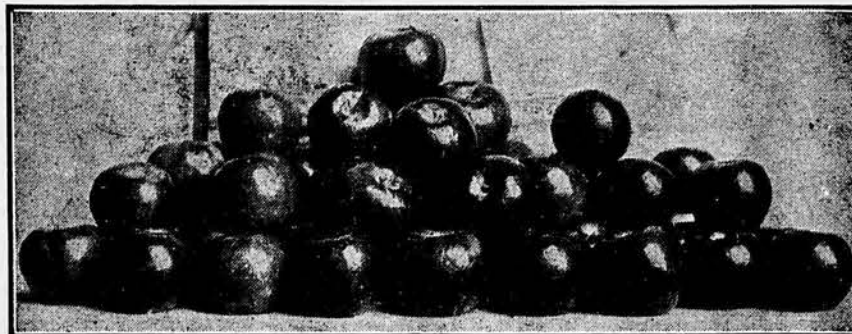
Everyone in the Burre neighborhood who raised fruit disposed of it at the time of harvesting and of course the price then was low. In the winter months after the season of plenty was past, there came a demand for fruit and no one had any to sell. Burre made up his mind to take advantage of this condition and went further in debt to build a storage house. A fifty-four by

fourteen-foot building cost him \$410, but it was large enough to hold 600 barrels of apples, and was so constructed that it maintained a fairly uniform temperature even under extremes of weather. One room was fixed up for storing the vinegar made from culls and for which he found a ready market the year around.

In the fall the apples are graded and sorted as picked. Some are not fit for storage but are sold at once. Others are labeled and stored in a certain part of the cellar to be sold first. The best and soundest fruit is stored carefully away in barrels to await a late winter or even spring market. Every week during the winter, indeed almost daily, Mr. Burre is kept busy hauling loads to town and delivering orders phoned direct to his house. After the fall supply in the neighborhood is diminished the demand increases rapidly and the price rises accordingly. It is not necessary to sell to a middleman, he saves those profits for himself and he sets his own price rather than have a wholesaler dictate it to him. All the year around he hauls load after load away from his cellar and delivers first class fruit at fancy prices.

Today Fred Burre does not have to worry about keeping the wolf from the door. Although he is not a rich man, he is out of debt, his farm is improved and modern in every respect, and he has twenty-two acres of fruit trees that give promise of being a continuous source of revenue for the rest of his days. Moreover, he has found work in which he takes pleasure. He need not worry, for the name of Burre is synonymous with honesty and he has a market for all he can produce.

No right thinking dairyman should continue to keep in his herd an animal found to be unprofitable. The farm is a factory and the consuming public should know that no manufacturer can long continue to place an article on the market at a price below production costs.



APPLES PRODUCED BY SCIENTIFIC HANDLING OF ORCHARDS

Road-Building Program

(Continued from Page Five)

ience of the city man except paved roads. The city man is ready to help the farmer get these and the farmer should be quick to accept the offer.

"The mud tax on the autos and trucks of Kansas is enormous. It is a real burden. The best way to stop the tax and dump the burden is to build hard-surfaced roads.

"The members of the coming legislature have the power to help in a big way to relieve the condition. They will respond to the demands of their constituents. If you are for this big road program just tell your state senator or member of the house about it and do it now."

How Abortion Spreads

The introduction of an infected cow into a healthy herd is apparently the most common way the abortion disease is disseminated among cattle. Newly-purchased cows should never be turned with the herd until such cows have delivered a normal calf, says Dr. L. C. Kigin, veterinarian on the Purdue University extension staff. However, some cows that deliver a healthy calf harbor the germ, and infect healthy, susceptible cows, but such cases should not discourage all efforts that are known to be essential in combating the disease. Abortion is too destructive to the cattle breeding industry to wait until sufficient research and experimental work has thrown light upon dark phases of it. The part that the bull plays in spreading disease is a debatable question; however, he should be regarded as dangerous in spreading it and treated with antiseptic measures.

Contaminated food and drinking water have been responsible for many outbreaks. Attendants walking through infected stalls and climbing into silos or hay mows contaminate food which conveys the germ to animals in the barn. The discharge from infected cows dropping into the water tank is a common way of contaminating the drinking water. Taking an infected cow to a community bull without using antiseptic precautions can serve as an avenue for disseminating the disease. Such cows should be kept out of the cow-lots, away from drinking tanks, and no cow should be bred that shows signs of a discharge.

Neighbors as Farm Assets

All of us like good neighbors, folks who will work with us and with whom we can work. The rural neighborhood has much to do with actual farm values. In buying a farm everybody likes to get into a good neighborhood. Nobody wants to settle in a community where brawls, fusses and feuds are common. In other words, no one wants to include a lawsuit with his land. A good neighborhood adds to the value of the poorest farm in it, while a poor neighborhood detracts from the value of its best farm.

Why not then, even if lacking in public spirit and prompted only by selfishness, organize as farm clubs or in some other manner that will result in a better neighborhood, that will make of it a more valuable business asset?—W. L. NELSON.

Cholera Losses Decrease

Hog cholera losses in the United States have very materially decreased in the four years from 1914 to 1917. During this time the federal government has conducted an extensive campaign against this destructive disease and has had considerable co-operation from the states.

The losses for 1914 totaled 6,304,300 animals, which, valued at \$10.40 a head, made a monetary loss of \$67,697,461; for 1917, 2,952,144 animals, valued at \$11.73 a head, a monetary loss of \$32,475,190. During the four years the number of animals taken by the disease was 18,835,901, representing a value of \$188,448,643.

"Estimates obtained from state authorities during November, and reports from our inspectors in charge of hog cholera control work," says Secretary Houston, "indicate that there will be a further reduction of losses from the disease during the present year (1918) except in New York, Pennsylvania, and Washington, where no co-operative work is being conducted by the department. The monetary loss, however, will still be great owing to the increased value of this class of farm animals over that of previous years.

"A recent article, in which conditions

in Iowa are discussed, indicates that the number of hogs lost in that state from cholera in 1914 was approximately 3,000,000, while the losses for 1917 amounted to less than 200,000. Conditions in Iowa, however, have been more favorable to the efforts of the co-operative forces engaged in hog cholera control work in that state during the last two years than previously.

"The reduction of losses has been less in certain other states due largely to circumstances which have handicapped our efforts in controlling the disease. We can not hope to be so successful in states where hogs have access to open ranges as in localities where herds are restricted to the premises of the owner and kept away from sources of contamination."

Modern Electric Lamps

Although great advance has been made in the electric lamps, some people still hold to the old carbon lamp. When it is stated that the tungsten lamp gives more light for at least half of the expenditure of energy, some seem to think that that is merely advertising talk for the company who manufactures the lamps. Such is not the case. The ordinary sixteen candle power carbon lamp is rated at sixty watts. The twenty-five-watt tungsten gives nearly, if not quite, twenty candle power. Thus, with the carbon lamps one is paying for 3.75 watts per candle power, while with the tungsten lamp of twenty candle power only 1.25 watts are used.—FRED G. PERSON, Colorado Agricultural College.

Self-Feeders for Hogs

Labor is now one of the main factors in profitable production on the farm. This condition has caused men to invent labor-saving tools. The self-feeder is one of the most valuable inventions ever made. While calling on a farmer in Johnson County last summer, he showed me 140 pigs, and fed them while I was there. It took him at least three hours a day to mix the feed and feed those pigs. Last week I called on the same farmer. He had made a self-feeder and was feeding the same pigs, letting the pigs mix their own feed. By using the self-feeder, he feeds those pigs in a few minutes each day. The pigs drink at a running stream. But, with automatic feeders, pigs can be handled very cheaply. The feeder used in this case cost twenty dollars.—J. E. PAYNE.

Economy in Heating

To burn fuel economically in a furnace or hot water boiler, control the fire by the draft inlet door located in the ash pit, or in the ash pit door. Regulate draft inlet door so that the maximum amount of heat that is required can be obtained with the least possible amount of opening. From one-eighth to one-half an inch opening will usually meet all requirements.

Many people imagine that by closing the choke damper in the smokehood they prevent the heat from escaping up the chimney. This practice, however, decomposes the fuel without giving off its available heat, and interferes with the

draft and regulation of the fire. It is very important that the furnace or boiler should be made air-tight so that the air for combustion enters the draft inlet door, located in the ash pit or in ash pit door, and through slide in fire door, which should be carefully adjusted to give best results. Thermostatic control, properly connected to the draft dampers, effects a great saving in fuel and gives a more uniform heat. In adding fresh fuel, first remove the clinkers, if any, then push or pull the live coals to one end or side of the fire pot, leaving only enough live coals on the grate to prevent the fresh coal from falling through. Then fill the fire pot

leaving live coals exposed at one end. This method of firing, properly executed, will eliminate dense smoke from the chimney and give good heating results.

Judging by the experience of tractor users, it is not safe to expect any material reduction in the cost of farm operations per acre through the use of the tractor, but it is safe to expect to be able to increase the crop acreage to a very considerable extent, and, the same time, the amount of crops which one man can raise.—Farmers' Bulletin, U. S. Department of Agriculture.

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Fall Freshening Insures Milk Flow

ON FARMS where provision has been made to give cows the right kind of winter care and feed, the fall-freshening cow will yield more in a lactation period than when calving in the spring. In the spring and early summer the conditions are favorable for milk production. At this time there is an abundance of green grass and the cows can be handled with little labor. This condition, however, lasts only a very short time and very often by the first or the middle of July the pastures are burned and almost useless. This is the hardest season in the year for the dairy cow. If the cow freshens in the spring there will be a short period of very heavy milk production, but soon the abundant feed supply fails and as a result the cow fails in her milk production. It is not uncommon for production in August to be not more than one-half what it was in June. The pasture shortage is not entirely responsible for this big reduction, for the flies are very troublesome at the same season, and doubtless are to blame for a part of the decline in milk flow. Many cows seem unable to stand the hot weather and this shows up in the milk production particularly, because the cow when uncomfortable from heat fails to graze as she normally does and as a result is underfed. Another factor of importance is that the milk tests lower in the summer months than at any other season of the year so that not only does the milk production receive a severe cut, but the fat percentage is affected.

When a fairly regular milk supply is desired throughout the year, have a few cows freshening at all seasons. The preferable time, however, is in the fall, because then the weather is cool and most favorable, the flies are not troublesome, the declining pastures are not a factor, as the cows are fed in the barn, and because in the winter months the percentage of fat in milk is at its highest point. Still another reason for fall calving is that the calves and the dairy work can be given more attention at that season. Flies and hot weather affect the calves also and the young calves can do their best during cool weather.

Testing Association Records

There were fifty-four cows in the Arkansas Valley Cow Testing Association making over forty pounds of butter fat in the month of November. Of these one had a record of over ninety pounds, two between seventy and eighty, seven between sixty and seventy, thirteen between fifty and sixty, and thirty-one produced between forty and fifty pounds of butter fat for the month. The total production of these fifty-four cows for the month was 76,108 pounds of milk and 2,790.25 pounds of butter fat, or an average to the cow of 1,409 pounds of milk and 51.87 pounds of butter fat.

Appleman Brothers had the highest average for cows in the forty-pound class, or 1,707 pounds of milk and 58.88 pounds of butter fat. The Stubbs Farm came second with an average of 1,616

pounds milk and 5,744 pounds of butter fat.

