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ECONOMIC FARM POWER

The Horse as a Source of Power in Farm Work

By W. F. HANDSCHIN

ON THE basis of its influence on farm profits, the economic use of horse power is of first importance. Profits in farming are determined by expense involved in production quite as much as by gross returns. Such profits can be increased only by increasing gross returns without a corresponding increase in expense, or by decreasing expense without a corresponding decrease in gross returns. From the standpoint of reducing expense, horse labor costs constitute the item of greatest importance. First, because in the operation of a farm the only items of expense which can be very much influenced are those which are commonly known as the operating costs. Such fixed charges as interest on the investment, rent and taxes, cannot ordinarily be reduced by any great margin. On the other hand, the operating costs, such as man labor and horse labor, can be materially reduced through the proper organization and management of the farm business.

Cost of Horse Labor

In ordinary corn belt farming, operating costs make up from 35 to 50 per cent of the total cost of production. Of these operating costs, man and horse labor represent from 60 to 80 per cent; horse labor representing from 30 to 40 per cent of the total operating costs. It is of special importance to study the cost of horse labor because of the fact that this item can be influenced more than almost any other item of expense in the farm business. On the pre-war basis, horse labor costs varied on representative Illinois farms from 8 to 15 cents per hour. On the basis of present prices there is a range of from 12 to 25 cents per hour. Thus we find that on some farms the cost of horse labor is 100 per cent higher than on other farms working under the same conditions and carrying on the same type of farming. I appreciate, naturally, that the horse hour is not a very definite unit. On the farms under consideration, however, the amount of work performed per horse per hour was in general about the same, regardless of whether the cost was 8 or 15 cents per hour.

Even these differences in the unit cost of horse labor mean relatively little until we translate them into terms of cost per acre of our standard farm crops. In the case of corn which requires normally about 50 hours of horse labor per acre, a difference of 8 cents per hour would equal a difference of \$4 per acre, due to horse labor costs alone. Extreme differences on fairly representative farms range as high as 10 to 12 cents per hour. That is, in producing corn, differences of \$5 to \$6 per acre, due entirely to the differences in the costs of horse labor, are somewhat common on Illinois farms. In the case of oats which normally requires about twenty hours of horse labor per acre, differences due to this item would range from \$1.60 to \$2.40 per acre. In the case of wheat, which requires about thirty-six hours of horse labor per acre, the differences would range from \$2.88 to \$4.32 per acre.

Thus it is evident that the differences in the cost of horse labor which occur somewhat commonly on Illinois farms, are responsible for very considerable differences in the costs of producing our

ordinary farm crops. These differences existed on representative farms, carrying on the same general type of farming. It is evident, therefore, that they should be very carefully considered by farmers generally throughout this section. In order to insure the largest profits, farmers must so organize and operate their farming business as to secure the lowest possible operating costs, as well as to aim at large returns. In as much as horse labor—above all other items of cost—shows the greatest variations, this item should be made the subject of very special attention.

Reducing Horse Labor Costs

In the economic production of farm horse power, one of the chief factors to be considered is the securing of the lowest possible costs per unit of work done. Unit costs may be reduced mainly by the following means:

First—By so organizing the system of farming as to secure a large amount of productive horse use per year. If we assume that a horse works ten hours a day, and that there are 300 working days in the year, we should have 3,000 horse hours per year, providing the horse were able to work ten hours per day every working day. In actual practice, however, we find that the farm horse frequently does not work over 600 to 800 hours per year; that is, from sixty to eighty days of ten hours each. Some farms carrying on representative types of farming are able to secure from 1,200 to 1,400 hours of labor per horse per year, that is an increase of 40 to 50 per cent over the average secured on good farms.

One of the most fundamental factors in making possible a large use of horse labor is a good crop rotation, in which the crops selected are such as to distribute the horse labor as evenly as possible throughout the entire growing sea-

son. Naturally, in the corn belt, we shall continue to grow a considerable proportion of our crop area in corn as long as corn continues to be our most profitable crop. By growing from 30 to 40 per cent of oats or fall wheat, or preferably a combination of the two, we shall insure a much better distribution of horse labor. The introduction of clover or some of the other legume crops necessary to the maintenance of fertility and the proper feeding of our live stock will further improve the distribution of horse labor. Thus it is evident that the introduction of a good rotation containing clover or some other legume crop not only proves most advantageous from the standpoint of reducing horse labor costs, but fits in with the whole problem of maintaining fertility and providing the best feeds for general live stock production.

The production of two or more classes of live stock, particularly where winter feeding is carried on, helps to provide productive employment for horse labor and in this way assists both in keeping horses in better condition during the winter months, as well as reducing the unit cost of horse labor.

It is of interest to note that as we introduce better systems of farming, both from the standpoint of maintaining fertility as well as increasing profits, the horse becomes increasingly more efficient because he can be used more hours per year on productive work. Thus every improvement in the direction of more permanent and better farming is a step in the direction of a better and more economic use of horse labor.

Second—The unit cost of horse labor may also be reduced by paying closer attention to economical feeding, shelter and management of the horses carried on the farm. Important economics, particularly in feeding, may be effected. I

shall not take the time, however, to discuss the question, since it has been frequently discussed by others better qualified.

Third—Unit costs of horse labor may also be reduced by using brood mares to supply a considerable part of the farm power. Under this plan the number of animals carried may well be somewhat larger than where no foals are raised. This increase in numbers is justified by the fact that this plan makes possible two sources of revenue rather than one. It goes without saying that if the raising of foals is to be a factor in reducing horse costs such foals must be of the best type, otherwise the enterprise may prove a liability rather than an asset. The question of the type of horse to be raised I shall discuss a little later.

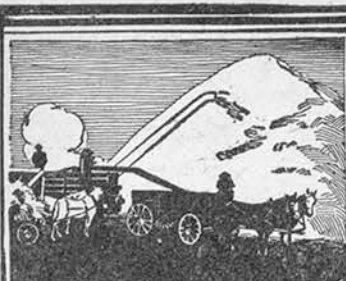
Fourth—In reducing unit costs of horse labor the farmer may also reduce his total carrying cost somewhat by shifting a part of his depreciation on horse equipment. Since approximately 90 per cent of all work horses in the country are on farms, it is evident that no large amount of the depreciation can be shifted to the city user. City horses, however, wear out in from four to five years on the average, while farm horses last from eight to ten years. It is evident, therefore, that approximately 20 per cent of the horse consumption of the country takes place in cities. In as much as other factors than age contribute most to the wearing out of the horse on the city street, it will be advisable for the farmer to sell off his surplus horses which the city requires before they depreciate on his own hands. In this way 15 to 20 per cent of the depreciation costs of all farm horses may be shifted to the city. From the standpoint of the corn belt section which produces practically all of the surplus horses of the country, a much larger portion of this depreciation can be transferred to the city or to the farming sections which buy horses rather than raise them. It is quite possible that from 30 to 40 per cent of the depreciation charge can be shifted to others by corn belt farmers, if they dispose of their horses before they wear out or die of old age. Corn belt farmers, as a general rule, should raise at least enough horses to replace those worn out.

Fifth—In the reduction of the unit costs of horse labor, one factor which is very frequently overlooked should be given primary consideration. I refer to the question of the type of horse to be used. As a matter of fact, only a small percentage of the horses actually in use even approximated what we might call standard requirements from the standpoint of weight, conformation, speed, quality and temperament. We are discussing very much these days the question of design in farm tractors and farm machinery in general. The same question is quite as important as applied to the farm horse. In the case of the horse, however, the problem of securing the right type in any large number is a difficult, long-time proposition, even though we have many excellent examples of the right design. In the case of the tractor, once a good design is perfected, there will be any number of concerns which can turn it out in large

(Continued on Page Nine)



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MECHANICS ON THE FARM

Items of Interest About Automobiles,
Engines, Tractors and Motorcycles

Hints to Tractor Farmers

THE agricultural engineering department of the Idaho Experiment Station recently completed an investigation of the use of tractors on farms in that state. This was an official and unbiased investigation of the results being obtained with tractors in actual use on farms and the summary as published may be of interest to farmers. We are therefore quoting it below.

1. The tractor, when selected to suit the farm and intelligently and carefully operated, has been reported by owners in Idaho a profitable investment.

2. The farmer must be able to make all minor repairs himself and to get repairs and expert help quickly for larger installations.

3. Dependability is probably the largest factor in the success of the tractor.

4. The three-plow size is favored by a majority of Idaho owners.

5. Proper care of lubrication will prolong the life of the machine.

6. The best quality of oil is the cheapest for the tractor.

7. The tractor motor is required to pull its rated load the greater portion of the time. The automobile motor is very rarely subjected to full load for a ten-hour day. Care for the tractor accordingly.

8. The tractor that displaces half its value in horses can easily be made to pay its way, according to reports of Idaho tractor owners.

9. The man who makes up his mind to care for his machine and to be as independent as possible of outside help is the satisfied owner.

10. Taking off one plow may enable the tractor to operate at its rated speed and may result in a greater accomplishment for the season.

11. Overloading brings trouble and cuts down the work accomplished during the season.

The author of the bulletin in which the results of the investigation were published also offered a few "Hints to Prospective owners," which we believe should have careful consideration by all prospective tractor farmers. They are as follows:

"Know your tractor thoroughly before you begin operating it. Study your instruction book and know the why and the how of each part of the machine.

"Follow instructions of the manufacturer. He has experimented with cheap oils and with heavy loads and in your instruction book you are getting the benefit of his experience. The experimental work is expensive. Let the manufacturer do it.

"Do not overload the tractor, as it will shorten its working days and bring you expense.

"House the tractor between seasons. Proper shelter will be far cheaper in the long run."

Renovating the Used Car

The car that has seen one or two years' service is bound to be somewhat marred and shabby in appearance. While we may not be in a position to buy a new car this year, yet our pride in keeping up appearances demands a spick and span appearance.

The expert auto and carriage painter can obtain the real "factory finish," but there are many of us who cannot spare the amount necessary for this work, so it's well to know how to do the work ourselves. It's not a difficult job when one knows how.

When the surface is in good condition and it is desired merely to freshen up the colors, clean off all dust, dirt and grease with benzine or turpentine. Sandpaper lightly to cut the gloss and then apply one or two coats of a good auto finishing varnish.

If it is desired to merely change the color in keeping with your own ideas, first thoroughly clean off all foreign matter with sandpaper as directed above. Then apply two coats of auto enamel of the desired color. Where an exceptionally high finish is desired, complete the finish with one coat of auto finishing varnish.

When the surface is in bad condition and paint has chipped or cracked, re-

move all loose particles and prime such spots with lead and oil primer, composed of lead in oil thinned with turpentine and a little Japan drier. Allow to dry twelve hours. Deep cracks and dents should be filled with filler and surfacer, knifed on as you would use putty. Allow to dry eight hours and sandpaper level. To thoroughly even up the surface, apply one or two brush coats of the filler and surfacer, eight hours apart, sandpapering each coat with fine sandpaper.

Next apply one or two coats of good auto enamel of the desired color, using the color recommended by the dealer as the proper ground coat for the color of enamel selected. Sandpaper lightly between coats.

Then apply one or two coats of good auto enamel. This will complete the job. If, however, an exceptionally high finish is desired, complete the work by applying a final coat of auto finishing varnish.

These various treatments, under proper conditions, will give your car a factory newness. In appearance you will have a new car quickly and economically.

Overhauling Threshers

Enormous waste of grain and much loss of time and labor occurs in the midst of the threshing season because threshing machines have not been thoroughly repaired and put in working order before the beginning of the working season. Defective parts are overlooked or neglected in the hope that they will last through the season. When they fail in the midst of the threshing season, serious losses often result before repairs can be made. In or just before the threshing season new parts are difficult to get promptly because of the rush of orders from many who have procrastinated.

Repairs should have been made last fall, but if not already done the separator should be overhauled as soon as possible, necessary repairs and adjustments made, and needed parts ordered. This not only will prevent loss of time and money during the next working season but will lengthen the life of the machine.

A bulletin has just been issued by the U. S. Department of Agriculture, as No. 5 in the series of "Care and Repair of Farm Implements," giving detailed instruction on how to "lay by" grain separators. The discussion of every part of the machine is minute, constituting a handbook for the overhauling and repair of grain separators between seasons. It is a contribution from the Bureau of Public Roads and is issued as Farmers' Bulletin 1036. Taken in connection with Farmers' Bulletin 991, which treats of operating adjustments, it is believed to constitute a complete thresherman's guide.

Ignition of Airplane Engine

The twelve-cylinder Rolls-Royce engine used on Harry G. Hawker's Sopwith biplane with which he hopes to fly across the Atlantic Ocean from Halifax to England is fitted with four magnetos for ignition entirely independent of any batteries. Only two magnetos will be used, one for each six cylinders. The extra two magnetos are for emergency purposes only. All twelve cylinders fire their compressed gas once every second revolution of the propeller, thus six cylinders fire every revolution.

The normal revolutions of this engine are 1,300 each minute, or 108,000 an hour. For a journey of 2,000 miles at 100 miles an hour, six cylinders firing for each turn of the propeller will mean 12,960,000 hot sparks from the two magnetos at the rate of 648,000 an hour.

The confident dependence of Mr. Hawker on his magnetos is not to be wondered at when it is recalled that every airplane engine in the world, with the exception of one type, is magneto-equipped, and that the magneto has proven itself ideal for the difficult airplane services required in actual warfare. Airmen could not under any circumstances afford to take chances of



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failure when all else was at stake. They had to have absolutely dependable ignition, which would never miss fire nor go dead.—GEORGE W. MORRISON.

Binder twine cost the farmer 150 per cent more in 1918 than in 1914; barbed wire, 99 per cent; barrels for apples, 164 per cent; half-bushel baskets, 45 per cent; buggies, 57 per cent; double wagons, 71 per cent; harness, 66 per cent; horse blankets, 96 per cent; paris green, 123 per cent; grain sacks, 182 per cent; nails, 87 per cent; wire fence, 92 per cent. These are averages for the United States.

Ten farmers in one community near Goddard will build silos this summer. They are securing bids on this number, which is to be built of the same material. This is a good type of community co-operation.

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ECONOMICAL CATTLE FEEDING

War rations for steers in preparation for market are likely to become permanent. The old-time cattle feeder who fed corn with a scoop shovel and regarded roughage simply as filling is out of the running in these days of high-priced feeds. The present plan is to finish cattle with a minimum of corn. Experiment Stations in all the states where cattle feeding is followed have been testing the cheaper system of feeding, and the results are almost unanimous in favor of making beef more largely from roughage.

At the Pennsylvania Experiment Station the results of the past season's feeding, recently made public, have shown that the most profitable system was to use roughage to the fullest extent possible in the form of silage balanced with high protein concentrates. Heavier grain feeding gives higher finish and the cattle are valued a little higher on the market, but when the experiment station results from the standpoint of profit year after year show the economy of the policy of making beef from roughage, we can hardly hold longer to the old ideas. The silo must become an indispensable part of the equipment on the beef-making farm. At Ames last week, where a big cattle feeders' meeting was held to study the results of the year's experiments, a bunch of steers fed on war ration of silage, alfalfa hay and three pounds of linseed oilmeal dairy per steer, but no other grain, made a profit on the five steers in the lot of \$23.11, excluding the profit from the hogs and \$27.32 with the hogs figured in. These steers were valued by Chicago buyers at \$15.30 a hundred. The highest valuation placed on any lot in the test—the lot fed the standard ration of shelled corn, oilmeal, silage and alfalfa—was \$16.50 a hundred. We can look forward to similar results at the Manhattan experiment station, where the cattlemen will meet next Tuesday, May 13, to inspect the experimental feeding work of the year and receive the details of the tests.

HIGH PRICES WORK BOTH WAYS

Most urgent demands are being made for a reduction in prices of foodstuffs. Recently an appeal was made to the President by women's organizations for a five-cent loaf of bread, the claim being made that it was in the interest of a considerable majority of the housewives of the whole country. It was asked that the price of wheat be forced down to \$1.25 a bushel and the billion dollar appropriation be used by the Grain Corporation to make good the guarantee to the producer.

The high price of foods of all kinds is a serious matter to people generally, but consumers should not overlook the fact that a number of factors are involved in the high price of the loaf of bread or any other food product. The high price of wheat is only one and the lowering of the wheat price as suggested would not make possible the five-cent loaf unless other factors of cost were lowered in proportion. It cannot be assumed that because farmers are receiving high prices for their products that they are the ones responsible for high food costs. High prices work both ways. While farmers are getting higher prices for the products they sell than they received in 1914 or at the beginning of the war, they are also paying higher prices for the things they buy, and it is of special concern to them to know just how they have fared in the general price movement of things sold in relation to that of things bought. This comparison is made possible by a recent investigation of the Bureau of Crop Estimates, United States Department of Agriculture.

In 1915 farmers received 3 per cent less than in 1914 for crops and live stock in their composite price, but they paid 9 per cent more in the composite price of the many articles that they bought. The list of articles bought used for this

purpose contains eighty-five items of textiles and garments, lumber, wood products, agricultural implements and machinery, metal products, coal, petroleum products, foods, fertilizers, household furnishings, and other farm and family supplies. Relative loss in the second year of the war also was suffered by farmers. What they sold in crops and live stock advanced in joint price, while what they bought advanced 21 per cent.

In the next year, 1917, the relative character of these price movements was reversed, and the farmer faced prosperity instead of disaster, since the price that he received for crops and live stock gained 74 per cent upon 1914, while he paid 49 per cent more in the composite price of his purchases. War time is a period of rapid changes in prices and of sudden and often of painful maladjustments. Although the farmer lost ground in 1915 and 1916 in comparison with 1914, and regained the lost ground in 1917 and gained much more, he lost his relative lead in 1918 and found himself where he started in 1914 in the comparison of price of crops and live stock with that of things bought. The advance of price received in 1918 above 1914 was 97 per cent, and that of price paid was 96 per cent, or substantially the same.

