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MARKETING MILK IN KANSAS

Important Investigation Being Made of Milk Distribution Methods

By F. L. THOMSEN, K. S. A. C.

EFFICIENCY in marketing farm products is a matter of the greatest importance. This fact is now being more generally recognized. Years the thoughts of those interested in agricultural progress have been devoted mainly to a consideration of the problems relating to production, while many and often evil aspects of marketing were ignored. With few exceptions no one ever took the time to even consider the fact that there was a marketing problem. But the developments of recent years have made clear to everyone the fact that increasing concentration of our people in large centers of population, and other changing features of our system of distribution, have brought on a condition of great significance.

Interest seems for the present to be centered on some of the larger considerations in connection with marketing, such as the packing industry. It is certainly true that we have some big problems of distribution which demand most careful investigation and still more careful thinking to solve. But in the meantime there are many comparatively simple, homely instances of marketing inefficiency to which attention should be given.

One of the most prominent of these is the question of milk distribution. Not very intricate problem is this, perhaps, but nevertheless one which affects the farmer and consumer to a surprising extent, and which, although the fact is generally known, furnishes us with one of the best examples of inefficient marketing.

Milk is one of our most necessary and valuable articles of food. Scientific research carried on in recent years has demonstrated the fact that milk is absolutely essential to the health of the people, especially growing children. This fact alone would be enough to increase the importance of a proper consideration

of the marketing of this product. The consumer is vitally interested in an adequate supply of sanitary milk at a reasonable price.

On the other hand, of no less importance is the subject of milk distribution from the farm viewpoint. Cries of "diversified farming," "go into dairying," etc., are heard repeatedly. But there would be no occasion for such urging if the marketing of dairy products was put on a sound basis. The trouble with dairying has been not with production, but with marketing. While a good steady income is to be derived from dairying, it is a well known fact that the per cent of profit from this kind of farming is not equal to that in many others. "All work and nothing much in it" is an expression often heard. About 90 per cent of replies from dairymen of Kansas to such a question are to that effect.

But this is not the fault of production. Increased fertility of the soil and other advantages should make dairying more profitable than any other type of farming. Some say it is now. But the hard fact remains that the dairymen have been the hardest hit by the rising cost of labor and all commodities entering into production, and many are going out of business for such reasons.

The real difficulty lies in the marketing of dairy products. Price is a large factor. The writer does not wish to say here that milk is too low in price, but it is plainly evident that milk has gone up less in price than almost any other farm product, especially when its increased cost of production is considered.

In addition to these two sides of the question which point to the need of a proper study of the marketing of milk, we have the outstanding fact that our system of milk distribution is an acknowledged example of inefficiency.

Existing conditions are not due to the producers, to the distributors, or to the consumers, alone. They are due to a combination of things, and the end result is that such inefficiency must work to the disadvantage of all.

That the question of milk marketing is an important one, and of great concern to those directly connected with it, can hardly be doubted. But the problem has still another angle which makes it of even greater interest. It furnishes an example of the relations existing between the producer, consumer and distributor which affords opportunity for study that throw much needed light on our marketing processes as a whole.

A considerable amount of investigation has been carried on with reference to milk distribution in our large cities, such as Chicago and New York. It has been plainly shown that inefficiency in our present system is causing the loss of millions of dollars annually in these big cities alone.

But a surprising thing in connection with investigations which have been made is the fact that in practically every case attention has been directed to the large metropolis, and not to the average representative American city and town, where a large proportion of the country's milk is consumed.

Especially in Kansas is the marketing of milk an important study. In addition to the incentive needed by the dairy interests of the state there are other aspects to consider—the fact that conditions in regard to return for the producer have become more acute, that the milk supply in some cities is becoming actually endangered, and that the subject, being considered of somewhat minor importance in this state, has been little understood. In Kansas, especially, is the milk distribution problem confined

largely to cities of smaller size. The boast of Kansas is not of her large industrial centers, but of her many prosperous county seat towns.

The marketing of milk in Kansas has many features peculiar to the state which are not found elsewhere. The wide variation in agricultural conditions make many characteristics distinctive of certain sections within the state itself.

Is there need of co-operation among Kansas milk producers and sellers? Could Kansas milk be sold more economically through centralized concerns in the cities than through the method of direct distribution from producer to consumer which is now largely followed? Could the market for milk in Kansas be enlarged to any extent, thereby opening up to the dairyman an additional avenue for the disposal of his milk? Could the present actual methods employed in delivery of milk be improved upon to the advantage of all concerned? These are only some of the interesting considerations confronting us. In short, the question is, in what way can conditions affecting the distribution of milk in Kansas be improved?

Investigation alone will not accomplish much, but it is nevertheless essential, in that a condition cannot be rectified until just what is wrong has been found out. "Marketing of Milk in Six Representative Cities of Kansas" is the subject of a project recently started by the department of agricultural economics of the agricultural college, and it is hoped that a great deal of much needed information will be obtained. The interest taken in the subject has been demonstrated by the unusually high percentage of replies received to a questionnaire on the subject sent out to dairymen of the state, and this despite the fact that the State Board of Agriculture recently sent out another questionnaire on dairying, devoted to the production side.



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MECHANICS ON THE FARM

Items of Interest About Automobiles,
Engines, Tractors and Motorcycles

Setting Machines Up Right

Poor work with farm machinery is often due to wrong assembling of parts or to an improper hitch.

Whenever a farmer buys a machine he should insist upon being furnished with the manufacturer's directions for setting it up and operating it, says a writer in Tractor Farming. Practically every manufacturer sends out such directions with each and every machine, but in a great many cases these directions do not reach the farmer. The book furnished by the manufacturer usually contains not only the directions for setting up the machine correctly, but also instructions for its care and operation, as well as numbers and names of repair parts. This information is often of great value to a farmer in ordering extra parts if needed. If all farmers would insist upon receiving these printed directions from the dealer who sells them a machine, read them carefully, and then keep them where they can be referred to in case trouble is experienced with the outfit, it would often save a great deal of time and expense, to say nothing of improving the quality of the work done by the machines.

There are thousands of farm machines in use today which are not properly assembled and which are not doing as good a quality of work as they would were they put together right. In some cases these machines have been set up by the implement dealer or some of his hired hands, while in others the farmer has hauled the machines home and set them up himself.

When a farmer buys a machine which has been set up by a dealer or one of his men he naturally assumes that the work of assembling has been done properly, but he should remember that the dealer himself cannot do all of this kind of work in many cases, but must depend upon employees who often are not entirely familiar with the machines or are careless in assembling them. Some of these men are so sure of their ability to assemble any kind of a machine that they will not read the directions sent from the factory. As a consequence they often put the machines together wrong, especially in cases where changes have been made in the machine, new parts added, etc. Some of these men not only refuse to read the directions themselves but throw them away without giving the farmers a chance to see them.

In such cases, unless the farmer knows just how the machine should be put together, he is unable to tell whether it is properly assembled and if anything goes wrong he may experience considerable trouble, while if the manufacturer's directions were at hand they would usually enable him to straighten the matter out in a few minutes.

To be frank about the matter, however, there are many farmers who are no more given to reading such directions than the dealer's employees, and factory experts make a great many trips to adjust machines and re-assemble them properly when the whole trouble would have been avoided if either the farmer or the dealer had taken a few minutes to read the printed directions.

Out of the numerous instances which might be cited illustrating the points mentioned just one will be given. A farmer bought a standard make of manure spreader. The machine did fairly good work for a short time and then part of the mechanism which drove the beater had to be replaced because of wear. This happened several times during the three years he used it. The wear on this part of the mechanism was excessive; the spreader, therefore, was very unreliable, apt to break down just when needed worst. Finally, entirely

disgusted with the outfit, he sold a neighbor for fifteen dollars. The neighbor replaced the parts one more, justed them properly and has used machine with entire satisfaction since. The whole trouble had been to wrong assembly. The first owner out \$100 and had a lot of worry trouble due to someone's ignorance assembling the machine and his own of knowledge as to how it should be adjusted. The second man, because he knew to adjust it, got a spreader for saving several times that amount. Fortunately, similar cases happen together too frequently and usually machine or the manufacturer takes the blame.

Another frequent cause of trouble with farm machines is that the hitch is not properly adjusted. An example of this is hitching a disk harrow designed for use with horses to a tractor without moving the forecarriage or extending the hitch. The tongue truck is apt to be attached so close to the tractor when the drive wheels drop into a furrow or ditch the weight of the end of the tractor will come directly on it. The bearings and axle of the carriage were not intended to bear weight of a tractor and when used this way it is almost sure to be bent or bent out of shape. Obviously, this is a case where no one is to blame the person who was so thoughtless as to hitch a disk harrow in this manner.

Another case of trouble with a forecarriage was caused by hitching high up on the harrow. Part of the pull exerted by the horses was in driving the forecarriage into the ground, wearing out the bearings and doing poor work.

Whenever a farm implement gives a great deal of trouble and does not do the work for which it was intended be sure that the machine is given a chance, that it is properly assembled and hitched.

It is said that exposure to weather causes greater destruction to farm implements than using them. Avoid this by storing all machinery and tools properly under shelter before winter sets in.

Stock Shippers Organize

With eighteen men in a Missouri county devoting all or a large part of their time to shipping live stock, the farmers there have organized a stock shippers' association. They must buy on a good margin to make worth while. Eight of these shippers worked out of one town and shipped cars of live stock last year. They couldn't the farmers organize a stock shippers' association of their own and by eliminating the buyer absorb his profit. They could, and did, with the assistance of the county agent. Twenty-five shippers in one neighborhood enrolled to effect the organization. They have elected a well known farmer and stockman to handle their shipments. Now other communities are interested in this plan whereby one manager will do the work of several buyers, and more economically.

The Red Cross doctor was examining a doughboy who had been badly wounded in both hands.

The boy surveyed his injured hands ruefully.

"Do you think I'll be able to play piano when I get well?" he asked.

"Certainly you'll be able to play piano," said the doctor emphatically.

"That's funny," remarked the soldier. "I never could play one before."

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STABILIZING CATTLE MARKET

Efforts to hold back cattle not ready for market, which grew out of the Emergency meeting of the Kansas Live Stock Association, seem to be having some effect.

The rush to market of cattle from all ranges of Kansas has been checked. The delegation of cattlemen headed by Governor W. R. Stubbs which went to Washington to appeal for relief also met with some success. The opening of the European market to American meats was regarded as necessary. The shipping board after a conference with Kansas cattlemen promised reduction of two dollars a hundred on rates to Europe. The present rate is \$4.50. This cut puts ocean rates on a level with those established by British shipping interests between Liverpool and South America.

Another important factor in connection with the opening up of European markets is the extension of credits. A measure providing for a systematic extension of credit to European countries in the need of American meat has been introduced in the Senate.

Packers have been claiming that they did not take care of the heavy runs because of the fear that the Attorney General would proceed against them for illegal hoarding of meat. They have used this as a reason for not buying heavily and thus keeping up the market. There has been a good deal of talk in the papers on this matter of hoarding, and it seemed necessary that something should be done to clear the public mind as to just what constituted illegal hoarding. Numerous threats have been quoted as coming from the Attorney General's office. Mr. Palmer has now made a ruling which will remove the packers of any fear of governmental action and they can no longer use this as a valid excuse for failing to care of the seasonal requirements of the matter of slaughtering and storing a big run of cattle and hogs.

This present Washington trip of the Kansas cattlemen seems to have been the most effective in its immediate results any trip made.

DICTATING CROP PRODUCTION

Agriculture as an industry has had no means of foretelling the possible future demands for any of its products. It is a weak point in the business of farming, for no one has the slightest advance information on the probable needs of the world in the year ahead. During the strenuous war period the Department of Agriculture and the Food Administration developed this function of anticipating to some extent the food needs of the world and called for the planting of definite acreages of wheat and rye to meet world needs.

Apparently an effort is being made by the Department of Agriculture to continue this function of forecasting crop requirements to a limited extent for another year at least. This is based on a world survey of food requirements, and certain suggestions are made as to acreage to devote to bread-grain crops. The live stock situation has also been given consideration. On page 8 of this issue will be found the statement from the Department on this subject.

Wheat farmers who are suffering from the manner in which wheat is being allowed to accumulate at local points and are being compelled to hold back wheat on the farm because no cars can be obtained may resent these suggestions from the Department having the appear-

ance of dictating the amount of wheat they should put out the coming year. Exasperating as the conditions may seem in connection with the marketing of the crop, it probably would be unwise to resent this information and the suggestion coming from the Department. It looks now as though there might not be enough wheat to carry us through until another crop is raised, and while we will not have a Government minimum price on next year's crop, wheat will probably bring a good price. Mr. Hoover, who has just returned from abroad, after studying carefully the food conditions in the European countries, insists that they will need vast supplies of breadstuffs for a long time. Large quantities of grain are now being exported. The United States and Canada sent ten million bushels only last week.

Many of the grievances and annoying conditions in connection with the handling of the crop are probably unavoidable because of the natural consequences incident to the reconstruction period. Julius H. Barnes, president of the United States Grain Corporation, who spoke in Kansas City before the delegates to the International Farming Congress last week, said that the car situation would soon improve, that he had wired the Railroad Administration since coming to Kansas City for assistance in the matter.

The function of anticipating future needs in certain fundamental foodstuffs and raw materials, which has been developed in connection with war activities, might well become permanent if means could be found for accumulating the necessary dependable information as to world demand. Perhaps out of the wartime efforts to obtain worldwide knowledge of food conditions and anticipate as far as possible world needs, will come some plan whereby agriculture will not be compelled to be so completely in the dark as to the possible requirements of its fundamental products.

SORGHUM FOR SILAGE

Cane, or sweet sorghum, long viewed with suspicion as a silage crop, has been proven to be one of the most satisfactory crops for that purpose if properly handled. The objection formerly made was that cane made a sour silage which was less appetizing to the stock. Stockmen who used cane extensively as a winter forage, storing it in large cocks in the field, learned that the secret of getting the largest value from the crop was to let it mature before cutting. When this practice was followed the cane contained the maximum of feed value, was palatable, and in addition did not go into the shock until the weather was cool in the fall, which resulted in its remaining sweet until well into the winter. Following the same principle of allowing cane to mature before being run into the silo has made it a silage crop superior to corn in many respects. Carefully conducted tests at the Kansas Experiment Station have shown that ton for ton cane silage made from a crop allowed to mature before being put into the silo equalled in feeding value the average corn silage. Chemical tests made last winter showed that the corn silage being fed in an experiment comparing corn and cane silage was more acid than the cane silage. Furthermore, in feeding cattle silage to the limit, the lot having cane silage would have cleaned up a larger allowance than the lot being fed corn silage.

If you have a crop of cane which you

wish to use as silage, do not be in too much of a hurry to harvest it. Cane is apt to be late in maturing because of the period of dry weather prevailing through July and August. Cane has made a splendid growth since the rains of the early fall, but it is better to run the risk of a light frosting than to put it in too immature. A little touch of frost does not seem to injure the crop for silage if it is put in before the leaves begin to dry too much.

Some rather striking charts were shown in the Kansas Experiment Station exhibit at the Soils Product Exposition in Kansas City, setting forth the comparative returns from an acre of cane silage and an acre of corn silage. For example, an acre of cane silage made more milk than an acre of corn silage, the principle reason being that the cane produced a much larger tonnage than corn. Of course neither cane nor corn silage is properly balanced for milk production and must be properly supplemented.

COST OF WHEAT PRODUCTION

Determining the cost of producing the 1919 crop of wheat in Kansas, based on figures furnished by thousands of farmers in every section of the state, is a project now being put into operation by the Kansas State Board of Agriculture. The principal new feature in the investigation is its comprehensiveness. Some excellent work has been done by the agricultural economics department of our agricultural college in getting cost figures through careful surveys in restricted areas and on individual farms. This is investigational work of a high character and should be given every encouragement possible, but the present effort of Mr. Mohler to get figures on this 1919 crop, covering as it does every nook and corner of the whole state, is also worthy of commendation and support.

