

KANSAS FARMER

For the improvement



of the Farm and Home

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PROFIT FROM GOOD LIVE STOCK

Increased Labor Returns Shown on Farms Growing Improved Stock

LIVE stock furnishes a profitable market for many of the by-products of farming which would otherwise be wasted. Straw and other cheap forage have practically no market value, but fed to good live stock yield a cash return. The keeping of live stock distributes labor throughout the year, aids in maintaining fertility and materially increases the income of the farm as a whole.

Statistics on 1,633 Wisconsin dairy farms show that approximately 75 per cent of the total farm income is derived from live stock and live stock products, says D. H. Otis in "Plow and Tractor." Where live stock constitutes such a large factor in the operation of the farm the question of the quantity and quality of the live stock is a vital one.

Records of dairy farms in Wisconsin show that the farms with grade cows only make the poorest labor income or profit per farm. The records obtained from farms containing both grades and pure-breds show about \$350 more profit per farm than those having grades only. The records from pure-bred farms show about \$1,000 per farm more profit than those having part grades and part pure-breds, and about \$1,350 more profit per farm than those having grade cows only. These figures were obtained upon farms where the number of cows per farm averaged between eighteen and twenty.

The importance of the quality of live stock in influencing farm profits is shown in the returns per cow for dairy products. Records of 300 farms where the receipts for dairy products averaged below \$80 per cow, the labor income or profit amounted to \$617 per farm. On seventy-seven farms where the receipts for dairy products averaged between \$80 and \$100 per cow, the labor income or profit per farm averaged \$1,120, an increase of \$503 per farm. On fifty-six farms where the receipts for dairy products averaged over \$100 per cow the labor income or profit amounted to \$1,550 per farm, an increase of \$430 per farm over the middle group, and \$933 per farm over the first group. A comparatively small increase in income per cow results in a large increase in net profits per farm.

What is true of receipts per cow for dairy products is likewise true of income per cow from the sale and increased inventory of breeding stock per cow. This is well illustrated in the records of 125 farms divided into five groups of about twenty-five farms each. Group I shows less than \$18 income per cow from breeding stock. The labor income or profits on these farms amount to \$505 per farm. Group II has an income of \$18 to \$25 per cow for breeding stock. These farms show a labor income of \$891 per farm, or an increase over Group I of \$386 per farm. Group III has an income of \$25 to \$35 per cow from breeding stock, and a labor income of \$960 per farm, an increase of \$455 per farm over Group I. Group IV has an income of \$35 to \$55 per cow from breeding stock and a labor income of \$1,174 per farm, which is an increase of \$669 per farm over Group I. Group V has an income of about \$55 per cow from breeding stock and a labor income of \$1,760 per farm. This is an increase of \$1,255 per farm over Group I, and a

very substantial increase over each of the other groups. This is a substantial testimony as to the value of quality in our live stock breeding.

In comparing various groups of dairy farms a striking and important similarity is noticed between the income from live stock and the income from dairy products. There is a tendency for these two sources of income to approximate each other, and this appears to be true in the average, in the best, and even in the poorest groups of farms. This indicates that as the dairy breeding herd is improved there is an increase not only in the income from the sale and increase inventory of live stock but also in the receipts from dairy products. In other words improved live stock are making good as producers of dairy products.

Large Herds Pay Best

Not only must there be quality in the individuals composing our herds and flocks, but it is also necessary to have sufficient numbers to maintain a proper size or volume of business. This point is well illustrated in the records of 425 Wisconsin farms divided into four groups according to the number of cows kept. Group I, ninety-eight farms, average below ten cows per farm. The labor income or profits on these farms amount to \$547 per farm. Group II, 214 farms averaging between ten and twenty cows per farm, have a labor income of \$706 per farm. Group III, ninety-seven farms, averaging between twenty and thirty cows per farm, have a labor income of \$1,257 per farm. Group IV, sixteen farms, averaging over thirty cows per farm, show a labor income of \$2,939 per

farm. The rapid increase in labor income with the increase in the number of cows is both striking and noteworthy, and indicates that volume and quality of business go hand in hand.

Improving the quality and increasing the quantity of business means an increase in the farm investments, particularly in the operating capital. On live stock farms the bulk of the operating capital is invested in live stock. The influence of operating capital on labor incomes varies with the type of farming and with the stage of agricultural development. It appears to be more important in the more settled and developed agricultural regions than in the newer regions. The operating capital is particularly important in the well developed dairy regions. This is well shown in the records of 437 farms in Southern Wisconsin. These are divided into groups according to the percentage of operating capital. Group I, 159 farms, have less than 20 per cent of their total investment in the form of operating capital. The labor income is \$683 per farm. Group II, 134 farms, have between 20 and 25 per cent of their total investment in the form of operating capital. Their labor income is \$802 per farm. Group III, fifty-eight farms, have between 25 and 30 per cent of operating capital, and a labor income of \$705 per farm. Group IV, forty-four farms, have between 30 and 35 per cent of operating capital and a labor income of \$1,193 per farm. Group V, forty-three farms, have over 35 per cent of their total capital in the form of operating capital, and their labor income averages \$1,558 per farm.

With the exception of Group III, there is a uniform increase in labor income with the increase in the per cent of operating capital. This increase is quite marked in the groups containing above 30 per cent of operating capital.

The experience of the well developed agricultural regions indicate the importance of operating capital, which in fact means investment in high quality live stock. This experience indicates the trend of development for the newer agricultural regions, or for the farms in the older regions that are beginning to introduce live stock as an important enterprise of the farm. To obtain the best returns operating capital should be provided not only in larger amounts but in larger proportions relating to the total investment.

The good financial showing obtained on the farms where improved live stock are kept indicates where one is equipped and sufficiently experienced to handle them, judicious investment in high quality live stock will not only pay the interest on the investment but much more.

To obtain the greatest success in handling of improved live stock it is desirable for as large a number of farms as possible in a community to become interested in the same breed, and co-operate in the production and the advertising of their breed of live stock. In this way the community becomes a breed center where improved live stock is produced in sufficient quantities to allow buyers a large freedom of choice, and also to buy in carload lots.