WHEN TO PLANT KAFIR AND MILO

The sorghums will not germinate in cold soil. For that reason the seeding of kafir, milo and others of these crops must be delayed until the ground warms up. The exact date for planting these crops will be governed by the season and soil conditions. No positive date can be fixed upon, for even on the same farm the proper date may vary a week or ten days in different fields.

Probably as safe a rule as any is to delay the planting of kafir or milo in the various sections until the corn planting is well under way. The cultivation of the land in advance of seeding aids in warming the soil and the crops can be planted earlier on land that has been given considerable of this early preparation. Freedom from weeds is also a factor.

It is of course important to get these crops started as early in the season as possible in order that they may mature before frost. In this connection it is also important to have improved strains such as have been developed by our experiment station and farmers over the state who have paid some attention to seed selection. The pink kafir requires from 100 to 105 days to come to maturity. The dwarf blackhulled kafir requires about the same period. The white milo will mature in from ninety to ninety-five days, the standard yellow milo in from ninety to a hundred days, feterita—one of the earliest of the grain sorghums—will mature in from eighty-five to ninety-five days. The growing season, figuring from the average latest killing frost in the spring to the average first killing frost in the fall, ranges from 140 days in the extreme northwest corner of the state to 190 days in the southeast corner.

The ideal stand of kafir or milo in sections where it is grown for grain is at the rate of one plant to every ten or twelve inches in the row, and thinner stands will give better results in dry seasons. At this rate of seeding two or three pounds of good seed is enough to plant an acre. Where planted for grain and forage combined, which is the more general practice, the rate of seeding is considerably thicker.

TIME TO KILL WEEDS

The time to kill weeds is when they are "babies"—just in the germination stage or only barely out of the ground. This is always a good policy. The present season has been wet over most of Kansas, and weeds will probably give more than the usual amount of trouble and particularly in the West where weeds are perhaps not as hard to con-

trol as in the more humid section. Moisture is so abundant this year that weeds will be pushed forward rapidly and their control will become difficult unless they are destroyed early to the fullest extent possible. A practice followed regularly at the Hays Experiment Station is to disk or harrow all land in preparation for the sorghums or corn just in advance of planting. This kills all the weeds in the germinating stage and gives the crop a chance to get started before a new crop can germinate. This extra work will pay for itself in a weedy year, for weeds can be killed much more rapidly and cheaply before the crop is planted than afterwards.

Early cultivation of crops is always important. Every farmer knows that if he can keep his intertilled crops clean of weeds during May and June there is far less danger of the crop being choked by heavy weed growth later. This is not always easy to do and particularly where a considerable acreage of wheat must be handled, for the wheat harvest must be taken care of, even though the cultivation be neglected. This makes it doubly important to get at the weeds early and kill them as rapidly as possible. Nothing will accomplish more in cleaning land than the use of the harrow and weeder while the weeds are in the germinating stage. The harrow is one of the most useful implements on the farm at this stage of crop cultivation. If you wish to destroy weeds at least expense, use the harrow and weeder freely while the crop is small.

SUDAN GRASS FOR PASTURE

Sudan grass is giving most promising results as a supplemental pasture crop. No similar crop grown in Kansas is giving as large pasture returns in so short a time as Sudan grass. The seed of Sudan grass germinates readily, it makes quick growth, produces well with limited moisture, stands heavy grazing and its productive period extends from spring to the first killing frost of the fall. Here are some important features of the crop as enumerated by Ralph Kenney of the agricultural college extension service: Sudan grass if given a fair seed bed rarely fails to make a stand in Central or Eastern Kansas. Seeding at the rate of fifteen to twenty-five pounds of seed to the acre is satisfactory, the heavier rate tending to form a sod more quickly and smother the weeds. A wheat drill set to sow two pecks of flax to the acre will usually plant Sudan seed at about the proper rate. It is sometimes broadcasted and disked lightly. In Western Kansas an equally good yield is usually produced by seeding it in rows and cultivating.

Stock should not be turned on Sudan grass pasture until it is about a foot high, or from twenty to thirty days after planting. Mr. Kenney states that it will support an average of a thousand pounds live weight to the acre until killed by frost, and that this rate has even been doubled on fertile soils for thirty days or more at a time during favorable growing weather. If the crop is growing more rapidly than the stock will keep it down, the extra growth can be mowed and cured as hay.

Men who have tried Sudan grass as pasture on small fields during the past three years report that as an emergency supplement to native grass pasture it cannot be excelled.

POSSIBLE STORAGE CONGESTION

With the possibility of a billion bushel wheat crop in this country, the largest ever produced, it is a safe guess to look forward to storage congestion following harvest. Last year, with a 900,000,000 bushel crop, the rushing of grain to market caused a congestion all the way from the farms to the terminal markets. Wheat "backed up" after the terminal elevators were full and congested the railroads and the country elevators. We are probably in no better condition to handle the crop this year than last. The remedy last

year was to place embargos on further shipments until terminals could be cleared. The Bureau of Markets calls attention to a situation which prevailed in North Dakota the winter of 1915 and 1916 following a production of 150,000,000 bushels in that state. Owing to the congestion of elevators at the country stations and the inability of railroads to carry the wheat, hundreds of thousands of bushels of the grain were piled up in the open.

About the only precaution the producer can make is to get in shape to hold his wheat for a time if it becomes necessary to do so. In sections where wheat is bound, stacking is a feature of crop handling that furnishes a partial solution to the grain congestion problem. Properly stacked wheat will be protected against the weather and can be threshed later and it is generally recognized that wheat which sweats in the stack is of better quality than wheat threshed direct from the shock. It would seem that there should be more than the usual effort made to stack wheat this year as soon as it is dry enough after harvest. Provision can also be made to store grain in buildings already constructed or portable bins such as are on the market. The United States Department of Agriculture is now issuing specifications for a portable farm granary in the form of a circular entitled Market Document No. 11.

HANDLING THE WHEAT CROP

The 1919 wheat crop is to be handled by Julius H. Barnes, who headed the United States Grain Corporation during the war. The statement made by Mr. Barnes recently indicates that in his judgment wheat should be traded in by the government at the guaranteed price only as it was necessary to keep up the market price to that level. His opinion seems to be that the regular open market price on the basis of supply and demand may remain above the government fixed price. It is evidently his intention to use every effort possible to protect producers and consumers and at the same time spare the United States treasury. He lays down three fundamental principles, as follows:

First, the guarantee is clearly intended for the producer, and the license power may be used to control trade practices so as to assure the proper reflection of the guaranteed price reaching all producers.

Second, in the event of surplus wheat production, domestic consumers shall not pay more for wheat than prices concurrently accepted from foreign buyers.

Third, the national treasury should be protected by the realization of the world price as far as it can be determined, and any governmental policy of artificial subsidizing is unsound.

Mr. Barnes' statement leaves the matter of exact methods to be followed in handling the crop still open. He calls attention to the cleanup of last year's crop and the fact that this country must still continue to supply European needs, as proof that the price will remain high. Some definite policy will have to be adopted soon, for it is no small task to manage the details of marketing such a crop as will be produced in the United States this year under the requirements of the congressional act for carrying out the government's guarantee.

There are now more than 4,000 co-operative creameries in Siberia, and it must be recognized as one of the leading butter manufacturing countries of the world.

Put quarters which might be spent foolishly into War Savings Stamps; back up yourself with cash and back up your government in cleaning up the war.

It makes no difference how big your feet are if they are pointed in the right direction and on the move.

DEFECTIVE FLUES CAUSE FIRES

Chimney Can Be Made Safe at Cost of \$6.00 to \$8.00

FIRE losses in Kansas for the year 1918 amounted to \$4,701,653, and almost 40 per cent of this is rural loss. It is also significant that rural losses amount to 60.39 per cent of the value of the property involved, while the losses in town for the year are but 17.69 per cent of the value of the property.

Of the 3,235 fires reported by L. T. Hussey, state fire marshal, in his annual report for 1918, almost half are dwelling house fires. Considerable over 10 per cent of the fires for the year are directly traceable to faulty flues, and practically all of the flue fires are dwelling house fires. Sparks are given as the cause of over 400 fires, and these in almost every case could be traced to defective flues in which soot and dirt have accumulated. When these burn out, as they frequently do, showers of sparks fall on the roof and start a blaze.

A summary of the various causes of fires as given by fire marshals of the different states show that from 10 to 26 per cent of all fires are attributed to flues, and during the winter season the percentage has reached as high as 50. This is a fire risk which can be almost entirely eliminated by proper care in construction and at an expense so slight as to be negligible.

It seems rather remarkable that so little attention should be given to this matter of properly constructing flues and particularly on the farms and in the small towns. When a fire gets started in the country or small town it almost invariably results in the total loss of the building and its contents. There are no facilities to fight fire and the owners can only stand by and see their property go up in smoke, and sometimes it is not only a matter of property but lives that are at stake. The city resident not only has the protection of the fire department, but in addition local laws compelling the adoption of protective measures. There are some fires in the country, of course, that cannot be prevented, such as the occasional blaze due to lightning, but there is little excuse for the faultily constructed, sooty, dirt catching flue. It is from this that the principal danger comes, and this risk could be absolutely eliminated by the simple precaution of building flues and chimneys in such a manner that no neighboring woodwork could become overheated nor soot, birds' nests or other rubbish accumulate inside the flue.

During the war there was an almost entire cessation of residence construction. The statement was recently made that we are two million residences short in the United States at the present time. With the establishment of peace, the building of residences will undoubtedly

receive a considerable stimulus. Building will be speeded up to the limit and carelessness is certain to creep in unless those who are building take special pains to see that proper precautions are taken. Guarding against fire hazards in chimney construction is an important point in residence building.

In the ordinary brick and mortar flue the time is almost sure to come when it will be a source of danger, since the constant heat from the fire causes the mortar to crumble and fall out, leaving holes in the chimney. These are usually in out of the way places and too often wood construction comes in direct contact with the chimney and is a constant source of fire danger. Chimneys in wooden buildings should be built straight up from the ground and never placed on a bracket, as is so often the practice. They should extend two feet or more above the peak when the chimney is in the center of the roof and three feet or more above the surface on flat or slanting roofs. In order to have proper draft the medium sized opening for a flue should not be less than sixty-four square inches. At the base of each flue a clean-out door should be provided if possible. Cement mortar and good quality brick should be used for chimney building. Flue holes should always be covered in a secure manner with metal flue stops.

The joists used to support floors should never have their ends supported in the brick of a chimney. This is a very common practice. The chimney is almost sure to settle, leaving at these points cracks through which fire may creep to the joists.

The time will come when the various states will have laws compelling these precautions in building. Ohio now has such a statute and similar measures are being considered and adopted in other states. The Ohio law requires that all flues and chimneys must be lined with fire clay flue lining set inside the bricks of the chimney so as to make a smooth, tight conduit for the escape of the

smoke without affording lodging place for soot or rubbish. If all the flues in farmhouses were constructed in this way the number of fires in rural districts would in all probability be reduced by at least half. The fire-clay flue lining is not expensive and can be purchased from practically every dealer in building materials in the country. In view of its small cost, it would hardly seem necessary to legislate to compel builders to use such a simple measure as a means of preventing fire danger.

Kansas has been the first state of the Union to voluntarily observe a fire prevention day each year, the day appointed each spring being proclaimed by the governor. It is to be hoped that the people of this progressive state will not wait until they are compelled by law to adopt effective means of making flues absolutely safe. While this precautionary building measure may involve a little extra initial expense, this would soon be overcome by the saving which would later be effected in reduced insurance rates. Insurance rates are always based on the risks involved. The greater the risk of destructive fires, the higher the rate must necessarily be. With the general use of flue linings such as are by law now required in Ohio, one of the greatest risks of fire in both town and country would be eliminated. This would mean fewer fires and consequently a less heavy drain upon the insurance companies in payment of claims. A very small reduction in insurance rates would soon return to the builder the small extra expense of properly lining flues, and flue linings can be considered as insurance in themselves, and they have to be paid for but once in a lifetime.

It would seem that the householder in the country or small town could not possibly overlook this matter of making flues safe. The figures quoted from our fire marshal's report show that even though the rural builder is no more careless in his chimney construction than the

city builder, he most assuredly suffers more when a fire visits him. In the country, where the women and children are alone in the house the greater part of the day, there is little hope of successful fire fighting. The fire menace is ever present in the minds of every man and woman both day and night. The exclamation, "I smell smoke! what's burning?" will quickly rouse to alertness the most drowsy group of people. The tragic possibilities suggested by this cry are instantly presented to those who realize how helpless they are when fire occurs.

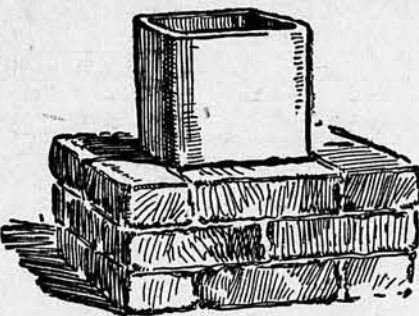
Where the dwelling house has the ordinary unlined brick chimney a close inspection should be given at frequent intervals to insure safety. The point of greatest danger is where the chimney passes through the roof and if the mortar has fallen out so as to leave openings the only safe plan is to tear the chimney down through the roof and rebuild it. It is also a good plan to clean the chimney occasionally, thus removing the soot. This can be done with a wire or rope to which is fastened any object suitable for the purpose. A pair of old automobile tire chain has been used very satisfactorily.

It is to be hoped that the campaign for fire prevention which is being waged by our state fire marshal will effectively stimulate those who are building to take the necessary precautions to make their buildings safe, and no one thing can be done which will add more to the safety from fire than the careful lining of all flues with a specially prepared flue lining.

What Ripened the Wheat?

While visiting with Nelson Drenner, who owns a farm near Mound Valley, he told me that his wheat ripened last year several days before the same variety of wheat ripened on the neighboring farms. I asked him if the land was alike. He replied, "When the land was first settled, it was alike. But, the man who settled on my farm kept a herd of dairy cows all the time he lived there. And he put the manure on the land. Since I got the farm I have kept beef cattle all the time and have fed some cattle for market nearly every year. The manure has been put on the fields. I also used some fertilizer containing phosphorus on the field of wheat. The wheat on my farm gave a better yield than the neighbors' because of the phosphorus put on. The neighboring fields have been farmed fifty years, and no fertilizers or manure have been put on them.—J. E. PAYNE, Parsons, Kansas.

Smut-free kafir seed will produce a smut-free crop regardless of weather conditions.



THE ordinary single course brick chimney is certain to become at some time a source of fire danger. No matter how carefully laid, the mortar will eventually soften through the action of heat and fall out, leaving openings for fire to reach wood on the outside of the chimney. The method illustrated adds but little to the cost and is the cheapest kind of insurance against chimney fires.

Function of Lime in Soil

SO MUCH is being said about the value of lime that many have formed an erroneous idea as to its function and look upon it as a fertilizer. While lime in some form is indispensable, its action is as an indirect rather than a direct fertilizer. It has two principal effects, namely, the correction of soil acidity and the control of bacterial activity. Its most important effect is in the promotion of the growth of the various legume crops. Where legumes cannot be successfully grown the soil cannot be built up in fertility and it is in this indirect way that lime brings about the enrichment of the soil. A mere application of lime in itself cannot materially enrich the soil.

The action of lime upon the organic material of the soil is destructive in character. It increases the availability of plant food in the soil and especially the nitrogen and as a result tends to more rapid soil exhaustion. Lime without the addition of manures and without the growing of leguminous crops, while it may produce larger immediate crops, will soon bring about a shortage of available plant food. The promotion of the growth of legumes, then, is the

one effect which above all others justifies the use of lime.

To be successfully grown the legumes must have soil conditions favorable to their respective forms of associated bacterial life. Lime furnishes the favorable bacterial environment and in the luxuriant growing of legumes there are always possibilities in soil enrichment.

Lime acts mechanically on certain types of soil in a beneficial way. Its application to heavy clay soils makes them mellow and friable. Sticky, heavy loams are made fine, light and mellow in character. This improvement of the physical character of such soils is of considerable importance since soils of this nature, no matter how fertile, cannot be made to produce at their best because of this lack of mellowness and lightness.

Where ordinary ground limestone is used no immediate results can be expected except in the case of leguminous crops. All nitrogenous organic material must go through a process of bacterial decomposition before its plant food becomes available. In order to have these processes go forward there must be at all times a sufficient amount of lime

in the soil to neutralize all acids as they are formed. Unless these acids are neutralized the bacterial action will cease and the organic material in the soil will not be converted into available form. Fermentations of a destructive nature are liable to take place and as a result sour acid soil develops in which very few crops will grow to the best advantage.

The user of lime, then, should recognize that its function is mainly to hasten the decomposition of organic materials in the soil and thus render available the plant food they contain. The system of cropping should provide for the supplying of an abundance of such organic material. The legume crop must be grown and barnyard manure applied.

The determination of the presence of acid in soil can be easily carried out through the use of the litmus paper test. One way of applying this test is to take a few ounces of soil and add water to it until it is thin mud. Now take a piece of the blue litmus paper, such as can be obtained at any drug store, and place one end of the piece in this mixture. If the soil is acid the paper will be turned reddish or pink.

A test for the presence of lime may be made by taking a ball of moist earth and making a depression in one side into which is poured a little muriatic acid. If lime exists in any quantity little bubbles will begin to appear as soon as the acid touches the soil.