The following table gives the names and records of the cows in the association which have produced more than forty pounds of butter fat during the thirty-day period ending November 30, 1918:

Owner—	Pounds Milk	Per Cent Fat	Pounds Butter
A. C. DeWitt, H.	1,333	3.5	46.655
A. C. DeWitt, H.	1,368	3.7	50.616
A. C. DeWitt, H.	1,245	3.3	41.085
F. H. Bock, G.	1,068	4.1	43.788
F. H. Bock, H.	1,494	2.9	43.326
F. H. Bock, H.	1,635	2.7	44.145
F. H. Bock, H.	2,084	3.0	61.020
F. H. Bock, H.	1,767	3.3	57.144
F. H. Bock, H.	1,131	3.8	42.978
F. H. Bock, H.	861	5.1	43.911
B. R. Gordon, H.	1,002	4.2	42.084
C. R. Gordon, H.	1,095	3.9	42.705
C. R. Gordon, H.	1,530	3.9	59.670
C. R. Gordon, G.	1,146	3.7	42.402
P. W. Enns, H.	1,104	3.7	40.848
P. W. Enns, H.	1,146	3.5	40.110
B. R. Gosney, H.	1,200	3.4	40.800
B. R. Gosney, H.	1,410	3.5	49.350
B. R. Gosney, H.	1,821	3.5	63.735
Stubbs Farm, H.	1,464	3.3	48.488
Stubbs Farm, H.	1,528	3.3	50.657
Stubbs Farm, H.	1,556	3.8	59.328
Stubbs Farm, H.	1,530	3.2	48.560
Stubbs Farm, H.	1,776	3.1	55.058
Stubbs Farm, H.	1,329	3.2	42.528
Stubbs Farm, H.	1,131	3.7	41.847
Stubbs Farm, H.	1,299	4.5	58.455
Stubbs Farm, H.	2,049	3.4	69.666
Stubbs Farm, H.	1,464	3.2	46.848
Stubbs Farm, H.	1,548	4.2	65.016
La. Y. Posey, H.	1,104	4.5	49.680
Fred Harvey, H.	729	6.5	47.385
Fred Harvey, H.	1,260	3.7	47.730
E. B. Greene, H.	1,260	4.0	50.400
E. B. Greene, H.	1,197	3.5	41.895
E. B. Greene, H.	1,299	4.2	54.558
Appleman Bros., H.	2,145	3.3	70.785
Appleman Bros., H.	2,427	3.8	92.226
Appleman Bros., H.	1,491	3.8	56.658
Appleman Bros., H.	1,542	3.6	55.512
Appleman Bros., H.	1,632	2.9	47.328
Appleman Bros., H.	1,569	3.8	59.622
Appleman Bros., H.	1,374	3.2	43.968
Appleman Bros., H.	1,818	3.0	54.540
Appleman Bros., H.	1,878	3.6	67.608
Appleman Bros., H.	1,194	3.4	40.596
J. R. Pringle, H.	930	6.0	55.800
J. R. Pringle, H.	843	5.6	47.208
J. R. Pringle, H.	900	4.5	40.500
G. Regier, H.	1,218	4.4	53.592
G. Regier, H.	1,221	3.3	40.293
G. Regier, H.	1,269	3.6	45.684
G. Regier, H.	1,545	3.2	49.440
G. Regier, H.	1,068	4.5	48.048

In the table H. stands for Holstein; G. for Guernsey; J. for Jersey; S. H. for Shorthorn.

Handling Dairy Steers

The men who change from beef production to dairying will always grow calves which are "scrubs," from the butcher's standpoint. Also all steers from dairy cows are classed as scrubs by buyers of beef cattle. These two sources of scrub beef steers will always furnish quite a percentage of the cattle to the speculators and feeders. And the problem of the man who produces calves of this kind is how to handle them without loss. Three ways of handling the problem are now practiced by the most successful men. They are as follows:

Killing steer calves at birth when there is no hope of making a profit by feeding them; feeding for veal and selling as soon as fit to kill; feeding for baby beef.

Holstein calves and some individuals of other dairy breeds often feed out well for baby beef. But, unless a farmer has very cheap feed and pasture, calves of the above classes are likely to cause

losses to himself, and also to the man who fattens them, as grown steers.—J. E. PAYNE.

Cows were relatively low in cost in 1918, and this despite the fact that in 1914 you could buy a cow for \$80 that would now cost \$120. How, then, can it be said that cows are relatively cheap? The answer is that in 1914 it took eighty-eight bushels of wheat to buy a fair grade cow; now it takes only sixty bushels of the same grain. In 1914 it took 124 bushels of corn to buy a fair grade cow; now it takes about ninety-five bushels. If the comparison is made in terms of butter at present prices, the difference is still more striking.

In an Illinois cow testing association twenty-four herds were tested during the year 1918. From a total of 495 cows on test, 260 finished a complete record, and 135 were sold for beef because they were not profitable. The average production of the entire association was 7,473 pounds of milk and 282.4 pounds of butter fat. The average test was 3.78 per cent. The market value of milk per cow was \$209, value of feed \$113, leaving a net return over feed of \$96 per cow. Forty-five pure-bred cows were purchased during the year and every member but one used a pure-bred bull.

The objects of a cow testing association are to secure a fairly accurate record of feed costs and total annual milk production from individual cows under test; to eliminate boarders; to help in feeding more economically; to aid in breeding and selection, and to help put our dairy herds on the right financial basis.

Fertilizer Prices Up Again

Those who have hoped that the ending of hostilities would bring some reduction in the price of commercial fertilizers this spring are due for keen disappointment. Not only has the price not lowered, but it has raised about \$2 a ton for all mixed goods. Thus, a mixture carrying 2 per cent nitrogen, 8 per cent phosphoric acid and 2 per cent potash is retailing at about \$53 a ton compared with \$51 a ton last season. The 16 per cent acid phosphate is retailing at about \$30 a ton, an advance of \$1.25 higher than last season's quotation. Some dealers may charge as much as \$33 to \$35 a ton for acid phosphate, but this is abnormal. The price per pound of the three elements, in mixed goods will approximate 42½ cents for nitrogen, 30 cents for potash, and 9 cents for available phosphoric acid. It is highly important, therefore, to study the fertilizer needs of soils in order to buy fertilizers more intelligently.

The above information is on the authority of the Missouri College of Agriculture.

It cannot be too often repeated that sufficient nitrogen should be grown through the leguminous crops for maximum production of cereals besides supplying rich nitrogenous feeds. For example, two tons of clover returned to the land enriches the soil by at least 80 pounds of nitrogen, whereas the nitrogen contained in an acre application of 150 pounds of an ordinary 2:10:2 fertilizer amounts to only three pounds per acre. In regard to potash, it should be remembered that nearly all Kansas and Missouri soils are fairly well supplied with this constituent. The great need, therefore, is for phosphorus. It is unfortunate that the supply of phosphatic fertilizers is again so limited, most of this material having been used in compounding the mixed goods. In general the best source of phosphorus is acid phosphate, preferably the 16 per cent goods. It is reasonable to expect that the cost of this material be materially lower by next fall; at least there appears to be no economic reason for the price to remain much above what it was before the war, at which time the 16 per cent acid phosphate could be bought for about \$18 a ton.

Save Farm Manure

There has never been a time when the making, saving, and utilizing of all sorts of farm manure was so essential as at the present time. All fertilizing material is high in price, and some kinds can not be had in sufficient quantities at all. No refuse of any kind should be allowed to go to waste. The total quantity of manure can be greatly in-

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Grange and Public Highways

AS A general proposition the Grange views with disfavor the idea of heavy bond issues for road-building. The pay-as-you-go policy has long been contended for by the National Grange, and at the recent annual meeting held in Syracuse, New York, last November, this organization reiterated this policy by adopting the following report submitted by the Committee on Public Highways:

"We believe that federal aid for good roads should be increased in co-operation with states to meet the needs of the country for roads, and to stabilize the labor situation so far as practical. We believe that these funds should not be diverted from market and post roads to pleasure boulevards, nor should these funds be used as a leverage to take from county and local officials control of local funds and local affairs. We believe that the 'pay as you go' policy in providing money in the making of these roads by taxation instead of bond sales should be reaffirmed. Road building cannot be completed in many years. Debts and interest burdens will accumulate, and many of the roads will be worn out and other bonds issued for reconstruction before the original debt is paid. Road funds will be more economically expended if derived from taxation rather than from a jack pot bond issue, with pay day a long time in the future."

"The development and increased use of motor vehicles are steps in the progress of the transportation and distribution problems of the country, but the effect of these vehicles on our highways is such that another problem arises, that of building roads that will withstand the new conditions of high speed and heavy traffic. This involves increased cost of construction and maintenance, adding to the already heavy financial burdens of road building. These same motor vehicles increase the radius of service that can be rendered in transportation and distribution, and create a corresponding demand for more and better roads."

"This demand for highway construction makes possible to some extent the absorption of surplus labor that may result from cessation of war activities."

B. Needham, master of the Kansas State Grange, touched on the public highway question in his annual address at the State Grange meeting held in Newton the first week in January. He said:

"We are all interested in good roads, and many miles of improved roads will be constructed in the next few years. The returning soldiers and the men released from war industries will furnish an abundant supply of labor that must be gradually absorbed back into constructive activities and there is probably no better 'shock absorber' than an intensive road-building campaign. However, that does not justify the building of scenic cross country boulevards. The roads of most service to industry, and to the people who pay the bills, are the mail and market roads, those connecting the farm and factory with the market or shipping point and with the school."

"Illinois has just authorized a heavy bond issue for road building and the word has gone forth to the highway commission of one of our neighboring states, apparently from some one in authority, that Kansas is to issue \$40,000,000 of bonds for road construction. There is no excuse for huge bond issues at this time. We believe that the 'pay as you go' policy in providing money for improvements should be reaffirmed."

"There is altogether too much formality required in the administration of our road laws, too much overhead expense, too small a proportion of the road funds goes into actual work on the road. The people who must pay the bills have too little voice in the management of our road affairs. A few more turns of red tape and no self-respecting citizen can be induced to accept a township office. Our local roads should be under the control of our township boards, our county road systems should be controlled by the county commissioners, and out state or cross-county system should be under state supervision. Our federal road fund had better be rejected than be used as a pretext to take from county and local officials control of local funds and local affairs."

Departments of Agriculture

THERE are two distinct lines of agricultural work being conducted in every state—the regulatory activities and educational research work. Secretary of Agriculture D. F. Houston urges a separation of these two lines of activities. In addressing the National Association of Commissioners of Agriculture in Baltimore recently, he spoke earnestly in favor of strong state departments of agriculture to co-operate with the federal Department of Agriculture in regulatory activities concerning animal and plant diseases in the same way that the federal department now co-operates with the state agricultural colleges in educational and research work.

The secretary related the difficulties that the department has encountered in many of the states due to the lack of well equipped state departments or other regulatory agencies with sufficient legal powers and funds. He explained also the method of co-operation and joint support between the federal department and the states under the Smith-Lever Agricultural Extension Act and the Federal Aid Road Act, and contrasted these effective methods of co-operation with the lack of co-operation in respect to regulatory measures. He said:

"Now the matter stands in a different situation. Two great state organizations, your own and the Association of Land-Grant Colleges, have had the matter under advisement and have arrived essentially at a common mind. I am informed that the thoughts of the two bodies is that a great gain would result if the states adopted the policy, in general, of confining the agricultural colleges to investigational and educational work, both in the colleges and in the field, and the commissioners or boards of agriculture to administrative and regulatory matters, heading up under such commissioners of boards all the appropriate administrative and regulatory activities affecting agriculture,

thus providing in each state two great, strong, central agencies for the betterment of agriculture and rural life."

"This course, it seems to me, would be eminently wise. It would remove possibilities of duplication of work, of wasted energies, of jealousy and friction, and make it possible for the two great state establishments to work with a common purpose and with united forces. It would also very greatly facilitate the work of the Department of Agriculture, much of which must be carried on of necessity in co-operation with state officers. The department would then be in position to co-operate untrammelled with the colleges of agriculture in investigational and educational work and with the state departments of agriculture in all matters involving regulation, such as quarantines, the control of animal disease, orchard and nursery inspection, seed inspection, feed and fertilizer control, statistical inquiries, and the highly important tasks of aiding the farmer in the promotion of better rural finance and in the distribution and marketing of his products. If this is the plan of the two bodies, I shall be very glad in all appropriate ways to give it such support as I can, and to aid in securing its acceptance in any state where action may be needed. I know that there will be difficulties and that the problem will have to be dealt with in each state in the light of local conditions. It may be that no given plan would be feasible for every state; but I take the liberty of suggesting, for your consideration, the desirability of developing a tentative model law."

The relationship of these various activities in our own state may come up at the legislative session just begun. There should be clear thinking on the part of those most vitally concerned. These thoughts advanced by Secretary Houston give us some idea of problems involved and possible solutions.

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Temperature in Meat Curing

Favorable temperature conditions are essential for the proper curing of pork. The ideal temperature for meat curing is 38 degrees Fahrenheit. The meat should not freeze. On the other hand, if the temperature is above 40 degrees for a considerable time, there is great danger that the meat may sour before the curing is completed.