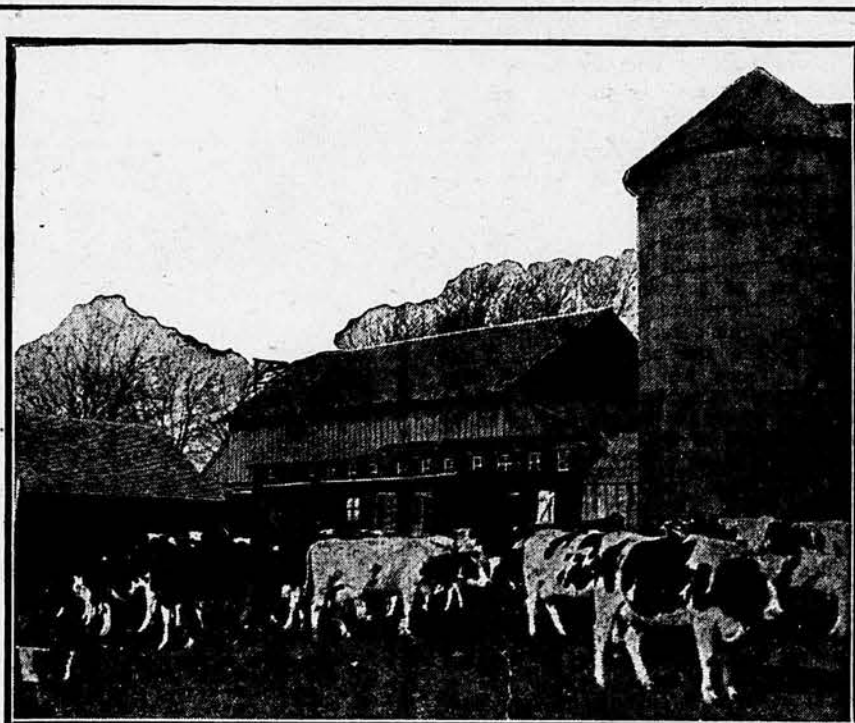
Demand for Meat and Dairy Products

Meat and dairy products are, and will continue to be, in great demand. To produce them economically demands efficient animals be kept in sufficient quantities to permit of economical production. Improved live stock have demonstrated their ability as efficient producers. The farmer who figures on entering, or enlarging upon his live stock program, should realize that improved live stock calls for improved methods of housing, feeding and management. As fast as he can provide these essentials he may proceed cautiously and feel reasonably certain of success.

Control of Bindweed

Bindweed is one of the worst weeds ever introduced into Kansas. A subscriber asks how to get rid of it. If it has spread over any considerable area the case is almost hopeless. Persistent pasturing with hogs or sheep will hold it in check and some are able to keep it in control by smothering it with alfalfa or cane.

The weed very much resembles the common wild morning glory. It spreads by means of underground roots, a new plant sprouting at each joint of these roots. In plowing or cultivating the roots are broken up and carried about the field and every piece produces a new plant. If the weed is discovered when it covers only a small patch, the surest way of getting rid of it is to thoroughly salt it. While this of course destroys the use of the land for a few years, it will get the weed and prevent its gaining a foothold.



IMPROVED STOCK CALLS FOR IMPROVED METHODS OF HOUSING, FEEDING AND MANAGEMENT.—SILOS, GOOD BARN AND OTHER EQUIPMENT NECESSARY FOR BEST RESULTS IN LIVE STOCK FARMING



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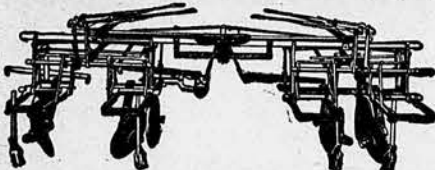
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In replacing the intake and exhaust manifolds when overhauling your engine, be careful to draw up the nuts gradually. If you tighten the top row first and then the lower set, the lugs may snap because of the uneven strain. Some manufacturers avoid this danger by holding the manifolds in place by clamps.

MECHANICS ON THE FARM

Items of Interest About Automobiles, Engines, Tractors and Motorcycles

IF YOU have leaks around spark plugs, try putting a copper washer on the plug and screwing it into the cylinder head solidly. This should prevent leakage and consequent loss of compression. Sometimes, however, these washers do not overcome the difficulty or the washers are not available. Then a little paste stove blacking put on the threads of the plugs will overcome the trouble. Just enough paste should be used to cover the threads lightly.

Many motors fail to give efficient service because of leakage around the spark plugs. Many a motor has leaky spark plugs and the driver does not know it. A little oil squirted around the plugs while the motor is running will reveal leakage.

Graphite as a Lubricant

We have been asked if graphite can be used in lubricating oil.

Graphite is an excellent lubricant. You don't hear as much about its use now as a few years ago. Formerly it was worked as a good deal of a fad. It seems now that motor owners have passed the point of using anything with good lubricating oil. Nevertheless, graphite is an excellent lubricant. Ordinary flake graphite may be mixed with cylinder oil. A graphite manufacturer recommends the mixture of about 5 per cent of its motor graphite with 95 per cent of good cylinder oil. This concern says that the best results are obtained when the graphite is fed to the oil a little at a time instead of mixing the entire 5 or 7 per cent at one time. The concern recommends mixing say 2 per cent at first, and then 1 per cent every day for five days.

It is apparent that more or less trouble and inconvenience is involved in preparing a mixture of graphite and oil. It would seem that there is no occasion for the mixture if good quality of oil is used.

Large Fields for Tractors

With a tractor, as with horses, it is desirable to have fields of considerable length in order to do efficient work, since less turning is required. Every farmer knows that he can cover a greater acreage at cultivating or other field work when he is working in a long field than when working in a short one because of the difference in time lost in turning. Where horses are used, this saving is not so important because at most field work horses must be given some time to rest and turning answers this purpose. In the case of a tractor, however, resting is not necessary, and the longer the fields can be made, the greater the amount of work the tractor can accomplish.

Selecting the Garage

Utility is the thing to be sought in garage building. The garage ought to be proof against dust and cold weather. There is little fun in starting a cold car, whether it be an electric starter or a hand-cranked car. It is necessary that the car be kept warm in the winter time if it is to be easily started. Heating is simple and safe and not expensive. There are, of course, many ways of heating. There are many various constructions which keep out the dirt and which reduce the amount of fuel required. There are constructions, too, which are pleasing to the eye and there are those which are so displeasing as to jar the senses of the driver every time he comes in sight of the garage.

In the towns various styles of garages are built. The man in the country who would have something out of the ordinary should keep his eyes open for an idea obtained from the city. If he will do this the chances are he will get a better garage than he otherwise would have and it will be so different from others in the neighborhood as to give distinction to the farm.

It is possible these days to buy just about any kind of a garage one might want. Many are built all ready to set up. So, in the matter of choosing one of these it is really a matter of selecting the kind you want.

Of course there are a great many own-

ers who have ideas relative to methods of construction and conveniences to be sought and general appearance desired of the garage built. There is every opportunity for the motorist who has an idea to work that idea into the building of his garage. A garage carrying out the plan of the motorist is as gratifying in its possession as is an automobile which meets the peculiar idea of its owner.

Are You Guilty?

I own an automobile. I am proud of my automobile; so I try to take care of it. After a hard day's work I like to get out for a little while in the bracing air. It makes me feel like new.

I like to take my friends out riding. Half the pleasure I receive from my car is the pleasure I receive from giving pleasure to my friends. I pick up people on the road and help them on their way. I always try to respond to patriotic calls for cars. My friends and the public in general appreciate my generosity, but there's a rub, and that's another story.

I pick up the wayfarer on the road, who appreciates my kindness, gets into my car, and then emphasizes his appreciation by giving the door of the car a slam that can be heard a block. I take a group of soldiers on their way. They hop in and give the doors a slam with all the vigor of their abundant strength. I take in some women on the way from a shopping tour; and they slam the doors. I take the minister to call upon the sick of the parish. Every time he gets into the car, and every time he gets out of it, he slams the door. I take my best friends for a drive, and it's slam, slam, slam!

Boys and girls, young men and young women, old men and old women; those with automobiles and those without automobiles—they are all alike. They all shut the doors with a bang.