Paint Is Good Investment

Here and there in the country one sees farms where all the buildings are kept freshly painted. What a difference it makes! How fresh and new and cheerful the farm looks. These are the places strangers stop to look at, and many times \$20 worth of paint adds \$500 to the value of the farm.

In the United States there are thousands of paint manufacturers, and yet not over six or eight are known to farm folks. These are the ones who are proud of their paint, who know they make a good paint and who want the people, everywhere, to know about it.

Give your boy a pig or a calf. Make him a partner in the business, and the chances are that he will not want to leave the farm.

The Grange and National Legislation

THE National Grange of the Patrons of Husbandry is using its Washington office to inaugurate a practical, if not a radical, legislative program. It is asking Congress that the farmers of this country have a hearing, and a place on important commissions and in administration. It is asking Congress for legislation which will be of benefit to all the farmers of the country.

Thomas C. Atkeson, Master of the West Virginia State Grange, is in charge of the Washington office. He has prepared and is sending out a booklet for the information of members of Congress as to the Grange position on matters of legislation.

The Grange representatives are not "lobbyists" in the usually accepted meaning of that term, and there are no unclean dollars paying the expenses of the Grange representatives. They are in Washington in a spirit of helpful co-operation in the effort to place before Congress and the various departments the true farmers' viewpoint of the food production problems which are now receiving so much attention and upon which the welfare of all our people so largely depends.

Under the head, "What the Grange Stands For," this booklet contains the following statement of the Grange national legislative program.

A prosperous and progressive agriculture with an independent, self-respecting citizenship in the open country is the surest guarantee of an enduring national life. Farming must be made as profitable as any other occupation involving the same amount of investment, business ability and hard work, or our democracy must fail and our people go hungry.

Economy—We insist that the most rigid economy be exercised in government expenditures. Boards and commissions created to handle war emergency work, and others masquerading as such but which are non-essential, must be discontinued without delay.

Orderly Government—The Grange believes in orderly government and denounces the methods and tactics of any agency or organization that uses violence to serve its ends.

Price Fixing—The Grange is opposed to all price fixing, but if prices are to be fixed on farm products or stabilized by artificial methods, then the price of all the items which enter into the cost of production of farm products should also be fixed.

Education—We insist that our state and national legislators shall provide a system of education that will turn the farm youth toward the farm and not away from it.

Marketing—The present system of distribution and marketing is clumsy, costly, inefficient and wasteful. The cost of production plus a fair profit should establish the price of farm products. Unnecessary middlemen must be eliminated. Direct co-operative buying and selling should be encouraged. Food and feed must be sold without substitution or adulteration.

Collective Bargaining—The Grange demands legislation wherever necessary in state or nation to establish beyond question the right of producers of farm products to bargain collectively for their sale.

Packers' Monopoly—The Grange commends the exposure of the packing monopoly made by the Federal Trade Commission, and expresses the hope that this valuable information will assist in the solution of the important problems of food distribution. The Grange insists that the strictest control of the packing plants be continued by the Trade Commission or otherwise, and that the government exercise such control as may be necessary to protect the people against injustice.

Roads—The Grange stands for an aggressive road construction policy by national, state and local governments. Highways connecting the farms with market centers for the transportation of farm necessities and farm products should be given first consideration.

Better Farm Credit—Every possible means should be provided to assist men of character and training to secure farm homes and to establish a system of personal credit for the purpose of increasing farm ownership. To this end we favor such amendment of the land bank law as will extend its benefits more widely.

Land Tenancy—Land tenancy is in-

creasing. Farm ownership is concentrating in the hands of wealthy landholders, and abandoned farms are becoming too common. Legislation should be devised to encourage farm home owning and to discourage land speculation and tenancy.

Farms for Soldiers—We oppose the proposed plan of reclaiming swamp and arid lands for returning soldiers as unsound, impractical and detrimental to the interests of the nation and agriculture. There are enough of untenanted farms near market centers to supply all soldiers who may wish farm land. The government should meet this need in this way so that they may become self-

supporting and useful without waste and delay.

Fertilizer Supply—The Grange favors the enactment of laws to secure to farmers of this country a supply of essential fertilizers, including lime, at the lowest possible cost delivered to the farm.

Daylight Saving—The Grange opposes changes in standard time which injuriously affect conditions of farm work, and demands the repeal of the so-called Daylight-Saving law.

Oleomargarine—The Grange demands the enactment of laws that will effectively prohibit the sale of oleomargarine as a substitute for butter.

Public Office—Every place of state and national authority which concerns agriculture should be filled by a person

who is qualified by agricultural training and experience and so identified by vocation, ideas and effort that farmers will recognize him as one of themselves. It is essential that such public official be so identified in the public mind with agriculture that agricultural interests and workers will rally and work with confidence in his leadership.

Natural Resources—The Grange opposes any law or regulation that will take from the government the control of the natural resources still in its possession, and demands such control of the natural resources which have already passed into the hands of private owners as will protect the public against extortion and exploitation.

Public Utilities—The Grange stands (Continued on Page Eight)

When Market Prices Come Down Our Price to You Is Cut at Once

When the prices of any commodity come down, we immediately reduce the cost to our customers. It has always been the rule of this house to give the customer the benefit of every price reduction regardless of the price quoted in the catalog from which the order is selected. This advertisement is just one of hundreds of money-saving opportunities offered in our latest Price Cutting Bargain Catalog. You can order from this advertisement or from your regular catalog. You always get our lowest price.

Send for
Our Latest
Bargain
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Satisfaction Guaranteed or Your Money Back

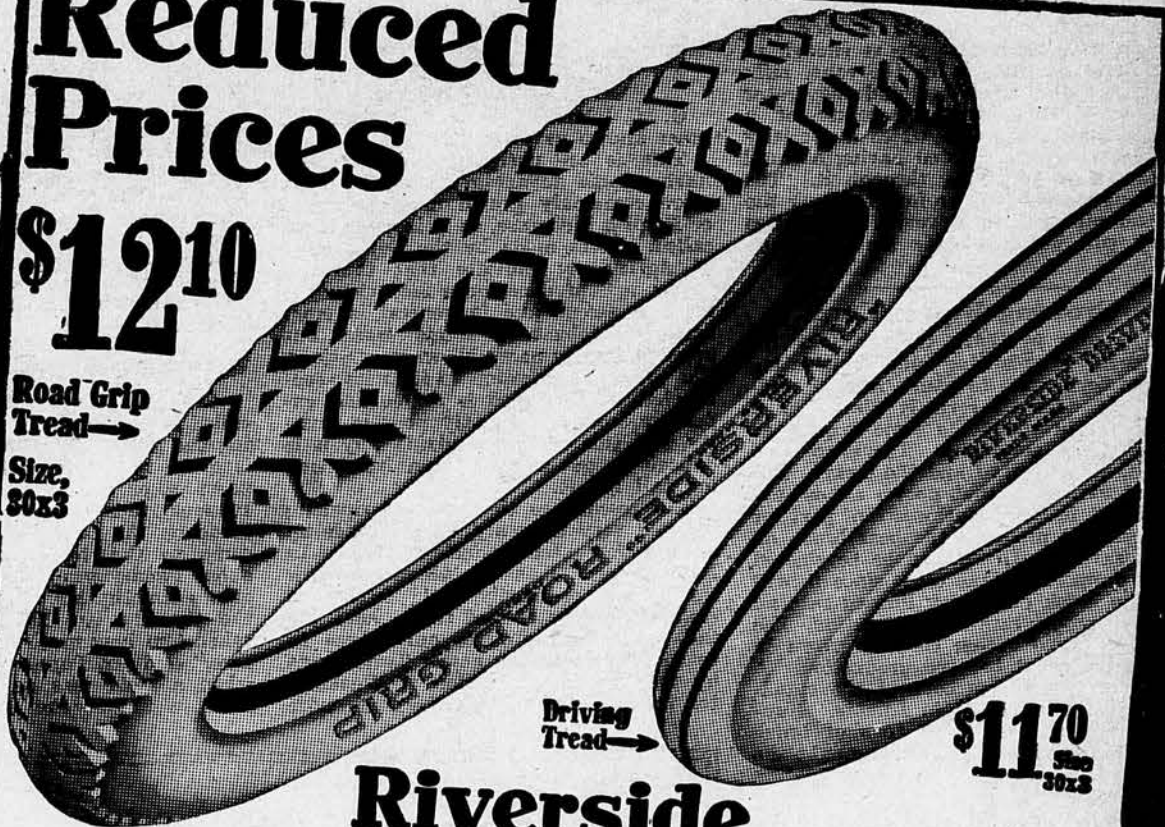
Dept. 3F33

Northeast Station, Kansas City

Reduced Prices

\$12¹⁰

Road Grip
Tread—
Size,
30x3



Riverside
Trade Mark

5,000 Mile Auto Tires

Riverside Tire Sales have shown such a tremendous growth that we have greatly increased the manufacturing facilities and output to take care of the demand. Large numbers of customers have been ordering three and four Riversides to put their cars in good tire condition for the coming season.

Many of these auto owners tried one or two Riversides first and now they know how dependable, long lasting and economical they are—so use Riversides all 'round. It is our aim to give auto owners the best tire value obtainable—our direct-to-you selling plan has been a wonderful help in reducing tire

prices. Now comes increased tire production with large contracts. These two things—direct selling and big production are the best means of giving you bigger values. The extremely low prices shown here on Riverside 5,000 Mile Auto Tires is the best proof of our aim to give

"Most for the Money"

Road-Grip Casings

Size	Regular Clincher Style	O. D. Clincher Style	Straight Side or Dunlop Style	Price	Average Ship. Wt. Lbs.
28x3	6403053	6403053	6403331	\$11.75	9
30x3	6403055	6403055	6403331	\$12.10	10
30x3 1/2	6403059	6403059	6403331	\$12.75	12 1/2
32x3 1/2	6403050	6403050	6403331	\$15.00	13 1/2
34x3 1/2	6403071	6403071	6403331	\$19.75	14
36x3 1/2	6403071	6403071	6403331	24.25	16
38x3 1/2	6403071	6403071	6403331	25.75	16 1/2
40x3 1/2	6403071	6403071	6403331	26.50	18
42x3 1/2	6403071	6403071	6403331	34.75	23 1/2
44x3 1/2	6403071	6403071	6403331	37.50	24 1/2
46x3 1/2	6403071	6403071	6403331	38.00	26 1/2
48x3 1/2	6403071	6403071	6403331	42.75	29
50x3 1/2	6403071	6403071	6403331	45.00	32

Riverside Inner Tubes Page 64

FREE Write for Our New 100-Page Auto Supply Book. It's FREE

Driving Tread Casings

Size	Clincher Style	Straight Side or Dunlop Style	Price	Average Ship. Wt. Pounds
28x3	6403000	6403000	\$11.00	8 1/2
30x3	6402981	6402981	\$11.75	9 1/2
30x3 1/2	6402982	6402982	\$12.75	12
32x3 1/2	6403018	6403018	\$17.75	13
34x3 1/2	6403018	6403018	\$23.25	15 1/2
36x3 1/2	6403018	6403018	\$24.75	16 1/2
38x3 1/2	6403018	6403018	\$26.35	17
40x3 1/2	6403018	6403018	\$34.10	22
42x3 1/2	6403018	6403018	\$35.75	24

Be Sure to Specify Type of Rim
Plain Smooth Tread Casing

Size	Regular Clincher Style	Price	Average Ship. Wt. Pounds
30x3	6403002	\$14.00	9 1/2
30x3 1/2	6403002	\$14.00	12

GENERAL FARM AND STOCK ITEMS

Something of Interest for All—Overflow from Other Departments

THE ordinary washing of dairy utensils does not destroy germs. The organisms causing milk to spoil and at times germs of dangerous diseases are lurking in milk cans, buckets and other utensils used in handling milk and other dairy products. Sterilization of some sort is necessary in addition to the usual washing, and the application of live steam is the simplest method to use. On the small farm, however, steam is seldom available. Most outfits on the market consist of small boilers and this equipment is too expensive for the farm where only a few cows are milked. Of course by using enough scalding water, utensils can be sterilized, but this involves the expenditure of considerable labor and time and too often it is neglected.

A very simple and inexpensive home-made steam sterilizer has been worked out by dairy specialists in the Department of Agriculture. It can be provided at a cost of not to exceed \$10 or \$15, and in spite of this low cost the outfit is thoroughly efficient, as has been demonstrated experimentally and on hundreds of farms where it has been used. We described this sterilizer in some detail in KANSAS FARMER a couple of years ago. The cut on this page shows the different parts, which can be made in any tinshop. The saving effected in one season will be enough to pay the cost of the sterilizer.

This simple sterilizing outfit can be used on any stove or on a two-hole oil or gasoline stove and in a very few minutes will generate steam enough to kill all the bacteria in the cans, milk pails, strainer cloths and separator parts. The apparatus consists of a large roasting pan to which a specially insulated cover is fitted having a small steam pipe projecting through it. The various utensils can be inverted over the steam pipe and in a very few minutes they will be sufficiently scalded to be safe.

Growing Broom Corn

A reader in Clark County asks for methods of planting and cultivating broom corn, time to plant, rate of seeding, etc. Broom corn is planted and cared for in about the same manner as corn or the sorghums. There are two types, the standard and the dwarf. The dwarf variety is that grown almost exclusively in the southwestern part of Kansas. It produces the best brush on light sandy soils. It can be considered as a drought-resistant crop, since it will mature brush on a very limited rainfall if given proper care and cultivation. The standard type broom corn is grown in regions adapted to corn production. A great deal of broom corn of the standard type is produced in Illinois. Kansas produced over 9,000 tons of brush in 1918 and about the same amount the year before.

To grow good broom corn it is very important to have good seed. Too little attention has been given to the selection and improvement of this crop. In every field there will be found many poor heads, having long central stems or coarse twisted fibers. Seed which has been threshed from some old dry brush just as it came from the field cannot be expected to produce a crop of uniformly high quality. The value of the brush produced in Kansas could probably be doubled in four or five years by paying a reasonable amount of attention to seed selection. This improvement would almost necessitate having seed patches planted from selected heads. A few broom corn growers are doing this work on their own farms.

The dwarf type of broom corn is usually planted in three-foot rows with the plants from two to four inches apart in the row. A bushel of good seed can be made to plant twenty-five acres. This is a rather thin planting, but if uniform will result in a good quality of brush. Like the sorghums, the time for planting is a week or two later than the usual corn planting time. The young plants grow very slowly at first. The harrow and weeder are good tools to use in the early cultivation. Later cultivators with small shovels can be used and such other machinery as is used in cultivating cane or kafir planted in rows. The crop matures in about ninety days, the proper time for harvesting the

brush being when it is in about the blooming stage.

Considerable hand labor is involved in handling a broom corn crop. The brush of the dwarf type is harvested by pulling, the heads being piled on the ground to dry. Later the seed is removed by a special machine, or in some cases where only a small amount is grown, by hand. The curing has considerable to do with the market value of the crop. The ideal brush is of bright green color free from discoloration due to weathering. Considerable care is necessary in handling the crop in order to produce this ideal brush. From 400 to 500 pounds to the acre is a fair yield of dwarf brush and the market price has varied in recent years all the way from \$50 a ton up to \$200.

No License to Buy Powder

During the war it was impossible to buy powder or dynamite for agricultural purposes without obtaining a proper license which was issued through an officer in each county appointed for that purpose. One of the recent acts of the Bureau of Mines was to revoke this provision requiring a license to use explosives for farming purposes. Many did not attempt to buy explosives during the war because of the license requirement. Farm powder may now be bought with no more trouble than before the war. Any dealer may supply it without requiring anything more than a simple request on the part of the purchaser.

Tall Fescue

G. M., Johnson County, asks about the grass known as tall fescue.

This is an upright perennial grass having some advantages over the much more commonly grown meadow fescue or English bluegrass, as it is quite often called. Tests made by the Department of Agriculture indicate that this tall fescue will produce more feed than the meadow fescue and in general is more hardy and robust. It seems coarser, but appears equally palatable and nutritious. The principal objection to it is its seeding habit. The seed is scarce and expensive and is frequently poor in quality, and this perhaps explains why it is difficult to get a good stand from sowing tall fescue.

Tall fescue has the habit of ripening its seed very unevenly, and it sends up a very few seed-producing stems. In Northeastern Kansas where meadow fescue will ordinarily yield twelve to eighteen bushels of seed to the acre, the tall fescue will produce only three to seven bushels to the acre. Tests made by the experiment station of Washington indicate that seed can be much more

successfully grown in the eastern part of that state than in Eastern Kansas.

In Eastern Kansas and in Missouri the best results seem to come from seeding this grass in the fall, sowing it on ground which had been in oats or wheat and plowed in July or early August. It is also sown successfully in wheat or rye in the fall. Under favorable conditions a stand is sometimes secured with only fifteen pounds of seed to the acre, but it would be better to sow twenty to twenty-five pounds.

Sudan Grass in Kansas

We have been asked if the use of Sudan grass is increasing in Kansas.

We have no positive information on this subject. For a few years there seemed to be an unusual demand for Sudan grass seed and many extremely favorable reports were made on the crop. It has seemed to fill a real need on the farms of the state. We would welcome letters from our readers telling of the status of this new forage crop. As a hay crop it is by many considered superior to others of the sorghums, which were often sowed or planted thickly in order to produce a fine quality of forage. It has another feature to commend it and that is its value for pasture. It does not seem to be anywhere near as dangerous as cane or kafir. In fact there are very few instances on record where animals have been poisoned by grazing Sudan grass.

There is hardly a farm in Kansas where some annual pasture crop cannot be used to advantage, and Sudan is well adapted to this purpose. In Eastern Kansas it would seem that this crop should entirely supplant millet as a catch crop. In western sections its ability to produce a good yield on a minimum of moisture makes it a superior forage to use to supplement failing pastures.