A very satisfactory curing mixture for dry curing pork consists of forty pounds salt, ten pounds sugar, four pounds pepper, one-half pound red pepper, Chili saltpeter, if used, two pounds. This cure should be thoroughly mixed and will be about sufficient for a thousand pounds of meat. The pieces of meat should be thoroughly rubbed with the cure. Rub especially well around the bones and into the shank end of the hams and shoulders. Pack the meat into a box on a bench so that the pieces will keep the desired shape. Leave a liberal sprink-

ling of the cure over each piece. About every five or six days overhaul the meat, rub on more of the cure, and repack, until three applications of the cure have been made. The meat should then stand until the curing is completed, which will require from ten days to several weeks, depending on the size of the piece.

Take an Inventory

In farming, as in other lines of business, we should ascertain at the beginning of the year just where we stand financially. During the year just closed property has been bought, sold, and exchanged. It is only by making an inventory that the farmer is able to determine whether he is worth more or less than he was a year ago. He should know whether he is conducting a losing or paying business and this can be determined only by comparing each year's possessions with those of the year before.

Classified Advertising

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

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

AGENTS WANTED.

OUR REPRESENTATIVES MAKING \$5 per day and up selling Kansas Farmer on special proposition. Write today for particulars. Address Circulation Manager, Kansas Farmer Company, Topeka, Kansas.

SEEDS

SEEDS—SEND FOR OUR NEW 1919 catalogue free. Hayes Seed House, Topeka, Kan.

SEED CORN—THE 90-BUSHEL KIND. Very select, Emmons yielder. While it lasts, bushel, \$4. Order quick. Wiltse, Rulo, Nebraska.

OATS—FANCY RED TEXAS. SEND FOR sample. \$1 per bushel. Hayes Seed House, Topeka, Kan.

AUTO TIRES.

AUTOMOBILISTS, ATTENTION.—OLD tires retreaded, \$2.50 to \$3. Retreaded tires for sale, \$5 and \$6. All tires guaranteed 2,500 miles. Write for particulars. Milford Tire Retreading Co., Milford, Kansas.

TOBACCO.

LEAF TOBACCO, PURE AND UNADULTERATED. Sent to consumers exactly as it leaves farmer's hands. Fine smoking and chewing. Prices, 50, 45 and 40 cents pound, prepaid by parcels post. Two-pound sample, \$1. Duke Bros., Dresden, Tenn.

PURE BRED POULTRY

RHODE ISLAND REDS.

SINGLE COMB RED COCKERELS, GOOD quality and good laying strain. Write for prices. J. W. Hamm, Humboldt, Kansas.

LARGE DARK S. C. RED COCKERELS and pullets for sale. Stanley Kaura, Wyomere, Nebraska.

HIGH CLASS SINGLE COMB RED COCKERELS, big bone, dark red fellows that will improve your flock. Nels W. Peterson, Mason City, Nebraska.

PURE-BRED DARK VELVET RED cockerels, both combs, \$4, \$5. Freda Peck-enpugh, Lake City, Kansas.

SINGLE COMB RHODE ISLAND RED cockers, none better, for \$3, \$4, \$5. Mrs. Geo. M. Long, St. John, Kansas.

DARK RED ROSE COMB REDS, GOOD scoring, greatest laying strain; cockerels, pullets, eggs. Satisfaction guaranteed. Highland Farm, Hedrick, Iowa.

BABY CHICKS.

THOROUGHbred BABY CHICKS.—WE are now booking orders for chicks of the following breeds: Barred Rocks, Rhode Island Reds, White Leghorns, Buff Orpingtons and White Wyandottes, from trap-nested stock; also utility stock of all breeds. Have some very nice cockerels at from \$3.50 up. Thoroughbred Poultry Yards, Dept. A, Box 771, Denver, Colo.

ORPINGTONS.

WHITE ORPINGTON COCKERELS, Wilderness Farm, Route 5, Hutchinson, Kan.

SINGLE COMB BUFF ORPINGTON COCKERELS, Cook and Martz strain direct, \$3 and \$5. Thos. D. Marshall, Sylvia, Kansas.

LARGE PURE-BRED BUFF ORPINGTON COCKERELS, \$3, \$4 and \$5 each. Myrtle Howard, Byron, Okla.

WYANDOTTES.

ROSE COMB WHITE WYANDOTTE cockerels. A. H. Fry, Paxico, Kansas.

FINE BIG BUFF WYANDOTTE COCKERELS, \$2.50 up. George H. Kittell, Newton, Kansas.

LARGE WHITE WYANDOTTE COCKERELS, \$2.50 each. Von Forell Bros., Chester, Nebraska.

LARGE WHITE WYANDOTTE COCKERELS, \$2.25. Mrs. Nelson Belden, Route 6, Sterling, Kansas.

CLARY'S PRIZE WINNING CHALK-White Wyandottes for sale. Prices right. George B. Clary, Fairbury, Nebraska.

SILVER WYANDOTTE COCKERELS, \$2.50 up. Hens, \$2. Mrs. Edwin Shuff, Plevna, Kansas.

TWENTY CHOICE SILVER WYANDOTTE cockerels, \$3 each; six, \$15. Twenty, \$4 and \$5 each. Eggs in season. Mrs. Philip Schuppert, Arrington, Kansas.

WHITE WYANDOTTE COCKERELS—From the world's greatest layers. The dams of the sires of these birds have a yearly record of 227 to 276 eggs. \$3 and \$6 each. H. A. Dressler, Lebo, Kansas.

SEVERAL BREEDS.

WHITE LEGHORNS, BLACK MINORcas, Barred Rock cockerels, ducks, geese, guineas. Emma Ahlstedt, Lindsborg, Kan.

PHOTO FINISHING.

TRIAL ROLL DEVELOPED AND SIX prints only 25c silver. Reed Studio, Dept. C, Norton, Kansas.

SEEDS AND NURSERIES.

SUDAN GRASS SEED, NORTHERN grown, free from Johnson grass, 20c per pound, bags free, postage, express or freight extra. White Sweet Clover scarified, 30c. Alfalfa, \$8 per bushel and up. Order early. Supply short. Quality guaranteed satisfactory. Henry Field, Shenandoah, Iowa.

REAL ESTATE.

WRITE TOM BLODGETT, PINE BLUFF, Ark., for land bargains that will double in value.

LISTEN—200-ACRE FRUIT AND STOCK farm, \$3,500, terms. Others. McGrath, Mountain View, Missouri.

CANADIAN LAND FOR SALE—SECTION in Alberta, near school and railway. For information apply Box 353, Barrie, Ontario, Canada.

FOR SALE—EIGHTY ACRES IMPROVED land near Purcell, Doniphan County, Kansas. Address Ft. L. Schneider, Box 464, Albuquerque, New Mexico.

FOR SALE BY OWNER, IN RILEY County, 160 acres, 1 1/2 miles station; 60 cultivated, 35 alfalfa; house, barn, water, orchard, timber. \$6,000. Terms. A. L. Tombaugh, Keats, Kansas.

SOUTHWEST KANSAS IS DEVELOPING fast. Farmers are making good profits on small investments. It is the best place today for the man of moderate means. You can get 160 acres for \$200 to \$300 down, and no further payment on principal for two years, then balance one-eighth of purchase price annually, interest only 6%—price \$10 to \$15 an acre. Write for our book of letters from farmers who are making good there now, also illustrated folder with particulars of our easy purchase contract. Address E. T. Cartledge, Santa Fe Land Improvement Company, 405 Santa Fe Bldg., Topeka, Kan.

DOGS.

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

MISCELLANEOUS.

PACOTA KEEPS RAZOR KEEN. SHAVE yourself. Shave-E-Z. For barbers and surgeons, too. 25c. Pacota Manufacturing Co., Box 533-J, Columbus, Ohio.

FARMS WANTED.

WANTED—TO HEAR FROM OWNER of good farm for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

IF YOU WANT TO SELL OR EXCHANGE your property, write me. John J. Black, 56th St., Chippewa Falls, Wisconsin.

CATTLE.

RED POLLED CATTLE—A FEW CHOICE young bulls, priced right. T. A. Hawkins, Wakeeney, Kansas.

OUR HERD BULL, PIETERTJE FRENesta De Kol 193057, for sale. A fine herdier, good breeding and right in every way. Also some well bred youngsters. Hamm Dairy Farms, Humboldt, Kansas.

FOR SALE—OUR WHOLE HERD OF forty-four head of registered Holsteins. Will sell whole herd or individuals. Also several grade Holstein calves, finely marked, fine individuals, at \$22.50 each. Marcus Knillans, Box J, Whitewater, Wis.

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

HORSES AND MULES.

FOR SALE—ONE COMING FIVE-YEAR-old Percheron stallion; one seven-year-old Percheron mare; one six-months-old filly; one six-months-old stallion colt. All Cassino bred. Will accept Liberty bonds in payment. Carl Snyder, Route 28, Topeka.

THE STRAY LIST.

TAKEN UP—BY F. A. JOHNSON, OF Garrison, Blue Valley Township, Pottawatomie County, Kansas, one cow, color red with white face, left ear off; piece cut out of right ear. Appraised at \$80. J. B. Claywell, County Clerk.

A pretty good firm is Watch & Waite, and another is Attit, Early & Layte; And still another is Doo & Dalret; But the best is probably Grinn & Barret. —De Laval Monthly.

For dark cakes, and chocolate, coffee, or caramel ice cream, use half and half sugar and molasses. For light cakes and light creams use half and half sugar and white syrup.

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.

Caring for the Sick

"The recent epidemic, with few available trained nurses, has emphasized the value to every woman of some knowledge of the proper care of the sick," says Virginia H. Corbett, of the Colorado Agricultural College.

"Every woman should know that only necessary articles should find a place in the sick room and that perfect cleanliness and order are the first requirements of the trained nurse. She should know how to make a comfortable bed and be able to change linen without exposure or discomfort to the patient. She should know how to give the rest and comfort that come to a patient with a bath skillfully managed.

"A liquid diet does not necessarily mean the same form of food administered ad nauseum, and every woman should be able to prepare a pleasing variety of safe and nourishing dishes as often as possible, bringing a surprise instead of a tedious monotony to her charge.

"The Red Cross has recently given a most helpful service in short courses of training in the essentials of home nursing, and women who have availed themselves of this opportunity have been able to use most efficiently this useful and timely information. Life often depends more upon the service of the nurse than of the physician.

Useful manuals of home nursing may be ordered through any book dealer. Such books, giving clear and simple directions for the care of the sick, would be valuable in every home library."

The Victory Smile

"How to wear the victory smile is the question being variously answered on all sides," says the Illustrated London News. "The girl war workers wear it openly and wide as did the Cheshire cat. Indeed, to quote Mark Twain, their smiles are loud and frequent. The ordinary nice woman wears it in a nice, contented, ordinary way that is most effective. The selfish women seem to smile into themselves as if settling in what manner peace is specially to please them. The aristocrat smiles more with her eyes than with her lips. Opulent women smile, lips and eyes alike, many a thousand smiles; and I thought that the Queen's was among those, as I saw her several times last week, who have tears quite near them for all that is gone beyond recalling. Yet it is ever a victory smile, and very becoming it proves whether merry or grave or just joyous. Even the selfish smile is camouflaged so that its own wearer does not know that there is self in it."

Restoring Artificial Flowers

To freshen soiled or faded artificial flowers, brush and shake the flowers to remove all the loose dust. The silk flowers may be dipped in clear gasoline, worked about and then shaken well to remove the dust and dirt. If the flower is faded, a little oil paint may be mixed with gasoline and applied with a brush, working from the darker to the lighter parts.

When the flower is of velvet it may be cleaned by working into the velvet a paste made of flour and gasoline. When the gasoline evaporates the flour is brushed off. The velvet flower may also be brightened with the oil paint and gasoline. —CHARLOTTE E. CARPENTER, Colorado Agricultural College.

The Influenza Patient

"When I am nursing in influenza," said the trained nurse who had just come from a case, "I always give the patient plenty of fresh air. I consider that one of the most important things. If you go to bed as soon as you feel sick and stay there until you are really well, and have plenty of fresh air in the room, you will not be likely to have any serious trouble. Of course you want to have enough covers to keep you warm. The trouble with most people is that they get out too soon. They get

to feeling better and think they are able to go to work again before the system is strong enough to stand exposure."

A Womanly Woman

(To be placed in the corner of a young girl's mirror and read while she is making her toilet.)

She cultivates reserve.
She thinks, then acts.
She speaks ill of no one.
She is loyal to her friends.
She lives her mother's faith.
She cares for her body as God's temple.
She writes nothing that she may regret.

She knows that nothing is more undignified than anger.