Automobiles have the polish of pianos. How would you like to have the lid of your piano slammed? I no longer wonder why automobiles grow old so fast. For their sake, and for mine, and for the automobile's sake, I am emboldened to speak.—B. F. COEN, Colorado.

In slippery roads there is no surer way to cause skidding than by driving so that frequent applications of the brake are necessary. A sudden application of the brake is almost sure to cause the car to skid on a slippery road. Even in coasting down a long hill under such conditions it is safer to put the gears in low or intermediate and shut off the spark, letting the compression of the engine hold the car back instead of depending on the brakes to any great extent.

Try pouring some kerosene into the cylinders off your tractor when you shut down for the day. Put in it while the

WRITE GALLOWAY

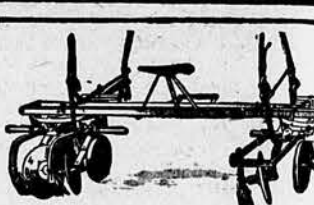
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POWER to pump, saw, grind, etc.,

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engine is hot and turn the fly wheel

over by hand a couple of times to work

the kerosene into the piston rings. It

will soften the carbon and loosen the

rings if they happen to be stuck. You

may have to prime the engine with gas-

oline to get it to start easily the next

morning, but it will be greatly benefited

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ERADICATION OF TUBERCULOSIS

The work of eradicating tuberculosis from the herds of Kansas is steadily gaining momentum. In the Bureau of Animal Industry report for March we note that Dr. Graefe, who has charge of the work for Kansas, made tests in twenty-five herds in the state, involving 743 animals. This is an increase of 200 over the number tested in February. Sixteen reacting animals are reported, and thirty-three animals were condemned and slaughtered during the month. The state and the government co-operate in payment for animals so condemned. In Kansas three Bureau of Animal Industry men and one state man are employed in the tuberculosis work.

It means a good deal to a breeder of pure-bred cattle to be able to advertise his herd as on the accredited list of the United States Department of Agriculture, and breeders are warranted in co-operating to the fullest extent possible in this effort to wipe out this serious disease.

CO-OPERATIVE EXPERIMENTS

We cannot give too much encouragement to the conducting of co-operative experiments on the farms in the various sections of the state. One of the charges sometimes made against experiment station work is that conditions are so variable that station tests are of little value locally. In the matter of varieties of farm crops the results of station tests are being verified and tried out all over Kansas on the farms. B. S. Wilson, who has charge of this work, states that plans are under way for giving these local tests to 200 varieties of corn, 150 varieties of sorghum and 60 of wheat. Many fertilizer tests are also being made, for soil conditions are so variable that in no other way can fertilizer requirements for a given locality be determined. The farm bureau and the county agent are important factors in carrying on this co-operative experimental work which is under the general direction of the experiment station at Manhattan. In the eight years this work has been going on, local tests of various kinds have been made in ninety-five counties of the state, and much good has come from the results so obtained. If you know of such work in your community, encourage those engaged in it and watch the results. It will be money in your pocket. Opportunities will be given for farm meetings to specifically study the tests being conducted. You help pay the expenses of the experiment station, and this means of spreading the station all over the state is one of its most practical lines of work.

MYSTERIOUS CATTLE DISEASE

Many reports of cattle losses are coming in, and as the cattle in most instances have been pastured on wheat, the theory seems to prevail that the trouble is in some way associated with the grazing of wheat. The veterinarians seem to suspect that the disease may be hemorrhagic septicemia, which is not necessarily associated with wheat pasture. It is possible that the germs of this disease have had a favorable opportunity for growth this spring and are appearing in the wheat fields. The disease is not very well understood by the average stockman and even the veterinary profession has no very satisfactory treatment. A preventative vaccine has been quite extensively used and some good results have been reported. This vaccine, however, is in no sense a cure.

If cattle are dying of this mysterious disease, the whole herd should be changed to new ground and sick animals should be separated from the herd. This should be done even though the preventative vaccine has been used.

Hemorrhagic septicemia is contagious, and animals dying from it should be buried deeply without even removing the hides, say the veterinarians. If the animals are skinned, every precaution should be taken to prevent the infection from being scattered or carried on

the shoes of those who work about the dead animals. Scattering straw on the ground and burning it will destroy the germs and the shoes can be scrubbed with hog dip or some other good disinfectant solution. This is a dangerous disease and should not be treated lightly. Its true character can only be determined by a careful examination by a competent veterinarian.

INSPECTION OF SEED WHEAT

One of the commendable activities of the Kansas Crop Improvement Association is its inspection of crops to be sold later as seed. This organization has a membership covering the whole state. The 1,550 growers of Kanred wheat in Kansas have been offered the coming year an opportunity to have their wheat inspected on payment of a \$2 inspection fee. Those who are not members of the association or who have not paid their 1919 dues will be charged \$2.50, 50 cents of this being credited to dues. It is required that a half gallon of the seed to be sold must be sent to the secretary of the association, this to be a representative sample of the wheat. The fields will not be inspected unless the association has a record of the source of the seed and convincing evidence that it came originally from the seed of Kanred first produced and distributed by the Kansas Experiment Station. This improved strain of wheat very closely resembles other varieties of hard wheat, and the purity of the seed sold for Kanred should be positively established. Evidence to this effect will be of the greatest value to the growers of seed and also to the man who buys seed claimed to be Kanred. An expert can determine in the field after the wheat is headed whether it is Kanred or some other similar variety.

The demand for genuine pure Kanred seed will probably continue until this wheat is widely distributed, and during this process the Kansas Crop Improvement Association can do an important work in guarding the purity of the seed so distributed. Applications for field inspections were to have been made by May 1. The first inspections will be in the fields before the crop is harvested.

FARM LABOR FOR YOU

If you need a hired man, if you have a hard job for some able bodied man, why not try to get one of the many men now being discharged from the army? By all means try to get your former help back. But if you can't do that, and if you would raise more crops with more labor, write today to J. Will Kelley, Federal Director of Labor for Kansas, 515 Mulvane Building, Topeka.

The Department of Labor does not promise you they can get you all the labor you want. But out of the thousands of soldiers who are being discharged every day, yesterday, today, and tomorrow, many of them were raised on the farm. At the camps all over the United States, the men's interest in farming is proved by the fact that books on farming, stock raising, etc., have been the most popular books in the libraries. At some of the camps extended agricultural schools were conducted.

The Department of Agriculture has a representative in each demobilization camp. He supplies to the employment bureaus the names of the soldiers who want work on the farm. If you get one of them, you are lucky. Try it.

LIVE STOCK AND CROP CONDITIONS

The native grass pastures of Kansas are coming forward unusually well this spring, considering the set-backs of recent dry summers, says Mr. Mohler in his April 15 report for the Board of Agriculture. In many localities cattle were turned on grass somewhat earlier than usual. The report indicates that the losses of live stock during the winter were about normal except in the western counties, where losses were excessive because of lack of feed and ex-

posure to storms. Those who gambled on an open winter, expecting to carry cattle through on buffalo grass without shelter and stored roughage, lost heavily, as the grass was covered with snow most of the winter.