This project cannot be made a success without the co-operation of a large number of wheat growers. If you throw the blank received from Mr. Mohler's office into the waste basket, thinking there will be plenty of others who will take the time and make the effort to fill it out, the plan will fail. A letter setting forth the scope and purpose of this project has been sent to members of the Grange and the Farmers' Union. Every farmer in the state in position to furnish dependable, first hand information is invited—is urged—to join the board in this work. Mr. Mohler will be glad to send cost blanks to any such farmer upon receipt of his name and address.

FIRE PREVENTION DAY

Next Thursday, October 9, is Fire Prevention Day, officially so designated by proclamation of the Governor. For a number of years this date, the anniversary of the great Chicago fire, has been generally observed in the United States and Canada as Fire Prevention Day.

Fire prevention and control is not a matter for cities and villages only, for nowhere are fires so certain to result in almost complete loss as on the farm. Clearing up the rubbish about barns and buildings and in the house are measures of precaution to be regularly taken on the farm, and this day set apart might well be devoted to making a careful study of the problem on each individual farm, carrying out every possible measure which might lessen the fire danger. City dwellers are compelled

by law to observe various rules tending to lessen the possibility of fires. Public buildings are required to be equipped with hand fire extinguishers to be used in putting out the chance fire as it starts. In many farm homes we have visited, we have never yet seen such a hand fire extinguisher hanging in the kitchen where so trivial a cause as the overturning of a vessel of fat on a hot stove might start a serious fire. Often it is not merely a matter of property loss, but means human suffering and perhaps loss of life. No one should be more concerned in reducing fire dangers to a minimum than those who live on farms.

The Governor points out in his proclamation that never in history has the conservation of our resources been so important as at present. Fire losses in the United States and Canada for the past year were \$317,014,385, and to this enormous sum Kansas contributed \$4,701,653.

Point is given to the special need for conserving our resources at the present time by an incident which came to our attention last week. Meeting an old friend from Harvey county at the International Farm Congress in Kansas City and inquiring as to his welfare, we were told that he had suffered a \$10,000 fire loss recently, all his barns and buildings except his house being totally destroyed. Of course they were insured, but he told us that insurance which seemed sufficient a few years ago when the policies were written was totally inadequate in meeting present replacement costs.

The Governor is urging that every resident of the state join heartily in the observance of Fire Prevention Day. Schools are urged to have special programs along fire prevention lines. The churches are also requested to give whatever attention is possible to the matter.

FARM CONGRESS MEETS

Probably the most successful and profitable sessions the International Farm Congress have ever held were those of last week held in Kansas City in connection with the International Soil Products Exposition. The opening session was attended by 350 or more delegates, and these delegates, a large majority of them at least, were real farmers, as could easily be noted by the interest taken in the topics up for discussion. There were a number of agricultural delegates from foreign countries.

One of the important addresses of the Congress was that of Julius H. Barnes, president of the United States Grain Corporation, who spoke on the subject "The World's Wheat." W. I. Drummond, the managing director of the Congress, deserves high commendation for the character of the program and the splendid interest taken in the sessions of the Congress. The exposition was a well balanced display of the agricultural production of the United States. Canada was also represented with a most comprehensive exhibit. Kansas has put on at previous expositions a splendid exhibit, but the one on display this year surpasses any previous effort. Bruce Wilson of the agronomy department of our agricultural college is the man who has had special charge of preparing and staging the Kansas exhibit.

For the third time in five years the Kansas exhibit won first honors. Second went to the province of Manitoba, Canada, and third to Oklahoma. Last year Kansas tied with Nebraska for first place.

KEEPING SOIL PRODUCTIVE

Must Provide for Maintenance of Plant Food Elements

A KANSAS farmer in a section of the state which has been farmed a good many years made the remark recently that the soil of his farm was getting blacker each year in spite of the fact that the soil of the community generally was becoming lighter in color and less productive. He attributes this to the fact that he had adopted a systematic soil-building policy. Kansas farmers must recognize the need for a definite soil-building program.

Much has been written of the Illinois system of permanent soil fertility. It is something more than a name designating the fertility system of a state only, says H. F. T. Fahrnkoph in Plow and Tractor.

Its sound principles and practical working basis have caused it to become so closely allied with the fundamentals of agriculture that it is not thought of as a system standing apart and belonging to a single state. It has become a fundamental. In the corn belt states, especially, it is considered an essential wherever the business of farming is practiced.

To provide for permanent soil fertility a system must embrace those principles whereby the productivity of a soil will in no way be diminished. It means, simply, providing for the maintenance or increase of the supply of essential plant food elements; this, further, involves the physical and chemical condition of the soil and these must not be impaired.

There is nothing difficult, whatever, in defining the subject of permanency itself. There has, however, been a great deal of scientific work and investigation involved in arriving at the various methods offered to provide for support of permanent soil fertility.

The Illinois system of permanent fertility has grown out of results from studying investigations, not only at the Illinois experiment station but from other experiment stations as well. Many leading farmers of the state who had sufficient foresight and faith to try recommended practices on their own farms contributed largely to the general dissemination of the knowledge concerning this system.

It has been established and is quite generally known that ten elements are essential to plant growth and development. It is true also that several of these elements as far as their permanent supply for plant growth is concerned, will be taken care of by nature. There are, however, certain elements and compounds absolutely essential to plant growth and which are deficient in many soils. These are nitrogen, phosphorus, limestone and in some cases potassium. Their maintenance in the soil invite the skill and earnest attention of every farmer. They, principally, are involved in the Illinois system of permanent fertility.

Limestone Sweetens the Soil

Limestone, when applied to soil, neutralizes the acid in that soil and supplies the plant food elements—calcium and magnesium. There are very large areas of soil which are decidedly acid and, before they can grow crops profitably, limestone must be used. There are also large areas of cutivated land that, although they are not acid, have such a low limestone content that it is imperative that this material be applied before maximum crops can be grown.

Under present farm practices, where no provision is made to counteract the result, it is the natural tendency of our soils to become acid. For practical, permanent and economical systems of farming these acid soils are unproductive soils. Our leguminous plants—clover, alfalfa, soybeans, cowpeas, etc.—cannot thrive properly or do their best work in an acid soil. Limestone not only "kills" the acid but places the soil in a suitable

condition for the life process that must be carried on there. It benefits the soil from a chemical, a physical and a biological standpoint.

Studies of detailed investigations at different agricultural experiment stations show that finely ground natural limestone is the form and kind that should be used. The limestone industry has developed wonderfully. Limestone is used in building, paving, curbing, road-making, as railroad ballast and in agriculture.

Until recently, the limestone for agricultural purposes has been largely a by-product of a larger industry. There was no special effort made by companies toward its special production. There is such a growing demand for it, however, that companies have awakened to the call and, accordingly, are equipping their plants to prepare enormous amounts of this material. Literally, millions of tons are needed annually for Illinois soils alone.

Nitrogen, legumes and organic matter

satisfaction of knowing that he is maintaining or increasing the supply of phosphorus in his soil but when dollars are considered he will happily learn that he is engaging in a highly remunerative business.

There is a very liberal supply of potassium in our normal soils. The more widely practiced farming conditions have been such as to deplete the organic matter content of the soil. When potassium salts (sometimes spoken of as potash) are added to such soils there is often an increase in yields but this it not applying good business principles to farming when we consider that there is an inexhaustible supply of potassium in the soil that will be made available for crops without any cost to the farmer by the organic matter he will supply when he adopts a good system of permanent fertility.

Many truths which substantiate the principles set forth in the Illinois system of permanent fertility have been brought to light by data secured as a

third receives an application of raw rock phosphate in addition to the manure and limestone.

The four plots between the fifth and tenth comprise the grain system of farming and no manure is used. These are known as residue plots. The straw and stalks are returned to the soil. One of the plots receives residues, alone; another residues and limestone; another residue, limestone, phosphate, and still another residues, limestone, phosphate and potassium.

A common rotation followed is one of corn, oats, clover, and wheat. Oats with clover seeding follows the corn. The clover stands over the following year and a hay crop and a seed crop is obtained. The chaff from the seed crop of clover on residue plots is returned to those plots. This chaff, along with the growth of clover that was made the preceding year after the oats were removed, very materially aids in supplying organic matter for the soil. In case of a clover failure, soybeans are substituted thus giving a legume for that year. Wheat follows the clover year. On the residue plots of the wheat, sweet clover is seeded and turned for corn the following year. This gives the residue plot a seeding of clover twice in the rotation. Often on a fifth series alfalfa is grown. After five or six years this is moved to one of the other series and after an equal number of years is again moved until finally it grows on the entire field.

Poor Soils Show Greatest Gain

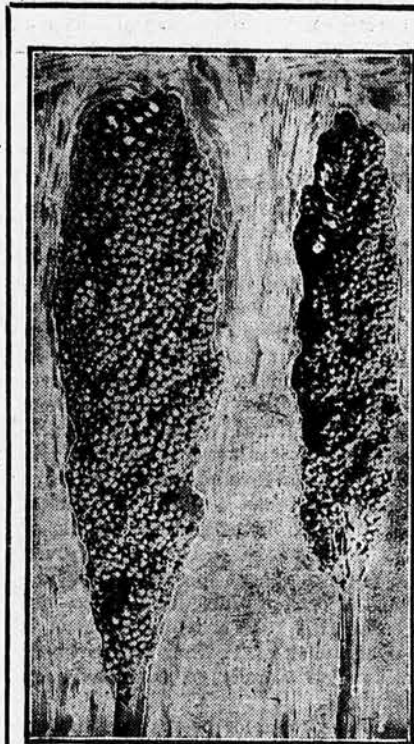
A study of results from experimental fields shows that differences due to treatment are usually very much more marked on poor soils than on very fertile soils. Nevertheless, by following a good system of farming the fertility of our richest soils may be maintained or even increased.

On the experiment field at Aledo, Mercer County, Illinois, the 1918 corn crop averaged on untreated land, 77.3 bushels per acre, an average of the yields in the livestock and grain system where limestone and phosphate are used was 93.6 bushels of corn per acre. The untreated wheat land yielded 31.6 bushels per acre and the average of the plots receiving limestone and phosphate where manure are used was 41.4 bushels of wheat per acre.

On untreated plots at Urbana, there is a ten-year average yield of corn of 52.1 bushels per acre and an average of plots receiving organic matter along with limestone and phosphate shows the ten-year average yield to be 72.8 bushels of corn per acre.

On six of the different experimental fields, located in the southern third of Illinois, that have been in operation from five to eight years, involving a combined total of 23 wheat crops and 3 corn crops, as an average of the plots in the live stock and grain systems where limestone and phosphate are used there is an increase per acre for those two natural fertilizers of 10.5 bushels of wheat and 11.4 bushels of corn. These figures are very significant when we consider that on those poorer lands of the state there is seeded annually more than a half million acres of wheat and a million acres of corn. We can see that our soils and crops respond to fair treatment.

If a permanent system of soil fertility is to be established, it is essential that the farmer understand the principles involved. He may be a livestock farmer or a grain farmer or practice a combination of the two. The farming can not be done by a set of rules. Through it all there are certain fundamentals which should be understood. These are embodied in the Illinois system of permanent fertility. It is sane, safe, profitable and permanent.



THESE two kafir heads came from adjoining rows on a Jackson County, Kansas, farm—one fertilized with a commercial fertilizer, 2-12-2 formula, at the rate of 150 pounds to the acre, and the other unfertilized. They are representative samples of the best heads in the respective rows, selected September 16. The seed of the smaller head is just in the milk stage and has little chance of fully maturing before frost. The other head is eleven inches long and packed full of well-matured seed. The field was planted May 8. In planting, two rows were fertilized and two missed, so conditions have been the same for all the rows of the plot with the exception of the fertilizer. The field had been in clover three years previous to 1918 in which year it was in corn, the crop being very poor, yielding only about four tons of silage to the acre. Part of the field is in corn this year, but the owner is sorry he did not put it all into kafir.

are very closely related in any discussion concerning fertility of soils. The legumes—clovers, soy beans, etc., through the aid of bacteria which inhabit their roots, have the power of utilizing the atmospheric nitrogen, converting it into organic compounds from which it is used as a plant food. When a clover crop is grown upon a soil, no appreciable amount of nitrogen is added if the crop is removed. The nitrogen must be added to the soil either by plowing under the clover or adding manure produced by feeding it. In this manner the clovers are either directly or indirectly fed to the grain crops. Organic matter is added to the soil and its consideration is absolutely essential in a good system of farming.

Rock Phosphate Should be Used

With an abundance of actively decaying organic matter in the soil we have ideal conditions for the rendering soluble of raw rock phosphate. Thus we have the element phosphorus applied for our growing crops, by one of the most economical and practical methods. This is one of the elements that must be purchased by the farmer and applied to the soil. It is absolutely necessary that this element be furnished for the formation and development of all grains and the farmers must purchase it and apply it to the soil. In using raw rock phosphate on his farm the farmer not only has the

result of growing crops on the soils experiment fields which are operated by the Illinois Experiment Station. Besides those located at Urbana, there are about thirty-eight fields with a size ranging from five to forty acres located in different parts of the state. A few of these fields are leased but many of them were given to the experiment station either by an individual, group of individuals or by the county in which they are located.

These fields are divided into plots and sets of plots called series. When a field is selected an effort is made to secure as nearly as possible, uniformity in soil type. A most common method is to establish on a field four or more series of ten plots each. These plots are exactly the same size, usually one-fifth or one-tenth acre. Three of them, one at each end and one in the middle of the series are designated as check plots and receive no soil treatment. These serve as an index to the productivity of the soil had it been farmed under the system of removing everything and returning nothing. Between the first and fifth are three plots which comprise a live stock system. Everything is removed from these plots and weighed. They receive manure in direct proportion to the crops grown on them. One of the plots received an application of manure alone; another, in addition to the manure, receives an application of limestone; the

GENERAL FARM AND STOCK ITEMS

Something of Interest for All—Overflow from Other Departments

ONE of our Dickinson County readers asks what date we would advise for sowing wheat in the northern part of that county.

He states that since the rain has softened the clods he is getting his ground into shape for a wheat seed bed. He plans to sow both hard and soft wheat and asks if there is any difference in the proper sowing date for the two kinds.

This section of the state is in the hard wheat area, and since hard wheat is more resistant to winter killing and also to dry weather it would seem that there could be little reason for sowing any considerable area to soft wheat. Soft wheat has a harder, stiffer straw than hard wheat, and for that reason is less likely to lodge in wet seasons or on very rich ground. It is sometimes grown for this reason in the hard wheat belt along creeks and river bottom where hard wheat is likely to lodge. The soft wheat seems a little more resistant to Hessian fly injury when both kinds are grown in the same neighborhood, but the difference is so slight as to be hardly worth considering.

There is probably little difference in the dates at which it is best to sow the two types of wheat.

In determining the date of sowing, the Hessian fly must be given consideration. In the north Dickinson County locality one year with another sowing wheat the latter part of September will give the best yields, but the fly-free date is a little later, or about October 6, as will be noted by referring to the map of fly-free dates printed in last week's issue of KANSAS FARMER. If the flies are present in large numbers, sowing at or near the fly-free date will avoid fall infestation. The better the condition of the seed bed, the later wheat can be safely sown, for under ideal seed bed conditions it will start and grow quickly and be farther advanced and better established by the time winter sets in than earlier sown wheat on a poorly prepared seed bed.

Orcharding in Middle West

Within recent years we have heard much of certain far western states as fruit producers. Through skillful advertising and propaganda many people have been led to believe that it is only in those states that high-grade fruit can be produced, and that it is only a matter of time before they will practically eliminate the competitions of other sections. Even the growers themselves of this general region have often come to wonder if the best markets of the country must finally be turned over exclusively to the so-called "box apple" states.