She knows that to love and be loved is her birthright—if she be but worthy of love.—Wisconsin Agriculturist.

He Got Results That Time

"I've been reading an article on electricity, William," said his wife, "and it appears that before long we shall be able to get pretty nearly everything we want by just touching a button."

"It will never pay here!" said the boss of the ranch. "You will never be able to get anything in that way."

"Why not, William?"

"Because nothing would ever make you touch a button. Look at my shirt!"

Stuffed Baked Heart

Remove veins and cords of calf or beef heart, soak and clean. Stuff with dressing made of one cupful of bread-crumbs moistened with hot water, one teaspoonful chopped onion, one teaspoonful chopped parsley, one tablespoonful fat—beef suet—salt and pepper.

Place slices of salt pork or beef suet across heart, sprinkle with salt and pepper and cook slowly in covered roasting pan one and one-half to two hours. About one cupful of water should be placed in the bottom of the pan to be used for basting. During the last half hour remove cover and brown the meat.

Cottage Pie

Remove gristle and fat from cold cooked meats—beef or mutton. Chop the meat fine and add one cupful of gravy for each cupful of meat. Season to taste with salt, pepper, and if desired with finely chopped or grated onion. Capers make a pleasing addition if the pie is made of mutton.

Place in a baking dish, cover the top with a thick layer of well seasoned mashed potato. Use a fork to form the potato into a mound with the highest point in the center. Bake in a hot oven until the potato is slightly browned on top.—Home Economics Department, University of Wisconsin.

Apricot Tarts

Wash dried apricots, cover with water and soak over night. Cook slowly in the water in which the fruit was soaked. When tender add enough sugar to sweeten.

Cut pastry into diamond shapes, bake until brown and serve with apricots.

Simple, clean, wholesome food of the right kind, fed to children in proper quantities and combinations will go farther than almost any other single factor in assuring them normal health and sturdy development.

Memory Verse

Yesterday has slipped away;
God has got tomorrow;
Take today and do your part,
As your part is given—
That's the way to gladness, heart;
That's the road to heaven!
—Nancy Byrd Turner.

Isn't It True!

They sing about the glories of the man behind the gun,
And the books are full of stories of the wonders he has done;
There's something sort o' thrillin' in the flag that's wavin' high,
And it makes you want to holler when the boys go marchin' by;
But when the shoutin' over and the fightin' done, somehow
We find we're still dependin' on the man behind the plow.
—S. E. Kiser.

THE X-RAY

Shipped Express Prepaid The Day We Get Your Order

X-RAY INCUBATORS

PAY FOR THEMSELVES

WITH BIGGER HATCHES

ONLY 9,000 X-RAYS This Year Output Limited To Half Order Quick or You Will Be Too Late.

If you want the incubator that will give you the very best hatch of healthy, vigorous chicks at the lowest cost and with the least trouble and labor—USE AN X-RAY. It's the modern, up-to-date hatching machine—with more improvements and refinements than you'll find on any other machine. Its big exclusive features—EVERY ONE OF WHICH IS PROVEN VALUABLE—The X-Ray pays for itself in better hatches and in economy of operation. We maintain a Service Department to solve all poultry problems for our friends.

20 Big Features of the World's Superior Incubator

Twenty wonderful improvements—found on no other machine. Before buying any incubator find out about the X-Ray. Incubator Heater, X-Ray Vapor Generator, X-Ray Fan, X-Ray Automatic Regulator, X-Ray Blended Glass Top, and all the other improvements.

Write For Big New Catalog No. 292 Handsomely Illustrated in colors. Full list of incubators & brooders. X-RAY INCUBATOR CO., Des Moines, Iowa.

Be One of the Lucky 9,000. ACT!

Big Oil Capacity One Fill During Hatch

INCUBATORS

\$10.95 Buys 140-Egg Champion Belle City Incubator

Over 740,000 Sold

Prize Winning Model—Hot-Water, Copper Tank, Double Walls Fibre Board, Self-Regulating, Thermometer Holder, Nursery With 6.25 Hot-Water 140-Chick Brooder. Both only \$15.95.

Freight Prepaid East of Rockies Towards Express

With this Guaranteed Hatching Outfit and my Guide Book for setting up and operating you are sure of success.—My Special Offers provide ways to earn extra money. Save time—Order Now, or write for Free catalog, "Hatching Facts"—It tells all—Jim Rohan, Pres.

Belle City Incubator Co., Box 18 Racine, Wis.

150 EGG INCUBATOR CHICK BROODER

Both are made of Calif. Redwood. Incubator is covered with asbestos and galvanized iron; has triple walls, copper tank, nursery, egg tester, thermometer, ready to use. 30 DAYS TRIAL—money back if not O.K. Write for Free Catalog Now.

Ironclad Incubator Co., Box 119 Racine, Wis.

64 BREEDS Most Profitable chickens, ducks, geese and turkeys. Choice, pure-bred, hardy northern raised. Fowls, eggs, incubators at low prices. America's greatest poultry farm. 26 years in business. Valuable new 112 page Poultry Guide and Catalog free. Write today.

R.F. NEUBERT Co., Box 639 Mankato, Minn.

American Poultry Almanac Our 1919 catalog FREE. How we breed the 300-egg hen. Plain scientific facts. How we win medals at the egg-laying contests.

HOPEWELL FARMS, BOX X, HOPEWELL, N. J.

SCHOOLS AND COLLEGES

LEARN TELEGRAPHY

Young men and women attend on credit. A practical school with railroad wires. Owned and operated by the A. T. & S. F. Ry. EARN FROM \$75 TO \$165 PER MONTH. Write for catalog.

SANTA FE TELEGRAPH SCHOOL

Desk F Topeka, Kansas

— OTTAWA —

Business College

OTTAWA, KANS. CATALOG FREE

Before culling his flock of 166 hens, a Missouri farmer kept a record of the egg production for four days and found that they produced an average of 33½ eggs a day. He culled seventy-seven hens from the flock and the part of the flock retained produced an average of thirty-two eggs a day for the nine days after culling. He said he could not afford to feed seventy-seven hens for an egg and a half a day.

HELPFUL POULTRY HINTS

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

Feeding for Winter Eggs

IN A leaflet from the extension division of the agricultural college, Ross M. Sherwood emphasizes the need for well-bred properly-housed poultry if we are to have the highest egg production. In order to make these fowls give best results, it is necessary to supply the proper feed. Feed for egg production may, for convenience, be classed as grain and mash feed. About one-third of the grain is fed in the morning in each litter of straw or other similar material. This makes it necessary for the fowls to secure exercise as they get this food. The remainder of the grain feed, preferably that with larger-sized particles such as corn, may be fed at night. When corn, barley, and heavy oats are available, the rate of one-half by weight of corn and the other half barley and heavy oats would be recommended. If neither barley nor heavy oats are available, the amount of corn may be raised to two-thirds of the grain ration. Kafir, milo, or feterita are quite similar to corn and may be used as a substitute. The grains are rich in fat-forming material and must be supplemented by the mash feed. The mash feeds are kept before the fowls at all times. A satisfactory mash ration may be made of equal parts of bran and shorts with 1 per cent bulk and 20 per cent meat scraps or high-grade meat meal or tankage. Let the chickens have all the sour milk or butter milk they can drink. It is not necessary to feed many meat scraps. Oyster shells are necessary for best results. Clam shells, often called poultry shells, are not satisfactory. The hens do not eat them as they do oyster shells. Get the genuine oyster shells and feed them all that the hens will eat. Water should not be neglected. About two-thirds of the egg is water and the body requires still more. If it is not given, the hens will not lay well.

Here are some pointers for winter egg production:

Don't neglect to have the scratch floor and keep the fowls busy.

Feed for both whites of eggs and yolks. Grain and mash will do this.

Feed well. It doesn't pay to under-feed.

Keep oyster shells and water before the hens at all times.

Buy Cockerels Early

Buy early, and buy good stock, urges Ross M. Sherwood, poultry specialist, in speaking of preparing for the poultry breeding season. The male is more than half the flock. You already have your hens and pullets and seldom change them. It rests with the males to raise or lower the standard of the flock.

A pure-bred, well-matured, strong, vigorous cockerel, from a high-producing strain, will bring improvement. If weak, immature, scrub roosters are used, the flock will go down.

In buying cockerels go to farmers or breeders having high egg production throughout the year; and do not forget that most breeders follow the rule, "First come, first served." If you buy early you will get a much better choice than if you delay. It is already time for the males to be used for breeding purposes to be in the pens. If you do not have good cockerels to use, get busy and make your purchases, for much of the success of your poultry work the coming season will depend on the kind of males heading your flock.

Boosting Poultry Production

At a meeting of the Rhode Island Red breeders in attendance at the Chicago Coliseum Poultry Show, held last month, preliminary steps were taken toward the creation of a fund of not less than \$2,000 to be used in a publicity campaign to create greater interest in and demand for the already very popular Rhode Island Red chickens. During the show \$503 was subscribed.

Poultry breeders everywhere are very optimistic regarding the future of well-bred poultry, and the Rhode Island Red Club, desiring to keep the breed it fos-

ters to the front, is the first poultry organization to attempt an extensive publicity campaign for the purpose of enlightening everyone as to the merits of its chosen breed. This action shows how rapid has been the change among poultry breeders, since the close of the world war, from a down-hearted spirit to an outburst of enthusiasm, backed by plenty of pep and push. The farmers and poultry breeders who have not made their plans for heavy production this season should get busy right away. Get the incubators going early. Have the brooder houses in good shape for the chicks. Raise all the chicks you have room for and have time to take care of. Let all other poultry raisers follow the lead of the Rhode Island Red breeders at the Chicago poultry show, to the end that poultry production in 1919 will break all records.

Study Incubators on Market

One man says there is practically no difference in incubators—but there is. There is just the same difference in incubators as there is in pianos, in automobiles, in tractors, or in any number of things that could be mentioned. True, incubators are all made for the same purpose—to hatch chicks—and they do it when the attendant does his or her part of the work, but people have notions about the things they buy. Even if the inside parts of all incubators were alike, and only the outside of the machines different, one person would buy one because it was painted red and another person would buy another because it was painted yellow. Then, some people want to pay a high price, while others want to pay a low price for what they buy. There are so many people to be served that there must be a variety of things, incubators included, in order for everyone to be satisfied. In buying an incubator, the thing to do is to select the one that suits your notion and your pocketbook, and then get it. The incubator catalogs, aside from containing descriptions of the machines, give a lot of good poultry information. Do not delay sending for the catalogs, because baby chick time will soon be here again.

Poultry Studies Wide in Scope

In its efforts to encourage the broad development of poultry raising in the United States, the Bureau of Animal Industry of the United States Department of Agriculture is conducting investigations to establish the best methods of raising many varieties of fowls. The present scope of the work includes not only the feeding, breeding, and care of ordinary poultry, but also the raising of pigeons, squabs, guineas, turkeys, and many other birds. The flesh of squabs, turkeys, guineas, geese, and ducks makes a pleasing variety in the diet, and with wild fowls now becoming less available, it is important that a sufficient number of domestic birds be raised to keep the market constantly supplied. The problem now is chiefly one of farm production, which requires expert knowledge if adequate supplies are to be continued.

Laying Hen a Worker

A laying hen is always a working hen. The best layers are always active, and if their feed is given to them so that they can eat it without exercise, they will get exercise in some way and pull each others' feathers, get frightened and fly across the pen at every little noise, or try to fly out.

Feed should be given so that the hens will have to work five to eight hours every day to get their fill. Grain may be scattered thinly in a deep litter. It may be fed unthreshed, compelling the hens to scratch it off. Heads of milo may be hung up so that the hens will have to work hard to pick it off. Roots and cabbage may be treated the same way. Give ample feed and see that every hen has plenty, but see that she works hard for it.

Poultry

PLYMOUTH ROCKS.

CHOICE WHITE ROCK COCKERELS, \$3 and \$5 each. W. H. Beaver, St. John, Kan.

FINE PURE BUFF ROCK COCKERELS, March hatched, \$3 each, six for \$15. Mrs. Geo. Mortimer, Route 4, Manhattan, Kan.

BUFF ROCKS AND BLACK LANGSHAN cockerels for sale, \$2 each; good ones. Newton Coffman, Rosendale, Missouri.

WAGNER'S BIG FARM-RAISED Barred Rock cockerels, \$3 to \$6; pullets, \$2.50. Mrs. E. C. Wagner, Holton, Kansas.