If you have any observations to make about Sudan grass as a Kansas crop, write us about it. The information will be valuable to many of our readers.

Top Dressing Meadows

KANSAS FARMER has many times called attention to the necessity of feeding the grass. Too often little thought is given to supplying fertility to either pastures or meadows. J. E. Payne, of Parsons, tells of some observations he made on the farm of J. A. Hush, who came to Crawford County from Iowa about twenty years ago. Mr. Hush has grown timothy hay on his farm most of the time he has lived in Kansas. "I asked him how much hay he got to the acre," said Mr. Payne. "He replied that when a field was new the yield was about a ton to the acre, but it grad-

ually decreased until in about four years he would be getting only about half a ton to the acre. He went on to say, however, that whenever he top-dressed an old meadow with well rotted manure, the yield was practically doubled. Usually these meadows are plowed up as soon as the yield gets low. By top-dressing once in two years a meadow could probably be kept up to maximum production."

Mr. Payne tells of the many meadows of native grass he has noticed which are producing very light yields of hay and he is wondering if these could not be improved in the same way Mr. Hush has improved and maintained his timothy meadows. It is impossible to get land into native hay after it has once been plowed, and it might pay to top-dress some of our native prairie meadows with well rotted stable manure.

Water for Milk Cow

A correspondent asks how much water a milk cow will drink in a day.

This may seem like a foolish question, but a good many people have rather vague ideas as to the exact quantity of water a heavy milking cow requires. If you have ever had to carry water to a cow, you probably realize how much water it takes to keep a good milk cow going. It is not good form to put water in the milk you sell, but you cannot neglect to supply your milk cows with plenty of water and expect them to keep up the milk flow. A shortage of water will cut down the milk even more quickly than a shortage of feed. Every pound of milk you draw from a cow contains about eighty-seven parts water.

It has been found that a 750-pound milk cow on grass will drink sixty pounds of water a day, and the same cow on dry feed will drink over a hundred pounds of water daily. The cow giving milk requires more water than the dry cow. The dairyman cannot afford to stint his cows on water. An abundant supply of pure fresh water is a very important consideration on a dairy farm.

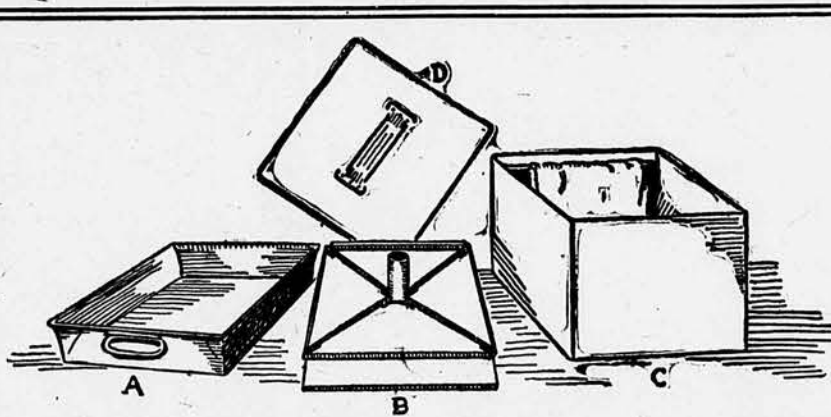
Feeding Work Horses

T. R., Nemaha County, asks about feeding work horses. He wishes especially to know how much grain is necessary to keep a horse in good condition for hard work.

Feeding horses with the best results is not as simple a matter as some may suppose. Probably closer observation is needed in feeding horses than any other class of stock. A horse at hard work uses a considerable portion of his feed for the production of energy. This means that a working horse requires considerably more feed than would be enough to keep him up in condition when he is not working. If he is worked hard on an insufficient ration, the stored-up energy in the form of body fat and tissue will be used and the horse will get thin and finally become so run down as to be of little use for hard work and also be much more subject to disease.

A work horse ration must be concentrated and well balanced, or contain protein, carbohydrates and fats in the right proportion. Corn alone as a grain feed is lacking in protein and must be supplemented with bran or alfalfa or clover hay. Oats as a grain feed has long been recognized as ideal for work horses. Horses cannot perform hard work on rough feed alone. Heavy work horses can use a larger proportion of bulky feed than light horses used for driving, but even the heavy draft horse cannot eat and digest enough hay when doing hard work to keep up in good condition.

There used to be a decided prejudice against the use of alfalfa or clover hay for feeding work horses, but it has been found that alfalfa or clover if clean and bright can be used very successfully. But the mistake should not be made of simply filling the manger with either alfalfa or clover hay and letting the work horses help themselves. The work horse is not likely to eat too much prairie or timothy hay when given free access to it, but he will eat too much alfalfa or clover hay. Feeding these legume hays in the same way that the prairie hay had formerly been fed is responsible for much of the trouble at-



THE parts of the home-made sterilizer described in the first article on this page are here shown. A is the roasting pan, B the insulated cover consisting of sheets of asbestos board between sheets of galvanized iron. It is fitted with a steam pipe one and one-half inches in diameter, and the top has flanges or ridges to raise the cans, and the upturned edges catch the condensed steam. C is the galvanized iron bottomless box. D is the cover to this box. A few wires are arranged across the top of this box from which can be hung strainer cloths. To use the box it is placed over the steam pipe with the cover on and the cloths will be thoroughly steamed. To use the sterilizer, all that is necessary is to put some water in the pan, place it over the fire or oil burners and fit the lid. When live steam is escaping from the steam pipe, invert pails or cans over it and leave them for five minutes. Replenish the water as often as necessary. Farmers' Bulletin 748 describes in detail how to make and use this simple sterilizer. Copies of the bulletin will be furnished free as long as they last. Address the Department of Agriculture, Washington, D. C.

May 19, 1919

tributed to the feeding of alfalfa or clover. In the experiments conducted under the supervision of Dr. C. W. McDerder the artillery horses at Fort Campbell with artillery officers were convinced almost against their wills that alfalfa could be used to good advantage in feeding artillery horses and at no time were the horses more subject to disease or shorter in wind and less efficient than when fed on prairie hay. It was simply a matter of being careful to feed hay free from dust and mold and limiting the quantity allowed each horse, instead of permitting them to eat at will.

It is a good rule to allow about eleven pounds of grain and twelve pounds of hay to a thousand pounds of weight for horses at moderate work. This means that a 1,200-pound horse would require about thirteen pounds of grain and fourteen and a half pounds of hay as a daily ration. If the horses are at hard work, the grain should be increased to twelve or fourteen pounds to the thousand pounds of weight and the hay somewhat reduced, or not more than about twelve and a half pounds to the thousand pounds of weight. Most of the hay should be fed at night.

Milk Strainers Compared

Cleanliness is of the greatest importance in producing milk. Milk is a human food and no other food product is so easily contaminated and rendered unfit for use or dangerous to the consumer. Dairymen who wish to use every precaution possible to keep milk clean will be interested in the report of dairy specialists of the United States Department of Agriculture on the relative merits of different methods of straining milk. It is pointed out in this report that certain kinds of strainers cause milk to appear clean but fail to remove all impurities. Of all the milk filters in use only two—absorbent cotton and filter cloth—are reasonably efficient, according to the department, in actually improving the commercial quality of milk. Even these filters must be kept clean and changed frequently to insure satisfactory results.

According to reports from about 40,000 farms, wire gauze strainers are in more general use than any other kind, but studies with the microscope show plainly that the meshes are much too large to hold back any but the very coarse impurities. One thickness of cheesecloth or other cotton cloth is only slightly more effective than a wire-gauze strainer, but when the cloth is folded to about eight thicknesses its ability to remove dirt in milk increases somewhat, but is still inefficient as compared to absorbent cotton or filter cloth.

Filter cloth, a specially made cotton cloth, smooth on one side and fuzzy on the other, was found reasonably effective. This cloth can be obtained from leading dairy supply houses. The milk should be poured on the fuzzy side, the fibers of which stand up like the nap of a carpet and remove all but a small percentage of the solid impurities. The most effective strainer of all, however, according to the experiments, was a layer of absorbent cotton placed between two thicknesses of cheesecloth.

At best, straining milk is a practice that makes milk appear clean and therefore more easily salable, but no strainer removes either the bacteria and objectionable flavors or the very fine dirt. As a consequence straining milk fails to improve its wholesomeness to any noticeable degree. Clean milk is best obtained by sanitary methods which prevent, so far as possible, the entrance of dirt into the milk. This can be done best by having clean cows in a clean stable and milking with clean hands into sterilized small-top pails.

Detailed information on the proper care and use of strainers is given in Farmers' Bulletin No. 1019, "Straining Milk." This bulletin can be obtained on request from the Department of Agriculture, Washington, D. C.

The Ocean Shipping Situation

The latest official statement on the world's ocean shipping situation is very reassuring and clearly indicates that before the present year is far advanced the world's merchant fleet may be as large as prior to the war. This will not mean an abundant supply of tonnage for all needs, because a number of ships still will be required for military purposes, and a larger proportion of the world's shortage of foodstuffs will be moved longer distances, owing to the shortage in Eastern Europe. However,

the general position will be greatly improved and is expected to grow better.

The United States Shipping Board now has under contract 1,33 steel cargo ships which will be completed in 1920, and there will then be under the American flag a total steel cargo and passenger fleet of 16,732,700 dead-weight tons; 788 vessels with a dead-weight tonnage of 4,094,587 tons now fly the American flag in overseas trade. The United States Shipping Board estimates that from December 1, 1918, to March 1, 1919, there were carried overseas 1,200,000 tons of foodstuffs, 80 per cent of which was loaded in American bottoms. These facts would appear to assure exporters and importers that ample tonnage for the expansion of American sea-borne trade will soon be available and that lower rates and more favorable shipping conditions will prevail in the near future.

The Girl and Her Calf

It is always interesting to learn of the accomplishments of boys or girls in handling improved live stock. It has often been said that the true live stock man is born, not made, and young people cannot begin too early to practice along the lines of their natural inclinations.

Ruth Lindley, of Indiana, who made a rather remarkable record in the showing of an Angus calf last year, writes as follows of feeding and showing this prize winner:

"I began feeding my calf, George Washington, April 1, when he was a little over one year old, being calved February 22, 1917, weighing at this time 700 pounds.

"For the first three months I fed 7 pounds chopped soft corn and 2½ pounds alfalfa hay twice a day. The second month I began to add bran and cottonseed meal occasionally, sprinkling it over the corn, but he didn't seem to care for either and left most of it. I tried feeding the bran for two months and the cottonseed meal for three months.

"By the last of the third month, as he was wasting the corn by spitting out the cobs, I began shelling the corn, feeding five pounds three times a day, leaving out the bran. He had eaten good up until now, not missing a meal, but the last two months he would miss a meal or part of one now and then. Perhaps I had tried to increase his rations too much. He has never been on pasture, but for the last two months, when I thought he wasn't eating enough, I would turn him in the yard for ten or fifteen minutes, give a handful of oats or bran or cracked corn or chopped corn instead of the shelled, so as to sharpen his appetite.

"During the last four months, or as soon as the flies began to bother, I kept him in a large darkened stable, 36 by 12 and bedded with sawdust, during the day, but turn him out in the barn lot at night to rest close by the other cattle, so as to keep him contented.

"His mother was a grade cow, fully three-quarters Angus—and his sire was a pure-bred Aberdeen-Angus.

"I curried and led him for exercise twice a week, or whenever I happened to have time, but as much as possible. The first of every month I weighed him. He weighed, on April 1, 700 pounds; May 1, 860 pounds; June 1, 960 pounds; July 1, 1,040 pounds; August 1, 1,120 pounds, and September 1, 1,200 pounds.

"I fed him 153 days and he made a daily gain of 3.26. The calf cost me \$90, the feed \$42.61, and trucking to fairs \$10. I sold him at the I. & I. fair at Danville, Illinois, for \$250, making a profit of \$107.39.

"The premiums received at the Fountain County Fair were sweepstakes in county, a trip to the International at Chicago; first in township, a trip to Purdue University, and the Aberdeen-Angus gold medal and \$10. Winning first at the I. & I. fair at Danville, Illinois, I received \$50 from Fair Association for first on individual and \$30 and trophy cup from J. Ogden Armour, the Chicago packer.

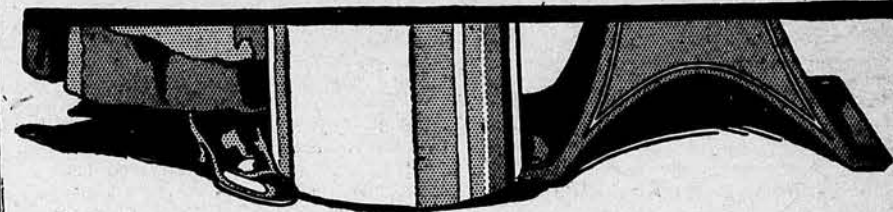
"I found much enjoyment in the feeding, brushing and taking care of my calf and I believe he liked it as well as I. I learned many things new to me and hope they will be useful and that I will profit by them."

Among the vegetable oils, that made from cottonseed stands in a class by itself with respect to its production in this country. In 1912 it constituted 73 per cent, and in 1917, when the cotton crop was unusually short, 61 per cent of the total production.



YOU

can't afford to use a second or third grade CREAM SEPARATOR



Get a DE LAVAL

Many users make the mistake of "saving" \$10 or \$15 in the first cost of a cream separator. More of them continue the use of an inferior or half-worn-out machine simply because it still operates.

These users fail to consider what it means if the separation is not complete; if the capacity of their separator is so small that it needs to be run longer; if it is out of order a good part of the time, or if the quality of the product is not the very best it could be.

They fail to realize what a very little difference means in the use of a cream separator twice a day every day in the year, and what a difference it makes in first cost whether a machine lasts three years or fifteen years.

All these differences led to the great majority of experienced users buying De Laval machines when butter was worth 20c a pound, and they mean just three times as much when it is worth 60c a pound and when every minute of time saved is worth so much more than it was a few years ago.

De Laval superiority over other cream separators is no uncertain quantity that cannot be seen or measured. On the contrary, it is capable of demonstration to every separator user, and every De Laval agent is anxious for the opportunity to demonstrate it.

If you don't know the local De Laval agent, write to the nearest De Laval office as below and we shall be glad to put him into prompt communication with you.

THE DE LAVAL SEPARATOR COMPANY

165 Broadway, New York

29 E. Madison St., Chicago

OVER 2,325,000 DE LAVALS IN DAILY USE

Well-fed Crops, like Well-fed Stock, pay Best

Feed your crops as you feed your stock—generously but wisely. Apply a liberal amount of high-grade commercial fertilizer. Then guard your investment by prompt and thorough tillage. There is no better way of multiplying the fruits of your labor than by using

Empire Fertilizers

They furnish quickly available plant food and, unlike manure, are free from weeds. They start the crops off vigorously, carry them through, and hasten maturity. With the demand for food so urgent, they should pay better this year than ever before.

We have fertilizers with or without potash. The potash is soluble in water.

Our Agricultural Service Bureau will gladly aid you, without charge, in selecting the right fertilizers or by testing your soil as to its need of lime. Our book "How to Make Money with Fertilizers" points the way to bigger crops of better quality. It will be sent free with our crop books and bulletins if you will mention the crops you intend to grow.

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

The American Agricultural Chemical Company
EMPIRE CARBON WORKS

508 B Commonwealth Trust Building, St. Louis, Mo.

FOR SALE ONE OF THE FINEST FARMS IN SHAWNEE COUNTY

155 ACRES, part creek bottom and second bottom, cultivated to alfalfa for fifteen years, soil very productive. 105 acres in wheat in choicest condition; on macadam road, four miles from center of Topeka, Kansas, 1½ miles from Washburn College grounds. Two large hay barns 60 tons capacity each, barn for six or eight horses and three cows, large corn crib and granary, implement sheds, wash house, six-room dwelling with large yard and plenty of shade trees, buildings newly painted, well and wind mill of never failing finest drinking water.

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

A New Way to Sell Real Estate

Any Kind Anywhere

I got cash for my property in less than two weeks. Made sale myself so had no commission to pay. You can do the same with The Simplex Plans for Selling Real Estate. No matter where located, these practical, scientific Plans will show you how to sell your property—quickly, and for cash—without employing agents or paying commissions. Investigate at once. Learn how easily you can use The Simplex Plans, just as I did, to sell your real estate. Write today (a postal will do) to

QUICK RESULTS!

"Sold for cash in 10 days. Recommend your methods."—W. H. Medford, Iowa.
"Your method sold my farm for cash."—Mrs. L. A. Childs, Minn.
"Sold my property. Your plan the quickest I ever saw."—Johnson, Niles, Ks.

THE WESTERN AGENCY, Topeka, Kansas

They will send you full particulars without cost or obligation.

A Harmless Fly Poison

A solution of sodium salicylate sweetened with a pinch of brown sugar is recommended by the Kansas Board of Health as a safe and effective poison for flies. Dissolve one and a half teaspoonfuls of salicylate of sodium in a half pint of water, adding a little brown sugar. Partially fill a tumbler with the solution, place a piece of blotting paper the size of a saucer over the top, and on top of the blotting paper set a saucer. The whole is then quickly inverted, a toothpick or match placed under the edge of the glass, and the container is

ready for use. As the solution dries out of the saucer, the liquid seal at the edge of the glass is broken and more liquid flows into the saucer, thus the blotting paper is always kept moist.

This has the advantage of being harmless to human beings, while being poisonous to flies.

Andrew Carnegie says: "Keep expenditures always below income; save something. The fundamental difference between the civilized man and the savage is thrift." Buy W. S. S.