It is not the intent here to reflect in any way upon the size or character of the fruit industry of the northwestern states, says V. R. Gardner of the Missouri College of Agriculture. As a matter of fact it is well that all concerned gain a correct idea of the development of that industry and of the extent to which it is capturing our markets, and entering into direct and indirect competition with us. On the other hand it is well that, when comparisons are made between the fruit industries and the fruits of the two sections, such comparisons be based upon exact information and not upon hearsay evidence or general impressions that may get abroad.

The best measure of the actual commercial value of an article is the price that the buyer is willing to pay for it. Fictitious values may be attached to certain things for a time, but in the long run they will find their true level in the general list of commodities. In this connection it is interesting to note the prices that are being paid this year to the growers in this state, and to those in Oregon, Washington, Idaho and Montana for the same varieties of fruit. Reports indicate that a large percentage of the Jonathan, Grimes and Rome crop

of the Northwest is being sold at prices ranging between \$1.75 and \$2 per box, f.o.b. shipping point; and Winesap, Spitzenberg and Yellow Newtown is being sold at \$2 to \$2.25. These prices are for their first and second grades. Growers here are selling the same varieties, except for Spitzenberg and Yellow Newtown, which they do not grow, for prices ranging from \$6 to \$9 per barrel, depending upon grade. Our prices here are just about enough higher to account for the difference in freight rate, so that fruit from the two sections will sell to the consumer for about the same figure.

These facts should encourage the orchardist of Kansas and Missouri, for they mean not only that the markets do not discriminate against him, but that they appreciate the value of his product, and that he can obtain a higher price per bushel for this product than can his western competitor. Couple these advantages with the equal yields, lower freight rates, and lower production costs here, and it is obvious that the grower of this section has a bright future if he will but employ methods of management that will insure a high-grade product.

Overcharges

In the course of its supervision over live stock markets under the Food Control Act, the Department of Agriculture has been investigating the practices of live-stock commission firms licensed un-

voking or suspending their licenses. A temporary injunction was granted pending a hearing to be held at Chicago on September 15.

Barley vs. Corn as Hog Feed

With corn at the present high price hog feeders are trying to find a good feed which can be purchased more cheaply. Barley costs less per pound and hence is being used by a large number of feeders. The Missouri Experiment Station has results from a recent feeding trial which indicate that barley makes a very satisfactory corn substitute.

Twenty hogs, averaging in weight about 130 pounds, were divided into two lots of ten hogs each and full fed for forty-nine days. Lot 1 received ground corn 9 parts, shorts 2 parts and tankage 1 part, while Lot 2 was fed this same ration except that ground barley was substituted for the corn.

At the end of the feeding period the hogs fed corn had gained an average of 1.93 pounds per day, while the hogs fed barley gained an average of 1.85 pounds. Thus the hogs getting corn gained more rapidly, but they also consumed more feed.

Lot 1 (corn, shorts and tankage) gained 100 pounds on each 409.9 pounds of feed, while Lot 2 (barley, shorts and tankage) required 426.6 pounds of feed for 100 pounds gain. In other words, for each 100 pounds of pork produced about 4 per cent more of the barley



THIS lamb was three months and seventeen days old when his picture was taken. His mother, standing behind him, is an ordinary grade western ewe. Those taking part in the Marshall County farm tour August 22, were much impressed with this demonstration of the results of crossing good pure-bred rams on western ewes. On the Hawks Bros. farm near Beattie where this photo was taken, the sheep are money makers.

ration was required than of the ration containing corn.

These results are inside the allowance usually made, namely that ground barley has about 10 per cent less value than corn as a swine feed.

Owing to its hard flinty covering barley should be ground or rolled for hog-feeding purposes. Since its composition is very similar to corn, like corn it should be supplemented with feeds like shorts, tankage, linseed oil meal or milk by-products.

Dominant Breeds by Counties

In the nation-wide campaign to promote the general use of purebred sires and better live stock, the United States Department of Agriculture will keep records of the agricultural counties according to the breeds of live stock which predominate in them. Practical experience has demonstrated the desirability of communities concentrating on the production of only a few breeds and types of the different classes of live stock. Such management not only enables the individual farmers to aid each other in improving and upgrading their stock, but also gains for the communities wide reputations as centers for certain breeds. The raising of several dominant breeds in any community makes that locality the mecca for prospective purchasers who are desirous of buying animals of those breeds, and also makes

it possible for buyers to obtain stock in large quantities.

For the service of persons interested in examining or selecting live stock, the department will keep a record of the dominant breeds and varieties of the different kinds of live stock in each county where such information is obtained from accurate and dependable sources. Pending future developments in this work, a breed or variety will be considered dominant if 100 of more good purebred sires of that breed or variety are owned and used for breeding in a county. Sources of information concerning these farm animals will include rural colleges, and representatives of state boards of agriculture. The department requests that state and county live stock associations transmit figures and all data available on the pure-bred sires of their region to their local county agent or the state agricultural college. This material should include a statement of the number of pure-bred sires in the county, together with the date when the information was gathered. Initiative in collecting and reporting these data rests entirely with the county and state officials.

Information gathered in this way by the department of agriculture will be available to the public. Thus persons wishing to purchase any kind of live stock may ascertain readily what counties in the United States, according to the records, have purebred sires of the various breeds in which they are interested. Naturally where as many as 100 purebred sires are used in a community, these herd headers will stamp their quality to a considerable extent on the live stock of that county and lead to the production of many desirable grade females, as well as purebred stock of both sexes. Furthermore, in counties where a certain breed is considered dominant, even though there are less than 100 purebred sires, such facts should be reported and will be kept as supplementary records.

Battling Scrub Bulls

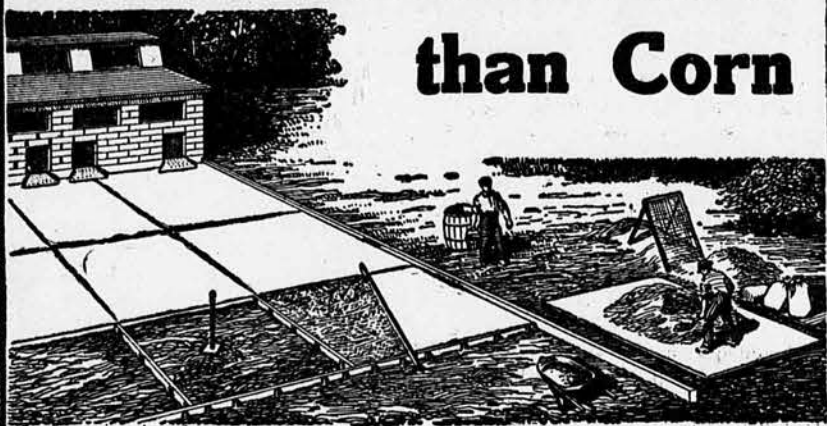
Wisconsin has been waging a purebred bull campaign in the hope of banishing scrub and mongrel sires from within its boundaries. Of course, in the Badger State, which is one of the leading milk, cream, butter and cheese states in the Union, there are thousands upon thousands of dairy cows and hundreds of dairy sires, so that the matter of pure-bred bulls is important.

Waukesha County—one of the leading dairy communities of the United States and noted particularly for its Guernseys—after a stiff fight has reduced its mongrel bull population to 42 per cent of scrubs and grades, as compared with 58 per cent of pure-breds. Walworth County now has 53 per cent pure-bred and 47 per cent grade and scrub bulls, while Sawyer County has 52 per cent pure-bred, 37 per cent grade, and 11 per cent scrub bulls. The Price County bulls are 45 per cent pure-bred and 55 per cent grades and scrubs, while Sheboygan County has 37 per cent pure-breds, 50 per cent grades, and 13 per cent scrubs. Wood County, with 38 per cent pure-breds and 62 per cent grades, is just a little better off for good bulls than Barron County, which owns 36 per cent pure-breds, 45 per cent grade, and 19 per cent scrub bulls. In La Crosse County the bull census shows 30 per cent pure-bred, 54 per cent grade, and 16 per cent scrub sires.

Twenty-one Wisconsin counties have completed censuses of their bulls and have instituted drives to banish those of inferior blood lines and undesirable type.

A sour soil won't digest the plant food in fertilizer and manure. Lime is the remedy.

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Here's Big News for America's Corn Growers—Our Fall announcement and your best chance to own a World's Famous Watts' Corn Sheller in any size—small, medium or large capacity. We are now able to offer them at Big Cut Prices in all sizes, under most liberal terms with a 60-Day Free Trial and a guarantee of complete and lasting satisfaction. All other sizes are offered at equally big reductions.

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

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HARRIS BROTHERS CO. Dept. KB-49, 35th AND IRON STREETS CHICAGO, ILL.

It will pay to store away for winter use a good supply of cabbages, mangel beets, turnips and small potatoes.

Hens Need Meat Scrap

One of the most significant facts in feeding fowls for egg production, as brought out by experiments at the Ohio Experiment Station, is that rations containing approximately 12 per cent meat scrap decrease the cost of feed under present market prices more than 20 per cent, and increase the egg production

more than 50 per cent, as compared with a ration containing only 2 per cent of meat scrap. This comparison has held true with both the light and heavier breeds of poultry.

A ration in which the grain mixture was made up of three parts corn and one part wheat and the dry mash mixture of two parts by weight ground corn, one part bran, and two parts meat scrap, has given satisfactory results. The fowls consumed twice as much grain as mash.

Speculation in Farm Land

Farmers Warned of Danger in Rapidly Rising Land Prices

PROFITS being made by speculators in farming lands, especially in the corn belt, have produced what in some sections is almost a frenzy of trafficking in farms that portends serious results. Of the dangers of this activity farmers are warned in a statement issued by the Bureau of Farm Management, United States Department of Agriculture.

Farm land prices in the corn belt have increased in recent months with unprecedented rapidity. In most of Iowa and the principal corn-producing counties of central Illinois, representative farms probably have been sold and are being sold at increases averaging at least \$75 to \$100 an acre since last spring, and many far greater increases have been noted. The tendency has spread into northern Missouri, eastern Kansas, eastern Nebraska, eastern North and South Dakota, southern Minnesota, and western Indiana, and it is thought probable that it will appear in districts still more distant from the present centers of disturbance.

Eight farm management investigators were sent into the corn belt states to find out what are likely to be the results of above mentioned conditions. From their reports the following tentative conclusions are drawn by the department, in order that the farming population of the regions affected may at least be made aware of some of the possible consequences of the changes now taking place.

Speculators Reap Profit

"Large numbers of people dwelling in cities and towns who are not farmers have been making large profits buying and selling farms. In numbers of cases bankers, merchants, real estate men, and persons in other occupations have made profits of from \$10,000 to \$30,000 on single transactions. This tendency represents in effect a process of transferring the ownership of portions of rural wealth to persons who are not farmers. In one form or another toll will be levied on the farming industry to pay interest on these speculative profits. Wealth that should constitute a permanent basis of rural well being is being subtracted from the resources of rural communities and this is true even though farmers nominally may own the farms when the process is completed.

"However, it must be clear that the higher prices of farm lands in the regions affected will tend to make it more difficult for tenants to acquire land. Assuming no change in the minimum percentage of initial payment required, this initial payment necessarily will be higher, because of the higher total value. This difficulty in the way of acquisition of ownership by the tenant is likely to be all the greater for some years, because those agencies which lend on farm mortgages have not been disposed to increase the amount per acre loaned on first mortgages in proportion to the advance in land prices. Thus, in Iowa the standard maximum has been about \$15,000 per quarter section, or about \$94 per acre. Recently, a few loan companies have been disposed to increase the amount loaned to as much as \$125, but probably a majority are still governed by the smaller maximum. A much larger margin than before remains to be accounted for by cash payment or by second mortgage.

Evils Now Apparent.

"Certain temporary evil results of speculation in land are becoming apparent. In the corn belt most sales during the past six months have involved the immediate payment of only a small per cent of the purchase price at the time of sale, the remainder of the cash payment to be made on March first, next, at which time the buyer is to receive possession of the farm. In a large number of cases the farm subsequently is sold several times. As a result no one knows who will be the owner on March first, and tenants are unable to make

contracts for next year. Consequently many tenants will be unsettled and uncertain in their plans for the coming year.

"On the other hand, if the farm is now occupied by the former owner, he can make no plans for the farm and is inclined to neglect the improvements and the preparation of the fields for next year's crops.

"The method of selling the land several times over with reference to settlement on March first, contains certain elements of danger. The seller in each case depends on the settlement by his buyer. The latter in turn becomes a seller and depends on the settlement to be made by his purchaser in order to make his own cash payments on March first. There are undoubtedly some persons in the chain of transactions who are unable to complete their settlements on March first unless they succeed in selling again. Preliminary observations are convincing that such persons are the minority. However, the farmer who sells should be exceedingly careful to ascertain whether his purchaser is depending on resale for settlement or whether he can complete the purchase out of other resources available. Caution in this respect will greatly reduce the immediate dangers of the speculative tendency. Banks also should be cautious in extending their credit to patrons for the purpose of speculation. The Commissioner of Banking of one of the states affected declares that there is danger that country banks especially may find themselves possessed next spring of a large amount of paper which really rests on non-liquid security. In fact, the bankers of the regions affected can do much to prevent the natural tendency toward speculation in a period of rising land prices from getting entirely out of bounds.

Unfair Speculation Cited

"It is desirable to call attention to certain speculative practices now being employed which are entirely unfair in character. Certain corporations have been formed with limited liability for the purpose of enabling the promoters of those corporations to speculate in farm land in the name of the corporation without incurring personal liability for their purchases. A still more reprehensible practice is being followed. Certain shrewd persons are purchasing land in the name of some 'dummy' who is personally not good for the obligation. The dummy subsequently resells the land to the actual speculator, though still retaining the liability. In case the speculator fails to sell, the dummy will be unable to fulfill the obligation. At best the farm will revert to the former seller who may have lost the opportunity to make an advantageous bona fide sale.

"However, the most fundamental question involved is whether the present land 'boom' is justified by the future earning power of the farms.

"Indeed there are indications that in many parts of the northern states, even before the present 'boom,' land prices were higher than earnings on the investment justified, because the prices reflected the anticipated further increase of land prices. Farm management surveys have shown average cash rentals to yield net returns of only from two to three per cent of the average estimated prices of the land. If a steady and gradual increase in land prices would result in over-capitalizing land to this extent there is great danger that in a period of such rapid advance of land prices as has occurred in the past six months, the speculative profit made from this increase will to some extent be added to the prices of the land, resulting in a still greater over capitalization. There is no 'bear' side to the land market once a period of speculative activity is well developed, runs its own course until it collapses. Such has been the case in former land booms.

October 4, 1919

"It is very clear that with the return of normal conditions, the farmer who purchases a farm at the prices which have recently been paid for farms in some sections is likely to find it exceedingly difficult to earn a reasonable return on his investment, and if he buys the farm on a small cash payment, as occurs in many cases, paying from five and a half to six and a half per cent interest on his indebtedness the result may prove positively disastrous.

Hidden Evils in Profits

"It is true that the farmer who already owns his farm and who takes advantage of the advance of land prices to sell often appears to have made a handsome profit. However if he intends to continue farming in the same locality he is likely to find that he must pay as much or more than he received to obtain another farm of the same quality. In fact, in a number of cases farmers have been forced to pay from \$10,000 to \$15,000 to rebuy the same farm which they had previously sold at an apparently large profit. It is true the farm owner may sometimes improve his position by selling at the present high prices and rebuying in another state where prices of farms have not increased in the same proportion for farms of equal quality. However, this involves migration with the resulting separation from friends, relatives, and established associations. Others are selling out and retiring. This may be to the advantage of the individual who succeeds in unloading his farm at a high figure, but as pointed out above, it may prove disastrous to the next buyer, especially if a large element of credit enters into his purchase. Moreover, the opportunity to sell at high prices is undoubtedly inducing many good farmers to leave the farm at an earlier age than is necessary merely because the increase in price of the farm has assured them a good living as retired farmers.