EXTRA LARGE PURE-BRED WHITE Rock cockerels, \$2.75 each. Peter Eltzen, Hillsboro, Kansas.

BARRED ROCK ROOSTERS FROM pure-bred stock, \$3 to \$5. R. D. Ames, Walton, Kansas.

PURE-BRED BARRED ROCK COCKERELS, large kind; bred for laying, \$2.50 and \$3 each. C. H. Wempe, Seneca, Kan.

BARRED FANCY BREEDING COCKERELS from St. Louis, Kansas City state show winners. J. K. Thompson, 205 The Drive, Topeka, Kansas.

BARRED ROCK COCKERELS, BOTH light and dark lines, \$5 each; six for \$25. C. C. Lindamood, Walton, Harvey County, Kansas.

"RINGLET" BARRED ROCK COCKERELS, \$3 and \$5 each. Eggs and day-old chicks in season. Mrs. C. N. Bailey, Lyndon, Kansas.

BARRED ROCK COCKERELS, 107 premiums, winter laying stock. Record, 39 eggs from 40 hens. \$2 to \$5. A. G. Hammond, Vinland, Kansas.

BRED-TO-LAY BARRED ROCK COCKERELS, absolutely the finest ones I ever raised. \$3 to \$5. Satisfaction guaranteed. Belmont Farm, Topeka, Kansas.

PURE BARRED ROCK "RINGLETS," large, vigorous, beautifully marked birds, \$3.00, \$5.00 and \$8.00 each. S. R. Blackwelder, Isabel, Kansas.

BARRED ROCKS, 1918 WINNERS MO. State Show. 35 choice cockerels and cocks \$3 to \$10; 75 hens and pullets \$2 to \$10. Order now. Mrs. P. A. Pettis, Wathena, Ka.

LEGHORNS.

R. C. BROWN LEGHORN COCKERELS. Otto Borth, Plains, Kansas.

PURE-BRED S. C. BROWN LEGHORN cockerels, \$2 each; six for \$10. Mrs. L. H. Hastings, Thayer, Kansas.

EXTRA FINE SINGLE COMB BROWN Leghorn cockerels, \$1.50 each; six for \$7.50. Mrs. F. E. Tonn, Haven, Kansas.

PURE-BRED SINGLE COMB BUFF LEGHORN cockerels, \$1.50. Wm. Fox, Logan, Kansas.

BROWN ROSE COMB LEGHORN COCKERELS, \$1.50 each. Mrs. Den Barry, Wallace, Nebraska.

PURE-BRED S. C. WHITE LEGHORN cockerels, fine ones at \$2 each; six for \$10. J. W. Hamm, Humboldt, Kansas.

S. C. WHITE LEGHORN COCKERELS, six for \$8. Mammoth bronze toms, \$7; hens, \$5. Will Tonn, Haven, Kansas.

EXTRA FINE PURE SINGLE COMB White Leghorn cockerels. Tom Barron strain, \$1.50. Ethel Stevenson, Beverly, Kansas.

VIGOROUS BARRON WHITE LEGHORN cock, Bradshaw Barron cockerel, scoring 93; Ferris (260 egg) cockerel, \$4 each. Clyde Rees, Emporia, Kansas.

TURKEYS.

FINE BOURBON RED TURKEY TOMS, \$6 each. J. W. Warner, Rush Center, Kan.

BOURBON RED TURKEYS, EXTRA good. W. H. Oliver, Reger, Missouri.

PURE-BRED WHITE HOLLAND TOMS, extra, \$8. Freda Peckenpaugh, Lake City, Kansas.

LARGE DARK MAY-HATCHED BOURBON Red turkey toms, \$6.50 each. Mrs. F. E. Tonn, Haven, Kansas.

RED BOURBON TURKEYS, FINELY marked, extra large. Toms, \$7; hens, \$5. Hattie Blackhart, Route 3, Manhattan, Kan.

LARGE WELL MARKED PURE-BRED mammoth bronze turkeys—toms, \$10; hens, \$8. Mrs. Minnie Snider, Piedmont, Kansas.

PURE-BRED BOURBON RED TURKEY TOMS, \$6 each. Mrs. T. A. Hawkins, Wakeney, Kansas.

OAK HILL FARM, HOME OF THE pure-bred M. B. turkeys, May hatched, large, good weight. Route 3, Lawson, Mo.

WE SOLD FIVE CHAMPION BRONZE turkeys last March for \$750. One tom brought \$500. Have 300 grand birds, same breeding, sired by sons of my 52-pound champion tom, \$7.50-\$25 each. Ike Hudson, Milan, Missouri.

LANGSHANS.

BLACK LANGSHAN COCKERELS, \$2 and up. Mrs. Geo. W. King, Solomon, Kan.

BIG BLACK LANGSHAN COCKERELS and pullets, fancy and utility; also eggs. Guaranteed. H. Osterfoss, Hedrick, Iowa.

POULTRY WANTED.

PAYING FOR NO. 1 HENS AND SPRINGS, 23c; geese and ducks, 18 to 20c. Old pigeons wanted February 5, \$1 dozen. Coops loaned free. The Copes, Topeka.



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

This apron will be mailed FREE and POSTPAID to anyone sending us one new or renewal subscription to KANSAS FARMER at \$2.00.

ORDER BLANK

KANSAS FARMER COMPANY, Topeka, Kansas.

Gentlemen: Enclosed please find \$2.00, for which send me KANSAS FARMER two years and one Waterproof Apron, color.....

Name..... R. F. D.....

Town..... State.....

Glenwood Farms Polands

C. S. Nevius & Sons,
Chiles, Miami County, Kansas

OUR BRED SOW SALE AT FARM

February 17, 1919

RELIABILITY IS WHAT COUNTS

Our most worthy offering of our twenty-five years, producing 300 head per year, always the large type. Make good and prove out kind.

25 TRIED SOWS AND FALL YEARLINGS
25 LARGE STRONG SPRING GILTS

Carrying the blood of Big Bob Wonder through King Wonder II; Giant Joe through Wonder's Joe, with several of the leading boars mixed in.

Remember, we want you here personally sale day. Please send for catalog and come.

C. S. NEVIUS & SONS - - CHILES, KANSAS

FARM AND HERD.

H. E. Huber, of Meriden, Kansas, has announced February 14 for his fifth annual sale of Shorthorn cattle, Duroc Jersey hogs and Percheron horses. The offering will consist of forty cows and heifers. Several cows will have calves at foot and all will be bred to Silk Goods, Royal Orange, Vindicator and Good Enuff for early spring calves. Fourteen head of young bulls will be included in the offering sired by Silk Goods, Royal Orange, Vindicator and Good Enuff. The cows represent some of the best imported Scotch families tracing to Imported White Rose, Young Marys, Rose of Sharon, Queen Beauty, Violet Buds, Golden Princess and Imported Arabella. Twenty head of choice Duroc Jersey bred gilts will be offered, all sired by C. Critic and A. Critic and bred to Huber's Wonder by Wonder 2d by Great Wonder for March and April litters. Also one registered Percheron stallion and five grade Percheron mares bred and two grade Percheron geldings, a splendid work team.

Henry Murr, of Tonganoxie, Kansas, has announced February 27 for his annual Chester White bred sow sale. Thirty-five head of bred sows and bred gilts will be catalogued and offered to the public, also five choice fall boars. The offering will be bred

to the first prize junior yearling at the Kansas State Fair and is out of the great show sow, Tip Top. This sow was shown at ten state fairs and was awarded grand championship at nine of them. She has been considered by competent judges as one of the best Chester White sows in the West, and Prince Tip Top promises to make one of the greatest show boars of the breed. Several sows and gilts will be bred to Big Prince by Prince Big Bone, the 1911 grand champion at the National Swine Show and a half brother to Wildwood Prince, the grand champion, 1918, at the National Swine Show. This herd is one of the best in the state and this offering promises to be the best lot to be sold in any sale this year.

W. W. Zink, of Turon, Kansas, has announced February 14 for his annual Duroc Jersey bred sow sale, and has catalogued fifty head of choice sows and gilts. Mr. Zink is the owner of one of the good herds of Durocs in Kansas and for several years has won a good share of the premiums at the Kansas State Fair. At the head of this herd is a great son of High Orion and a large part of this offering will be bred to this hog for early litters. The tried sows have all raised good litters and the fall yearlings are a part of the show herd and have been well grown out. The spring gilts are the best ever raised on the Zink farm.

Interesting War Items

THE following good little story was contained in a recent issue of Stars and Stripes:

During the fighting on the Marne front a young Yankee bugler still in his teens was unfortunate enough to fall into German hands. Believing that some useful information might be obtained from the lad, he was brought before the German officers for questioning.

"Who are you, my lad?" said the German officer.

"An American bugler," snapped the lad.

"Oh," said the officer; "for a little test, blow taps."

The boy obeyed.

"Now blow reveille," he commanded.

The bugler did.

"Sound retreat," said the German.

"Never heard of it," replied the lad.

The Brave Dogs of War

A certain fox terrier told of in the North Dakota Banner has a record of having saved the lives of 150 fighting men on the firing line in France. Commenting on the performance of this dog, Our Dumb Animals says:

"There are many other dogs in France with honorable life-saving records on the battlefields. A regiment could be made up of soldiers saved by dogs that have run the gauntlet of fire to hunt for wounded and bring stretcher bearers to them.

"These dogs of war carried messages through zones of fire from trench to trench, rushing from cover to cover, but always going true to command and bringing the messages, if not killed in the attempt. There are instances where dogs, after receiving mortal wounds, have crawled painfully along for hours to bring in their messages.

"One of the admirable qualities of these trained dogs is the seriousness with which they take and execute dangerous missions. A well trained Red Cross dog will not be swayed from his business by hunger, fatigue or pain, obeys only his officer, and works to the point of exhaustion unless officially relieved.

"Instances have never been wanting to prove that the Creator made a mistake when he made a dog, but this war brings out the fact most clearly."

Kindness to Army Animals

It is exceedingly gratifying to note that kindness to animals is emphasized in all of the manuals used by government officials for the use of army officers having charge of horses. The following, taken from "Pack Transportation," will be read with much interest: "A mule remembers kindness and will recognize by sight and sense of smell the individual who has shown it to him. Be brutal in treatment of him and he will shy from you and avoid you.

"Kindness will conciliate the most vicious animal and cause him to become docile.

"If vicious, provide means to prevent his injuring any person.

"In doing so, do not maltreat the animal. Treat him kindly, but firmly, and he will soon learn to recognize you as his master, and obey.

"Maltreat him and he will never forget you."—Our Dumb Animals.

Once Too Often

A young officer at the front wrote home to his father: "Dear Father—Kindly send me \$250 at once. Lost another leg in a stiff engagement and am in hospital without means."

The answer was as follows: "My Dear Son—As this is the fourth leg you have lost, according to your letters, you ought to be accustomed to it by this time. Try to hobble along on any others you may have left."—Exchange.

Impossible

One of the United States soldiers overseas was driving a four-mule team with rations towards the trenches, says the Hutchinson News, and losing his way was rumbling along an old road that cut across into the German lines.

"I was going along," he said, "when a doughboy at a listening post jumped up and waved both hands at me to go back. 'What's the matter?' I asked him, talk-

ing natural, and he mumbled at me, 'You're going right toward the German lines. Turn around and go back and don't speak above a whisper.' "Whisper!" I says to him, kind of mad. 'Why, man, I gotta turn four mules around!'"

Broken English

He was a hard-working and intelligent Frenchman, but the verbs still troubled him.

"Ah, yes, m'sier, I saw Mrs. Brown the other day," he said to an English friend, "and she telled—I mean, told me that her school was soon to break down."

"Break up, you mean."

"Ah, yes, break up! Your verbs do trouble me so yet! Break up—that was it!"

"Why was she going to let her school break up so early?"

"Because influenza had broken down in it."

"Broken out. It is a bit puzzling, isn't it?"

"Broken out—ah, yes! And she is going to leave the house in charge of a caretaker, as she fears it might be broken—How do I say that, please?"

"Broken into, I suspect."

"That is it. Broken into—by the burglars."

"Is her son married yet?"

"No, the engagement is broken in."

"Broken off. Oh, I hadn't heard of that! Is she worried about it?"

"He only broke up the news to her last week. Is that right?"

"No; you should say just 'broke' there."

"Ah, well, I think I am nearly broke myself by those verbs of yours."

And he went sadly on his way.—Omaha World-Herald.