The state's acreage of alfalfa is given at 1,228,000, and its condition is reported as 99.4 per cent. The first cutting, which will soon begin in the extreme southeastern part of the state, promises to be heavy. Grasshopper damage was reported in Western Kansas, and frost has injured alfalfa to some extent in the central counties. Gophers are becoming a real menace to many fields of alfalfa in all parts of the state.

The sowing of oats and barley was delayed this year on account of wet ground, and the acreage of each of these crops is somewhat less than last year, probably owing to the largely increased wheat acreage. The potato planting for the year is estimated at 66,000 acres, 2,000 less than last year. Already there are rumblings of impending harvest labor shortage, and also reports of serious lack of farm help in some localities at the present time.

FARM BUREAU HOME

Farmers of Cheyenne County, Kansas, are raising the money to provide a building at St. Francis, the county seat, as a home for the farm bureau organization. Cheyenne County is the extreme northwest county of the state and not very thickly settled. It is interesting to note how thoroughly the farm bureau idea is taking hold in this county.

It has been customary to have the farm bureau office in the court house and too often it has been given the least attractive location in the building or crowded into some other office. In some instances rooms have been rented and in others the commercial club of the town has furnished accommodations for the farm bureau office and such meetings as are held.

As far as we know, Cheyenne County is the first county in the state where the farm bureau organization plans for a special building. It speaks well for the progressiveness of Cheyenne County farmers. The farm bureau as an organization is of enough importance to the agricultural interests of any county to deserve suitable and adequate accommodations. The movement to provide a special building in this county was started by A. A. Reinhold, a prominent stockman and farmer of the county and a farm bureau member.

INSURING WHEAT CROP

The federal government has a stake in approximately 335,000 acres of wheat in Kansas and 290,000 acres in Oklahoma. Money was loaned last fall at the rate of \$3 an acre for the seeding of this wheat. The conditions have been very favorable through the winter even in the most western sections, and Uncle Sam has figured that hail insurance is a wise precaution. The government has arranged to take out two and a half million dollars worth of insurance on the wheat sown in Kansas and Oklahoma through the aid of government loans. Leon Estabrooke, of the Department of Agriculture, who had charge of the wheat loans for the Southwest, has been authorized to secure a blanket policy covering all loans in these two states at the rate of \$4 an acre. This policy is to be written by at least three standard companies and is to be effective May 10. The companies are to procure at their own expense notes from the borrowers to cover the premiums for the insurance and such additional insurance as they may want in their own interests. The notes are to be carried to September 1 without interest and are secured by a lien on the crop subject to the prior lien of the federal land bank.

Hail is one of the dangers every wheat grower in the western part of Kansas and Oklahoma must count on, and hail insurance is carried by practically every

grower. Hail damage is nearly always more or less local and does not cause a very serious loss in considering the wheat crop of a state as a whole, but the few who happen to be in a hail belt often-times suffer a total loss. The wise plan is to pool the risk by insurance and particularly so this year when the present prospects for a big crop are so good and there is no uncertainty about the price.

PLAN FOR PLENTY OF FEED

Now is the time to plan for next winter's supply of feed for the stock. Nothing is more detrimental to success in handling stock than to have the feed supply run low before the feeding season is over. The seasons are variable and in planning the crop be sure to allow a good margin of safety. If too much feed is grown it can be carried over, but if too little is grown the stock must suffer or be sold at a sacrifice. There is little profit in feeding stock on such scant rations as barely to keep them alive. It is far better to have a lot of feed left over than to run short.

In the western part of the state the only really safe plan is to keep a supply of feed in reserve at all times. You will never have to rush stock to market at a sacrifice in an unfavorable season if you follow this forehanded plan. We can recall many instances where the possession of a reserve of feed made it possible for a man to buy stock of his less fortunate neighbors at bargain prices. This has happened frequently where the feed was stored in a silo. It was conclusively shown last season that a kafir crop in the silo was almost twice as effective in the feeding of stock as the same acreage stored in the shock.

In planning our feed in the West and in fact in almost any section of the state the sorghums can be depended on and no live stock farmer can afford to pass up these forage crops which are so sure of making some feed in almost any kind of a season. In favorable years they often produce enormous yields and the surplus in these good years, if properly stored, can be turned into a profit in the poor year which may follow.

As to method of storage, there is nothing that equals the silo. By always planting enough feed crops to allow a good margin of safety and carrying any surplus over in the form of silage, there need never be a shortage of rough feed on a properly managed Kansas farm. The time to plan for the surplus is when the feed crops are being planted. Be sure to plant enough of the varieties best adapted to your locality so that if the season is unfavorable you will still have plenty to carry your stock through and if the season is favorable you can later prepare to carry over the surplus for the possible lean year.

CATTLEMEN MEET MAY 13

The annual experiment station meeting of Kansas cattlemen is to be held in Manhattan May 13. At this time the various feeding experiments of the winter will be closed, the results given out and the animals inspected in the feed lots. This is a most important meeting and you should by all means plan to attend if possible. The full program is given on another page of this issue.

A hopeful development of the past few weeks was the final announcement of Chairman Hurley's complete and exhaustive plan for handling the country's shipping problem. The most significant feature of the plan is that it would commit the government definitely to the principle of private ownership, with government rate supervision and government representation in the operating boards.

In no other way is it possible to produce so large an amount of good feed from an acre as by raising corn, cane or kafir, and harvesting it as silage.

PASTURE LAND IMPROVEMENT

Prevent Further Deterioration by Systematic Care and Treatment



ONLY THREE OR FOUR STATES EXCEED KANSAS IN BEEF PRODUCTION.—PERMANENCY AND EXTENT OF INDUSTRY DEPENDS LARGELY ON CARRYING CAPACITY OF PASTURES

WE HAVE given scant attention in Kansas to our \$500,000,000 investment in grass land. To every hundred acres cultivated and cropped in the state there are forty acres in pasture, or a total of 20,000,000 acres. The permanency and extent of our live stock industry depends largely upon the carrying capacity of the pastures. Four years ago President Jardine of our agricultural college, then dean and director of the Kansas Experiment Station, in an address before a live stock conference presented in a most striking manner the need of giving greater consideration to our native pastures. As a result of this presentation of facts, a systematic investigation of the native grass problems was started by the Kansas Experiment Station, the land, equipment and cattle being made available through the generosity of Dan D. Casement on his Pottawatomie County ranch northeast of Manhattan. This work has been kept up, but will be carried on even more thoroughly in the near future.

F. D. Farrell, the new dean and director, recognizes the importance of our grass land and, although new to the state, he has already given considerable thought to the problem presented and has expressed himself in some detail on the subject, urging the necessity of better preservation of the pasture lands of the state and going on to say that few people have an adequate appreciation of the importance of grass.

Only three or four other states produce anywhere near so many beef animals as Kansas produces. Its more than 2,000,000 beef cattle make a large part of their growth on grass. The future welfare and development of the beef industry of Kansas must depend in a large measure on the conservation of its pastures.

Not far from two-fifths of the 52,000,000 acres of land in the state is used for grazing. Most of this 20,000,000 acres of grazing land is native pasture. It is improbable that these vast pasture areas will be used for anything but grazing for many years to come. Most of these lands probably always will be left in grass because it is likely that grazing will continue to be the best method of utilizing them. They represent no small part of the state's agricultural wealth. Their aggregate market value at present is probably in the neighborhood of \$500,000,000. Their total value to the state through their relation to the live stock industry of Kansas is scarcely measurable.