"With the return of normal conditions, considerable dissatisfaction is likely to result if farmers find that they are unable to secure a reasonable return on their investment in land at 'boom' prices. It should be pointed out that the present marking up of land prices on the basis of abnormal earnings is analogous to the watering of stocks by a corporation which has been earning a large return on its initial investment. The corporation which claims that its products should sell at a price sufficiently high to pay dividends on this watered stock has been sharply criticized. The question naturally arises, therefore, whether logical claim can be made when normal conditions are restored to interest on the land prices which will result from the present 'boom.' Increased prices due to substantial improvements in the farm itself or to progress in community advantages, including good roads, schools, churches, are to be sharply distinguished from those which result from an artificial marking up of the prices of land. Yet, it may be difficult for the purchasers of farm land to see the distinction if the prices of farm products should fall."

Weaning Calves Young

Tests have recently been made at the Missouri Experiment Station to determine the earliest age at which calves can be taken off skim milk and still continue to make normal gains. The general plan has been to wean one group of calves at five months, another at four months, another at three months, and a fourth group at two months. Both before and after weaning the calves were weighed and measured every ten days and the weights and measurements compared with normal weights and measurements for the breed.

Success has been attained by weaning

both Jersey and Holstein calves at five months, at four months, and at three months, and practically normal gains were secured in almost every case when the calves were taken off a skim milk ration at the age of sixty days.

The plan followed has been to get the calves to take a good ration of skim milk with some hay and grain as soon as possible. For the first two weeks after birth a small calf such as a Jersey should receive from eight to ten pounds or four to five quarts of milk daily. This should be fed in two or three feeds a day. A large calf such as a Holstein may be given ten or twelve pounds daily. When the calf is two weeks old it can be gradually changed from a ration of whole milk to one of skim milk by substituting an equal amount of skim milk for each portion of whole milk removed. The plan of substitution is based on the supposition that the farmer can secure a limited amount of skim milk. A complete substitution can be secured in a week or ten days. When this substitution has been completed a medium sized calf should be receiving about twelve pounds of milk daily. From this time until two months old a calf should receive from twelve to fifteen pounds of skim milk daily, depending upon the size and condition of the calf. During this period the calf must be taught to eat hay and grain. The calves on experiment were fed liberally by this plan until about fifty-five to sixty days old, at which time they were taking an average of about one pound of grain daily. The amount of skim milk was then reduced a half and the amount of grain and hay somewhat increased. About a week or ten days later the rest of the skim milk was withheld, provided the calves were doing well. At this time the calves were

about sixty-five to seventy days old and were receiving a ration made up entirely of alfalfa hay and a grain mixture.

Ration for Dairy Calves

On farms selling whole milk it may be found advantageous to raise the calves for the dairy herd on calf meal instead of whole milk. The meal or gruel is added to the ration in increasing amounts beginning when the calf is two weeks old. A feeding plan which will work out fairly well with calves of average size is presented in Station Circular 88 of the Missouri College of Agriculture. The feeds used are whole milk, calf meal, grain and hay. Calves receive whole milk until they are two weeks old. For the next week the quantity of milk is reduced and a pound of gruel added. In the fourth week the calves receive nine pounds of milk, three pounds of gruel, a little grain and some coarse hay or alfalfa. From thirty days to six weeks the ration consists of six pounds each of milk and gruel together with a little grain and hay. The milk is then discontinued and the calves receive twelve pounds of gruel, a half pound of grain and a small amount of alfalfa hay. At two months of age the calves are getting fourteen pounds of gruel, one pound of grain and have free access to alfalfa hay. The gruel is discontinued after the fourth month, and the grain is gradually increased until by six months the calves are getting four and a half pounds of grain and all the alfalfa hay they will eat.

Gruel feeding may be continued after the fourth month if desirable, or it may be discontinued at three months of age and the calf be put on a hay and grain ration according to a plan which is described later in this circular.

Remember that calves will probably be less fat and smooth when fed on calf meals than when fed on milk. However, they should be of practically the same size and in a good thrifty condition. Milk is preferable as a feed and at equal costs should be given in preference to substitutes. The use of calf meal is valuable only when the selling price of milk makes the use of milk prohibitive.

All of the precautions to be followed in feeding whole or skim milk must be observed when using calf meals.

Do not overfeed.

Give feed in a clean wholesome condition.

Have all utensils scrupulously clean.

Feed regularly and in small quantities. Always feed at a temperature of 95 to 100 degrees F. Use a thermometer—do not use your finger.

Give the calf water to drink.

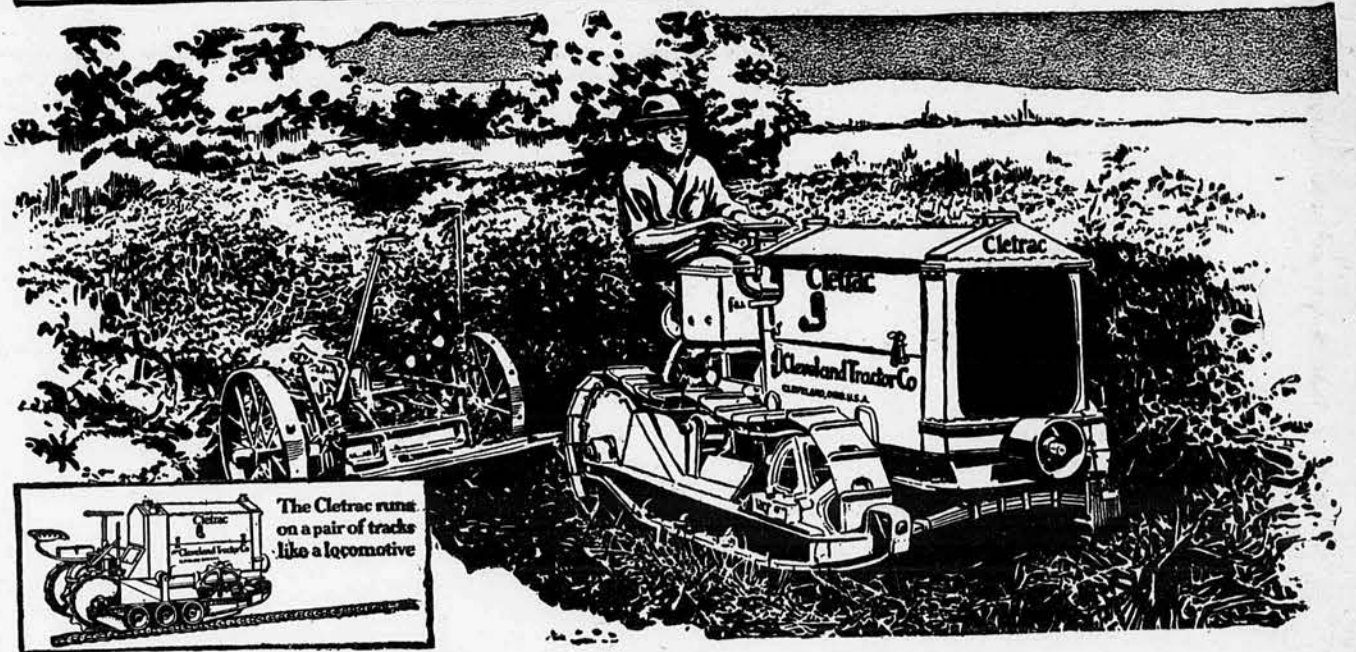
Be regular in everything.

Give the calves exercise in the open air during good weather, but do not expose them during cold, rainy weather.

Provide clean, well lighted pens with plenty of bedding.

Whenever possible give each calf a separate pen and limit the feed of each animal. If a separate pen is not possible, stanchions must be used. Especially is this true when raising calves without skim milk.

Farmers' Bulletin 1066, just published by the U. S. Department of Agriculture, tells how to ascertain by their teeth the age of cattle from calthood to about 12 years of age. The bulletin is illustrated with six drawings, which will aid the stock farmer in judging the age of his own animals or of those he may desire to purchase. It is for free distribution.



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Five-Year Average Is Guide

MORE wheat should be sown this fall than was the average in pre-war years, but not so much should be sown as was sown last year. This is the outstanding fall farming recommendation of the United States Department of Agriculture, which is watching the changes of world supply and demand while European countries are getting back to normal in food production and thus affecting the market for American products. The department's suggestions are based on the observations of specialists who were sent abroad to report on foreign conditions and probable needs, and on the most extensive reports it has been possible to obtain from other sources in this country and other countries.

As to winter wheat, the department suggests that 42,000,000 acres be sown this fall to this crop, and that 20,000,000 acres be sown in 1920 to spring wheat, making a probable aggregate production in 1920 of 830,000,000 bushels, of which 200,000,000 bushels would be available for export after home needs are met. This production would approximately equal the average yield of wheat in the United States for the five years 1915 to 1919 inclusive. The five-year average is thought to be a safe guide for American farmers.

The suggested acreage for fall-sown wheat is approximately 85 per cent of the area sown in the fall of 1918 and is about the same as was sown in the fall of 1917. The suggested area for spring wheat is approximately 88 per cent of the area sown in each of the last two years. The combined acreage of winter and spring wheat suggested for 1920 is about 86 per cent of the acreage sown for the 1919 crop, slightly more than the acreage sown for the bumper crop of 1915, and about 4 per cent less than the area sown for the 1918 crop.

Winter Rye

The pressure of war demand for rye has ceased, and it does not seem probable that exports next year will greatly exceed 25,000,000 bushels. Consumption of rye in this country was stimulated by the war to about 50,000,000 bushels. If this rate of consumption is maintained, a crop of 75 to 80 million bushels would be necessary to provide 25,000,000 bushels for export, indicating a total acreage of 5,500,000 to 6,000,000 acres, in comparison with 6,800,000 acres sown last fall.

"In any consideration of the probable foreign demand for American wheat and rye based on pre-war consumption experience," says the Department, "a greatly increased transportation cost and the existing condition of international exchange cannot be disregarded. * * * It seems clear that if the foreign exchange situation continues as it is or becomes more abnormal it will constitute a powerful stimulus for some foreign countries to seek grain in countries other than the United States, or to produce it."

Dairying

It is probable that several years will be required for European countries to get back to their normal cattle population. In order to supply their needs it will be necessary for them to import dairy products, and at the present time this country is supplying large quantities. Last year's exports were so large that about 2,000,000,000 pounds of milk were required to make the products, or 100 pounds from each cow in the United States. The department expects that exports will decrease and imports will increase with the exception of condensed milk. It recommends that dairymen give particular attention to economical feeding, through the buying of concentrates in large lots or the co-operative buying of feeds; attention to pastures that have been allowed to run down; attention to the feeding needs of their cows by the use of cow-testing associations; and the best use of labor and labor-saving devices.

"What our foreign trade in meat and

meat products will be in the future is impossible to predict with any degree of accuracy, owing to many factors which may affect it," the department says. "The exports will probably decrease as compared with the past year, as the European countries increase their production of live stock towards the pre-war production."

Other factors affecting American export trade are rates of exchange, which in many cases are decidedly unfavorable to those countries most in need of our meat and meat products; campaigns being waged in the European countries for increased production and decreased consumption; prices of meats and meat products in this country as compared with the prices in other countries having meats for export; available ocean tonnage for shipping from other countries.

However, pork exports at least probably will be greatly in excess next year of the pre-war annual exports. The European countries probably will require two years to get back to pre-war production, and their present needs are great.

Pre-war production of poultry in most European countries, the department says, will soon be resumed. Emphasis in this country is placed on more efficient methods of production. Whether increased production should be undertaken must necessarily depend on local conditions as to feed, labor, and other factors.

Appears in Farmer's Behalf

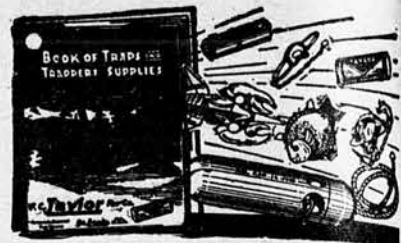
On August 15 J. D. Miller, who has been acting as a special representative of the National Board of Farm Organizations, appeared before the Agricultural Committee of the House and presented the board's viewpoint with respect to certain amendments proposed to the Food Control Act, which as then drawn would have made farmers and farm organizations subject to a \$5,000 fine or two years' imprisonment, or both, for carrying on collective bargaining activities. The exemptions asked for by Mr. Miller in behalf of the farmers were incorporated in the final draft of the bill adopted by the House. His statement has been published in full in Part 1 of the High Cost of Living hearings before the Committee of the House of August 15. Its value to farmers is indicated by the words of Congressman Jones of Pennsylvania, who said, "I have never heard a clearer or better presentation of a case before a committee than I have heard today."

Farm Business Letters

That letter answering your farm advertisement should be written carefully. Put yourself in the background. Emphasize "you" rather than "I." Make your prospective buyer feel that you have his needs in mind rather than that you are terribly and personally desirous of making a sale. The fact that you want to sell should have nothing to do with it. What you want to impress on the other fellow is that he will profit by investing in your goods. Give facts, real reasons, not frothy slush. Advertise, give sensible care to correspondence, then you'll get the business—provided your products are good.—GEORGE A. STARRING, Department of Journalism and Advertising, South Dakota State College.

Every father and mother should carefully consider the future welfare of their boys and girls before deciding definitely that they cannot afford to send them to high school and college. Forty per cent of the great vocations in life are practically closed to one who does not have a high school education at least.

Though loaded with public honors the great Washington said: "My greatest pride was to be thought the first farmer in America."



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Control of Stomach Worms

SHEEP growers must learn how to control the stomach worm. It is the most troublesome problem involved in maintaining a farm flock, but sheep can be handled successfully in spite of stomach worms. The stomach worm need not be a serious trouble for a good shepherd who has his lambs come early, feeds well, drenches his flock as a measure of prevention, and provides a rotation of pastures or pasture crops.

This is the judgment of the United States Department of Agriculture on this most serious problem for owners of farm sheep. Definite information concerning the essential things is embodied in Circular No. 47, "Stomach Worms in Sheep—Prevention and Treatment," prepared in the Bureau of Animal Industry. The whole subject is summarized in five questions and answers to them. Condensed, it is this:

How can one tell when sheep have stomach worms?

Dullness and lack of thrift are among the first indications. Scouring is often noticeable. These conditions might result from other causes, but when due to stomach worms are accompanied by a pale, bloodless appearance of the skin and the mucous membranes of eyes and mouth. Sometimes there is a watery swelling under the jaws.

How do the worms injure sheep?

These very small worms live in the alimentary tract, principally in the "fourth stomach," and injure sheep by consuming blood, and by secreting a poisonous fluid which destroys red blood corpuscles. The injury is often fatal to lambs. Adult sheep are better able to withstand it.

How should infested sheep or lambs be treated?

Make a drench by dissolving one-fourth pound of powdered bluestone in a pint of boiling water, and add sufficient cold water to make a total of three gallons of solution. The dose for an adult sheep is three and a half fluid ounces, for lambs under a year old one and three-fourths fluid ounces of this solution. It is better to use this early before serious trouble develops than to wait until the lambs begin to die.

Care, however, is necessary in drenching, and improper dosing may cause serious damage. While the lambs are with the ewes, change pasture every two weeks if possible and do not return the flock to the old pastures until the lambs are sold.

How do sheep become infested by stomach worms?

The stomach worm lays its eggs in the stomach of the sheep. They are passed out with the feces and hatch on the ground. In the last larval or infectious stage the young worms climb up on grass blades and are taken into the stomach of the sheep and lambs with their food. They will live for a long time in the pasture. For all practical purposes it may be considered that a pasture will not remain infested longer than a year, in the absence of sheep or other ruminants. Another way of freeing a pasture of its infection is to plow it up. It is not of much consequence whether every larval stomach worm in the pasture is dead or not. The object is to keep the number so reduced that they are not likely to prove injurious to sheep.

What methods can be employed to

prevent loss from stomach worms?