Women in War

The late Robert J. Burdette of the Burlington Hawkeye and of beloved memory was a soldier in the Civil War. The following beautiful and touching tribute to mothers of that period from his pen is particularly applicable to the present:

"When was there a generation since boys were born that women did not go to war? Never a bayonet lunged into the breast of a soldier that it had not already cooled its wrath in the heart of a mother? While the soldier has fought through one battle, the mother has wandered over a score of slaughter fields, looking for his mangled body. He sings and plays the rough games of out-of-doors men in camp for a month and then goes out to fight one little skirmish. But every day and night of the thirty the mother has walked through a hundred alarms that never were. She has watched on the lonesome picket post. She has passed the sentry seat before his tent. She has prayed beside him while he slept. The throbs of her heart have been the beads of her rosary. What does a soldier know about war? I went into the army a light-hearted boy. I had the rollicking time of my life and came home an athlete. And my mother—her brown hair silvered with my soldiering, held me in her arms and counted the years of her longing and watching with kisses. When she lifted her dear face I saw the story of my marches and battles written there in lines of anguish. If a mother should write her story after the war, she would pluck a white hair from her temple and dip the living stylus into the chalice of her tears to write the diary of the days on her heart."

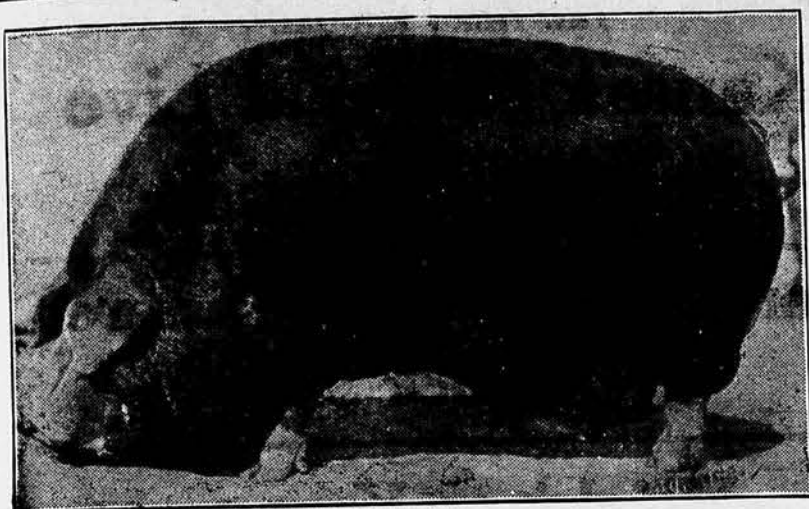
Might Have Been Worse

An officer failing to receive the proper salute from a colored soldier, thought to give him a lesson. So drawing himself up to his full military height, tapping his leather puttees, he said:

"Do you see these, do you see these?" thinking by that apparent evidence the colored private could recognize an officer.

"Yas sah, yes sah, I sees 'em," said the soldier; "but Lor' bless you, sah, you ain't got no kick comin'; see what I drewed." And he tapped his own khaki puttees.—Hutchinson News.

In France all grain that can be used in bread-making is reserved for human food.



Caldwell's Big Bob, the Breed's Most Sensational Sire

Caldwell's Big Bob Poland China Sale

At Howard, Kansas, February 8, 1919

45 HEAD CAREFULLY SELECTED SOWS AND GILTS

25 Will Be Bred and Safe to Caldwell's Big Bob.
10 Will Be Bred and Safe to King Jumbo.
10 Will Be Bred and Safe to King Bob.

An offering practically made up of yearling and young sows. A few of the attractions bred to Caldwell's Big Bob are

JUMBO GIRL, a March yearling by Big Jumbo out of Longfellow Belle by Longfellow

MAMIE GIRL, a March gilt by Blue Valley Big Bone, dam Mollie Big Bone by Smooth Big Bone.

ROYAL GIANTESS, a May yearling by Long Giant, dam Royal Lady by Long Giant.

JESSIE JONES, a granddaughter of Hancher's Big Jones.

JUMBO MAIDEN, a March two-year-old by Jumbo by Long Wonder, dam by King Defender.

LADY SPEARMINT, by Giant Buster, dam Lady Queen by Long Expansion, one of the top things in the Wrigley dispersion sale.

LADY QUEEN, by Long Expansion; an outstanding March gilt by the 1917 Iowa champion, A's Mastodon.

All are immuned and I have insured the entire offering for one year from date of sale, for one-half the purchase price. This will insure each purchaser a bred sow or the insurance money. The sale will be held in the heated sale pavilion on the Elkmere Farm. Please send for catalog.

FRED B. CALDWELL

HOWARD, KANSAS

Col. J. C. Price, Auctioneer

H. E. Myers' Poland China Bred Sow Sale

Gardner, Kansas, January 31, 1919

FORTY HEAD BIG IMMUNED BRED SOWS AND GILTS
Eighteen Tried Sows, Sixteen Fall Gilts,
Seven Spring Gilts

An offering sired by BIG BOB WONDER, WEDD'S LONG KING, GIANT JOE, W'S GIANT, GERSTDALE JONES, FESSY'S TIMM, BIG NED, A MONSTER, MODEL BIG BOB, A WONDERFUL KING, CHOICE GOODS, and WORLD'S BIG TIMM.

Bred to Giant Joe are—

PATSY WONDER by King of Wonders, dam Patsy Defender, the dam of Wonder Joe, the sire of the Schmitz Bros.' great futurity litter; BOB'S BEAUTY by Big Bob Wonder; REX-ALL QUEEN by Wedd's Long King; and KING'S LADY

WONDER by King of Wonders.

Attractions bred to Big Giant, the great young son of Denny's Giant by Giant Buster, include—

LADY JUMBO by Model Big Bob; two big roomy gilts by A Monster; two gilts by World's Big Timm, and six spring gilts by Big Bob Wonder and Big Ned, Maharry's noted show boar.

Two outstanding spring gilts by Gerstdale Jones, litter sisters, one bred to the sensational Liberator, the other to Liberty Bond. A Williams Wonder fall gilt bred to Liberty Bond.

The One Sale Event You Will Surely Want to Attend
Send for catalog, mentioning Kansas Farmer.

H. E. Myers' Gardner, Kansas

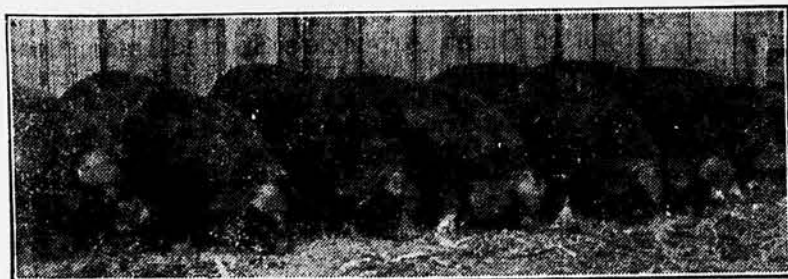
Col. J. C. Price, Auctioneer

Poland China Bred Sow Sale

At My Farm near Great Bend, Barton County, Kansas

January 28, 1919

Fifty Head Tried Sows, Spring Yearlings and Fall Gilts



A choice offering of well bred sows and gilts, including several sows that have proven good producers, and a lot of spring yearlings and fall gilts,

All Bred to Sons of Wonder Buster, Big Jones, Big Bob Wonder, and Jumbo's King

This is my first annual sale and I am selling a splendid lot that any farmer or breeder will be pleased to own. I urge every one interested in good hogs to attend my sale. One of my herd sows, Miss Orange Blossom, will weigh right at 800 pounds. She farrowed thirty-eight pigs in three litters. Several of her daughters and granddaughters go in the sale. A part of the offering is sired by Jumbo King, the sire of the Kansas show herd in 1916 and a full brother to A Wonderful King, the grand champion Poland China boar of Kansas, Oklahoma and Texas State Fairs in 1916. I have no mailing list. Please send for catalog and arrange to attend my sale. I guarantee a good offering.

F. W. Bartholomew, Great Bend, Kas.

Col. J. C. Price, Auctioneer

Poland China Bred Sow Sale

At Gypsum, Kansas

January 29, 1919

FORTY-EIGHT HEAD, ALL IMMUNED

Fifteen Choice Tried Sows, Eight Fall Yearlings, and
Twenty-five Large Spring Gilts

The Best Offering Ever Sold in This Locality.

The tried sows are sired by Monte Cristo, Fessy's Timm, Orphan Chief, Orphan Big Gun, Big Hadley Jr., Big Bone Model, Chief Expansion, Big Wonder, King Price Wonder, Big Bone Ben, Big Bob Wonder, Master Orphan, King Joe 3d, and King Bob.

The spring gilts are sired by Blue Valley Timm, Gerstdale Jones, Giant Jones, Mammoth Jones, Bis Masterpiece, Wonder Timm, Giant Bob, A Big Wonder, Kansas Wonder, and Caldwell's Big Bob.

Will be bred for early spring farrow to three great herd boars: GIANT BOB by Mellow Bob, dam Fontanelle by A Big Orphan by The Big Orphan; WONDER TIMM by Big Timm, dam Long Susie by Long Wonder; BIG BUSTER by the \$5,300 Wonder Buster.

Farmers and breeders, we solicit your attendance at our sale, on the merits of our offering. Please send for catalog and arrange to come.

Adams & Mason, Gypsum, Kansas

Col. J. C. Price, Auctioneer

PUBLIC SALE FEBRUARY 27, 1919

Of registered Chester White sows and gilts bred to Prince Tip Top, first prize junior yearling at Topeka, 1918, and Big Prince by Prince Big Bone. Am booking names for catalogs.

Henry Murr, Tonganoxie, Kan.

JERSEY CATTLE.

FOR SALE—Five registered cows, to be fresh in January. We are pricing them very reasonable. They are strictly high class, perfect individuals and the best blood lines. Also young things and bred heifers.

J. W. BERRY & SON, Jewell City, Kan.

ANGUS CATTLE

Dietrich's Aberdeen-Angus

Aged bulls, fifteen choice spring bulls. Females, all ages.

GEO. A. DIETRICH, CARBONDALE, KAN.

SHROPSHIRE SHEEP

FOR SALE

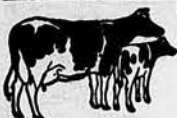
A bunch of big heavy-wooled young registered Shropshire ewes, not high in price. Bred to fine rams.

Howard Chandler, Chariton, Ia.

HAMPSHIRE HOGS

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

HOLSTEIN CATTLE.



Butter Making in Holland

Butter making is the chief business of the Holland dairymen, the originators of the Holstein-Friesian breed of cattle. Upwards of forty million pounds of butter per year is exported from that little country, which is more per cow, and more per acre, than does any other country export.

If interested in

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA, Box 114, Brattleboro, Vt.

A. R. O. HOLSTEINS

Bulls from A. R. O. Cows

One born May 6, 1918, sired by the great King Korndyke Veeman, whose sire is the only 40-pound bull with a 40-pound daughter, and full brother to the first 40-pound heifer.

Pinedale Stock Farm

H. A. DRESSLER, LEBO, KANSAS

REGISTERED HOLSTEINS

Ten fresh registered cows and heifers, six registered bulls, serviceable ages, out of cows with records up to 23 pounds of butter in seven days. Ten high grade heifers out of a bull whose three nearest dams averaged over 25 pounds per week, bred grade heifers, \$125; yearlings, \$65; almost white. Write or come and see my herd.

Chas. V. Sass

1013 North Fifth St., Kansas City, Kansas

HOLSTEIN CATTLE

We offer cows and heifers due to freshen soon. Also a few choice calves ready for shipment. Write us for prices, etc.

W. C. Kenyon & Sons

Holstein Stock Farms, Box 33, Elgin, Illinois

BUTTER-BRED HOLSTEINS

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

J. P. MAST, SCRANTON, KANSAS

BRAEBURN HOLSTEINS

My King Segis herd bull's dam and sire's dam both held world records. No other bull within 1,000 miles is of that class; and not many anywhere.

H. B. Cowles, 608 Kansas Av., Topeka, Kan.

SEGIST & STEPHENSON, HOLTON, KANSAS
Breeds exclusively of pure-bred prize-winning record-breaking Holsteins. Correspondence solicited.

GOLDEN BELT HOLSTEIN HERD

Herd headed by Sir Korndyke Bess Hello No. 165946, the long distance sire. His dam, grand dam and dam's two sisters average better than 1,200 pounds butter in one year. Young bulls of serviceable age for sale.