Despite the importance of these native pasture lands, there has been a marked tendency to take them for granted, as we do the air and the sunshine. Their area is so great and their resistance to abuse and lack of care has been so strong that systematic efforts at conservation and improvement, generally speaking, have been wholly lacking. Within the last ten years, however, a change in the general attitude towards

these lands has been developing. In 1915 the Kansas Experiment Station began to make systematic investigations with a view to the conservation of the native pasture resources of the state. These investigations have been carried on for four seasons in Pottawatomie County in the northeastern part of the state on the ranch of Dan D. Casement, whose interest and public spirit have made them possible. The work is still in progress, and plans are being made for its extension to other parts of the state.

Pastures Have Deteriorated

During the last decade evidence has been accumulating which indicates that the native pastures of the state are pretty generally undergoing some deterioration. The extent of deterioration is not evident each year in all instances. Extreme climatic conditions may for a time either exaggerate or mask the degree to which a pasture has been damaged. A wet season tends to obliterate damage, and an extremely dry one may make conditions appear worse than they really are. But, generally speaking, the evidence seems to show that the stock-carrying capacity of these native pastures is declining. At the same time there have been material increases in the rentals charged for pasture lands. In the eastern part of the state where pastures could be rented five years ago for \$2 or less an acre it is now necessary to pay \$4 or more. In these sections it now costs from \$12 to \$20 to pasture a steer through a season. Elsewhere in the state comparable increases in pasture rentals have been made. Because of these facts increased attention is being focused on the pasture situation in the state. As the need for increased efficiency in cattle production becomes more acute, it is to be expected that the problems of grass land conservation and utilization will be taken more and more seriously.

Recognize Climatic Conditions

In considering the problems of improving the pasture situation it is necessary to give attention to several factors. Of these factors the Kansas climate is of outstanding importance. Periods of abundant rainfall and luscious grass alternate with periods of extreme aridity in a most erratic manner, so that the grazier is always confronted with great uncertainty. If he reduces his live stock holdings materially, so as to relieve the pressure on his grass lands, it is always possible that a wet season immediately afterward will see his pastures understocked and hence only partly utilized. On the other hand a series of favorable seasons may lead to heavier stocking, only to be followed by a long drouth and serious deterioration of grass lands, with the accompanying loss of flesh, and sometimes even loss of life, among range cattle.

Another important factor to be considered is that most of the grass lands of Kansas are covered with native vegetation. The grasses which make these

lands valuable as pasture have been growing here for centuries. In these long periods of time the native grasses have become adapted to their environment. The vagaries of the Kansas climate have no terrors for these sturdy plants, so long as the land is not too heavily grazed. If there is copious rain the grass grows lush. If clear skies and hot winds seem for a time to become a fixed climatic habit, the native grasses govern themselves accordingly. They simply bide their time, always ready to resume operations when the rains come.

The adaptation of the native pasture vegetation to its rather difficult environment makes it appear somewhat doubtful whether we shall be able artificially to introduce new grasses which can compete successfully with these hardy species. Buffalo grass, the grama, and their sturdy associates are not to be replaced without a struggle. Newcomers in the grass association are likely to be severely handicapped because of the better adaptation of the grasses which are already established. It is conceivable that the native pastures can be improved by artificial reseeding, but a large number of trials have been made throughout the western ranges, chiefly by the United States forest service, and some have been made in Kansas by the experiment station, and the results are not encouraging.

Artificial Reseeding Impractical

Instances of successful artificial reseeding are rare. They probably occur only under exceptional conditions. At any rate it seems certain that conservation and improvement of the native pastures of Kansas must be based primarily on a better understanding of the growth and reproduction requirements of the native grasses, and on a satisfaction of these requirements, rather than on an attempt to develop a new complex of plants by artificial reseeding. It is also important to remember that in native pastures we are dealing with plants which for centuries have been developing peculiarities in their present surroundings. These peculiarities cannot be changed readily, if at all. The grazier must adapt his practices to the habits of the plants rather than to expect the plants to change their habits to suit his convenience.

The more foresighted cattlemen are coming clearly to recognize that more attention will require to be paid to methods of utilizing these grass lands. Instead of taking the pastures for granted, as formerly, an increasing number of leading stockmen are casting about for better systems of grazing and more satisfactory methods of pasture management. Much interest has been aroused by reports of success which the forest service has had in improving range lands in the national forests. The methods used by the forest service include the improvement and increase of stock-watering facilities, so that the range is not overgrazed near watering places and undergrazed a few miles away

through a lack of water; systematic rotation of grazing, so that the vegetation on one area has an opportunity to recuperate while another area is being pastured; better salting methods; the adjustment of the number of stock to the carrying capacity of the range, so that overgrazing and consequent permanent damage to the vegetation are avoided; and a number of other innovations.

Not all these improvements in the national forests were made at one time. They have been in process of development for more than ten years, and have followed the acquisition of new knowledge regarding the growth and reproduction requirements of the range vegetation. The range herbage in Kansas is different, and possibly essentially different, from that of most of the national forests, and its growth habits and requirements must be better understood than they now are before definite grazing rotations can be inaugurated with a high degree of confidence. Much can be done at once, however, in the way of conservative stocking of pastures and improvement of stock watering facilities.

Burning May Reduce Production

Spring burning is an interesting feature of the native pasture situation in Kansas. The practice of burning each spring the dead foliage of the preceding year is widespread. Cattlemen have observed that the grass on burned areas furnishes earlier grazing than that on unburned areas. This is an important consideration, especially after a long winter with hay at \$25 to \$35 a ton. But the soil experts suspect that continued burning may seriously deplete the supply of organic matter in the soil, and thus eventually do more harm than good. Moreover, it is not unlikely that the early growth on a burned area may be more than counterbalanced by a greater total forage production during the grazing season on unburned land because of the protection of partial shading and lower summer temperatures which probably are enjoyed by the unburned land, due to the presence of old vegetation. It is desirable to know more than is now known regarding the possibilities of substituting heavy grazing late in the fall or clipping at the close of the grazing season, in place of spring burning. Possibly one or the other of these methods in some parts of the state would provide all the benefits of spring burning without any of its suspected disadvantages. These are some of the important questions regarding the conservation of Kansas grass lands which are being investigated by the experiment station.

Water Supply a Factor in Production

While there is much to be learned about methods of improving the pastures of Kansas, and at the same time utilizing them, it is clear that one thing should and can be done: A serious effort should be made to prevent further deterioration. The chief thing which

(Continued on Page Seven)

PRACTICE THRIFT IN CLOTHING

Thoughtful Selection and Careful Conservation Still Necessary

MANY people feel now that the armistice is signed, the word "conservation" is obsolete, but our shortage in textile fabrics is not likely to be relieved soon and there is still need for conservation.

Remember, the United States raises only two-thirds of its supply of cotton, and much has gone into the manufacture of munitions as well as equipment for the army, navy and hospital. The supply of linen is always limited and the thoughtful person will realize that we are facing a real textile shortage and it is time for us to practice thrift.