Prevention when it is possible to take the necessary precautions is more satisfactory and economical than treatment. The most effective measures of prevention are:

Have the lambs dropped early, and feed to develop them as much as possible before they go on pasture. Rotate pastures. Where feasible, plow up infested land and put it in forage crops that will make good grazing for sheep. Where sufficient changes of pasture can not be provided, drench with bluestone as a preventive and curative measure. Many successful shepherds dose all the ewes before turning them on pastures with the lambs, and after weaning time dose all the lambs that are to be kept. This is done as a means of keeping infection of the lambs down to a minimum.

Do Cows Earn or Spend?

"When your cows come home, what will they bring?"

"Will they bring the means of gaining pianos, automobiles, electric lights, washing machines, books, travel, and education, or will they bring disappointment, drudgery, and make it difficult even to buy food and clothing for the family? What the cows bring home at night will depend largely upon the kind of man that opened the gate, and the kind of animals he drove to the pasture that morning."

This is the way that Noel Negley, formerly in charge of cow testing work in Wisconsin, sees the question of making dairying pay by having tested cows and pure-bred sires.

"Was the man who opened the gate a business dairyman who makes good use of the part of his anatomy above his shoulders, or was he the other kind who, without cause, still exist? Did he open the gate and send down workers or drones? Were the animals that he sent out to manufacture milk from the grass, hay, and grain, bred for that purpose, or did they just happen?"

"Many dairymen do not know when the cows come home what they bring with them. In the last analysis, it is for the dairyman himself to answer."

Financial Status of Dairymen

The milking of cows has always been resorted to in years of poor crops because it brought in some ready money through the sale of cream when there was nothing else to sell. Cows can market feed in the form of butter fat which would otherwise have no market value. In years of good grain crops the tendency is to discontinue the milking of the cows.

It is pointed out in a recent issue of the Meadow Gold Messenger that there must be something to the dairy business, some real benefit to the community, some future to dairying, when clear-thinking, level-headed business men urge that it be followed more generally and foster and aid its operation financially in every way possible. Proof of this is noted in the manner in which bankers, merchants, and men engaged in other lines of business dependent upon farming prosperity take hold of every reasonable and legitimate phase of activity for improving and building up the dairy industry in their respective communities. Thus these men will be found encouraging testing associations and promoting calf clubs, co-operative bull clubs, and milk cow sales.

Men of the above business are generally of wide experience and keen foresight and are not slow to recognize those things which are most permanently helpful in increasing the prosperity of their communities. The Meadow Gold Messenger reports numerous instances in which representative business men have taken a hand in promoting the dairy industry, and the same items set out the manner in which they have succeeded.

In addition to these and as a typical example of a banker's activity we mention D. W. Stallard, cashier of the Citizens National Bank of Ness City, Kan-

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sas, who is furthering a movement to establish a sales barn and regular monthly sales for dairy cows, and with this is at the head of a movement for greater diversification of crops in Ness County. This is what Mr. Stallard says, and we want to add that he is decidedly on the right track: "Our farmers will have lots of money this fall. My ambitions are to start a live movement to induce farmers to invest their money in a farm or farm improvements and better live stock instead of buying stock in foreign businesses of one kind or another, and which companies through their solicitors are always on the lookout for suckers of the get-rich-quick type among our farmers."

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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.

Kitchen Utensils

KITCHEN utensils represent one item in the cost of living which can be reduced by wise choice, care and use. The right utensil, in good condition, when and where you want it, saves time and trouble. An easily cleaned utensil is as much of a labor saver as a meat grinder or a fireless cooker.

Do not keep unnecessary utensils about. Choose those that will serve several purposes. Ease in handling should also be taken into consideration. This depends on weight, balance, the position of the lip, and the shape and material of the handle. Lips on both sides are convenient; if there is only one, have it on the side that suits you. Be sure the utensil is well made, smooth inside and out, with rounded surfaces, no grooves, and an opening large enough so that the inside can easily be cleaned. Choose the size of cooking dishes according to the amounts you usually cook. In using an oil stove, fuel is saved and cooking hastened if the bottom of the utensil extends beyond the flame.

In materials, aluminum has the advantage of being light in weight and color and very durable. The fact that it does not rust also makes it desirable. Its first cost is more than that of most other materials. Aluminum darkens with use and is affected by alkalis and acids. In cleaning, alkalis such as washing soda and strong soaps should be avoided. It may be cleaned and brightened with weak acids, such as dilute vinegar, sour milk, or a fruit acid, or it may be scoured with whiting or fine steel wool.

Earthenware heats evenly, is less noisy in use than metal and less expensive than aluminum. It comes in a great variety of shapes, and baking dishes of earthenware may be used for both cooking and serving. It has the fault, however, of chipping and cracking unless of good quality and carefully handled, and is rather heavy to handle. When the glaze which protects the porous clay underneath is cracked by changes of temperature or careless handling, the dish absorbs fat, moisture, and dirt, and cannot be kept clean.

Enamel and agateware are smooth, easily cleaned, attractive in appearance, not affected by acids or alkalis, and good for storing as well as for cooking foods. They require careful handling lest the glaze chips, exposing an iron or steel surface which may be affected by water and acids and thus injure food. The chips themselves may get into food and be swallowed with it. Toughen new pieces by filling with cold water, bringing slowly to the boiling point and letting the water cool in the dish. In poor grades the metal foundation sometimes bends easily and causes the enamel to crack and chip.

Glassware is smooth, unaffected by foods, and enables one to see the contents of the dish. It is also suitable for storing food. Ordinary glassware is easily broken and chipped, but may be toughened by covering with cold water, bringing slowly to the boiling point, then cooling in the same water.

Iron and steel grow better and smoother with careful use, and will take and keep an even heat. Their disadvantages are that they are heavy to handle and rust easily, thus losing the smooth surface. To prevent rust, cover new utensils with fat and bake it in. Keep them in a dry place. When storing for a long time, cover with paraffin or an unsalted fat, or wrap in newspapers.

Tin is not affected by weak acids or alkalis unless the plating is injured. It is light in color and fairly inexpensive. There are two kinds of tin, plain tin and block tin. In both there is a plating of tin on an iron or steel foundation. If this plating is scratched, the surface underneath rusts. Plain tin is light in weight, easily bent, and cools quickly. Block tin is heavier, more durable, and holds the heat longer. Great heat on empty tin makes it warp and also melts the plating.

Wood is less noisy and less hard than metal. It is absorbent, however, and has a tendency to warp, crack, and darken. Wood makes comfortable handles because it does not press so hard against the hand or transmit the heat so quickly as metal. It is good for cutting and chopping boards because it dulls the knife less than a harder material. In cleaning, do not soak. Wash quickly, using a scourer rather than soap. Use as little water as possible, rinse, and wipe dry. Rub down occasionally with sandpaper or steel wool. Store in a cool, dry place.

Well-tempered steel knife blades will take and hold a sharp edge. In the best knives, the steel extends through the length of the handle and is fastened to it by rivets. Keep the handles out of water as much as possible. Store where the cutting edge will not be hit or rubbed by anything hard. Keep kitchen knives sharp. Clean by scouring with bath brick, applied with a moistened cork, then wash and dry.

Proper care and storage mean longer and better service. Scraping and scouring scratch metal and chip glaze. If food is burned or stuck on, soak or boil in a solution of washing soda unless the dish is aluminum. Wipe off soot with soft paper. Wash utensils in hot, soapy water, rinse in hot water and dry thoroughly. Gears and bearings in egg beaters, ice cream freezers and other mechanical utensils are exceptions to this rule. They should be wiped clean rather than put into water and should have a drop of oil occasionally. Cooking dishes, pitchers, milk bottles, and jars are best cleaned with suitable brushes or mops with metal strands.

Store utensils by hanging or placing on convenient, accessible, and well spaced shelves, where it is light and airy, not in dark, unventilated cupboards.

The Cold School Lunch

The subject of school lunches is receiving a great deal of attention these days. Teachers are realizing that the child cannot be expected to do good work through the long afternoon unless he has had a nourishing, appetizing noonday meal. Mother recognize the fact that the character of the child's lunch five days in the week for from seven to nine months in the year is going to have a large influence on his development, both physically and mentally. The matter is being discussed at women's meetings, magazine articles are being written and studied, and there is a decided effort toward improvement. The following paragraphs from the bulletin "Home Economics in Rural Schools," by Miss Frances L. Brown of the Kansas Agricultural College are suggestive.

"A cold lunch need not lack attractiveness any more than it needs to be without food value, and while the latter should have the first consideration, the former should in no wise be overlooked. Plain, even poor, fare will be relished if served in an appetizing manner. Miss Emeline S. Whitcomb says, 'The con-

tents of the school lunch should consist of something starchy and something meaty, something fat and something fibery, something sweet and something savory.'

"Bread and butter or sandwiches of some sort will always be the basis of a lunch, and the bread should be cut in moderately thin, even slices, having the butter spread evenly on the bread. There can be an endless variation in the filling for sandwiches—chopped meat seasoned and moistened, chopped nuts, eggs, or fruits such as raisins, dates or figs. Where canned or preserved fruit or jelly is to be used as a part of the lunch it is better to put it into a covered glass or jar. The sandwiches keep moist longer if wrapped in buttered or paraffin paper, and this also prevents the lunch from mashing together. There may be fresh fruit in season added to the lunch or a dessert in the form of a little treat, and if this treat be a surprise it will add to the pleasure of the luncheon. This dessert should be small in quantity—a bit of cake, a couple of cookies, a cup of custard, a handful of nuts, or a piece or two of candy. Such a lunch as this, carefully prepared, might be as tempting as one could wish and may fill the needs of the body if selected with this thought in mind."

Because of the monotony and tiresomeness of eating a cold lunch every day and the child's natural love of exercise and play, he is likely to fail to eat enough at the noon hour to give him the nourishment he really needs. It is worth the extra effort to provide something different and tempting enough to keep him from his play until the needs of his growing body are satisfied.

Washing Knitted Articles

To keep sweaters, scarfs, and other knitted or crocheted articles from losing their shape when cleaned, take the following precautions: First measure the article—length, width, length of sleeve, etc. Use lukewarm water and soap solution made by dissolving some good soap in hot water. Wash the article by squeezing rather than rubbing and keep it under water as much as possible. When lifting it, keep the hand under the garment to prevent stretching from the weight of the water, or put into a pan. Rinse until the last water is clear. Squeeze out the water either with the hands or by putting through the wringer, keeping the hand under the garment. Do not twist in the hands. Put through the wringer several times, changing the folds to take out as much water as possible. Place on a covered table and stretch or pat into the original shape and size as shown by the measurements. If desirable, it may be pinned or fastened by thumb tacks.

How Scarlet Fever Spreads

January 5, Johnnie Jones was out of school with a sore throat and a little rash. January 8, he returned to school and reported that he had a sore throat. No investigation was made by the teacher or health department. There was no public health nurse in that district. Willie Brown, Robert Martin, and Jack Smith were chums of Johnnie Jones. January 12, Willie Brown was taken sick and Mrs. Sims came in to help Mrs. Brown nurse him and then went home to her own children. January 13, Robert Martin was not feeling well, had a sore throat, and Joe Lund came over to play with him. January 13, Jack Smith was taken sick and Grandma Starr came in to see if she could help Mrs. Smith and then went home to help her daughter take care of her children, the Goldstein children. January 17, all three Sims children were taken down with scarlet fever. January 17, Baby Lund was taken sick. January 18, Joe Lund had a severe attack of scarlet fever. January 22, Susie and Nat Lund develop scarlet fever. January 17, Joe Smith comes down with scarlet fever; Andy McLean goes over to see what the trouble is and Mrs. Smith lets him visit with Joe "for just a few minutes." Janu-

ary 18, Mose Goldstein has a sore throat and a slight rash. January 22, Rachel and Ike Goldstein come down with well-marked attacks of scarlet fever. January 25, Andy McLean has a sore throat and slight rash and the next day Mable McLean is taken very ill with scarlet fever.

Do you say "All this suffering because Johnnie Jones did not know that he had a mild attack of scarlet fever"? No, all this suffering because this district did not have a live health department. If it had, the school nurse would have seen Johnnie the first day he was out of school and would have recognized the condition and reported it to the health officer, who would have seen that Johnnie was quarantined until danger of transmitting the disease was passed and there would have been no more cases.

A live, up-to-date, working health department is the best investment any community can have.—Bulletin of Kansas Board of Health.

How to Frame Pictures

The effect of a good picture may be killed by an unsuitable frame. Some of the points to be kept in mind in selecting a frame for a picture, as given by Nellie M. Kilgore of the Colorado Agricultural College, are these:

1. Most pictures are best framed without a mat. The exceptions are a small print or etching and the Japanese print.
2. The color of frame should harmonize with color of picture.
3. Water colors and oils are usually best in dull gold.
4. A flat moulding is better than one with a decided height at edge.
5. Frames should be lighter than darkest part of picture.
6. A picture with strong action, color or composition needs a wide frame.
7. Delicate scenes are better in narrow frames.
8. Frames of bright gold with much ornament are not good.
9. Rectangular frames are better than round or oval shapes.
10. Frames of imitation circassian walnut are poor taste. Also those of the painted.

Cut an apple in thin slices, chop it and add to your potato salad to give crispness.

Is God Satisfied?

Oh! I wonder with the dawning of each morning
Where all the color comes from in the sky;
Does God just open up His wondrous paint box
And spill His colors there, for such as I?
And then I wonder at the golden noon time,
When all the world is robed in shimmering light,
If God has melted gold and precious jewels
And mixed his colors then, to witch our sight.

I wonder with the brilliant changing sunset,
When all the western sky is glorified
In tints no human hand can ever copy,
If God is really, truly satisfied.

When, after all the years and years he's painted
His mystic masterpieces in the sky,
He watches just the passive interest taken
By all his children calmly passing by.
And then I wonder when it's dark and dreary,
And all the world's enveloped in a pall,
If God just thinks it's all so very useless
And lets his misty tears just fall and fall.
—Mrs. J. N. Griswold, in Railway Journal.

The demand for young men and women is greater now than in war times.
Think of graduates receiving \$1,200 to \$1,800 per year as stenographers, book-keepers and secretaries. Your success depends upon your college.
Expert teachers in all departments. Equipment latest and most up to date. Banks, Railroads and Commercial firms demand our graduates because they are qualified.
We employ no solicitors. Every graduate a position.

Strickler's
TOPEKA BUSINESS COLLEGE
107-109-111-113-115-117
East Eighth Street
Topeka, Kansas

— OTTAWA —
Business College
CATALOG FREE
OTTAWA, KANS.

A Toast to Milk

Drink milk. Drink more milk. Pure, fresh, rich milk is a food fit for the gods. Babies cannot live without milk, growing children grow the faster for it. It gives vitality to youth, power to middle life, and to old age it brings a goodly portion of the health and strength of former years. It should be used more largely by people of all ages, classes, and conditions. Milk steadies the nerves and adds to the health, physical strength, and mental energy of those who use it. It excels coffee, and with it tea is not to be compared. We may drink it at meals and between meals. It is delicious, refreshing, invigorating. It is one of nature's best gifts to man. Come, let us have another glass of milk.—J. C. McDowell, U. S. Department of Agriculture.

Salad Materials

Lettuce and other salad plants should be fresh, clean, crisp and cold. Separate the leaves of all salad plants, examine carefully, wash well. Trim off coarse leaves under stalk. Leave in cold water until crisp. Drain. Place in tin pail with cover, or clean paper sack or cheese cloth. Set in cold place.

Salad materials should be cut into cubes or convenient small pieces uniform in shape. This applies especially to meat, fish, potatoes, apples, etc.) All gristle, skin, etc., should be removed from the meat. Avoid "chunky" or "mushy" appearance.—MIRIAM M. HAYNES, Colorado Agricultural College.

Tomato Piccalilli

Use eight quarts green tomatoes, two or three green sweet peppers and two hot peppers. The tomatoes may be chopped or sliced in half-inch pieces. Soak the tomatoes and chopped peppers over night in one pint of salt and water to cover. Drain thoroughly. Heat until tender in the following mixture:

3 quarts vinegar
4 cups sugar
1 teaspoonful each of ground ginger and ground cinnamon
2 tablespoonfuls mustard (ground or whole.)