Young Dairymen Make Record

TWO young men on a farm in Riley County have made five official records with pure-bred dairy cows on their father's farm. Three of these are yearly records which have just been completed. These boys have conducted this official testing work while attending college, carrying full assignments, and during the past year both have performed military service. Fred Young, the older of the two, who is a senior in the agricultural college, was called to Camp Funston last September. His younger brother, Clemens, was a member of the Students' Army Training Corps.

The Youngs began building up this dairy herd two years ago and have reason to be proud of the official records made in so short a period of time.

The first cow to complete the yearly record was Lady Volga Colanthus 3d, a pure-bred Holstein. She has broken the state record in the junior two-year-old division by producing 18,565 pounds of milk and 685.5 pounds of butter in one year. In doing this she displaced Leah Campbell Mutual Jess, owned by the agricultural college, whose record of 15,170.3 pounds of milk and 667.2 pounds of butter now takes second place.

Another cow, also a pure-bred Holstein, Lady Volga Colanthus 2d, has broken the state yearly record in the senior three-year-old division. She produced 21,200 pounds of milk and 822 pounds of butter in a year.

She is the first cow in the state to produce over 20,000 pounds of milk in a year. Besides holding the state record in the yearly division, she also holds the three-year-old record in the seven-day division. She produced 24.5 pounds of butter and 564 pounds of milk in seven days. She has milked as high as 91 pounds or 11½ gallons of milk in a day.

These cows were milked four times a day for the entire year, with the exception of two months and a half, while the boys were in the army. During this time the cows were milked but three times a day, as Mr. Young, the owner of the herd, was unable to hire help to do what the boys had done.

But the cows received as good care as could be given them under the circumstances, and the return of the boys enabled them to go on with their testing.

Cost of Keeping Dairy Bull

A KANSAS FARMER reader who owns a dairy-bred bull with the best of production records in his ancestry was told by a breeder who wrote to ask what his service fee would be that fifty dollars was "beyond all reason." The owner of this bull has six carefully selected pure-bred cows, and was determined that the bull he selected should be good enough to bring about improvement in the herd. Seven of the cows in this bull's ancestry had yearly records averaging 1,040 pounds of butter and 25,448 pounds of milk. The twelve nearest dams averaged twenty-six pounds of butter in seven days. Seven of them have held world records. A careful study of the bull's pedigree showed that all of his female ancestry had unusually consistent records of production and he felt that he could confidently look forward to this bull's transmitting high production to his female offspring. But putting aside all consideration as to what the bull might transmit, he figures that the fee suggested is not unreasonable on the basis of what it is costing him to breed his own six cows.

The bull cost as a calf \$600, and the express charges amounted to \$35, or a total cost delivered of \$635. He has an individual barn 16 x 16 and the run of a small pasture of three acres. He feeds some oats, oilmeal, bran and chop twice a day the year round and hay in addition to the pasture a good share of the time. He considers that under the head of feed and care he should charge at least \$100 a year, as he could not hire anyone to feed and care for him in this manner for less. He figures interest at 8 per cent, as that is what it would cost him at the bank if he should have to borrow money to replace the animal. Adding interest and \$100 for cost of feed and care brings the cost of this bull at the end of the first year, when he first began using him, to \$785, or \$130 as the cost of breeding each of the six cows. For the next year he adds \$60 interest and \$100 for feed and care, making the bull represent a total cost at that time of \$945. Dividing by twelve gives \$78, which he considers as

the cost of breeding each of his six cows twice if the bull had died at the end of the second season. He adds \$75 interest for the next season, and \$100 for feed and care, making a total of \$1,120. Dividing by eighteen gives \$62 as the average cost of breeding his cows the first, second and third season. In the same manner he figures his bull will represent a cost of \$1,309 at the end of the fourth breeding season, or a cost of \$54 a cow each year for the four seasons. These are suggestive figures, but of course the animal could be used in a much larger herd, which would reduce the cost per cow. It is expensive to keep a bull of such breeding at the head of a herd of only six cows. There is a lack of appreciation of what it means to have such an animal in a neighborhood and available for use in breeding a few cows. The man who goes to the expense of buying and keeping a high class bull frequently has reason to be discouraged because his neighbors are so unappreciative of the opportunity brought to their doors.

Germans Should Restore Cows

"For four years," said Herbert Hoover to the Anglo-Franco-American Club in Paris recently, "we have maintained a stream of condensed milk and other children's food into Belgium and Northern France. There is no cruelty to the European population greater than to rob them of their dairy stock, for on that depends the feeding of their young."

"There is one reparation that the Germans should be compelled to make, above all others, to the devastated countries they have pillaged, namely the restitution, cow for cow, of the herds they have taken. Money is not sufficient; children cannot be nursed on money."

Grange and National Legislation

(Continued from Page Five)

for the strictest government control of the railroads and other public utilities with an insistent demand that the public be adequately protected from every form of exploitation, discrimination and injustice.

Control of Trusts—The Grange stands today, as it has stood at all times, for the strictest control of trusts and business combinations to the end that the exploitation of the public and extortion and discrimination may be prevented. Tariff—In the readjustment of tariff schedules we demand that agricultural products be given the same protection as other commodities.

Equal Suffrage—The Grange unqualifiedly favors equal suffrage and citizenship rights to be guaranteed to women by federal constitutional amendment.

Taxation—The Grange stands for just and equitable income and inheritance taxes, and insists that all property shall be taxed equally according to its true and actual value.

Militarism—We oppose the building up of a militarism in this country which will become a menace to the peace, prosperity and contentment of our people.

Prohibition—The Grange favors such strong and positive legislation as is necessary to enforce and make effective the federal prohibition amendment.

Postal Zone System—We are opposed to the postal zone system and ask a return to the system of a single rate of postage for all publications, regardless of distance carried.

Postal Betterments—The Grange demands that rural delivery of mail, the parcels post and postal savings service be extended and improved with a view to the greatest possible efficiency.

League of Nations—The Grange favors a League of Nations to conserve peace, and will support a league, the covenant of which adequately upholds and protects the sovereignty and interests of the United States.

European dairy herds are sadly depleted. One ordinary milk cow sells for over \$600 in Sweden at the present time. Outlook for cattle raising and dairy industry appears good.

BINDER TWINE—Get our low price shipped from western warehouse. Farmer agents wanted. Free sample. Theo. F. Burt & Sons, Melrose, Ohio.

Shall The Packers Rule?

UNDER the above head F. C. Crocker, a prominent Nebraska breeder and president of the state federation of farm bureaus, expresses his views in the Nebraska Farmer on the question of the proposed co-operation between producers and packers. We have endeavored to keep our readers informed of the efforts being made to get a better understanding between the packers and producers. Mr. Crocker takes the stand that producers should watch packer representatives most closely in any negotiations which may take place. His letter is as follows:

"Do the American people within ten years' time care to have the packers control the greater lines of commerce and industry of our country? If the people continue to sleep on this proposition as they have the ten years just past, this may come true. It might be considered legitimate that they should gain this mighty control if it were not for the recent findings of the Federal Trade Commission which would prove them to be a monopoly. One of the most timely needs of our government is to control this monopoly. Uncontrolled it will be the chief agency that will bring the unwelcome bolshevik spirit to our country in some form. The recent findings of the Federal Trade Commission afford ample basis for action. The findings would indicate that the packers are operating in restraint of trade and dividing the spoils.

"Two bills, known as the Kenyon and Kendrick bills, were offered at the last session of Congress, each purporting to regulate the packers. Under the Kenyon bill the government would simply take over the stock yards and packer-owned transportation facilities and thereby prevent discrimination either in buying or selling and permit fair shipping facilities for all. The Kendrick bill would license the packer to operate his own transportation lines fairly, with light fines for violation, made lighter still by amendment to this bill. The Kendrick bill seemed to get much farther along than the Kenyon bill, but they were both lost by the premature adjournment of Congress.

"The findings of the Federal Trade Commission seem to have driven the packers to the use of open methods of defending their business. This highly capitalized, well organized, mutually operated trust is expending lavishly great sums of money, not alone to mould public sentiment in its favor through the press, but to keep down the righteous and deserving criticism which a free and just press should give them. By these very methods the packers have thrown themselves before the spotlight of public opinion.

"The packers are hastening to seek the co-operation and good will of organizations representing the meat producing industries of our country. They appear to be desirous of making any concessions. Two apparently semi-official meetings of live stock organizations have been called, at which the packer influence was quite dominant. One meeting was held at Chicago on March 10 and 11, and one at Kansas City on April 12 last. At the Chicago meeting tentative recommendations were indorsed which if put into execution with the live stock organizations co-operating, would have had the moral effect of tying the hands of the live stock organizations and forbidding their promoting further effective legislation to control the packer. They would have been expected to investigate the packer problems and arbitrate their differences.

"The purpose of the Kansas City meeting seemed primarily to be a demand upon the western live stock organizations to indorse this Chicago platform. While the western producers' interests seem to lack the firmness needed on thorough organization to make their purpose most effective, yet they were strong enough to break the packers' game of a proposed joint committee. An independent committee to counsel from time to time with the packers was indorsed. The complete organization of this independent committee will be effected in Chicago May 15. Even with this committee the packers will no doubt be able to divide and divert the attention of producers who are striving to control them. Personal grievances of shippers and minor issues will be handled through this stockmen's committee operating with the packers.

"Are the producers of our land going to fall for the openly flagrant and rotten

game? Are they to be bribed by temporary alluring promises and join hands with the common enemy we have today a chance to fight and to conquer?

"If laws are not now made to control the packer and our country shall meet with some form of socialistic uprising, shall the consuming public be permitted to point to producers who have then reaped our whirlwind as a party to a combination which has violated a trust, made more sacred to us because of the God-given soil that we produced from? Shall we permit ourselves to be confused upon the clean-cut fight that is before us?

"Let the producers of our land organize and demand of Congress that food products be distributed fairly to feed humanity."

Economic Farm Power

(Continued from Page One)

numbers. I need only to call your attention to the fact that the Liberty motor—now generally acknowledged by all unprejudiced persons to be the greatest motor ever turned out—was being manufactured in four different plants at the close of the war. In fact, the production during October reached more than 5,000 such motors, which was more than the total production of aeroplane motors of France and England during the entire four years of the war.

Type of Horse Required

The horse which is to meet our farm requirements must have weight; first, because the unit of man labor which now goes with the unit of horse power, as well as the machinery used, is adapted to anywhere from five or six to eight or ten horses. In the case of the tractor the unit of power which goes with one man may be even larger. On the basis of our methods in modern farming and the size of the farm, the unit of horse power must be large, if it is to be best adapted to the utilization of man power. I have already pointed out the importance of using economically, both man and horse power.

The horse must not only have weight, but he must combine with this weight correct conformation, if we are to get the greatest amount of power for a given amount of weight. He must have the right conformation if he is to be able to develop satisfactory speed. That is, he must be able not only to walk at a good rate, but also to trot when necessary, regardless of whether he weighs 1,600 pounds or a ton.

The horse must have the right quality and temperament, if he is to wear and perform his work intelligently. Quality and temperament will, no doubt, also be of importance from the standpoint of developing a given amount of horse power per unit of weight.

Unfortunately we know practically nothing regarding the horse from the standpoint of his efficiency as a motor. If we are to deal intelligently with the problem of economical horse power, whether furnished by the horse or by a machine, we must know much more about the efficiency of these various types of motors. Unquestionably, however, the horse with size, right conformation, quality and temperament—as these terms are understood at the present time—will prove to be the most economical producer of power as compared with other animals which do not meet our standard requirements. In the competition for the most economic sources for farm power, the man who cannot produce a horse which meets the best requirements will play a losing game. And this is as it should be. The horse, as well as everyone else, must make good on the basis of what he can deliver.

EDITOR'S NOTE.—The above discussion of the horse as an economic source of power is from an address at the annual meeting of the Illinois Draft Horse Breeders' Association. Mr. Handschin is professor of farm organization and management at the Illinois University. This institution has been conducting exhaustive studies in the cost of farm operations and the profit resulting from various systems of management. Professor Handschin has had direct charge of this work, which has been under way for the past seven years. In the course of his address he also spoke of the farm tractor as a source of farm power. His remarks on this we will give in a later issue.

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You can't think of "delicious" or "refreshing" without thinking of Coca-Cola.

You can't drink Coca-Cola without being delighted and refreshed.

The taste is the test of Coca-Cola quality—so clearly distinguishes it from imitations that you cannot be deceived.

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Land capable of yielding 20 to 45 bushels of wheat to the acre can be had on easy terms at from \$15 to \$30 per acre—good grazing land at much less.

Many farms paid for from a single year's crop. Raising cattle, sheep and hogs brings equal success. The Government encourages farming and stock raising. Railway and Land Co's. offer unusual inducements to Home Seekers. Farms may be stocked by loans at moderate interest. Western Canada offers low taxation, good markets and shipping; free schools, churches and healthful climate.

For particulars as to reduced railway rates, location of land, illustrated literature, etc., apply to Supt. of Immigr., Ottawa, Can., or

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Canadian Government Agent.

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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.

SEEDS

BLACK AMBER CANE SEED, \$1.50 BU. L. C. Robinson, Montezuma, Kansas.

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

CHOICE BLACK CANE, \$1.60 BUSHEL; ten bushels, \$1.45 bushel. White cane, \$1.80; ten bushels, \$1.75. Emerick Cutter, Hugoton, Kansas.

BLACK HULLED WHITE KAFIR, THE kind that has always matured. High germination test. \$3 bushel in two-bushel lots. Sacks must be furnished. R. W. Chestnut, Winfield, Kansas.

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

FOR SALE—TOMATO, CABBAGE AND the famous Nancy Hall sweet potato plants. Price, 50¢, \$2; 1,000, \$3. Postage paid. Write for price in large lots. S. & H. Plant & Truck Farm, North Enid, Oklahoma.

DWARF AND STANDARD BROOM CORN seed, Ted Top cane, feterita and common millet, \$6; Fodder Orange and Amber cane, Cream and Red Dwarf maize, and Dwarf kafir, \$5.50. All per hundred pounds, freight prepaid; prepaid express, \$1 more. Claycomb Seed Store, Guymon, Oklahoma.

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

MISCELLANEOUS.

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

CABBAGE CUTTER, SIX KNIVES— slices all vegetables rapidly. Excellent for potato chips. Prepaid, \$1; three for \$2. Lusher Brothers, Elkhart, Indiana.

DEHORNING.

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

CATTLE.

REGISTERED SHORTHORN BULLS— Reds, from 12 to 18 months old, at farmers' prices. W. T. Hammond, Fortis, Kan.

REGISTERED HOLSTEIN BULLS FROM one to six months old, \$50 to \$100 delivered anywhere in Kansas. G. E. Berry, Garnett, Kansas.

HIGHLY BRED HOLSTEIN CALVES, either sex, 15-16th pure, from heavy milkers, five to seven weeks old, beautifully marked. \$25, crated and delivered to any station express charges paid here. Send orders or write. Lake View Holstein Place, Whitewater, Wisconsin.

FARMS WANTED.

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

HONEY.

REGARDING THE LAST WORD IN FINE honey, write to Drexel, the Bee Man, Crawford, Colorado.

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

PATENTS.

JAMES N. LYLES—PATENTS, TRADE- marks and copyrights. 734 Eighth Street N. W., Washington, D. C.

REAL ESTATE.

LANDLESS MEN—LET US HELP YOU to a farm home. Farms to meet all requirements. Ask for our new List No. 5. Thorpe Bros., 1-206 Andrus Bldg., Minneapolis, Minn.

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

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

GOATS

TWO FINE MILK GOAT BUCKS. J. R. Davis, Columbus, Kansas.

KODAK FINISHING.

KODAKERS—AN ENLARGEMENT FROM your film for a few minutes of your spare time. Your name and address brings full information. Williams Studio, Beatrice, Neb.

DOGS.

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

Real Estate For Sale

80 Acres, Southeastern Kansas

1 1/4 miles from good country store, church and school; about 6 miles from nearest railroad town, in a good neighborhood, on rural route and phone line. One story three-room house, outside cellar, well, right good barn; half in cultivation, half meadow and pasture. Practically every acre tillable. Good rich limestone soil, practically no stone. A splendid proposition, make some man a good home. Price, \$3,750; \$500 to \$700 down and balance on time.

Why rent? Why not own a home of your own? Land will advance \$20 an acre before January 1. Come and see this farm at once. It will not be on the market long. One or two crops of wheat will pay for it. Send for further information. Address

Allen County Investment Co., Iola, Kansas

HOME FARM, 320 ACRES

Out 6 1/4 miles. Good buildings. Fine water, 160 wheat, half with sale; some alfalfa. Only \$8,500, with \$2,500 cash, balance long time. One good 160, out 9 miles, small house, 100 smooth, 60 wheat, 40 spring crops, one-fourth with sale; shallow to water; only \$2,500, with \$500 cash, balance terms. Have other farms and ranches on small payments now, another payment after harvest.

R. C. BUXTON, Utica, Ness County, Kansas

Northeast Kansas Bargain

Forty miles Kansas City, 200 acres, 5 miles good town. Fair improvements. 150 acres tillable, balance bluegrass, timber, pasture. This is a real bargain. Price, \$50 per acre.

Wm. Pennington

McLouth, Jefferson County, Kansas

EIGHTY ACRES

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

T. B. GODESEY—EMPORIA, KANSAS

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

—OTTAWA—

Business College
OTTAWA, KANS. CATALOG FREE

Lincoln on Farming

No other occupation opens so wide a field for profitable and agreeable combination of labor with cultivated thought as agriculture.