Substitutes in Wool Fabrics

For warmth, endurance, shedding dust and protection against dampness and sudden changes of temperature no other textile material can take the place of wool in cloth. This makes it absolutely necessary to have wool for army equipment. The soldier's uniform, to be of the most service, must be all wool of the best grade.

It was realized that civilians must be provided for as well as soldiers. For this reason the government regulated the amount of substitution in cloth for both army and civilian population. A greater saving is made by putting as high grade wool cloth as can be obtained into outer garments, as men's and youth's suitings and women's outer garments, because of the longer service this cloth will give. No wool should be used for unnecessary articles, and for many purposes cotton, silk, artificial silk or part wool fabrics may be substituted.

Many cotton-and-wool fabrics will endure as long as all woolen fabrics, cotton fiber sometimes being stronger than wool fiber. For underwear a cotton and woolen mixture is much more serviceable than all wool. A mixture of cotton and wool will often give the endurance and service required of a woolen dress, but will wrinkle and require more care if subjected to hard wear and exposure.

The most valuable substitute for new wool is the reworked wool, which is wool reclaimed from used wool articles, partly worn garments and manufacturer's clippings and wool waste from the mills. The better grades of reworked wool often give as good service as some grades of new wool, if not better. More reworked wool is necessarily being used in fabrics for civilian clothes than ever before, in some cases as much as 75 per cent. All wool rags should be saved, collected and sent to the shoddy mills through rag dealers for remanufacture. Reworked wool is still wool, and every particle of old wool should be used again.

Suggestions for Economical Selection

The girl or woman who spends a moderate and limited sum for her clothes should be very attractively clothed if her garments are well chosen. The person who possesses a few carefully selected, well made garments of style and material that will look well as long as the garments hold together, appears well dressed always. For planning and buying the clothing the following suggestions may be helpful:

Invoice the wardrobe, attic and clothes closet carefully before planning to buy and know what is really needed.

With income and past expenditure as a basis, made a detailed plan or clothing budget of the articles needed and anticipated amount of expenditure for the coming year, or if possible for the next three years. Twenty per cent of the total income is a high allowance for clothing.

Plan to purchase only the essentials, carefully omitting all the non-essentials.

In replacing articles, choose materials and garments which harmonize with the rest of the wardrobe. It is best to limit the number of colors.

Choose good materials for garments that are to receive hard wear, such as suits, every-day coats and dresses, shoes, stockings, etc. Know the correct cost of materials. Some materials have been fairly well standardized, are reliable, attractive, in good taste, and never go out of style; for example, wool serge, broadcloth, twilled flannel, crepe de chine, pongee, China silk, gingham, percale, flaxon and dimity.

One good garment outwears two cheap ones and will be presentable throughout that period of service.

By IRENE TAYLOR, Home Demonstration Agent, Shawnee County

Avoid novelties and fads. Buy standard materials.

Estimate amounts before buying.

Buy clothes after the rush season, as advance styles are always expensive.

See that clothes satisfy your needs rather than your wants.

Buy clothing that is conservative in style, good in color and line, appropriate to its intended use and suited to the individual. Such garments can be worn as long as the materials last without making over.

Plan to save on summer clothes so as to have plenty for more expensive winter garments.

Select simple underwear, saving both the initial cost and cost or additional labor of laundering.

Select garments that will serve two purposes if possible, but do not buy two hats, coats or dresses that serve the same purpose.

Every woman who demands good material, conservative styles and good workmanship helps to develop industries that turn out high grade products in every line. Demand regulates supply.

Increased Service of Clothing

All clothes should be taken care of systematically, as their period of en-

durance depends entirely on how they are treated. For the proper care and repair of clothing the following suggestions are made:

Simple garments require less care than elaborate ones.

Woolen clothes—suits, coats, dresses and skirts—should be brushed regularly.

Proper hangers should be obtained for all outside garments so that they will retain their shape. Hang them away from dust when not in use.

Cotton covers will preserve the freshness of waists, dresses and coats worn only occasionally. Old nightgowns are excellent for this purpose.

All spots should be removed immediately, since they can be taken out easily and successfully when dust has not been allowed to settle in them.

Sponging with hot vinegar will make the "shiny" part of a coat or skirt less noticeable.

Made-Overs from Left-Overs

Now is the time to save textiles and correct all habits of wastefulness. Study the possibilities of partly worn garments and do not discard them. Frequently touches of embroidery braid, rows of buttons or other means of simple trimming can be used to cover up defects in

garments as well as add to their attractiveness. Study materials, color, patterns and design. Learn to remodel old garments and waste nothing. It is economy to make over—

When materials are appropriate in pattern, color and texture for the purpose for which they are intended;

When material is good enough to warrant making over attractively;

When the cost of new material is saved;

When the work of making is not greater than the cost saved in material;

When materials on hand can be utilized, leaving new goods for other purposes. Any person should be proud to wear the clothing she has the ingenuity and skill to remodel into attractive and modish garments.

From a woman's worn suit may be made a misses' suit, a one-piece dress, a dress for a girl, or a boy's suit. A wash skirt may be used for a middie blouse, waist, romper, petticoat or aprons. The good parts of a white or silk waist will often make collars, cuffs, a vest of contrasting material, or a corset cover. A man's shirt may be remodeled into a blouse for a boy, a bib apron or a sport shirt, collarless and sleeveless.

Uses for Discarded Materials

All textile materials represent an investment of money; that is, the cost of raw material, labor of manufacture and transportation. The scarcity and high cost of material makes it the duty of every woman to assist in this particular form of conservation. There is a definite use for all textiles in the most worn-out condition. If any of this material is destroyed, it must be replaced from another source.

Woolen, cotton and linen rags have many uses in the household and in commerce. Worn-out parts of knit underwear, stockings, etc., make rag rugs, stove cloths, dustless dust cloths and mops and fillings for hot dish pads. Worn-out sheets, pillow cases and parts of muslin underwear, after laundering, may be cut into strips and rolled for bandages or rag rugs. Small and irregular shaped pieces make dressings. Pieces of silk make the best cloths for polishing furniture. Parts of old linen table cloths may be recut for table napkins, small pieces being sterilized and used for bandages. Old blankets, if all wool, may be sent back to the factory and for a small sum recarded, respun and woven into new blankets. Scraps of woolen and cotton material should be packed separately and sold, the wool for the manufacture of shoddy and the cotton for the manufacture of paper. Old newspapers are valuable in paper mills.

The Clothing Budget

System is the keynote of economical dressing. It has been discovered during the present situation that sane thrift is especially lacking in woman's dress. It is obvious to all thinking people that economy in the purchase and upkeep of the wardrobe is possible only when the expenditure is controlled by a clothing budget. If the planning of clothing expenditures was more uniformly adopted, men and women would not only know how to spend well but also how to dress well.

The advantages of a budget are:

It promotes saving. The passing desire for a certain article may have gone by the time the budget is adjusted to permit the purchase.

If one needs to count the cost of each garment, more thought is apt to be put upon the selection of clothing.

One shops with a definite aim, knowing exactly what one needs and how much one can spend.

It prevents waste of money at so-called "bargain counters," and the buying of goods marked "at reduced price."

It will aid one to distinguish between "first class quality" and high price, so that one will have a knowledge of the correct value of materials.