Add one cup of grated horseradish. Heat to boiling, and seal. Allspice, cloves, and one quart of chopped onions may be added before cooking.—Extension Service, University of Missouri.

Spanish Pickle

This is our favorite recipe for green tomato and cabbage pickle. The person from whom we obtained it assured us that it would "keep" indefinitely, but it never keeps very long in our home.

3 dozen green tomatoes
2 medium sized heads of cabbage
2 dozen small sweet pickles
8 small green peppers
1 teaspoon turmeric powder
1 teaspoon cinnamon
1 teaspoon white mustard
1 teaspoon celery seed
3½ pints cider vinegar
4 pounds brown sugar

Run cabbage, tomatoes, and peppers separately through the food chopper. Cut pickles in one-half inch pieces. Sprinkle vegetables with salt and let them stand several hours or over night. Scald tomatoes and cabbage separately in weak vinegar, but do not let them boil. The cabbage will require longer scalding than tomatoes. Drain cabbage and tomatoes well, add spices to vinegar, boil and pour over vegetables. Keep in a covered jar or crock in a cool place or in sealed jars.

With the Passing of the Storm

About the saddest task of mine when autumn comes around is seeing down the rose bush that we leave out in the ground. The house plants don't impress me in their shelter nice and warm, but I'm sorry for the rose bush that must stand the winter's storm. I gather up the leaves and the leaves about the lawn and I place them in a mighty tender where they'll keep the rose bush warm; for I love the little rose bush that must stand the winter's storm. Then I catch myself remembering that there's many a human soul that is left out in the winter by things he can't control; when the little things wasted could be used to keep him

warm 'til they bloom again in spring-time with the passing of the storm.—Midwest Printer and Publisher.

FASHION DEPARTMENT

Price of All Patterns, 10 Cents



2598—Girls' Dress. Cut in 4 sizes: 4, 6, 8 and 10 years. Size 6 requires 2½ yards of 36-inch material. 2986—A Pretty Gown. Blouse 2986 cut in 6 sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 2865 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. A medium size requires 7½ yards of 44 inch material. The width of skirt at lower edge, with plaits extended is 2½ yards. Two separate patterns 10 cents for each pattern. 2681—Girls' Dress. Cut in 4 sizes: 6, 8, 10 and 12 years. Size 12 will require 3½ yards of 44-inch material. 2996—Ladies Coat. Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. Size medium requires 4½ yards of 54-inch material.

Pattern Notes

A comfortable coat for general wear is the one illustrated. This is a good model for velour, cheviot, double faced cloakings, velvet, plush, and other pile fabrics.

Crepe de chine was used for blouse 2986, with the vest of figured silk voile. The skirt could be of serge or satin and the blouse of matched silk crepe or velvet with lace or embroidery for trimming.

No. 2681 is an attractive little model with simple lines, and is easy to develop. The overblouse may be omitted. It is arranged on a plain gathered waist and skirt which could be of contrasting material. The waist portions covered by the blouse may be of lining. Serge suitings, velvet, corduroy, and all wash fabrics are good for this style.

Facts About Dress Shields

Dress shields are made from a sheet gum placed between two layers of cloth, or from a waterproof cloth. The sheet gum shields are the more durable. They are made from rubber or balata, a gum very similar to rubber. The rubber used in the shields is vulcanized and will stand more heat than balata, but the balata shield has less odor.

When cloth is made waterproof by being treated with rubber it is known as rubberized cloth, but when the cloth is treated with soluble cotton and castor oil it is called pyroxylin. Shields made from either material are light in weight and wear fairly well, but since the seam in the arms eye is cemented there is danger of leakage.

Shields range in size from one to ten and the best results are obtained when the correct size is chosen. Sizes three and four are best for the average woman. Stout women should choose the shield having a long point at the front. Shields should be fastened into the dress so there is no chance for the flaps to curl.

Shields should not be worn in coats unless the waist is also protected by shields.—CHARLOTTE E. CARPENTER, Colorado Agricultural College.

Classified Advertising

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

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

AGENTS WANTED

AGENTS—OUR SOAP AND TOILET ARTICLE plan is a wonder. Get our free sample case offer. Ho-Ro-Co, 210 Locust Street, St. Louis, Mo.

AGENTS—BIG MONEY SELLING EUCA Alba Medicinal and toilet goods. Big repeater sales. Send 25 cents for guaranteed sample and particulars. Euca Alba Drug Co., Topeka, Kansas.

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

CATTLE.

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

JERSEY BULL, GENERAL CROWDER, thirteen months old, registered, fine individual, very best of butter breeding, solid color, gentle, for immediate sale at \$100. Jersey cow, Bessie's Little Golden, registered, fine conformation, very rich milker, gentle, solid color, three years old, fresh soon, priced at \$140. Come see them. Write or order from this ad at once. Dr. E. C. Ackerman, Stewartsville, Mo., twenty miles west of St. Joseph.

REAL ESTATE.

LISTEN—WELL IMPROVED 250 ACRE stock farm, \$25 per acre, terms, others. McGrath, Mountain View, Mo.

OHIO FARMS—I HAVE OVER 400 farms any size and price I want. Free Catalog. H. H. Masters, Agent, Cambridge, Ohio.

FARM LANDS—TEXAS.

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

TANNING.

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

IDAHO LANDS

BUY FORTY OR EIGHTY ACRES UNDER the Minidoka. Best irrigated project in America. Plenty water, electric light, power and heat for land owners. Special, fine all tillable eighty, fenced and under cultivation, forty in alfalfa, four-room house, barn, granary, picnic, chicken house, family orchard. Town 2½ miles. \$16,000, good terms. Call and be shown or write. Martin & Son, Rupert, Idaho.

FARM LANDS—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 per cent—price \$12.50 to \$20 an acre. Write for our book of letters from farmers who are making good there now, also illustrated folder with particulars of our easy purchase contract. Address W. T. Oliver, Santa Fe Land Improvement Company, 405 Santa Fe Bldg., Topeka, Kansas.

POTATOES.

FOR SALE—FINE LARGE OHIO POTATOES, \$1.40 bushel, car loads. Wickham Berry Farm, Salem, Neb.

When bread has moulded in a bread box the spores of the mould fungus are scattered about the interior, and will readily cause mould in a fresh loaf placed there. To prevent this, wash the interior well with about a spoonful of formaldehyde (40% strong) in a cup of water and then air in the sun for an hour.

Reduce your grocery bills next winter by filing your storeroom shelves now with canned, dried, and brined garden products.

FARMS WANTED.

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

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

HONEY.

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

PURE EXTRACTED CLOVER, EXCELLENT. Write us. W. S. Pangburn, Center Junction, Iowa.

THE STRAY LIST.

TAKEN UP—BY S. P. MORGAN OF Hallowell, Lola Township, Cherokee County, Kansas, on the 22d day of May, 1919, one small colt, male, color bay, appraised at \$30. Anna Masterson, County Clerk.

TAKEN UP—BY JOHN BYRNE, OF Florence, Marion County, Kansas, on the 27th day of August, 1919, one horse, weight 1,100 pounds, branded on left shoulder. O. V. Heinsohn, County Clerk.

TAKEN UP—BY JOHN BYRNE, OF Florence, Marion County, Kansas, on the 27th day of August, 1919, one pony mare, weight 800 pounds. Color, dark brown; 4 feet 4 inches high. O. V. Heinsohn, County Clerk.

TAKEN UP—BY B. E. LISTER, WHOSE residence is the northeast quarter of 15-6-37 of Sherman County, Kansas, on the 7th day of June, 1919, one three-year-old heifer, weight 800 pounds, color red, branded "C", appraised at \$50. One steer coming two years old, color all red, bob tail, appraised at \$50. One steer coming two years old, color black, face black with white ring, appraised at \$50. Doris E. Soden, County Clerk.

HOGS.

FOR SALE—REGISTERED DUROC Jersey pigs and Black Langshan cockerels. Mrs. Will Tune, Box 442, Durant, Okla.

250 CHESTER WHITE BOARS AND sows, spring and yearling record. Liberty bonds accepted. Earl Bloom, Bridgewater, Iowa.

LARGE POLAND CHINA SPRING PIGS, both sexes, by Walter Expansive Sid, Immune. Priced low. Lester Cooper, Peabody, Kansas.

DOGS.

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

FOR SALE—HIGH CLASS COON, SKUNK and opossum dogs. If you want the kind that delivers the goods I have it. Stamp for reply. A. F. Sampey, 862 So. Campbell St., Springfield, Mo.

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

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

POULTRY.

R. C. BUFF WYANDOTTE YOUNG stock for sale. G. G. Wright, Langdon, Kan.

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

SINGLE COMB RHODE ISLAND RED Cockerels, \$2. Utility Mrs. M. O. Royer, Butler, Mo.

CHOICE PURE-BRED BUFF LEGHORN cockerels—Classy, early-hatched birds, at let live prices. During October, \$1.50 each; three, \$4.00; six, \$8.00; twelve, \$15.00. Mrs. J. L. Dignan, Kelly, Kansas.

S. C. BROWN LEGHORN HENS AND pullets—Having sold our farm we will reduce our flock one-half. These are the same heavy egg producers we sell eggs from, all over the country. Prices \$2.50 each, best. Second \$2, third \$1.50. W. I. Gorsuch, Stilwell, Kansas.

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

POULTRY WANTED.

SHIP POULTRY AND EGGS NOW TO "The Copes," Topeka. Established 1883.

RUNNER DUCKS WANTED—BANTAMS for sale or trade. Emma Ahlstedt, Lindsborg, Kansas.

MISCELLANEOUS.

FOR SALE—BY THE MOHAWK RABBITRY & Kennels, Indianapolis, Ind., high-class rabbits of all breeds; guinea pigs, ferrets, pigeons, hunting dogs and blooded young hogs. Write for prices and terms, raise stock for us. We furnish the breeding stock and buy back all you raise. Stamp for circular.

HELPFUL POULTRY HINTS

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

Big Profit From Eggs

ONE hundred and sixty choice standard-bred pullets in the egg-laying contest being conducted by the American Poultry School at Leavenworth laid 28,798 eggs during the ten months period from November 1, 1918, to September 1, 1919. This is an average of 180 eggs to the hen. The feed cost, as given by R. F. Palmer, averaged 26 cents a month per pullet, each pullet earning a profit of 80 cents a month over and above the cost of feed, or a total of \$976.67 for the 160 hens.

These hundred and sixty hens were young pullets last fall, said Mr. Palmer. They started laying in November. Every pound of feed they consumed was charged against them. Every egg of marketable quality was credited to them at the regular market price for which it was sold. Since last November our market eggs have brought an average of 58 cents a dozen.

"Twenty-eight thousand seven hundred and ninety-four marketable eggs, or 2,399½ dozens, were produced by the 160 hens in ten months. We sold these eggs for \$1,392.67. The actual cost of all feed consumed by these 160 hens in the ten months was \$416, which left a net profit over feed cost of \$976.67 for ten months.

"It cost 26 cents per month, or almost one cent per day, to feed each of these hens. Against this the average earning per day from eggs sold was 23 cents per hen, or a clear net profit for each day of the ten months of over 2 cents.

"The feed given the flock of hens was bought at retail and was mixed and proportioned by us so that each hen secured feed that could be made into an equal number of egg yolks and egg whites. In this manner no feed was wasted and we could maintain the hens in better health.

"Over fifty different breeders from all sections of the United States, Canada, and three foreign countries, own one or more of these 160 hens. Thus they represent no one line of breeding, no one strain. In fact this flock of 160 hens is made up of ten different varieties.

"The feed formula for these hens is the best known to Prof. T. E. Quisenberry and differs slightly from time to time depending only upon the changing in price of one article of feedstuff or another, as we aim always to use a ration as low in cost as possible and still one that balances out to an equal number of yolks and whites.

"A White Leghorn hen from Pennsylvania took the lead for individual honors to date by the scant margin of one egg over the White Orpington hen from Ohio. The latter has produced 249 eggs in ten months, while the record of the former is 250.

"The best layer for the month of August was a White Leghorn from Nebraska which made a perfect score of thirty-one eggs. However, she was closely pressed by several, each with a monthly record of thirty eggs.

"White Leghorns lead in pen record of five females for ten months, the best record being that of a pen from Pennsylvania with a production of 1,117 eggs. This pen is closely followed by a White Leghorn pen from Washington with a record of 1,115 eggs. The high record for a pen of other varieties is held by five White Wyandottes from Canada. Their record to date is 938 eggs.

A pen of Mottled Anconas laid 113 eggs; a pen of White Leghorns 124 eggs, and a pen of White Wyandottes 101 eggs in August. None of the other varieties had a pen in the contest that passed the 100-egg mark for the month. There are three hens in this contest with splendid

chances of reaching or passing the 300-egg mark. All these are still in splendid condition and laying strong."

New Poultry Production Idea

Illumination is an important factor in profitable egg production and is no longer an experiment, in the opinion of J. C. Rice, noted poultry specialist and professor of poultry husbandry at Cornell University, who spoke before a large group of poultrymen at the Oregon Agricultural College. Professor Rice advocates transforming the day into thirteen or fourteen hours for getting the best results.

"It is amazing how the hens will respond to artificial light," he said. "The best way to get a hen warm is to let her warm herself up from the inside. Turn on the light and let her eat. The way to keep hens warm in the winter is to enable them to eat their food in a day of at least twelve hours of light.

"The domestic fowl originated in the tropics where the nights and days are twelve hours in length the year around. For centuries the fowls' digestive systems fitted to a twelve-hour day. In India the fowls do their foraging just before dawn in the twilight when it is cool.

"If one undertakes to feed at 6 o'clock in the morning and 6 o'clock at night, the birds will become fat and results will be produced. It doesn't cost much for the light. A gain in number of eggs laid in a year is shown, as well as the price received, as the hens lay at a time when the average hen is not producing.

"The best results were obtained from a flock of hens which was given light for feeding at 3 o'clock in the morning. No, we don't get up at that time—simply set an alarm clock which turns on the light."

Green Feed in Winter

If the best results are to be obtained with poultry they must be furnished with a plentiful supply of green feed. Where fowls have unlimited range on a farm they will secure green feed during the spring, but during the winter it must be supplied for them. The question of how to supply the best feed at the least cost is one that each poultry keeper must decide largely for himself. It will probably make but little difference what kind of green feed is supplied, provided it is relished by the fowls. Cabbages, turnips, beets, potatoes, etc., are suitable for this purpose. The larger roots and the cabbages may be suspended by means of a wire or string, or they may be placed on the floor, in which case it would be well to split the turnips or beets lengthwise with a large knife. Potatoes and turnips should be fed cooked. The mangel is an excellent root for feeding raw. Cut clover soaked in boiling water fed alone or with the mash is good. Clover meal and ground alfalfa make very good feeds for this purpose.

In marketing turkeys it pays to have them well fattened and well dressed, so they will look better than the average.

For Sick Chickens

Preventive and curative of colds, roup, canker, swollen head, sore head, chicken pox, limber neck, sour crop, cholera, bowel trouble, etc. Mrs. T. A. Morley of Galien, Mich., says: "I have used Germozone 17 yrs. for chickens and could not get along without it." Geo. F. Vickerman, Rockdale, N. Y., says: "I have used Germozone 12 years; the best for bowel troubles I ever found." Frank Sluka, Chicago, Ill., writes: "I have lost but 1 pigeon and no chickens in the 3 yrs. I have been using Germozone." C. O. Petrain, Moline, Ill., says: "I never had a sick chick all last season." Bernard Horning, Kirkville, Mo., says: "Cured my puniest chicks this spring." Ralph Wurst, Erie, Pa., says: "Not a case of white diarrhea in 3 yrs. I raise over a thousand a year." Good also for rabbits, birds, pet stock.

GERMOZONE is sold generally at drug and seed stores. Don't risk a substitute. We mail from Omaha postpaid in new 25c, 75c and \$1.50 sizes. Poultry books free.