I know nothing so pleasant to the mind as the discovery of anything that is at once new and valuable—nothing that so lightens and sweetens toil as the hopeful pursuit of such discovery. The mind already trained to thought in the country school, or high school, cannot fail to find there an exhaustive source of enjoyment. Every blade of grass is a study; and to produce two where there was but one is both a profit and a pleasure.

And not grass alone, but soil, seeds and seasons—hedgcs, ditches and fences—draining, droughts and irrigation—plowing, hoeing and harrowing—reaping, mowing and threshing—saving crops, pests of crops, disease of crops, and what will prevent or cure them—implements, utensils and machines, their relative merits and how to improve them—hogs, horses and cattle—sheep, goats and poultry—trees, shrubs, fruits, plants and flowers—the thousand things of which these are specimens—each a world of study within itself.

Rats and mice have been found to be carriers of bovine tuberculosis. Clean them out.

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.

Fruits and Vegetables in Diet

THE eating of fruits and vegetables is not merely a concession to the appetite, but meets certain important requirements of the body. The special function served by this group of foods is fourfold, according to Miss Inga M. K. Allison of the Colorado Agricultural College.

Within the last half dozen years fruits and vegetables have come to be known as an important source of the food essentials known as vitamins, which are regarded as necessary to growth. The cellulose which serves as the framework of fruits and vegetables is also very desirable, its bulkiness assisting the digestive processes and giving a laxative tendency. The organic acids contained in these foods give them their pleasing flavors, exert a laxative effect and serve other useful purposes. The fourth function is that of supplying to the body the essential mineral salts—iron, calcium, phosphorus, potassium, sodium, sulphur and chlorine. The first three elements named are particularly important and their presence in the diet cannot safely be left to chance.

If each day's ration contained two medium-sized potatoes, a serving of some other vegetable and the equivalent of a medium-sized apple in fresh fruit, Miss Allison believes the needs of the body for this class of foods would probably be supplied.

"Special care should be exercised," she says, "to make sure that the dietary includes a generous supply of foods in which iron, phosphorus, and calcium do occur. Foods rich in iron are egg yolk, lean meat, spinach, fruits, and cereal grains. Generous use of milk, legumes, celery, cabbage and cereals will insure an adequate supply of calcium salts to the body. Phosphorus contained in egg is considered to be more completely utilized than that derived from any other source, but beans, wheat and oats also serve to supply that element."

The Fly

The housefly exists only through the toleration of man—a toleration which, were it not ignorant, would be criminal.

The housefly is the most terrible single enemy that mankind has among living creatures. Beasts of the jungle have slain their thousands, but this prowler in the household has slain his tens of thousands. Of all vermin he is the most filthy; of all purveyors of disease, the most deadly.

The housefly is born in offal—nowhere else. And his life is in keeping with his birth. He lives, to the day of his death, in filth. The manure pile, the cuspidor and the cesspool are his home. It is from those haunts that he comes to visit the kitchen, the dining room and the nursery. He drags his filthy feet across the bread, dips them in the butter, wipes them on the meat and bathes in the milk. He seeks out the sick room of the consumptive, the typhoid fever patient and the child with summer complaint. Then he flies to the kitchen and deposits the poison on the rim of the milk bottle, and to the nursery, where he alights on baby's lips.

Don't mind a rattlesnake or two about the house, but kill every housefly as you value your life and the lives of your children. Don't buy your groceries or your milk or bread or fruit of any dealer who is not as particular as yourself. There would be little typhoid fever without the housefly, and little

chance of cholera infantum. And there can be no flies where there is no filth. Keep your kitchen, cellar and yard clean; let no refuse accumulate. Put lime about the stable and keep the garbage pail tightly covered. Use fly traps, sticky paper and the wire paddle until the house is clear.—Fly Bulletin, State Board of Health.

Aids for House Cleaning

The following list of cleaning aids and their uses is given by the extension service of the University of Nebraska:

Naphtha soap for coarse boards and heavy kettles; white soap, woodwork; high grade white soap, glasses and china; scouring compound, porcelain and windows; steel wool, for removing wax from floors before applying new covering for painted or varnished surfaces; floor wax, floors and furniture; kerosene, outdoor disinfectants, pouring down drains, cleaning enamel sinks, tubs, etc.; ammonia, washing windows and linoleum; borax, for softening water and washing glassware; chloride of lime, disinfectant for bathrooms; whitening, for cleaning enameled paint and nickel; linseed oil, for wiping woodwork and polishing cast iron and ranges (burn cloth at once to avoid danger of spontaneous combustion); gasoline, cleaning enameled tubs, bowls and sinks; turpentine, dusting wax floors; washing soda, for cleaning drains, traps, toilets, refrigerators, and rough and painted surfaces; rottenstone, polishing brass and copper.

Renewing Shabby Furniture

Often a little of the right kind of finishing material will restore old furniture at a very small expenditure.

To renovate old furniture, first clean the surface thoroughly, removing all grease and dirt. Use soap and water. If the varnished surface is merely scratched or marred, sandpaper lightly and apply one or two coats of furniture or interior varnish. If, however, it is desired to change the color of the furniture to a darker shade, apply one coat of varnish stain and when dry finish with one coat of varnish. If it is desired to change from a dark to a light color, apply one coat of ground coat and finish with two coats of varnish stain of the desired color.

Mother

The noblest thoughts my soul can claim;
The holiest words my tongue can frame;
Unworthy are to praise the name
More sacred than all other.
An infant, when her love first came—
A man, I find it just the same;
Reverently I breathe her name,
The blessed name of mother.
—George Griffith Fetter

Mother's Day

Don't forget Mother's Day—May 11. Wear a carnation or other flower in honor of your mother. The usual custom is to wear a pink flower in honor of a living mother or a white flower in memory of one who has gone from us. Thank God from the depths of your heart if you may wear the pink. Take time to think of what motherhood means—what it has meant in your life—and if your mother is still living, write her a letter expressing some of the things you have always felt but have probably kept to yourself, following the caveman instinct which prompts all of us to suppress the fonder feelings and conceal our deeper thoughts.

If you are a mother, the day will

THE GREATEST LOVE

NO LANGUAGE can express the power and beauty and heroism and majesty of a mother's love. It shrinks not where man cowers and grows stronger where man faints and over the wastes of worldly fortune sends the radiance of quenchless fidelity like a star in heaven.—E. H. CHAPIN.

have for you a double significance. As you think of what your mother has meant to you, you will also think of what you want your influence to be in the lives of your children. So great is the responsibility and so large the opportunity of motherhood that every mother of little children must feel something of the sentiment:

"Oh, what am I that I should train
An angel for the skies,
Or make the potent draught that feeds
The soul within those eyes?"

Canning Strawberries

Berries canned by this recipe will rise to the top of the syrup. Use only fresh, ripe, firm, sound berries. Clean, wash and stem the strawberries, add one cup of sugar and two tablespoons of water to each quart, boil slowly for fifteen minutes in an enamel or other acid-proof kettle. Allow them to cool and stand for several hours or over night in the covered kettle. Pack the cold berries in hot glass jars or enameled tin cans, filling them up to the top. Put rubbers and caps of jars in position loosely enough so that the edge of a knife blade can be inserted below the cap. If tin cans are used, cap and tip them. Sterilize for eight minutes in hot water bath, or five minutes under five pounds steam pressure. Do not use more than five pounds of steam for the cooked berries. Remove from canner, tighten covers, invert to cool and test joints, wrap in paper to prevent bleaching, and store.

Another satisfactory way of canning strawberries is to pack the fresh berries in the jars, pour over them hot syrup previously prepared, place rubber and cap in position, not tight, and sterilize in hot water bath twenty minutes or under from two to five pounds of steam pressure for fifteen minutes. Remove and tighten covers. Cool and wrap as directed above. This latter method gives a good tasting product which keeps well, but berries canned in this way usually rise to the top of the jar.

Omelets

A wholesome, easily digested and at the same time attractive way of serving eggs is in an omelet. The secret of a good omelet lies in thorough beating of the eggs and serving as soon as it is ready. The recipe for plain omelet may be varied by adding oysters or minced ham or bacon to the mixture or spreading with jelly just before taking from the pan.

Plain Omelet

- 1/4 teaspoon salt
- 2 teaspoons butter
- 3 eggs
- 3 tablespoons hot water
- 1/4 teaspoon white pepper

Beat the yolks of the eggs until light and creamy. Add salt, pepper and hot water. Beat whites until stiff and fold them into the yolks. Heat a small frying pan and put in enough butter to cover the bottom of the pan, turn in the omelet and spread it evenly. When the omelet is set, carefully fold and turn out onto a hot platter. Serve immediately.

French Omelet

- 4 tablespoons hot water
- 2 tablespoons butter
- 4 eggs
- 1/2 teaspoon salt
- 1-16 teaspoon pepper

Beat the eggs slightly, just enough to mix yolks and whites, then add the hot water and seasoning. Put the butter in a small, hot frying pan and when melted turn mixture into the pan. While this is cooking, mix slightly with a fork until the whole is of a creamy consistency. Place on a hotter part of the fire and allow to brown quickly underneath. Bring all together at one side of the pan and carefully slip it out on a hot platter. Garnish and serve while hot.

Spanish Omelet

Mix and cook a French omelet. Serve with tomato sauce in the center and around the omelet.

Tomato Sauce

- 2 tablespoons butter
- 1 1/2 tablespoons onion
- Cayenne
- 1/2 tablespoon capers
- 3 tablespoons mushrooms
- 1/2 teaspoon salt

Brown onion—chopped fine—in the butter. Cook the tomatoes with the

onion for fifteen minutes. Add the capers, mushrooms and seasoning. If desired, substitute three tablespoons peas and two tablespoons chopped red peppers for the capers and mushrooms.—U. S. Dept. of Agriculture.

A New Pattern Service

For the past few months KANSAS FARMER has been without a pattern service. We have taken some time to make satisfactory arrangements for an up to date, efficient and timely service, and are glad to announce that we have been fortunate in making provision to secure suitable and up-to-the-minute designs each week from New York.

In this issue we show a number of new summer models, including dainty summer dresses, a neat, practical house dress, a work apron and a variety of garments for children and misses. In No. 2843 we have a charming summer dress which may be developed in either organdie, foulard, shantung, lawn, batiste, silk, handkerchief linen, crepe or voile with trimming of lace net or embroidery. The little boy's suit, No. 2330, has a new feature in the suspender portions, which could be omitted if desired. The busy house worker will readily appreciate the good features of No. 2359, a one-piece house dress. The front closing makes adjustment easy and is a convenience in ironing. The sleeve may be in either of the two lengths portrayed. In 2852 figured and plain voile may be combined to make a pretty frock for the little miss, while the "growing" girl will always look trim in Model 2836. Drill, linen, khaki or plain gingham would do for this blouse, with striped or plaid material for the skirt and trimming.

Any pattern will be sent for 10 cents. Order adult patterns by number of pattern, giving bust measure for waist patterns and waist measure for skirt patterns. For misses and children give number of pattern and age only.

Summer Style Book

Send 10 cents in silver or stamps for an up-to-date spring and summer style book, containing 550 designs of ladies', misses' and children's patterns, a concise and comprehensive article on dressmaking, also some points for the needle illus-

trating thirty simple stitches, all valuable hints to the home dressmaker. Address KANSAS FARMER, Topeka, Kansas.

Plan to always have some kind of flowers in bloom from the first violets and tulips to the fall chrysanthemums. And keep a bouquet on the dining table. The children will love to gather and arrange them. Clean table linen, a few tastefully arranged flowers, good cheer and good appetites make the plainest fare taste good.

The best way to keep the hoes and cultivators polished this summer is by use.

FASHION DEPARTMENT

All patterns, 10 cents.



No. 2858—Misses' Dress: Cut in three sizes, 16, 18 and 20 years. Size 18 requires 4 1/2 yards of 44-inch material. Width of skirt at lower edge with plaits extended is about 1 1/2 yards. No. 2843—Ladies' Dress: Cut in six sizes, 34, 36, 38, 40, 42 and 44 inches bust measure. Size 38 requires 4 1/2 yards of 44-inch material. Width of skirt at lower edge is about two yards. No. 2416—Child's Set of Short Clothes: Cut in five sizes, six months, one year, two, three and four years. The dress will require two yards of 36-inch material; the petticoat 1 1/2 yards of 27 or 36-inch material; the drawers 1 1/2 yards of 27 or 36-inch material for a three-year size. No. 2330—Boys' Suit: Cut in four sizes, two, three, four and five years. Size 4 requires 1 1/2 yards of 44-inch material for the waist and 2 1/2 yards for the trousers.

No. 2359—Ladies' House Dress: Cut in seven sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires six yards of 36-inch material. The skirt meas-

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When market prices go down, our prices to you are reduced at once. That's a Montgomery Ward policy. No matter what catalog you order from, our price to you is always the lowest possible. This advertisement, taken from our latest Price Cutting Bargain Catalog, shows just one of its hundreds of money-saving opportunities. You may order from this ad if you like, or from your regular catalog. Always you get our very lowest price.

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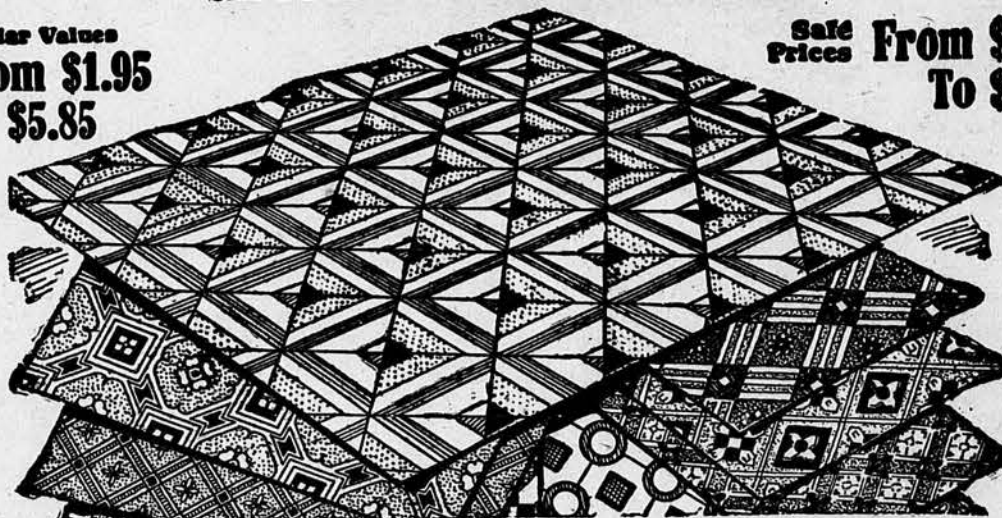
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**From \$1.95
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We have far outdone anything we ever attempted in value-giving when we offer you these Ward-O-Leum remnants in five popular sizes that can be used to advantage in the average room. We cannot furnish any particular pattern or colors as these are remnants that accumulate in our stock room. They are all, however, printed in good colors and just as attractive as the ones illustrated. They are very attractive placed in the center of the floor and used as a rug and cost just a fraction of what a Ward-O-Leum rug of the size would sell for.

Number	Size Feet	Shp. Wt. Lbs.	Price Each
72048328	8 x 6	7 1/2	\$1.39
72048329	4 1/2 x 6	11	2.59
72048330	8 x 6	14 1/2	2.98
72048331	6 x 7 1/2	18	3.98
72048332	6 x 9	25	3.98

Kill All Flies!

THEY SPREAD DISEASE
Placed anywhere, DAISY FLY KILLER attracts and kills all flies. Neat, clean, ornamental, convenient and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed.



DAISY FLY KILLER

5 by EXPRESS, prepaid, \$1.25.
HAROLD SOMERS, 160 De Kalb Ave., Brooklyn, N. Y.

Reliable Poultry Breeders

PLYMOUTH ROCKS.

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

100 BUFF ROCK EGGS, \$6.50; FIFTY, \$3.75. Maggie E. Stevens, Humboldt, Kan.

WHITE ROCK CHICKS, 15c; EGGS, 10c, \$5. Mrs. J. W. Hoornbeck, Winfield, Kan.

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

BRED TO LAY BARRED ROCK EGGS, fifteen, \$3. Mrs. Mattie Gillespie, Elk City, Kansas.

PURE-BRED BARRED ROCK EGGS—Pens, \$3 a setting. Mrs. Schlosser, Steele Farm, Falls City, Nebraska.

SINGLE COMB WHITE ROCK EGGS—\$1.50, fifteen; \$5 hundred. Joseph Surdez, Route 2, Onaga, Kansas.

BUFF ROCKS—SEVENTEEN YEARS successful breeding. Eggs, \$3.50 per fifty, \$6.50 per hundred. Mrs. Homer Davis, Walton, Kansas.

FINE BARRED ROCKS, HEN HATCHED, farm range. Eggs, fifteen, \$1; 100, \$6, prepaid. Mary Rodgers, Route 1, Concordia, Kansas.

BRED-TO-LAY BARRED ROCK EGGS from the finest lot I ever raised. Setting, \$1.25; hundred, \$6. Guaranteed. Belmont Farm, Topeka, Kansas.

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

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

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

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

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

BIG BONED IVORY WHITE ROCKS, bred ten years, won five ribbons at 1918 state show and seventeen ribbons, including three firsts, in sweepstakes at Kansas State Fair. Farm range flock eggs, \$5 per hundred; select pens at \$2, \$3 and \$5 per fifteen. Minnie Clark, Haven, Kansas.

TURKEYS.

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

ANCONAS.

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

WANTED—TO BUY.

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

ORPINGTONS.

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

SINGLE COMB BUFF ORPINGTONS, Martz strain. Eggs, \$1.50 fifteen, \$5 sixty, \$7 hundred. Mrs. Olive Carter, Mankato, Kansas.

LEGHORNS.