It will teach that economy does not mean getting the most for as little money as possible regardless of the suitability or character of the goods.

Very few people, however, have adopted even the simplest form of a budget. In these times of high prices and extra calls for money, most systematic planning is absolutely necessary, to make both ends meet.

Preserving Eggs in Water Glass

WITH eggs going into cold storage this year at the prices now prevailing, high prices can be expected during the season of low production. Preserved eggs cannot be sold except as stored eggs, but you can be sure of a supply for home use and may find it profitable to sell the fresh eggs next winter and use the preserved supply.

The best time to put down eggs for winter use is in the spring and early summer. Eggs are not only plentiful and lower in price at this time, but the quality of eggs produced during April, May and June is better than at any other time during the year. Fresh eggs properly preserved may be kept for eight to twelve months in excellent condition. The whites will be slightly thinner than new-laid eggs, but they will have a better flavor than cold storage eggs.

The two things to be guarded against are the spoiling of eggs by the growth of bacteria within the shell and drying up by evaporation through the shell. Spoiling in either of these ways is prevented by covering the shell with a substance that will prevent the entrance of bacteria and the evaporation of water.

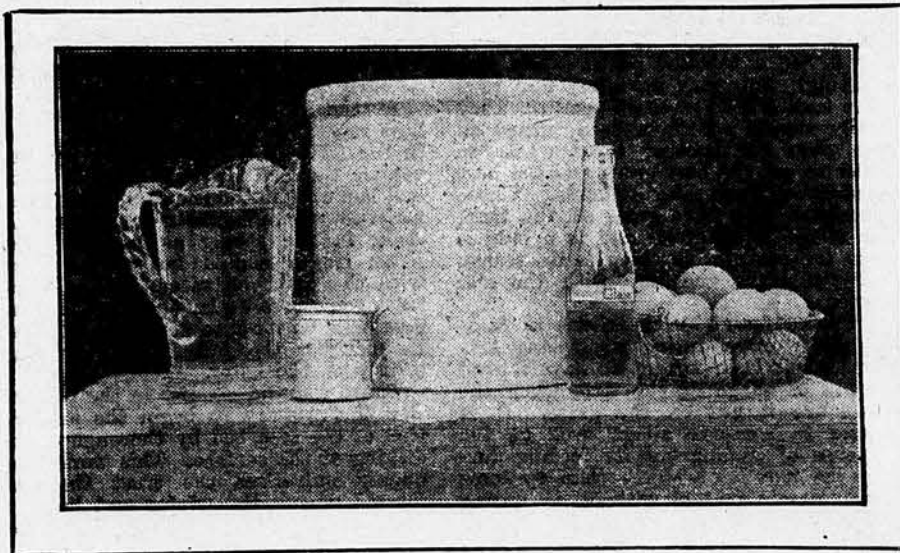
The most convenient and reliable substance to use for this purpose is sodium silicate, commonly known as water glass, which may be purchased at any drug store for 35 or 40 cents a quart. One quart of liquid water glass diluted with nine quarts of water sterilized by boiling, or one pound of water glass in the powdered form thoroughly stirred into two gallons of sterilized water,

gives the proper strength. Two quarts of the solution will cover a gallon of eggs.

Select a five-gallon crock or jar, wash it thoroughly, scald to kill any bacteria that may be present and allow it to dry. Do not wipe. Heat a quantity of water to the boiling point and allow it to cool. When the water has cooled, measure out nine quarts, place it in the jar and add one quart of the liquid water glass, stirring thoroughly. Then place the eggs in the solution. This amount of solution will cover about fifteen dozen eggs. Fresh eggs may be added from day to day, but they should remain at least two inches below the surface of the water glass. The jar should be well covered to prevent evaporation and set in a cool, dry place. Heavy wrapping paper coated with vaseline or paraffin placed over the top of the jar and tied down makes a very good cover. If the liquid evaporates too much, boil more water and when it is cold pour in enough to replace the water that has evaporated.

Do not remove the eggs until they are to be used. The pores will be closed with the water glass. If they are to be boiled, make a hole in the large end of the egg to let the air escape as it is heated and the eggs will not crack in boiling.

Only fresh clean eggs should be preserved, and they should be put into the solution each day as gathered. Under no circumstances should badly soiled eggs be used for preserving. If put into the jar dirty, they will spoil, and if they are washed, the natural protective covering is removed.



GENERAL FARM AND STOCK ITEMS

Something of Interest for All—Overflow from Other Departments

ONE of our readers asks if kafir has an established standing on our markets as a grain. No one need hesitate in planting kafir for fear the grain will not be marketable. There was a time when this objection might have been offered. The Kansas City Board of Trade has quoted prices and dealt in kafir for a number of years. For a long time the sorghum grains were not recognized on our central markets, and that detracted from their value as standard cash grain crops. The demand for kafir grain is likely to increase, and we can confidently look forward to the kafir belt ranking with the corn belt in the production of grain. The time will come perhaps when we will take as much pride in the fact that the very best of the kafir belt is found in Kansas and not think so much about maintaining our right to be considered as belonging in the corn belt.

Look Out for Water Supply

Nothing is of greater importance on a live stock farm than an abundant water supply. One of the first points to consider in selecting a farm to be used largely for live stock production is whether it has a thoroughly dependable water supply. A failure in the water supply always brings disaster where much stock is kept. In the dry years probably more cattle are rushed to market because of failing water in the pastures than lack of feed. On many a farm in Eastern Kansas during the past few years lack of dependable water has been a most discouraging factor in the attempt to handle live stock. In the big pastures of the state the first consideration is water for the cattle, for without the assurance that there will be plenty of water throughout the season it is risky to stock the pastures.

The live stock farmer must make provision for water for his stock or suffer the consequences, and there is hardly a year when we do not at some time have a dry spell. To be sure of water, deep wells must be sunk or streams dammed creating reservoirs, storage tanks must be provided, and the time to do these things is before the pinch comes. A good pumping engine or windmill is a necessary equipment on the live stock farm and it is difficult to get along without well built cement tanks, such as can easily be built. The same forms used in building silos are often used in the building of tanks.

Shaping Young Fruit Trees

The branches of a fully grown tree are but the twigs of yesterday, says Harold Simonds, extension horticulturist, in discussing the training of newly planted fruit trees. Mr. Simonds thinks the adage, "As the twig is bent, the tree's inclined," must have been formulated by an experienced orchardist. Keep this in mind as your young trees are growing and you can shape them almost as you will. Sometimes when two-year-old trees are purchased you must accept the main framework of branches already established. This is one of the disadvantages of a two-year-old tree. Occasionally bad crotches are developed from the junction of equal-sized branches that are so weak that a heavy crop in later years will split them apart and ruin the tree. Mr. Simonds suggests Nature's own processes for averting this danger. In a leaflet of the extension division he says:

"If two twigs are twisted about each other and kept from unwinding, the pressure of one against the other as they swell in growing results in their uniting in a natural graft. Thus where a bad crotch is developing we can make such a graft by twining together twigs on each arm of the crotch. Choose two that grow toward each other from opposite branches and carefully wind them together so as not to break them. If the twist seems likely to become undone, tie each twig to the other by a bit of string around the tip. These entwined twigs will soon unite and create a living link that will remove all pressure from the weak crotch. It will save a tree that is otherwise foredoomed to destroy itself.