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

FARM AND HERD NEWS NOTES

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

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CLAIM SALE DATES.

- Percheron Horses.**
Oct. 15—P. E. Lill, Mt. Hope, Kansas.
- Herefords.**
Oct. 29—Miller & Manning, Council Grove, Kan.
Oct. 30—Kansas Hereford Breeders' Sale, Council Grove, Kan.
- Shorthorns.**
Oct. 7—Johnson County Shorthorn Sale, Olathe, Kan.
Oct. 8—Eastern Kansas Shorthorn Sale, Olathe, Kan.
Oct. 9—Kansas Shorthorn Breeders' Sale, Independence, Kan.
Oct. 8—Franklin County Shorthorn Sale, Olathe, Kan.
Nov. 5—Ed Stoukie, Peck, Kan.
Nov. 6—Peabody Shorthorn Sale, Peabody, Kan.
Nov. 26—North Kansas Shorthorn sale, Concordia, Kan.
- Polled Shorthorns.**
Nov. 11—J. E. Baxter, Clay Center, Kan.
- Holsteins.**
Oct. 12—Linwood Calf Club Sale, Linwood, Kan.
Nov. 14—Holstein Calf Club Sale, Tonganoxie, Kan. W. J. O'Brien, manager.
Nov. 15—Breeders' Holstein Sale, Tonganoxie, Kan. W. J. O'Brien, manager.
- Poland Chinas.**
Oct. 7—Jones Bros., Hiawatha, Kan.
Oct. 8—Dr. J. H. Lomax, Leona, Kan.
Oct. 9—Kerman Groninger & Son, Bendena, Kan.
Oct. 6—Ross & Vincent, Sterling, Kan.
Oct. 11—M. E. Meyers, Gardner, Kansas.
Oct. 13—H. L. Glover, Grandview, Mo.
Oct. 15—H. B. Walter & Son, Effingham, Kan.
Oct. 17—Adams & Mason, Gypsum, Kan.
Oct. 20—W. K. James, St. Joseph, Mo. Sale at Savannah, Mo.
Oct. 20—L. V. O'Keefe, Bucyrus, Kansas.
Oct. 22—Fred G. Lupton, Lawrence, Kan.
Oct. 23—McClelland & Sons, Blair, Kan.
Oct. 30—John D. Henry, Leocompton, Kan.
Jan. 21—H. B. Walter & Son, Effingham, Kan.
- Durocs.**
Oct. 22—Fred G. Lupton, Lawrence, Kan.
Nov. 7—Kempin Bros., Corning, Kan.
Feb. 11—John W. Pettford, Saffordville, Kan.
Jan. 22—Sisco & Doerschlag, Topeka, Kan.
Jan. 23—Sisco & Doerschlag, Topeka, Kan.
Feb. 24—Gordon & Hamilton, Horton, Kan.
Feb. 25—Kempin Bros., Corning, Kan.
- Chester Whites.**
Feb. 12—Henry Murr, Tonganoxie, Kan.
- Spotted Poland Chinas.**
Oct. 29—George G. Eakin & Son, Delia, Kan.
Feb. 14—R. W. Sonnenmoser, Weston, Mo.

The Ketter Brothers, of Seneca, Kansas, held one of the first Poland China sales of the fall season at that place on Saturday, September 27. Twenty-one head of spring gilts were catalogued and sold for an average of \$60 per head, and fifteen spring boars and four fall boars sold for an average of \$50. A sale at this time of the season is a little early for a keen demand for boars among the farmers. The offering was presented in splendid breeding condition. While no sensational prices figured in the auction, the averages were very fair and yet low enough to permit farmers to invest liberally in high-class breeding stock. The total returns for the entire sale were very satisfactory to Ketter Brothers, and they will hold a bred sow sale March 3, 1920. On this date they promise to have a splendid offering of big smooth Poland China sows bred for March and April litters to their trio of herd boars.

The Glenwells' farm at Grandview, Mo., have catalogued an extra good lot of Spring boars for their October 13th fall sale. Sired by Liberty Bond, Liberator and the Clansman.

L. V. O'Keefe of Bucyrus, Kansas announces October 20 for his annual fall sale of Poland Chinas. On this date he will sell 25 spring gilts. All have been well grown and are a useful lot of registered stock. They have been picked from a large herd specially for this sale. The 20 gilts offered will be the best lot ever sold from the O'Keefe farm and probably the best spring gilts to go through any sale this year. They are the pick of the herd, sired by such boars as Model Big Jones and Equality Bob, out of the best herd sows on the farm, they by a King, Wedd's Long King, King Wonder 2nd, and other strictly big type boars.

Willis R. Coleman, of Lawrence, Kansas, is building up a valuable herd of shorthorn cattle. At the head of his herd is Marquis Cumberland, a great son of Cumberland last. This bull comes from the C. A. Saunders herd and was shown by Mr. Saunders at the Iowa State Fair, winning first in class. Mr. Coleman has a small herd of breeding cows and splendid lot of young calves by Marquis Cumberland. This bull has proven a sire of very uniform type of cattle. Mr. Coleman is a booster for good stock. He has shorthorn cattle, Percheron horses and Poland China hogs, and a feature is the good lot of spring pigs now on the farm.

R. C. Krueger, A. J. Winn and C. E. Winn of Burlington, Kansas, recently formed a partnership and will conduct the Winwood Dairy Farm. They will engage in farming, raising and selling live stock and farm products of all kinds. They have leased, for a

term of years, a 465-acre farm adjacent to the town of Burlington. The farm is well equipped and a very large new modern dairy barn will be built at once as an addition to the present equipment. The firm has absorbed all livestock and farm machinery owned previously by its members. Krueger put in his herd of registered Guernseys and Mr. Winn put in his registered Holsteins and other dairy cattle. A delivery system will be established to furnish milk in town. The Guernsey milk will be bottled and sold under the Guernsey label, the other milk will be bottled and sold as Dairy Farm Milk. Mr. Krueger is one of the best known Guernsey men in the country and has some of the highest quality of Guernsey cattle to be found anywhere, while Mr. Winn's herd of Holsteins also is of high quality. Mr. Krueger was a member of the board of directors of the State Dairy Association for some years and is a member of the American Guernsey Cattle Club.

The well known Hereford firm of Miller & Manning of Council Grove, Kansas, have announced October 29th for their annual production sale of Hereford cattle. The offering will include 60 bred cows, 20 cows with calves at foot, 10 bred heifers, 10 open heifers, and 5 head weanling heifers, grand daughters of Perfection Fairfax, 5 young bulls of exceptional herd bull quality. Among the females will be found daughters or grand daughters of Domino, Perfection Fairfax, Majestic, Dandy Andrew, Beau Brammel, Monarch, Beau Real, and the Span Park herd bulls. One of the real attractions of the sale is a cow by Millard out of Majestic 16th. This cow sells with a beautiful heifer calf at side, sired by Apex Fairfax. The 10 head of bred, and 10 open heifers are a splendid bunch. Four choice young bulls will be offered, including one herd bull, Beau Stamp 442468, a great breeding bull Miller & Manning are holding in the herd. 60 head females by him to herd cows.

A combination shorthorn cattle sale to be held at Council Grove, Kansas, is announced for November 5. This sale will be under the management of F. G. Houghton of Dunlap, Kansas, and shorthorn breeders wishing to consign cattle to this sale should write to Mr. Houghton and make their entries at once.

Volume Sixty of the National Duroc Jersey Record is now ready for distribution. The volume contains the pedigree of males from Number 269201 to 278899 and the pedigree of females from No. 679600 to 689799 and the usual amount of information of interest to Duroc Jersey breeders.

Holstein Fresian Sale Calendar for Fall and Winter

October 10, Fort Scott, Kansas, 120 head of high grade Kansas Cattle; October 11, Fort Scott, Kansas, 80 head of pure bred cattle. October 14, D. E. Flower, Mulvane, Kansas, 50 head of pure bred cattle. October 22, Harper County Breeders' Association, Harper, Kansas, 80 head of pure bred cattle. November 17-18, Wichita, Kansas, Holstein-Friesian State Association sale, 11 head of pure bred cattle. December 11-12, Leavenworth, Kansas, 120 head of pure bred cattle. The week of January 25 to 31, 1920, Kansas National Livestock Show, Wichita, Kansas, 150 cattle in the show, 75 of which are to be sold, all pure bred cattle. February 17-18, Omaha, Nebraska, Tri-State sale, Iowa, Nebraska and Kansas, 120 head of pure bred cattle, equal number from each state. March 23-24, Topeka, Kansas, Holstein-Friesian State Association sale, 11 head of pure bred cattle.

Real Estate For Sale

SOUTHEASTERN KANSAS—Farms, all sizes; lowest prices. Terms, \$1,000 and up. Send for booklet. **THE ALLEN COUNTY INVESTMENT CO., Iola, Kansas.**

140-ACRE MONEY MAKER \$2,800; 4 Extra Good Cows

Poultry, wagons, walking and sulky plows, wheat, ETACIN SHRDLU CFWPY, mowing machine, full line machinery, quantity wheat, corn, hay, other crops included for quick sale. Stores, churches, creamery near, convenient R. R. town, 70 acres heavy loam tillage, clay subsoil; well fenced pasture; estimated 1,000 cords wood for near market, much timber, fruit, excellent 12-room house alone worth more than whole price. 26-cow basement barn, etc. \$2,800, easy terms, see ad. Details page 25, Fall Catalog. Out. Farm bargains, Maine to Florida and west to Nebraska; copy free.

Strout Farm Agency,

831 A. S. N. Y. Life Bldg., Kansas City, Mo.

OREGON RANCH FOR SALE

On the Pacific Highway. Fine body of land in southern Oregon. Two miles from good country town on Southern Pacific Railroad. This is an excellent stock ranch, suitable for either cattle or sheep, or it can be satisfactorily subdivided into three or more farming or stock properties, each subdividing fronting on country road. Pasture, buildings and water are all sufficient. For further particulars write to

WM. MAC MASTER.

Ul. S. National Bank Bldg., Portland, Oregon.

BEST BARGAIN IN KANSAS

320 Acres, 200 acres in cultivation, 120 acres bluegrass pasture, all valley and bottom land; eight-room house, two in house, large barn, double granary, well, windmill, one oil well on farm, near church and school; fine surroundings.

Price, \$85; \$4,000 cash, balance five to fifteen years. Send for description or see at once. Address

Allen County Investment Co., Iola, Kansas.

If there are any leaks in the poultry house roof, patch them up. You want a good tight roof before fall storms and winter snows come. Give the poultry houses an overhauling and begin now to prepare for the cold season.

Plan for the convenience of your fowls if you are going to build houses or equipment this fall, installing the Winwood Dairy Farm. They will engage in farming, raising and selling live stock and farm products of all kinds. They have leased, for a

Sonnenmoser Big Stock Sale

At Weston, Mo. Thursday, October 16, 1919

12 REGISTERED SHORTHORN COWS WITH SPRING CALVES AT SIDE.

100 HEAD REGISTERED SHROPSHIRE SHEEP.

4 REGISTERED YEARLING HEIFERS.

1 TWO YEAR OLD BULL AND 2 YEARLING BULLS.

2 REGISTERED PERCHERON STALLIONS.

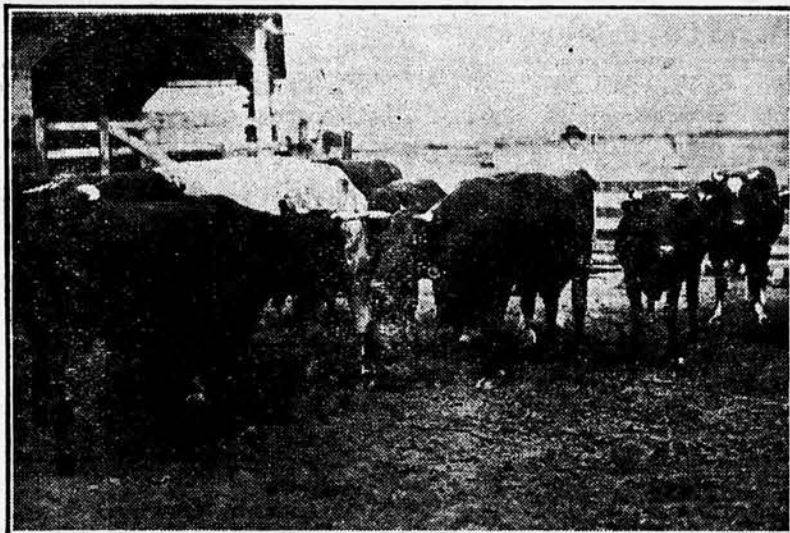
4 REGISTERED PERCHERON MARES SAFE IN FOAL

2 JACKS, 2 JENNETS—ONE WITH COLT.



60 HEAD SPOTTED POLAND CHINA HOGS

Consisting of 15 fall yearling gilts, 17 fall yearling boars sired by O and O. 8 tried sows, some have fall litters by side. 20 head spring gilts and spring boars. 1 two-year-old boar sired by Michigan Boy. Sale to be held right in town beginning at 10 o'clock a. m. There will be bargains for all. Don't miss this sale.



Part of the cattle in sale

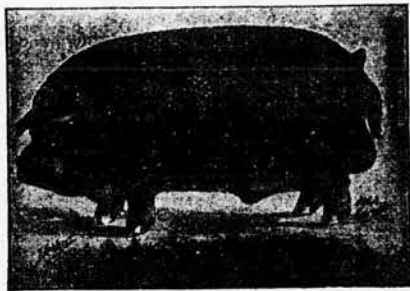
R. W. Sonnenmoser, Weston, Mo.

Auctioneers: Col. Cise, Col. Town, Col. Carson.

Poland China Sale

At Farm Seward, Kansas
Saturday, October 11, 1919

I am selling my entire herd of Poland Chinas, consisting of
Eight Tried Brood Sows with Fall Litters by Ricker's Big Jones
Thirty Spring Gilts Sold Open
Eleven Spring Boars and One Herd Boar



Hogs are not fat, but in good breeding condition. I am selling a useful lot of breeding stock to reduce my herd. Please arrange to attend my sale. It will be bargain day if you want good Poland Chinas.

M. F. RICKERT - - - - - SEWARD, KANSAS
Auctioneer—P. L. Keenan

Poultry Culling Is Effective

More than 1,800 hens were examined in twenty-eight poultry culling demonstrations in Vernon County, Missouri, and 861 hens were classed as culls by the county agent. Some owners were somewhat doubtful of the reliability of culling and kept the culled hens for a few days. Few eggs were received. One farmer kept twenty-four culls ten days

and got five eggs. Another kept forty-five culls a week and got one egg. A third kept thirty-five culls seven days and got three eggs. A fourth got one egg from forty-four culls in two days. A fifth kept nineteen culls for four days and got one egg.

Good pasture lands are the basis of successful dairy farming.

Poland China Sale

WE ARE OFFERING FIFTY HEAD

Of the best of Spring Boars and Spring Gilts, the tops from our herd, and we believe this will be

The Big Fall Event in Kansas

At GYPSUM, KANSAS
Friday, October 17, 1919

THE ATTRACTIONS: EVERY LOT LISTED

Including sons and daughters of the four good sires in service, and of

Col. Jack Mabel's Jumbo Buster Over Giant Jones
Big Bone Leader Bob Wonder Buster's Model

We ask your attendance strictly on the merits of the offering. Send for the catalog and come to sale.

COL. J. C. PRICE, Auctioneer

ADAMS & MASON,
GYPSUM, KAN.

HOLSTEIN CATTLE.**HOLSTEINS!**

We are offering a choice selection of both registered and high-grade springer cows and heifers. Also pure-bred bulls and young females. All reasonably priced. Also two high class registered yearling Ayrshire bulls at a bargain. Come and see them or write.