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

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

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

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

S. C. BROWN LEGHORN EGGS FOR hatching. Extra quality. \$6 per hundred. Mrs. L. H. Hastings, Thayer, Kansas.

SINGLE COMB WHITE LEGHORNS—Young Yesterlaid strain. Eggs, 10c for \$5; chicks, 15c. Mrs. C. C. Cole, Levant, Kan.

ROSE COMB BROWN LEGHORN EGGS—\$5 per hundred; baby chicks, \$15 per hundred, \$25 200. Mrs. Den Barry, Wallace, Neb.

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

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

IF YOU WANT BEAUTY AND UTILITY, buy my S. C. White Leghorn eggs. Heavy layers and prize winners. Pure Ferris, \$3 per fifteen. Ferris cockerel with Barron hens, \$2 per fifteen. Fertility guaranteed. Miss Bessie E. Morrison, 514 South Ninth Street, Salina, Kansas.

RHODE ISLAND REDS.

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

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

PURE-BRED DARK SINGLE COMB RED eggs, \$1.50 fifteen, \$6 hundred. Edna Kniseley, Talmage, Kansas.

SCORED DARK RED ROSE COMB cockerels, \$5 and \$10 each. Eggs, \$5 for fifteen; \$16 for fifty. Highland Farm, Hedrick, Iowa.

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

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

MINORCAS.

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

LANGSHANS.

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

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

WYANDOTTES.

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

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

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

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

EGGS FROM CHOICE SILVER LACED Wyandottes, \$1.50 per fifteen, \$5 per fifty, \$7 per hundred. Mrs. C. D. Banks, York, Nebraska.

DUCKS AND GESE.

EGGS—BUFF ORPINGTON DUCKS AND Quality White Rocks. Mrs. Chas. Snyder, Effingham, Kansas.

POULTRY WANTED.

BROILERS HIGHER NOW THAN later. Ship immediately. Good demand other poultry. Coops loaned free. The Copes, Topeka.

Poultry Culling Successful

That the experienced poultryman can readily determine which hens are laying and which are the drones, is evident to hundreds of farmers who have witnessed culling demonstrations throughout Missouri this last winter. This demonstration is typical of results:

At the Greenwood farms, Jasper County, T. S. Townsley, poultry extension specialist of the Missouri College of Agriculture, judged a flock of hens. Out of 133 hens, 43 were rejected as loafers. The pens were kept separated for seven days following the demonstration. No eggs were laid by the 43 hens culled out, and the 90 hens left laid 16 eggs more than the entire flock had laid during the seven days preceding the demonstration.

What Mr. Townsley did at that demonstration can be done by every poultryman if he will learn the simple methods these demonstrators are ready to teach. Reducing the poultry flock in the fall to include only the layers reduces the food cost of the eggs considerably.

Both eggs and poultry are higher than they were this time last year. More than 500,000 cases of eggs have been exported since January 1, against little more than 100,000 for all of last year. There is indication that eggs will continue high throughout the year.

The old hen sat in a leafless tree and said: "Nobody cares for me. My food is what I find about, I hunt for it till I'm frazzled out. My owner says I do not pay, and that I ought to sing and lay. I wish he had to sit out here and live on pickin's all the year. I'll bet a half a cent, by jing, he wouldn't lay from now till spring."

United States exports of condensed milk increased from sixteen million pounds in 1914 to 350 million in 1918. War had a good deal to do with this, of course, but indications point to a continued large demand in Europe for American dairy products.



REASONS FOR HIGH EGG PRICES

By G. D. McClaskey

ORGANIZING boycotts on eggs is the popular method being employed by women's clubs in various parts of the country in their blind and aimless efforts to reduce prices. Definite and painstaking investigations into the conditions of production and marketing would be far more fruitful of permanent results. The following item from a Canadian poultry journal is indicative of the prevailing opinion on egg prices:

At a hotel in a town where a poultry show was being held the editor listened a while to the learned comments on the "high price of eggs" by those seated at the breakfast table. They touched on the price of feed, and laughed at the poultryman who claims that because feed is high, eggs should be high. "Hens don't eat so much," they said. One suggested that the hen farmer was a profiteer in asking 75 cents a dozen for his eggs, because his hens ran all over the farm and picked up a living. "He does not have to feed them," he insisted. And a shudder of horror went round the table when another traveler said, "Eggs were a dollar a dozen in Toronto this week." "Nearly 10 cents apiece," ejaculated a mathematically-inclined person who had just ordered two. It was then we sprung our conundrum:

"When eggs are selling at 10 cents each, what is the price of roses?"

One or two eyes twinkled as we rose from the table. They had caught on. The others are still thinking.

I had just finished reading this item when my attention was called to a newspaper report of the actions taken by women's clubs in several cities in organizing boycotts on eggs. I was thinking about this when I chanced to see an item from a Southern Missouri newspaper, as follows:

The Ozark hen is now being called upon to help the European food situation, and "laid in Missouri" eggs are being shipped to Glasgow and Liverpool, the Ozarks contributing largely to shipments. One St. Louis commission firm contracted for six million eggs the other day and local shippers have been asked to help fill the contract. This is the first time such a contract has been made so far inland, foreign trade depending on eastern markets heretofore.

In addition to the home demand for eggs, eggs are moving for export, shipments having been made the last month to Europe. It is definitely reported in the trade that one large house is storing for shipment on an order to Europe in the near future a total of 300,000 cases of eggs. Of this total, 100,000 cases are being put away in New York, 100,000 in Chicago, 50,000 in Detroit and 50,000 in Lincoln, Nebraska.

This should serve to show that the demand for eggs is probably greater than it ever was before, while we do not have the source of supply that we have had in other years. There is a slight increase in the number of hens in the country over the number last year, but not as many as were on farms and in the poultry breeders' yards prior to 1918.

You cannot get away from the law of supply and demand as a factor in governing prices. You may disregard the cost of production as having anything to do with the selling price, but rest assured that when an unusual demand exists for any product the price will go up. Eggs are higher in price this spring than they have ever been at this time of year, but the demand for eggs is heavier than ever before. The price of eggs, however, is not out of proportion with the prices of everything else.

Not many persons accuse the producers of getting too much for eggs, but the commission men and cold storage men are constantly being flayed for robbing the people. If a commission man or a cold storage man is successful and makes money, he is accused of robbing the farmer and of robbing the dear people—in other words he is accused of working both ends from the middle, and is a crook and not fit to associate with decent people. But if a merchant who deals in women's wearing apparel and caters to the class of women—those same women who are most active in club affairs and boycotts—who wear expensive things that are not necessary for bodily comfort, amasses a fortune, he is much to be admired.

Notwithstanding all the efforts that have been put forth by poultry breeders to produce better laying hens—hens that will be efficient winter egg producers—it still remains that the great volume of eggs is produced during the spring months, and thus far no system of utilizing all of the spring output of eggs has been devised other than that now

employed by the commission men who buy the eggs and put them in the cold storage plants. Under the present system enormous quantities of eggs are saved and made available for use during the winter when the production is lowest. Without this system of handling the product of the hen, eggs would be a drug on the market in the spring, and would be so scarce, and the price so high, during the winter that, except in a few cases, they could not be considered as an article of food. The cold storage egg business is a big business and, like the packing business, railroad business, and other big businesses, there are times when it needs regulating, but no one yet has been able to devise any system of handling the egg crop, so that eggs are available at all times of the year, that is better than the system now employed. A boycott on eggs, while it may have some local effect, will not affect the price as a whole.

The cost of distributing eggs is quite an item, often amounting to more than the producer receives for the product, but no one yet has presented any plan whereby this distribution cost can be lowered. Some weeks ago Food Commissioner Ladd of North Dakota stated that 69 per cent of the final selling price of a dozen eggs goes to the cost of distribution. If a dozen eggs sold for a dollar, 69 cents would have been spent for distribution. Mr. Ladd found that the distributing cost of oranges is only 20.3 per cent.

"The orange growers of Florida and California are organized," he said. "They advertise extensively. They have built up a national demand for their fruit, and it is having a bigger sale today than it ever had before. Experts have figured that distributing these oranges is not half so expensive as distributing a product that is not advertised at all."

I gather from this that Mr. Ladd thinks that if egg producers organized and advertised their product, greater consumption of eggs would result and the distribution cost would be lowered. I am in favor of some poultry organization putting on an advertising campaign for the purpose of educating the public as to the real food value of eggs. When the food value of eggs is known universally, consumption of the product will take care of itself, and egg boycotts will be a thing of the past, regardless of the price of eggs. But egg producers cannot organize as have the orange growers, for the reason that oranges are grown in quantities in only two states, whereas eggs are produced in almost every nook and corner of the United States. Community production of one grade and color of eggs and community marketing is the best solution advanced thus far in the interests of the producers. In the interests of the consumer, a shorter route from producer to consumer by eliminating some of the handling under the present system of distribution would give the consumer better eggs, but it is doubtful whether it would mean a reduction in price. At the present time many consumers pay more than the market price, and are glad to do it, for strictly fresh eggs that come to their homes direct from the producers.

Whatever the cost of distributing eggs, consumers who are now boycotting eggs can save this cost and can also save any profit that the producer may be getting if they will produce their own eggs. The following item, touching upon this very thing, appeared in one of the big city dailies not long ago:

The cost of living is high, for one reason, because so many of our people become too tidy to fool with hens, too lazy to do their own housework, and too squeamish to handle hens with soreheads. If every family was in receipt of six eggs a day from its own poultry yard, the cost of living would drop like a deflated balloon.

The cost of living is high because of the general tendency of the world to let George do the work. With only 10 per cent of Americans producing foodstuffs, the cost of living cannot be anything else but high. It isn't so much a problem in economy as it is a problem in industry—regular industrial industry.

The foregoing is rather significant, but let us consider the price of eggs at



DR. HESS Instant Louse Killer Kills Lice on Poultry and Stock

Use it on your lousy hens and chicks—your lousy colts, horses and cattle. You'll get better chicks—bigger, better fowls—more eggs—better contented stock.

Chicks are apt to be lousy now. Give them a chance. Sprinkle Louse Killer into the feathers, about the coops, on roosts, in nests of laying and setting hens. Always keep Louse Killer in the dust bath. For lousy horses and cattle, colts and calves, stroke the hair the wrong way and sift in Louse Killer.

We authorize dealers to return your money if it does not do as claimed.

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

Dr. HESS & CLARK
Ashland, Ohio



SAVES THE LITTLE ONES

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

OTTO WEISS CHICK FEED

For "men" chicks. A natural food, prepared by poultry raisers who know how to mix the right ration of cereals, beef, bone and grit. A pound feeds 50 chicks one week. Ask your dealer for it. THE OTTO WEISS COMPANY Wichita, Kan.



Buy Direct from the Manufacturer



STATIONERY AT FACTORY PRICES

Forty-five double sheets of high grade offset Writing Paper with your Initial lithographed on each sheet and thirty envelopes to match. Just put 25 cents in an envelope and four cents in stamps and we will mail you this beautiful package of stationery. State what Initial you want. One trial will convince you that this is the way to buy your stationery. Direct from the factory and save all profit.

Anderson Stationery Manufacturing Co.
Anderson, Indiana

Farmers throughout the United States bid for mowers in 1918 prices that were 72 per cent above those of 1914, when the war began, and similarly above the former prices for other articles as follows: Harrows, 126 per cent; plows, 100 per cent; tedders, 81 per cent; axes, 100 per cent; churns, 76 per cent; corn cobs, 97 per cent; cream separators, 100 per cent; hoes, 78 per cent; ten-gallon milk cans, 133 per cent; milk cans, 104 per cent; pitchforks, 85 per cent; scythes, 60 per cent; shovels, 92 per cent. So reports the Bureau of Crop Estimates.

Power machinery for cutting firewood offers a practical solution of the fuel problem on farms where wood is available.

compared with the prices of a few other articles of food. The average price of eggs for the year 1913 was 34.5 cents a dozen; the average price for 1918 was 56.9 cents. In 1913 round steak averaged 22.3 cents, bacon 27 cents, butter 38.3 cents, milk 8.9 cents a quart and flour 3.3 cents a pound, and so on. In 1918 the average price of these same articles was, round steak 36.9 cents, bacon 52.9 cents, butter 57.7 cents, milk 13.9 cents and flour 6.7 cents. The question naturally arises, why the boycott on eggs, when the price of eggs is not out of line with the price of every other article of food? Eggs always "get theirs" first, yet there is no substitute for an egg.

GRANGE NOTES

The Grange asked that the farmer be represented on the different boards and commissions that the Governor appoints and sent a letter to him asking for such representation on each board. No names were suggested, but the State Master, Mr. Needham, asked that a real farmer be on each of the boards. Thus far we have 0.

In the appointment on the State Highway Commission the Grange fully expected the farmers to be represented. The road from the farm home to town is a question very near to the farmer. He is just as anxious about it as the suburban dweller of the city is that his house be linked to town with a sidewalk. Yet the farmer is ignored in this place and a city man appointed. The city man cannot appreciate the situation of the farmer in the road matter. He feels that we need good roads for the car, but the country dweller is just as anxious to have good roads so that he can get to town. The city is not included in the benefit district; the building of a country highway is not building a road for ingress and egress to and from the city man's premises; the burden of taxes is not on him; yet the full commission is composed of those whom the road will least benefit and who will pay the least part of building it.

In building roads—even hard-surfaced—grades should be established and built and allowed to settle at least two years before any hard surface material like concrete or brick should be applied. The settling of grades will cause concrete to crack and break. A new grade is a bad place on which to establish a permanent improvement, for the foundation is soft and spongy and will give way to moisture and freezing and thawing.

In the East, where the hard-surfaced roads are being built, the foundation has been laid for years. In Ohio and other states the old toll gate system, where tolls were paid at different stations along the road, has furnished a fund which has paved the roads with rock and gravel. This process has been going on for over fifty years and now they can build miles and miles of road without the initial preparation of making a bed. Yet the concrete and expensive surfacing is unpopular with the farmers of the East.

Bridges should be built and approaches made long before an unelastic surface is laid across it. The settling process is done best and cheapest by Nature, and it takes time. Approaches and fills should be built independent of a hard-surface contract and allowed plenty of time to settle.

Pour cement on a fresh approach and it will have to be renewed in a short time. All these preparations should be made before a hard-surface contract should be considered. The Grange policy, to pay as you go, will build roads as fast as they should be built for service.

Organized labor was able to have nine points inserted in the League of Nations constitution. Where was the farmer? Lack of constructive organization and co-operative efforts prevented the farmers from being heard at the great event, and the demands of agriculture will have to come later when the farmer realizes that he must organize. The Grange represents over a million farmers of this country and is established in thirty-three states, yet with this influential number the Grange was not able to make an impression that would allow American agriculture to have an influential hearing at Paris.

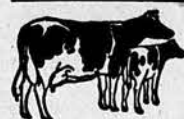
HOLSTEIN CATTLE.

CHOICE HOLSTEIN COWS FOR SALE

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

HOPE HOLSTEIN FARMS

HOPE, KANSAS



The Profitable Dairy Cow

The farmers of Antwerp will have only to do with such cattle as produce the largest amount of milk upon the smallest amount of food, and for this they prefer the pure Holstein-Friesian cow.

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Send for our booklets—they contain much valuable information.

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

HOLSTEINS!

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

T. R. Maurer & Co.

EMPORIA - - - KANSAS

GOLDEN BELT HOLSTEIN HERD

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

W. E. BENTLEY, MANHATTAN, KANSAS

CHOICE HOLSTEIN CALVES

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

FERNWOOD FARM, WAUWATOSA, WIS.

BUTTER-BRED HOLSTEINS

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

J. P. MAST, SCRANTON, KANSAS

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Sales made anywhere. Price reasonable. I breed Duroc hogs and Jersey cattle. Write for date.

H. GRABLE - - AGENCY, MISSOURI

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

JOHN D. SNYDER, HUTCHINSON, KAN.

POLAND CHINAS



Faulkner's Famous Spotted Polands The World's Greatest Pork Hog

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

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

There are some amendments that the farmers of the world will ask later concerning the markets, crops and provisions of the world, but the organization will have to grow before it will be heard in foreign lands.

ERNEST MCCLURE, Greeley.

Prune Shrubs After Blooming

Such shrubs as bridal wreath, golden bell, Japanese quince, lilac and syringa should be kept to a desirable height and habit of growth by judicious pruning. If pruned before blossoming time, however, many flower buds will be cut off. The best time for pruning is after they have bloomed, cutting out the oldest and most branched shoots so as to retain the long, willowy growth. Pruning at this time prevents the plant from wasting its vitality in producing seed. It also gives time for the growth of long shoots which will bear flowers the following year.

If necessary to prevent shrubs from growing taller than one wishes, they may be pruned at any time during the summer. This will produce a more bushy growth.

Benjamin Franklin said: "Waste neither time nor money, but make the best use of both." Buy W. S. S.

HOLSTEIN CATTLE.

Registered bulls ready for service and bull calves, out of good producing dams. Sires: Sir Rag Apple Korndyke De Kol and Duke Ormsby Pontiac Korndyke. G. REGIER & SONS, Whitewater, Kansas

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Quality Holstein Heifer Calves

Four to six weeks old, by pure-bred sire, \$25, express paid to any station. Write for prices on older stock.

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

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

AYRSHIRE CATTLE.

Ayrshire Calves Bull and heifer, pure bred, out of high-producing cows. Bull, \$75; heifer, \$50, for quick sale. H. L. Michaels, Kinsley, Kansas.

HAMPSHIRE HOGS

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

GUERNSEY CATTLE.

FOR SALE

Guernsey Herd for Sale—All Registered, Some Imported A. R.