W. E. BENTLEY, MANHATTAN, KANSAS

The annual meeting of the American Polled Hereford Breeders' Association will be held at the Hotel Randolph, Des Moines, Iowa, on Tuesday evening, February 6. All breeders of hornless Herefords and other interested cattlemen are invited. On Monday evening, February 3, the annual banquet of Polled Hereford breeders will be held at the same place, as the opening feature of "Polled Hereford Week." A three days series of sales will be a further attraction for this annual gathering of the admirers and producers of Polled Hereford cattle.

HORSES AND MULES.



JACKS AND JENNETS

15 Large Mammoth Black Jacks for sale, ages from 2 to 6 years; large, heavy-boned. Special prices for early sales. Twenty good jennets for sale. Two Percheron stallions. Come and see me.

PHIL WALKER

Moline, Elk County, Kansas



PERCHERON-BELGIAN SHIRES

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

PERCHERON STALLIONS

Some good young stallions sired by Algare and Bosquet, two great herd sires. These young stallions are very promising and priced to sell.

D. A. HARRIS - GREAT BEND, KANSAS

JACKS AND JENNETS

Registered Jacks and Jennets. Good individuals, good colors. Have some choice young jacks that are priced to sell quick.

GEO. S. APP, ARCHIE, MISSOURI

SHORTHORN CATTLE.

THE SHORTHORN

The Farmer's Breed, Beef and Milk

Shorthorn steers made three world's records on the open market in 1918 selling for \$19.50, \$19.60 and \$20 per cwt. The cows incline to a liberal milk flow with records in excess of 17,000 pounds per year. When dry the Shorthorn cow fattens quickly. Her calves are always in demand. The Shorthorn excels in scale, quality and quiet disposition.

SHORTHORN BULLS

For Sale—Ten bulls, seven to fifteen months old; Scotch and Scotch topped. Two Scotch bulls by Type's Goods, one a Braith Bud, the other a Duchess of Gloster. All in good condition and priced reasonably.

S. B. AMCOATS, CLAY CENTER, KANSAS

Write Me Your Wants

Cloverdale Farm Shorthorns

For Sale—Three Shorthorn heifers, two bred to a grandson of Whitehall Sultan; also a fine roan yearling Scotch bull, a real herd bull for some one. Heifers, \$150 to \$225; bull, \$300. Must go soon at this.

Wesley Jewell, Humboldt, Ks.

Ellen Dale Breeding Farms

Ellen Dale Shorthorn cattle and Duroc hogs. Bred sows, bred heifers, also choice bulls for sale. Inspection invited.

R. C. Watson, Altoona, Kansas

Mulefoot Hogs-Shorthorn Bulls

No hogs for sale at present. Four bulls eight to fourteen months old, roans and a red, sired by Knox Knoll Dale 617322, priced from \$150 to \$225.

Knox Knoll Stock Farm, Humboldt, Kansas

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

DUROC JERSEYS.

250—Duroc Bred Gilts—250

We offer 250 gilts guaranteed in farrow and immune, big type, best of blood lines and pedigrees recorded. Will sell one or a carload. Better get our prices. Shipped to you before you pay for them.

F. C. CROCKER

Box K, Filley, Nebraska

40 DUROC JERSEY BOARS

Cholera immuned, of rare breeding and excellent individuality. Grandsons of the two grand champion boars of Iowa. None better.

W. E. HUSTON - AMERICUS, KANSAS

HIGHVIEW DUROCS

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

F. J. MOSER - SABETHA, KANSAS

R. H. DIX & SON'S DUROCS

For Sale—One choice spring boar, a real herd header. Twelve spring gilts bred to Giant Crimson by G. M.'s Crimson Wonder, a prize winning boar. Priced reasonable for quick sale. Write today.

R. H. DIX & SON, HERINGTON, KANSAS

WOODDELL'S DUROCS

I am going to slash prices on boars the next thirty days. If you want a good boar at a bargain, write at once.

G. B. WOODDELL - WINFIELD, KANSAS

Duroc Bred Sows and Gilts

For Sale—Several well bred sows and bred gilts bred for early March and April litters, priced to sell. Also a few spring boars. First check or draft gets choice. Sold on an absolute guarantee or money back.

JOHN A. REED & SONS, LYONS, KANSAS

THE THIRD ANNUAL

Kansas National Live Stock Exposition

Horse Show and Registered Live Stock Sales

Wichita, Kansas

Feb. 24 to March 1st, 1919

\$30,000—In Cash for Premiums and Expenses—\$30,000
\$5,300—For the Evening Horse Show—\$5,300

IT IS THE LARGEST LIVE STOCK EVENT
OF THE SEASON

600 Head of Registered Live Stock Will Be Sold

If you have any good stock for sale, write at once, describing what you have.

We are anxious to receive more entries of Herefords, Holsteins, Jerseys, Percheron Mares, Jacks, Jennets, Trotting, Saddle and Coach Horses, Polands, Durocs, Shropshire and Hampshire Sheep.

Each sale is limited. Write today or you may be too late.
Premium List and Entry Blanks Sent Free Upon Request

F. S. Kirk, Supt. of Exhibits and Sales

OAK LAWN STOCK FARM

SPOTTED POLAND CHINA BRED SOW SALE

In Comfortable Sale Barn at Weston, Missouri

Saturday, February 1st, 1919

50 HEAD OF BRED SOWS AND GILTS

10 HEAD OF EXTRA GOOD JULY BOARS

The offering will represent the blood lines of ARBUCKLE LONGFELLOW No. 1055 that sold for \$500 when only a pig; Mack C, Spotted Giant, Arbuckle's Spotted Dude, Beaman's Giant, King of England, and will be bred to my great herd boars, Billy Bean No. 5441, who was four times Grand Champion at four state fairs, Syracuse, N. Y., Erie, Pa., Grand Rapids, Mich., and Ohio State Fair.



Major Arbuckle is also used extensively and is one of my very promising boars. Sale will be held right in town and I guarantee a good offering.

Write for catalog at once and arrange to come to my sale.

R. W. SONNENMOSER, WESTON, MO.

Auctioneers: W. W. Carson, Camden Point, Mo.
A. S. Grable, Dearborn, Mo.

H. B. WALTER & SON

GREAT SALE OF
IMMUNED POLAND CHINA

Bred Sows and Gilts

Effingham, Kan., Thursday, Feb. 6

The herd that made Big Bob Wonder famous. A splendid lot of tried sows, spring, summer and fall gilts bred to three of the greatest sires of the breed—

A BIG TIMM
BOB WONDER
BUSTER KING

A BIG TIMM—Dam Miss Long Wonder by Long Wonder. The biggest son of the noted Nebraska champion.

BOB WONDER—By the illustrious Big Bob Wonder, the sensational junior champion of Kansas last fall.

BUSTER KING—By The Giant Buster, the \$1,100 top of the Glover sale. The greatest young prospect by the wonderful Giant Buster.

This Is the Greatest Offering of Bred Sows and Gilts That I Have Ever Consigned to a Sale

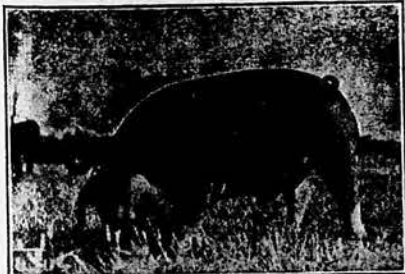
Please write at once for a catalog and arrange to be on hand at my sale. Sale held in comfortable sale pavilion right in town. Please mention Kansas Farmer when writing for catalog.

Col. H. S. Duncan, Auctioneer

H. B. WALTER & SON, EFFINGHAM, KANSAS

POLAND CHINAS

Greenfield Polands



Ten Choice Gilts by Model Big Timm or Orphan Bob, bred to the greatest young boars of the breed, Bower's Bob by Caldwell's Big Bob. Fall pigs, either sex.

EARL BOWER - McLOUTH, KANSAS

My brother, Fred R. Isaacs, having returned from the army, we will continue breeding the big black Polands under the firm name, ISAACS STOCK FARM. We expect to maintain a herd of top notches. Breeding stock for sale. O. L. ISAACS, ISAACS STOCK FARM, Peabody, Kansas.

Deming Ranch Poland Chinas. Big-Type Poland China Hogs

For Sale—Fifty spring boars, real farmer boars and herd boar prospects; 100 bred sows and gilts. Write or come and see our herd.

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

Henry's Big Type Polands

March and April pigs sired by Mammoth Orange, Smooth Prospect and Big Bob 2d, out of sows the best of big type breeding. Everything Immune.

John D. Henry, Route 1, Lecompton, Kansas

HOGS! HOGS! FOR SALE!

Big Registered Poland Chinas and English Berkshires that weigh and win. S. C. Brown Leghorn Chickens that lay. See or write

S. Y. BURKS, BOLIVAR, MO.

LONE CEDAR POLAND CHINAS—A splendid lot of bred gilts by Big Chimes, a great son of Big Hadley Jr. and out of high class mature sows; also a few tried sows and fall pigs. All Immune. A. A. Meyer, McLouth, Ks.

LANGFORD'S SPOTTED POLANDS—April boars ready to ship; also summer pigs. T. T. LANGFORD & SONS, Jamesport, Mo.

When Writing to Advertisers,
Please Mention Kansas Farmer

AUCTIONEERS.

FRANK BLAKE Live Stock Auctioneer
I make sales anywhere
Write for date. VALLEY FALLS, KANSAS

W. B. CARPENTER Live Stock Auctioneer
President Missouri Auction School
818 Walnut St. Kansas City, Missouri

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

BREEDERS' DIRECTORY

DORSET HORN SHEEP
H. C. LaTourrette, Route 2, Oberlin, Kan.

HEREFORD CATTLE

F. S. Jackson, Topeka, Kan.

RED POLLED CATTLE

Mahlon Groenmiller, Pomona, Kansas.

POLLED DURHAMS

C. M. Albright, Overbrook, Kan.

GUERNSEY CATTLE.

GUERNSEY BULLS
Good individuals of serviceable age, of May Royal, May Rose, Masher Sequel, Raymond of the Peel breeding. Write or come and see them.
ADAMS FARM, GASHLAND, MISSOURI
Twelve miles from Kansas City.

POLAND CHINAS.

ERHART'S POLAND CHINAS

Have a great lot of spring boars for sale. Some by the 1200-pound, A Big Wonder. Will make prices on pairs and trios not related. All Immune. Write your wants. Bred Sow Sale Feb. 19, 1919.

A. J. ERHART & SONS
NESS CITY, KANSAS

Oak Grove Stock Farm Polands

The blue ribbon herd of Spotted Polands. Fall pigs sired by O and O 25th, are Immune, recorded and the very best of breeding. Also choice Barred Rock cockerels, \$3 and \$5 each.

R. W. SONNENMOSER - WESTON, MO.

Faulkner's Famous Spotted Polands

HUSTON'S SENSATIONAL DISPERSION SALE

Duroc-Jersey Hogs

Tuesday, January 28, 1919

AT DR. RICHARDS' SALE BARN, EMPORIA, KANSAS

SIXTY HEAD

Twenty Great Sows—Twenty Big Fancy Spring Gilts, All Bred—Ten Fancy Fall Gilts—Ten Herd Boars, including Great Wonder Ned and Pathfinder's Image, to which the offering is bred

Twenty real sows and fall yearlings are sired by Taylor's Model Chief, winner at the Missouri State Fair and the American Royal.

Twenty big fancy spring gilts are sired mostly by Great Wonder 2d.

Ten fancy fall gilts are the tops of 100 pigs raised. They are sired by Great Wonder 2d and Pathfinder's Image.

Ten boars consist of five top fall boar pigs, three extra good spring boars, also Great Wonder 2d and Pathfinder's Image. Here are several real herd headers.

If You Really Want to Own a Herd Boar, Buy One of These.

Forty bred sows and gilts are bred to the two great herd boars above mentioned. Buy some of them, they will produce good litters and you will not be disappointed. I am closing out my entire herd. There will be bargains for all who will come and get them.

Please send for catalog and arrange to attend this sale at Emporia, Kansas, January 28. For catalog address

W. R. HUSTON, AMERICUS, KAS.

Auctioneers: James T. McCulloch; Wood & Crouch, Emporia, Kansas

RED POLLED CATTLE.