T. R. Maurer & Co.

EMPORIA - - - - KANSAS

Collins Farm Holsteins

A chance to purchase 40-pound breeding. We have choice sons of the great 40-pound bull, Vanderkamp Segis Pontiac, for sale. The dams of these bulls have creditable A. R. O. records. Price reasonable. Write or come and see our herd.

Collins Farms Co., Sabetha, Ks.

PRACTICALLY PURE BRED HOLSTEIN CALVES

Six to eight weeks old, nicely marked and excellent individuals, from registered sires and choice heavy milking cows, \$30 each. We pay express.

CLOVER VALLEY HOLSTEIN FARM

WHITEWATER, - - - - WISCONSIN.

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

HOLSTEIN BULLS

For Sale—One coming yearling bull, sired by a 22½-pound dam, production 14,490 pounds milk, 480 pounds fat in 263 days. Priced to sell.

JAY B. BENNETT - HOLTON, KANSAS

BRAEBURN HOLSTEINS

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

H. B. COWLES
606 Kansas Avenue Topeka, Kansas

BUTTER-BRED HOLSTEINS

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

J. P. MAST, - SCANTON, KANSAS

DUROC JERSEYS.**Woodell's Durocs**

A choice lot of extra well bred gilts bred for late farrow. Few fall boars.

G. B. WOODDELL, WINFIELD, KANSAS.

PETFORD'S DUROCS

FOR SALE—Fifty spring pigs by the grand champion Model Ally, Illustration Orion 3d and General Pathfinder, out of my best herd sows. These boars are good and priced to sell. Send for catalog. Bred sow sale February 14.

JOHN W. PETFORD, Saffordville, Kansas

DUROC BOARS

FOR SALE—Fifteen choice spring boars and one fall yearling that are too good to send to market. Priced at \$60 to \$80 for spring boars, \$100 for fall yearling. First check or draft gets choice. Guaranteed right and of choice breeding.

S. B. REPLOGLE, Cottonwood Falls, Kansas

DUROC BOARS

For Sale—15 spring boars priced to sell. Come and see me.

Louis Mc Collam, Kincaid, Kan.

HAMPSHIRE HOGS

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

MULEFOOT HOGS.**KNOX KNOLL MULEFOOTS**

Nothing for sale but Spring Gilts. Orders now taken for September litters. One boar of serviceable age.

S. M. KNOX HUMBOLDT, KANSAS.

HORSES AND MULES.**PERCHERON HORSES**

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

L. E. FIFE, NEWTON, KANSAS

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

RED POLLED CATTLE.**RED POLLED BULLS**

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

E. E. FRIZELL & SONS, FRIZELL, KAN.

RED POLLED CATTLE

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

J. H. FERGUSON - GYPSUM, KANSAS

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

POLAND CHINAS**Barnsdale Polands**

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

R. L. Barnes, Grenola, Kansas

CLINTON HERD

BIG TYPE POLAND CHINAS
Is ready to ship you a spring boar that will make you a real herd boar, sired by Giant Buster's Equal. Will sell a few trios not related. We have satisfied customers in 25 different states and can satisfy you. Everything immune and we record them.

P. M. Anderson, Holt, Missouri

DEMING RANGH**POLANDS**

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

Deming Ranch, Oswego, Kan.

H. O. Sheldon, Herd Manager

MYERS' POLAND CHINAS

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

H. E. MYERS - GARDNER, KANSAS

Poland China Boars and Gilts

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

Willis R. Coleman, Lawrence, Kansas.

BIG-TYPE SPRING BOARS AND GILTS
Priced reasonable. Registered. Immuned. Write Marmion McWilson, Rice, Kansas.

POLAND CHINA BOARS

For Sale—25 Spring Boars by Giant Lunger by Dishier's Giant and out of Old Lady Lunger, from my best herd sows. These pigs are good, the tops from 80 head, priced reasonable.

H. R. Wenrich, Oxford, Kan.

PIONEER HERD POLANDS

Black Buster and Columbus Wonder at Head of Our Herd

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

F. Olivier & Sons DANVILLE - KANSAS

JERSEY CATTLE.**BROOKSIDE JERSEYS**

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

THOS. D. MARSHALL, SYLVIA, KANSAS.

ALLEN CENTER STOCK FARM

Registered Jersey bulls of choice breeding from high producing cows. Ready for Service. Priced low. U. S. Government tuberculin test.

TREDWAY & SON, LA HARPE, KANS.

SHROPSHIRE SHEEP**FOR SALE**

Registered Shropshire Rams, Yearlings and Lambs.
Also my Shorthorn herd bull, King Archer.

W. T. Hammond, Portis, Kan.

FOR SALE

A bunch of registered Shropshire rams ready for service, priced worth the money.

HOWARD CHANDLER, Chariton, Iowa.

SHROPSHIRE SHEEP

Twenty pure bred unregistered Shropshire rams for sale.

K. HAGUE PEABODY, KANSAS.

PERCHERON SALE

I will sell twenty registered Percheron Horses at Public Sale, WEDNESDAY, OCT. 15, 1919

Eleven Mares : Four Stallions : Five Colts

The mares are young and good individuals. All of suitable age are bred to Casino, Admiral Casino or Imp. Karnatio. The colts are sired by one of the above stallions. Admiral Casino 115951, a five-year-old black son of Casino 27830 (45462) will be sold. Three coming two-year-old stallions sired by Admiral Casino will be sold. Inquiries answered promptly. Send for catalog.

PERCY E. LILL - MOUNT HOPE, KANSAS

Kansas Shorthorn Breeders' Association

PARK E. SALTER, Pres.
Wichita, Kans.

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

SHORTHORN CATTLE

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

C. S. NEVIUS & SON - CHILES, KANSAS

SHORTHORN CATTLE

Herd Bull, Sultan Seal.

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

Barrett & Land

Overbrook - Osage County - Kansas

SHORTHORN CATTLE.

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

FRANK GRAGG - DENISON, KANSAS

Snowdon Herd Shorthorns

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

D. N. PRICE - BAILEYVILLE, KANSAS

SHORTHORN CATTLE

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

J. R. ELY - MARION, KANSAS

ALL SCOTCH SHORTHORNS

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

MARKS LODGE

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

SHORTHORN BULLS

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

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

BREEDERS' DIRECTORY

ANGUS CATTLE.
Geo. Dietrich, Carbondale, Kansas.
RED POLLED CATTLE
Mahlon Groenmiller, Pomona, Kansas.
Horn Dorset Sheep
H. O. LaTourette, Rte. 2, Oberlin, Kan.

WANT SHORTHORNS THAT COMBINE BEEF AND MILK

We receive many inquiries for Shorthorns that combine beef and milk. We urge that all who are handling Shorthorns join the Miling Shorthorn Cattle Club of America, J. L. Torrey, Secretary, 13 Dexter Park Avenue, Chicago. Grass-fat Shorthorn steers have topped the Chicago market. In the Record of Merit there are listed 838 Shorthorn cows of all ages whose records average over 8,000 pounds of milk annually. Send for literature.

AMERICAN SHORTHORN BREEDERS' ASSN
13 Dexter Park Avenue Chicago, Illinois

SHORTHORN CATTLE

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

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

HICKORY POINT FARM SHORTHORNS

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

JOHN W. SHERWOOD, Dunavant, Kansas
Jefferson County

SCOTCH SHORTHORN BULLS

FOR SALE.

Lavender King and Red Stamp

IN SERVICE.

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

SHORTHORN CATTLE

Herd headed by Marquis Cumberland, a grandson of Cumberland Last, a first prize bull at Iowa State Fair. For sale—a few young bulls and females. Come and see my herd.

Willis R. Coleman, R. F. D. 5, Lawrence, Ks.

SPOTTED POLAND CHINAS.

SPOTTED POLANDS.

Last call for early boars. Order gilts early.

T. T. Langford & Sons, Jamesport, Mo.

AUCTIONEERS.

LIVE STOCK AUCTIONEER—Fifteen years' experience. Wire for date.

JOHN D. SNYDER, HUTCHINSON, KAN.

H. B. WALTER & SON Poland China Sale

AT EFFINGHAM, KANSAS

WEDNESDAY, OCTOBER 15, 1919

We will offer a choice lot of Spring Boars and Spring Gilts by the following herd boars:

BUSTER KING—The March 28 yearling weighing now almost 800 pounds. "We have never seen a better yearling boar," the comment of every one who has seen him. He will be at the fair. Do not miss seeing him.

A BIG TIMM—The 1,150-pound son of the grand champion boar, Big Timm. He, too, will be at the fairs. Watch for him. You never saw a better aged boar.

BOB'S INVINCIBLE—A son of the noted Big Bob Wonder, especially reserved for service in our herd. He is the right kind.

BOB WONDER—Also a son of Big Bob Wonder and the Kansas junior champion last year. Our show litter this year is by him.

Please send for catalog and come to sale.

H. B. WALTER & SON - EFFINGHAM, KANSAS

Sell Him Now!

If you have a pure-bred bull, boar or other breeding animal that you cannot use in your own herd another season, why not sell him now? There are always buyers looking for pure-bred sires. Their trouble is to find a good animal. Your cue is to tell them where to find him, through the Classified Columns of

Kansas Farmer

KANSAS' BIGGEST 1919 SALES

300 HEAD

Three Great Shorthorn Opportunities

OLATHE, KANSAS,
TUESDAY, OCTOBER 7
65—HEAD—65

The Johnson County Calf Club heifers go into this sale—thirty-five of them. The entire herd of Luther McKaig, Olathe, Kansas, is consigned to this sale.

TEN POLLED DURHAMS.
TWENTY-NINE COWS, some with calf at foot, others bred.
FOUR GOOD BULLS.

Twelve representative breeders will consign to this sale. For catalog write to

GEO. LORIMER, MORSE, KANSAS

OTTAWA, KANSAS,
WEDNESDAY, OCTOBER 8
83—HEAD—83

FIFTY COWS, many of them with calf at foot and rebred, others well along in calf.

TWENTY-FIVE OPEN HEIFERS that are suitable for calf clubs or foundation stock.
EIGHT FINE YOUNG BULLS.

Consignors: Barrett & Land, Overbrook; H. H. Churchill, Osage City; A. W. Cornelius Estate, Rantoul; A. L. & D. Harris, Osage City; R. H. Lister, Ottawa; W. O. Rule & Son, Ottawa; Jos. J. Sobke, Bushong.

For your catalog address

F. JOE ROBBINS, OTTAWA, KAN.

INDEPENDENCE, KANSAS,
THURSDAY, OCTOBER 9
125—HEAD—125

One hundred and twenty-five head, not counting calves at foot.

THIRTY-FIVE HEIFERS that are open and right for calf clubs.

BRED HEIFERS.

BRED COWS.

COWS WITH CALF AT FOOT.

BULLS for the breeder and farmer.

Offering ranges from high class to medium. All can be suited. Write for catalog,

G. A. LAUDE, HUMBOLDT, KAN.

Perfect train service with no loss of sleep between sales. Over 300 to select from, all done in three days. The greatest chance of the season and special attraction to calf clubs.

The 1919 Models in Poland China Hogs

Sell in Sale at Grandview, Mo., Monday, October 13, 1919

LIBERATOR "The Phenom"

Liberator, Liberty Bond, The Clansman, Giant Buster, Sheldon Wonder, Disturber's Giant

The Greatest Boars of the Breed Stand Sponsor for This Grand Offering.

Look at 'em. They are all of the same type. Forty head that are unparalleled in breeding and type. This offering is the paramount opportunity of the year. You can't afford to miss this sale.

Liberator The Clansman Liberty Bond

It is needless to expatiate on the merits of these sires. They have proven their greatness.

A sale that from every logical reasoning should mark a new milestone in Poland China progress.

They Are the Result of Breeding Genius

LESTER H. GLOVER,

LIBERTY BOND "The Marvel"

The Dams of This Offering Are Choice Individuals

Daughters of famous boars. We do not keep any sows that are not worthy mates for the great boars at the head of this herd.

Every Breeder in Need of a Herd Boar

owes it to himself and his business to investigate the boars in this offering before making the all-important decision of selecting the sire of next year's pig crop.

It's the Big Opportunity Sale of the Year

and the thoughtful breeder, the student of his business, will be on hand in an effort to own one of the really great boars and gilts of this offering. Come and spend a profitable day with us.

The Height of Breeding Achievement

GRANDVIEW, MO.

An Unusual Opportunity. Don't Fail to Attend This Sale.

Send for Catalog and Come to This Sale. Remember the Date—Monday, October 13, 1919

POLAND CHINA SALE

At Farm Near

Stilwell, Kan., Monday, Oct. 20, 1919

FORTY-FIVE HEAD

25 spring boars and 20 spring gilts sired by Model Big Jones (319559) he by Big Jones and out of Lady Jumbo, and Equality Bob, he by Big Bobs' Equal and out of Zelma Orphan. My sows are by A. King, Wedds Long King, King Wonder 2nd.

My offering of gilts are the best I have ever sold, they have outgrown part of the boars, but I am selling a lot of good boar pigs.

ALL IMMUNED

Please send for catalog and come to sale.

L. V. O'KEEFE

BUCYRUS, KANSAS

Auctioneers: Col. R. L. Harriman, Col. H. M. Justice.

Poland China Sale Orchardale Farm

Sale on the farm, 1 mile from Blair, Kansas

Thursday, October 23, 1919

Nineteen Spring Boars. Twenty-six Spring Gilts. Five Yearling Sows sell open, sired by McClelland's Big Jones by Gerstdale Jones.

Model Big Timm, a grandson of Both Big Bob and Big Timm
Big Bone Bob by Caldwell's Big Bob

Smooth Big Bone

Long Joe

We will sell the tops of over 160 spring pigs sired by these three boars.

REMEMBER THE DATE—

Thursday, October 23

We will show you a splendid offering of big, stretchy, selected boars and gilts in this sale.

Herd Immune.

Send in your name for a catalog, and come to this sale.

W. D. McCLELLAND & SONS
Blair, Doniphan County, Kansas
Col. J. C. Price, Auctioneer.

POLAND CHINA SALE

FEATURING THREE GREAT BOARS

Sterling Buster
Model Wonder
Sterling Tim

In our Big Fall Sale

Monday, October 6

The offering will include FORTY-FIVE HEAD, MOSTLY
SONS AND DAUGHTERS OF THESE GOOD SIRES.

REMEMBER, WE WANT YOU AT THE SALE

Send name for our mailing list so that a catalog may
be sent you.

ROSS & VINCENT
STERLING, RICE COUNTY, KANSAS
J. C. PRICE, Auctioneer

Poland China Sale

AT HIAWATHA, KANSAS

Tuesday, October 7, '19

FIFTY HEAD

Twenty-five Spring Boars

Twenty-five Spring Gilts

Sired by the noted JONES' COL. JACK, a sensational son of the \$10,200 Col. Jack, a young fellow of splendid individual merit and a breeder of real class.

NORMAN BOB by Black Bob by Big Bob, a line-bred Big Bob boar that will please you.

JONES' JONES, a son of Gerstdale Jones, dam Silver Tip by Big Orange, a rugged boar of the right type.

A great crop of Spring Pigs by these sires will be offered

Send for catalog and come to sale. Everything immuned.

JONES BROTHERS
HIAWATHA, - - KANSAS

Myersdale Farm Poland China Sale

At GARDNER, KANSAS

Saturday, October 11th

50 HEAD SELECTED IMMUNED BOARS AND GILTS

Featuring tops of litters by

LIBERTY BOND, out of a full sister of the noted Mary Pickford and Melba.

THE CHANCELLOR, out of a daughter of H's Mastodon.
GIANT BOB, last year's Missouri junior champion, out of a daughter of Fessy's Timm.

THE COUNCILLOR, the noted son of W's Wonder out of a daughter of W's Giant.

The world renowned LIBERATOR, also tops sired by the four great sires in service in my herd—

BIG JOE

LIBERTY KING

BIG GIANT

THE CRAFTSMAN

Please send for catalog and come to sale.

H. E. MYERS
GARDNER, - - KANSAS
J. C. PRICE, Auctioneer