All or any part of fifteen (15) head, consisting of six heifers ranging from six weeks to two years; five cows; four bulls from six months to six years old. Will make this especially attractive to parties desiring the whole herd.

GUERNSEYDALE FARM, OTTAWA, KAN.

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Registered Galloway Bulls

For Sale—Twelve head 2-year-old bulls, big strong fellows, ready to use. Eight head yearlings. Write at once.

Shive Bros., Burrton, Kansas

POLAND CHINAS.

ERHART'S POLAND CHINAS

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

A. J. ERHART & SONS

NESS CITY, KANSAS

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

A Few Fall Pigs.

CHAS. E. GREENE
Townview Farm Peabody, Kansas

POLAND CHINA PIGS

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

Frank L. Downie

R. F. D. 4 Hutchinson, Kansas

THOMPSON'S POLAND CHINAS

A few extra good boars, also a few open gilts, well spotted, good length and plenty of bone, with quality.

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LANGFORD'S SPOTTED POLANDS

Bred gilts, tried sows, herd boar prospects.

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Dietrich's Aberdeen-Angus

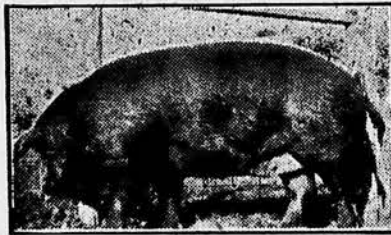
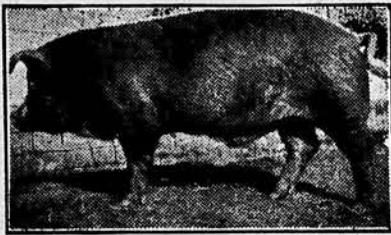
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On Thursday, May 15th, 1919



50 HEAD BRED SOWS, BRED GILTS AND FALL BOARS

23 Head consigned by J. Doerschlag, Topeka.
17 Head consigned by A. E. Sisco, Topeka.
10 Head consigned by H. A. Johnson, Perry, Kan.

Several of the gilts are sired by Orion's Model by Golden Model Again and Joe Orion and mostly bred to Pal's Orion Cherry King.

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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.

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RED POLLED CATTLE FOR SALE

Young bulls and some extra good young cows to calve in early spring. A few yearling heifers.

L. W. FOULTON, MEDORA, KANSAS

RED POLLS, BOTH SEXES, BEST OF BREEDING.

Charles Morrison & Son, Phillipsburg, Kan.

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FOR SALE

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

Howard Chandler, Charlton, Ia.

HORSES AND MULES.

Plaasant View Stock Farm

PERCHERONS AND HEREFORDS

For Immediate Sale

Six-year-old Ton Stallion, black. Have his fillies. Must sell.

One coming three-year-old, weight 1,750

One coming two-year-old, weight 1,550 lbs.,

black, ready to use this spring on a few

mares.

All of these horses sound and good individuals.

In Herefords Have About Thirty Cows

and Heifers

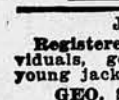
All that are old enough are getting calves

this spring from my herd bull, Domineer

566433, a son of Domino, bred by Gudgell &

Simpson. A few May bull calves yet.

MORA E. GIDEON, EMMETT, KANSAS



PERCHERON-BELGIAN SHIRES

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

Fred Chandler, Rt. 7, Charlton, Iowa

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

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FOR SALE—A number of Percheron stallions, yearlings and matured horses. All registered in Percheron Society of America. Sound, heavy bone, splendid colors. I have several horses that would have won in all the classes at our state fairs last year and must be seen to be appreciated. Dr. McCampbell of Manhattan and O. W. Devine, Topeka, tell me I have as good horses as they see on any farm in Kansas. Come and see them.

J. C. PARKS

HAMILTON, KANSAS

DUROC JERSEYS.

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DUROCS

For Sale—Ten bred gilts, bred for September farrow. Price, \$60 each. First check gets choice. Satisfaction guaranteed or money refunded.

J. R. Smith, R. 1, Newton, Kan.

HIGHVIEW DUROCS

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

F. J. MOSER - SABBETHA, KANSAS

Woodell's Durocs

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

G. B. WOODDELL, WINFIELD, KANSAS.

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KNOX KNOLL MULEFOOTS

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S. M. KNOX - HUMBOLDT, KANSAS

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It Pays to Grow Shorthorn Beef

H. M. Hill, Lafontaine, Kan., sold 18 yearling purebred Shorthorn steers at Kansas City, weighing 1,300 lbs., for \$224.60 per head.

Two Shorthorn grade calves 6 months old sold at Pittsburgh, Pa., March 31, at 18c, weight 605 lbs. each, \$108.90 per head.

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

You get quality and weight both with the Shorthorn. AMERICAN SHORTHORN BREEDERS' ASS'N. 13 Dexter Park Avenue Chicago, Illinois Ask for a copy of "The Shorthorn in America."

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For Sale—25 well bred cows and heifers bred, priced reasonable. A few young bulls by Double Diamond by Diamond Goods.

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

M. F. MARKS, VALLEY FALLS, KANSAS

SHORTHORN CATTLE

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Bull calves sired by champion bulls out of Register of Merit dams, for sale at all times.
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LEE'S SUMMIT - MISSOURI

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Chester White Boars

For Sale—Fifteen choice August, September and October boars. Best I ever raised, large and well grown. Price, \$50 to \$75. First check gets choice. Guaranteed right or money back.

Henry Murr, Tonganoxie, Kan.

SUNFLOWER HERD CHESTER WHITES
Big type, bred sows. Serviceable boars. Fall gilts open or bred. Booking orders for spring pigs.
LLOYD COLE, Route 5, North Topeka, Kan.

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CLAIM SALE DATES.

Jersey Cattle.
May 31—Central Kansas Jersey Cattle Club
M. A. Tatlow, Manager, White City, Kan.
June 24—Dr. J. H. Lomax, Leona, Kan.

Shorthorns.
May 16—Park E. Salter, Wichita, Kansas.
May 22—Jefferson County Shorthorn Sale, J. H. Mitchell, Manager, Valley Falls, Kan.

Holsteins.
May 12—A. S. Neale, Manhattan, Kan.

Hereford Cattle.
May 12—Kansas Hereford Breeders' Draft Sale at K. S. A. C. Manhattan, Kan.
May 14—I. W. Bowman & Co., Ness City, Kansas. Sale at Hutchinson.
May 13—Sam Drybread & Son, Elk City, Kan. Sale at Independence, Kan.

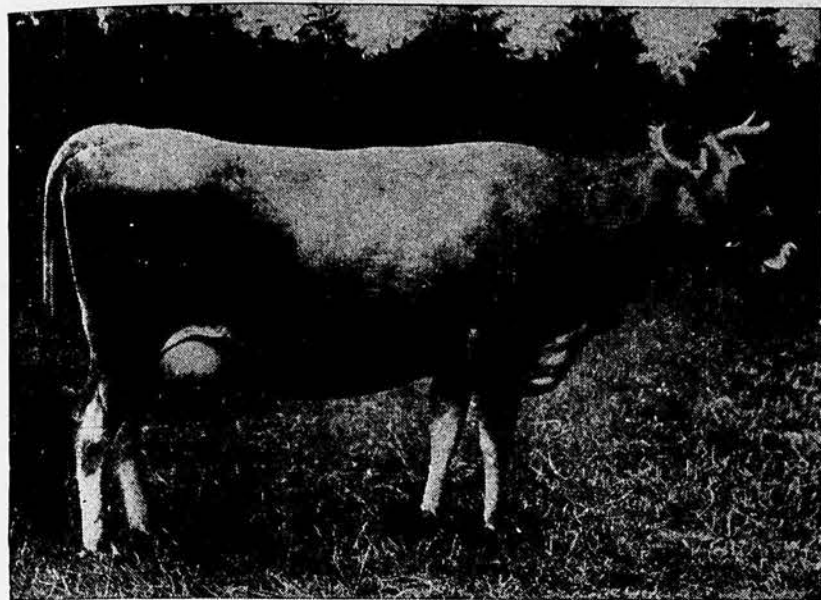
Durocs.
May 15—Doerschlag & Sisco, Route 2, Topeka. Sale at Topeka Fair Grounds.

Shive Bros. of Burrton, Kansas, have built a profitable herd of Galloway cattle. The herd now numbers about fifty head and is a feature of the herd at this time is a splendid lot of young bulls that would improve a lot of herds throughout the country.

The Central Kansas Jersey Cattle Club of White City, Kansas, has announced May 31 for their sale of Jersey cattle. On this date they will offer forty-five head of high class well bred and regular producing registered Jerseys. Several of the cows have Register of Merit records and are consigned by the well known breeders, J. A. Walter, White City, Kansas; M. A. Tatlow, White City, Kansas; and Gladys Tatlow, White City, Kansas. The sale will be held under cover, rain or shine. Every one will be made to feel comfortable. The offering is one of the best lots of real high class dairy cattle that will be sold in Kansas this year and probably one of the best lots to be sold in any sale this year.

CENTRAL KANSAS JERSEY CLUB SALE

At White City, Kansas, May 31, 1919



FORTY-FIVE HEAD OF HIGH CLASS JERSEYS, CONSIGNED BY THE WELL KNOWN JERSEY BREEDERS.

Twenty Head, J. A. Comp & Son, White City, Kansas; eight cows with Register of Merit records and real show type; six young heifers from high testing cows, and four young bulls five to six months old. Splendid prospects for herd bulls, sired by a double line bred Owl Interest bull and Torono Raleigh and Financial King bred bull.

M. A. Tatlow's Consignment consists of fifteen head of young cows and heifers, one two-year-old bull and two young bull calves. The two-year-old bull is closely related to the cow that holds the S. R. record of Kansas for milk and butter fat.

Walter Tatlow and Gladys Tatlow are each consigning one young cow. Mr. Tatlow is selling his entire herd and will leave the farm.

Mr. H. M. Pierce is consigning three splendid cows, one senior yearling heifer and one two-year-old, a double line-bred Owl Interest.

Sale held under cover, rain or shine. Please write to B. O. Settles, Palmyra, Missouri, for catalog, and come to sale.

THE BEST LOT OF REAL PRODUCING JERSEYS it has been my pleasure to see catalogued for a sale in years. No one will be disappointed sale day.—(Signed) O. W. DEVINE.

The Central Kansas Jersey Breeders' Ass'n.

J. A. COMP, PRESIDENT

M. A. TATLOW, SECRETARY

• AUCTIONEER—JAS. T. McCULLOUGH

Jefferson County Improved Breeders' Sale of Shorthorns

FORTY HEAD OF SHORTHORNS

25 Cows and Heifers and
15 Serviceable Bulls

Valley Falls, Kansas, May 22, 1919



This offering will be consigned from the following herds of well bred Shorthorn cattle:

Marks Lodge Herd, Valley Falls, Kansas;
Adam Becker & Son, Meriden, Kansas;
Geo. Ely, Valley Falls, Kansas;
Mitchell Bros., Valley Falls, Kansas;
Frank Gragg, Denison, Kansas;
R. B. Keys, Valley Falls, Kansas.

We are offering a useful lot of cows and heifers that any farmer or breeder can realize a nice profit on with a little care. The cattle are not fat, but in good condition.

Please Send for Catalog and Come to Our Sale

Jas. H. Mitchell, Manager

Valley Falls, Kansas

Auctioneer—Frank Brake, Valley Falls, 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

Diversified Farming Safe

The records of O. S. Rayner, of the farm management department of the Colorado Agricultural College, show that the man who attempts to raise only wheat or nothing but beans or alfalfa is putting all his eggs in one basket.

The difference between this and a diversified type of farming is illustrated from records of farms in the same community of the state.

Twelve farmers made an average labor income of \$1,921. Their average receipts were: Alfalfa, \$1,546; beets, \$1,996; live stock, \$629; grain and beans, \$250. These men were all well protected because if alfalfa failed they had beets and live stock to fall back on. The same can be said of other crops and live stock.

But a farmer in that community with practically the same acreage in crops made only \$750. He received \$3,075 from alfalfa, \$195 from grain and beans, and \$69 from live stock. He had only one main source of income. The other twelve men had three. What if his alfalfa had partly or entirely failed? Or suppose labor had been so scarce that he would have had to do all the work himself? Last year in parts of Colorado, wheat was left in the field because of a scarcity of labor at harvest time. Other men had to pay so much for labor that there was little or no profit left for the farmer.

The records from ninety-one farms in this community show that the average income of all that had only one source of income of over \$400 was \$437, compared with \$998 for those which had two sources of income, and \$1,302 for those with three. In other words, a cash receipt of \$1,200 from one crop will not leave as much net profit to the farmer as will \$1,200 from three different sources of \$400 each. In the latter case the cash-expenses are much less.

It is only a justification of the old saying, "Don't put all your eggs in one basket."

The Herd Bull

You often hear the expression, "The bull is half the herd," and pass it by without consideration. After a good many years of hard practical experience and close observation in my own case I want to fix your attention on this expression and thereby add both profit and pleasure to your stock farming. Nothing in nature stands still; everything continuously goes forward or backward. Every herd of cattle is constantly building up or going down; not one is the same grade this generation it was the last and it will change again the next, and the principal factor in these changes is the herd bull.

The simple, the easy, and the economical way to build up a herd is through the herd bull and the simple and easy way to run it down is through the herd bull; for while your bunch of calves have numerous mothers of vari-

ous dispositions and types, your herd bull is the father of all your calves and his type is permanently stamped on every one of them. You may accept the following as axioms: That if your herd bull is better than your herd of cows your crop of calves will average better than their mothers, and if your herd bull is inferior to your herd of cows your crop of calves will average inferior to their mothers and that by whatever per cent your herd bull is better than or inferior to your herd of cows, by that much will your crop of calves be better than or inferior to their mothers.

Now, if you would build up your herd rapidly and thereby accomplish something that will pay you handsome dividends and at the same time be fascinating for you to watch from year to year, fix in your mind the type of herd you would like to own; then painstakingly select a herd bull of that type that is an outstanding individual himself and that is sired by a high class bull also. The percentage of outstanding bulls produced in even the best herds is comparatively small and each one of them is worth in building up a herd more than all the mediocre bulls you could put on your farm and you should be prepared and willing to pay a living and reasonable price for the high class bull; but the first crop of calves from a herd of twenty-five medium cows and an outstanding bull will pay the total purchase price of this bull over and above what the same bunch of calves sired by a mediocre bull would be worth.

No big success has ever been made by a breeder who did not use outstanding herd bulls; the better the bull, the more rapid the success, all other things being equal. Stamp indelibly on your mind that your herd bull represents either eventual success or discouragement to you in cattle breeding.—E. H. HARRISON, Pilot Stock Farm, North Carolina.

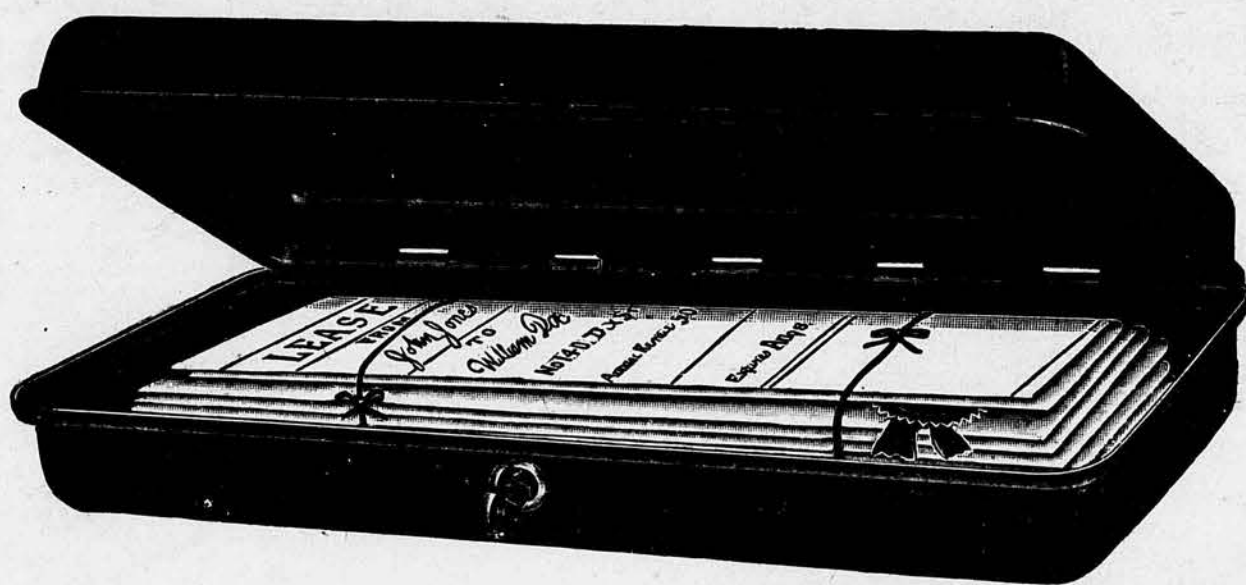
Butter Shortage in Paris

In 1912 the daily average amount of butter reaching Paris was 121,000 pounds. During the first week of February, 1919, it was 55,000 pounds, or less than half the pre-war receipts. A French investigator sent to one of the large dairying provinces—Normandy—reported that the shortage was caused by the slaughter of cows for meat, which brings relatively higher prices than milk.

According to the investigator a quart of milk cost about 6 cents before the war and 17 cents at the time of the investigation. Before the war an eight-day-old calf brought about \$5.80 whereas now it will sell for \$29. The previous price of a cow was about \$58, but at present it is approximately \$232. These prices had led to the killing of dairy cows, thus lessening the milk supply. To counteract this tendency, it has been proposed to import a large supply of meat and prohibit the slaughter of dairy cattle.

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