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

FOR SALE

Red Polled cows, heifers and bulls. Special price if taken at once.
W. J. HARRISON - AXTELL, KANSAS

RED POLLS, BOTH SEXES, BEST OF BREEDING.
Charles Morrison & Son, Phillipsburg, Kan.

FARM AND HERD.

W. H. Mott, of Herington, Kansas, and A. S. Neale, of Manhattan, Kansas, have arranged for the consignment to the Holstein Friesian sale to be held at Leavenworth, Kansas, on February 14, of the entire herd of M. E. Moore & Company, Cameron, Missouri. This herd consists of fifty head of registered cows and two great herd bulls. The herd will be consigned and dispersed to settle the W. E. Moore & Company estate. Several A. R. O. cows and daughters of A. R. O. cows, several 16 and 17-pound two-year-old heifers from great sires. This herd of registered cattle was founded over forty years ago and is one of the oldest and best herds west of the Mississippi River. The great show cow, Missouri's Josephine, one of the greatest Holstein cows in Missouri, was bred by M. E. Moore & Company. They also bred and showed the champion herd at the St. Louis World's Fair, and also the cow, Shadybrook Gerben. One of his daughters and several granddaughters are consigned to this sale, and about one-third of the offering is directly descended from this great cow. The show ribbons and silver trophies won by this herd will be on exhibition at the sale. The Leavenworth Commercial Club will tender a banquet to all attending the sale on the evening of February 14.

Captain Fiske of the U. S. Disciplinary Barracks, Leavenworth, Kansas, has announced February 15 for his semi-annual sale of Holstein cattle. Captain Fiske is one of the best posted men on Holstein cattle the writer ever had the pleasure of meeting. He built up the great Pabst herd at Waukesha, Wisconsin, and was selected from this position to manage the herd of more than 300 head of registered Holstein cattle now at the Disciplinary Barracks farm. The farm is conducted more as an educational feature than for the purpose of making a large profit. Fifty head of cows and heifers will be dispersed on February

15 and like sales will be conducted twice each year. In addition to the Holstein herd there is a herd of one thousand pure-bred hogs and a flock of 15,000 White Leghorn hens on the farm. All buildings are strictly modern and up to date. A visit to this farm is well worth the trouble to anyone interested in improved stock.

A. B. Wilcox & Son, formerly of Abilene, Kansas, now living near Topeka, have announced March 26 for their annual Holstein cattle sale. This sale will follow the Kansas Holstein Breeders' sale that will be held at the fair grounds on March 25 following the annual Holstein meeting on March 24. The Chamber of Commerce has promised to tender a banquet to all visiting members on the evening of March 24.

H. A. Dressler, of Pinedale Stock Farm, Lebo, Kansas, owner of herds of pure-bred Holstein cattle and Duroc swine that are among the best in the state, reports his herds doing well. Pinedale Stock Farm Holsteins are noted for high production records and a feature of the herd at this time is the choice lot of young stock, including some record bred bulls.

Arthur Mosse, of Leavenworth, Kansas, proprietor of the Kansas herd of big Chester White hogs, has announced February 11 for his next annual sale. Sixty head will be offered—thirty bred sows and thirty spring gilts that have been carefully selected for this occasion. The sale will be held in the Coliseum and the breeders of the Chester White hogs present will be given a banquet at the National Hotel on the evening of February 10.

The Holstein-Friesian Association of Kansas is planning a big association sale to be held in Topeka March 25. It is the purpose of the management to sell eighty head of cattle and not more than five from any one breeder may be consigned. The sales committee has decided that the time has come to hold the standard a little higher. Breeders believe that bulls should not be consigned having dams with records less than twenty-four pounds of butter in seven days for full age cows, or less than twenty pounds for two-year-old heifers. No cows over eight years old at day of sale will be accepted and nothing but animals with sound udders; every quarter must be absolutely right. It is time now that consigners begin to fit cattle for this sale. It is not necessary that you know now just what animals you will consign, but how many, and then you can decide as to what you will sell. W. E. Peterson, expert dairy judge of the agricultural college, will inspect each animal consigned to the sale, both as to individuality and condition. This inspection will not be made before February 10.

IN BROOD SOW SALE

TUESDAY, FEBRUARY 18, 1919

You know the kind—big bones, big hams, and big spots—the prolific kind. If interested in the world's greatest pork hog, write for catalog.

H. L. FAULKNER, Box K, Jamesport, Mo.





Correct TRACTOR Lubrication

How to read the Chart

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

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

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

TRACTORS	1917 Models		1917 Models		1918 Models		1919 Models	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Albough-Dover (Square Turn)	BB	A	BB	A	BB	A	BB	A
Allis-Chalmers	BB	A	BB	A	BB	A	BB	A
All Work	BB	A	BB	A	BB	A	BB	A
Andrews	BB	A	BB	A	BB	A	BB	A
Appleton	BB	A	BB	A	BB	A	BB	A
Aultman-Taylor	BB	A	BB	A	BB	A	BB	A
(18-30)	BB	A	BB	A	BB	A	BB	A
Avery	BB	A	BB	A	BB	A	BB	A
(8-10 HP.)	BB	A	BB	A	BB	A	BB	A
(Loudville)	BB	A	BB	A	BB	A	BB	A
Bates Steel Mule	BB	A	BB	A	BB	A	BB	A
Bean Track Pull	BB	A	BB	A	BB	A	BB	A
Best	BB	A	BB	A	BB	A	BB	A
(8-10)	BB	A	BB	A	BB	A	BB	A
Big Bull	BB	A	BB	A	BB	A	BB	A
Bower City	BB	A	BB	A	BB	A	BB	A
Buckeye (Indiana)	BB	A	BB	A	BB	A	BB	A
(Indiana) (Giant Baby)	BB	A	BB	A	BB	A	BB	A
(Ohio)	BB	A	BB	A	BB	A	BB	A
Case	BB	A	BB	A	BB	A	BB	A
(9-18)	BB	A	BB	A	BB	A	BB	A
(10-20)	BB	A	BB	A	BB	A	BB	A
(12-25)	BB	A	BB	A	BB	A	BB	A
(20-40)	BB	A	BB	A	BB	A	BB	A
Chase	BB	A	BB	A	BB	A	BB	A
Cleveland	BB	A	BB	A	BB	A	BB	A
Common Sense	BB	A	BB	A	BB	A	BB	A
C. O. D.	BB	A	BB	A	BB	A	BB	A
Corn Belt	BB	A	BB	A	BB	A	BB	A
Creeping Grip	BB	A	BB	A	BB	A	BB	A
Cumerson-Brantingham (EB)	BB	A	BB	A	BB	A	BB	A
(EB) 9-16	BB	A	BB	A	BB	A	BB	A
(Blue Four)	BB	A	BB	A	BB	A	BB	A
(Revere)	BB	A	BB	A	BB	A	BB	A
Farm Horse	BB	A	BB	A	BB	A	BB	A
Flour City	BB	A	BB	A	BB	A	BB	A
Galloway (Heavy Duty)	BB	A	BB	A	BB	A	BB	A
Gen Pull (Rumely Co.)	BB	A	BB	A	BB	A	BB	A
Grain Belt	BB	A	BB	A	BB	A	BB	A
Gray	BB	A	BB	A	BB	A	BB	A
Happy Farmer	BB	A	BB	A	BB	A	BB	A
(Model B)	BB	A	BB	A	BB	A	BB	A
Hart Parr	BB	A	BB	A	BB	A	BB	A
Heider	BB	A	BB	A	BB	A	BB	A
Holt Caterpillar	BB	A	BB	A	BB	A	BB	A
(Model 45)	BB	A	BB	A	BB	A	BB	A
(Model 18)	BB	A	BB	A	BB	A	BB	A
Huber	BB	A	BB	A	BB	A	BB	A
Imperial Forty	BB	A	BB	A	BB	A	BB	A
Ingersoll	BB	A	BB	A	BB	A	BB	A
Kearl	BB	A	BB	A	BB	A	BB	A
K. C. Prairie Dog	BB	A	BB	A	BB	A	BB	A
Kinkaid	BB	A	BB	A	BB	A	BB	A
Lion	BB	A	BB	A	BB	A	BB	A
Little Chief	BB	A	BB	A	BB	A	BB	A
Little Giant	BB	A	BB	A	BB	A	BB	A
Maytag	BB	A	BB	A	BB	A	BB	A
Minneapolis	BB	A	BB	A	BB	A	BB	A
Mogul (I. H. Co.)	BB	A	BB	A	BB	A	BB	A
(8-10) (I. H. Co.)	BB	A	BB	A	BB	A	BB	A
Moline Universal	BB	A	BB	A	BB	A	BB	A
New Age	BB	A	BB	A	BB	A	BB	A
Nichols & Shepard	BB	A	BB	A	BB	A	BB	A
Nelson	BB	A	BB	A	BB	A	BB	A
Oil Pull (Rumely Co.)	BB	A	BB	A	BB	A	BB	A
(14-28, 10-20, 20-40)	BB	A	BB	A	BB	A	BB	A
(Rumely Co.)	BB	A	BB	A	BB	A	BB	A
Parrett	BB	A	BB	A	BB	A	BB	A
Pearce	BB	A	BB	A	BB	A	BB	A
Pioneer	BB	A	BB	A	BB	A	BB	A
Flow Boy	BB	A	BB	A	BB	A	BB	A
Flow Man	BB	A	BB	A	BB	A	BB	A
Pontiac	BB	A	BB	A	BB	A	BB	A
Rumely	BB	A	BB	A	BB	A	BB	A
(8-10)	BB	A	BB	A	BB	A	BB	A
Russell	BB	A	BB	A	BB	A	BB	A
(Little Four)	BB	A	BB	A	BB	A	BB	A
Sandusky	BB	A	BB	A	BB	A	BB	A
Simplex	BB	A	BB	A	BB	A	BB	A
Standard	BB	A	BB	A	BB	A	BB	A
Strait	BB	A	BB	A	BB	A	BB	A
Titan (I. H. Co.)	BB	A	BB	A	BB	A	BB	A
Tom Thumb (4 cyl.)	BB	A	BB	A	BB	A	BB	A
Twin City	BB	A	BB	A	BB	A	BB	A
(Model 16)	BB	A	BB	A	BB	A	BB	A
Walls Cab	BB	A	BB	A	BB	A	BB	A
(Junior)	BB	A	BB	A	BB	A	BB	A
Waterloo Boy	BB	A	BB	A	BB	A	BB	A
Winco	BB	A	BB	A	BB	A	BB	A
Yuba	BB	A	BB	A	BB	A	BB	A

The Years Ahead

OLD farm methods are being thrown aside. The tremendous margin between what the farmer has produced and can produce—what he has earned and what he can earn—becomes every day more evident.

He realizes at last the vital part he plays in the welfare of his nation—and the other workers of the country are looking to him with a new respect.

For war has shown the people the true importance of a man who produces Food.

The farmer who has formed the habit of looking ahead, plans every year for a marked increase in his crops. He realizes that the productive possibilities of his soil have not been touched.

A sixteen year old boy has recently raised 169 bushels of corn on one acre. Illinois, our best corn state, averages per acre 29 bushels.

Recent experiments in Indiana, by scientific cultivation and fertilization of wheat, brought an increase of over 40% over the average crop.

Cases like these are becoming more common every day.

The two chief factors in the increase of yield per acre are proper fertili-

zation and proper farm machinery. The one type of farm machinery that is doing the most to increase production per acre is the tractor.

Think of it! Not many years from now millions of horses and mules now on the farms will be replaced by tractors.

Fewer men will cultivate more land. Arm labor, leg labor and back labor will be taken over more and more by machinery.

The farmer will be a business executive. He will work more with his mind and less with his body. He will have more time for recreation. His will be one of the most interesting, independent and worthwhile ways in which men earn their living.

TO the Vacuum Oil Company it is a matter of great satisfaction that, almost without exception, the leading tractor manufacturers consider Gargoyle Mobiloils first choice among the tractor lubricating oils.

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

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



Mobiloils

A grade for each type of motor

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

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

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

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

Correct AUTOMOBILE Lubrication

How to read the Chart

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

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

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

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

AUTOMOBILES	1918 Models		1917 Models		1916 Models		1915 Models		1914 Models	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Abbott	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
Abbott-Detroit	A	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.
Allen	A	Arc.	A	A	A	A	A	A	A	A
Apperson	A	A	A	A	A	A	A	A	A	A
Auburn	A	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	A	A
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