"Sometimes it is impossible to get twigs properly located for such a graft.

If there is but one, you may accomplish the same result in a different way. You can graft this twig into the opposite branch. Make a straight, smooth, beveled cut on the twig at a point where it will reach over to the branch. Make an inverted T incision in the bark of the branch and force the beveled twig end into this incision as in bridge grafting. Tack the twig or otherwise secure it so that it is held tightly in place and plaster with grafting wax."

Between Grass and Hay

Every year complaints come to our attention of the failure of stock to do well in the early spring period before the pasture is strong enough and again in the fall before it is time for regular winter feeding to begin. It is the season known to live stock men as "between grass and hay," and comes in spring and fall of each year. They are trying seasons for the feeder. This is the time when dairy animals shrink in milk and the feeders of beef cattle know there will be a shrink in flesh. They are discouraging periods and are always accompanied with a loss unless they can be bridged by either liberal feeding of good hay and grain until there is good grass, or with good silage, for the silo really makes these seasons of little consequence to the stockman.

In the spring of the year when hay gives out and the grass is just starting, many men turn their cows on pasture

for several days after the cows are on the pasture, for the grass lacks body and is very light in nutriment at this time.

"Good feeding was never so important as now. Stock are exceedingly high and feed is high, therefore the investment is great and it requires skill and knowledge to make a profit with such expensive foods. Certainly times are ripe for the silo. There is no excuse for forty-dollar hay if we would but save the feed we have at hand. The consuming public has a right to complain if we do not use the best known methods of economic production. Make this between grass and hay season a thing of the past and cheapen your production and increase your profit. This means a silo."

Kafir and Cane Seedbed

J. L. R., Osborne County, asks for suggestions on the best methods of seed bed preparation for kafir and cane. The best soil condition is one in which the soil particles are thoroughly crushed and pulverized through the whole seed bed. A soil full of lumps and clods is not a proper seed bed for any kind of a plant. The roots cannot penetrate the clods, and the plant food they contain is not available for the growth of the plant.

It is apparent that the careful preparation of the seed bed has a most important bearing on the future growth and development of the plant. Listing

layers of the soil. When the planting is done with the lister in the ground that has been given this preparation the whole seed bed from top to bottom is in a fine mellow condition. A great many weeds have been destroyed since the first work of the disk germinates the weed seeds and they are later killed either by another disking or by the lister when the crop is planted. With such preparation much better stands are secured, the crop makes a stronger growth early in the season and the work of cultivating is easier. It is not unusual to find that yields of both corn and grain sorghums have been increased fully a third by this early preparation.

Treating Sorghum for Smut

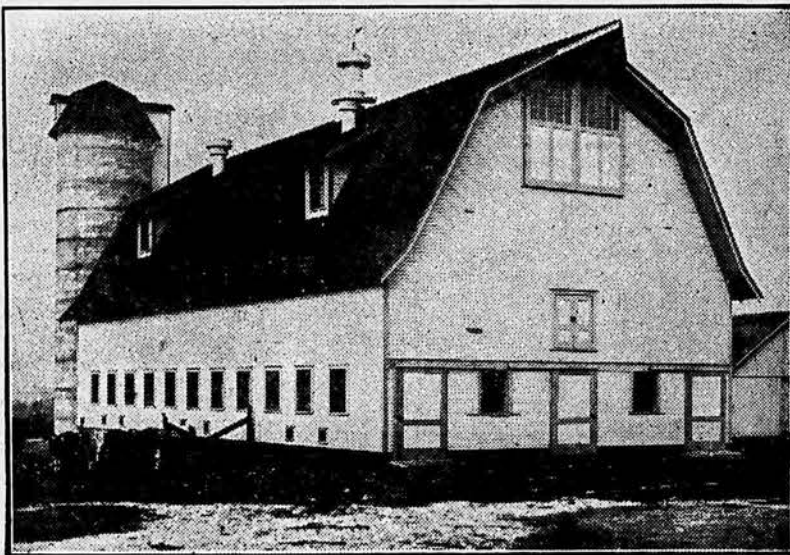
We have been asked if treating kafir or cane seed with formaldehyde will prevent smut, also for details of treatment. All of the sorghums except milo and feterita are susceptible to the kernel smut. Prof. L. E. Melchers, plant pathologist at the agricultural college, estimates that this smut causes an average annual loss of one million dollars in Kansas. This is taking into consideration the destruction of the grain and the reduction of the feeding value of the whole plant. The formaldehyde treatment is a positive preventative, and the seed of all sorghums of the susceptible varieties should be treated before planting unless you are positive it came from a clean field and has not been infected in handling. The solution used is made by mixing a pint of full strength formaldehyde with thirty gallons of water. The seed to be treated can be placed in burlap sacks or dumped directly into the solution. If sacks are used, they should not be filled more than half full in order to allow for the swelling of the seed. The sacks should be moved about in the solution until the seed is thoroughly wet, and the grain left in for one hour. It should then be drained and spread out to dry, being raked so as to hasten the drying process. It is always best to plant the seed as soon as possible after it is treated. Unless it is thoroughly dried, it cannot be stored without molding. If the directions are carefully followed, this treatment will not materially injure the vitality of good seed, but it is a good plan to make a germination test after the seed has been treated.

Corn in Wide Rows

M. T. N., Rooks County, asks if there is any merit to the plan of growing corn in wide rows. This is a method that has been followed with some degree of success, both in the growing of corn and kafir. Probably the most frequent cause for poor yields of corn is lack of moisture. It takes an immense amount of water to produce a corn or kafir crop. Tests have shown that on good soil a corn plant will evaporate through its leaves approximately 300 pounds of water to each pound of dry material produced in grain and stalk, and in addition there is a large amount of moisture evaporated directly from the soil without passing through the plant. This loss is greatest where high winds prevail during the summer season.

Planting in wide rows is nothing more nor less than using the moisture from twice the usual area for a single row of corn. It reduces the number of plants to the acre, and it can be easily seen that if a single plant evaporates a gallon of water daily, an acre containing, for example, 2,500 plants, might produce some grain, while the results with twice as many plants to the acre would be a total failure.

In Oklahoma some very suggestive tests were made of the wide-row method several years ago. These were conducted in co-operation with the Frisco railroad. The corn was planted in rows six feet apart, and later the vacant space was planted to cowpeas. The peas were not planted until the corn was practically made. At Wellston, Oklahoma, the wide-row planting gave yields of fifty-four bushels to the acre, while ordinary spacing gave but forty-three bushels to the acre. At Okmulgee, Oklahoma, a field of seven-foot rows yielded twenty-eight and three-fourths bushels of corn to the acre and four



MODERN DAIRY BARN ON FARM OF A. H. PIERSON, BOURBON COUNTY.—THIS SECTION IS RAPIDLY BECOMING A DAIRY CENTER

and the result is likely to be a loss in milk production. The grass at this time is watery and thin, it looks fine and green from a distance and the animal is led on to every corner of the pasture. Like a mirage in the desert, the lake of grass is always ahead. The use of silage during these trying seasons is the surest way to avoid the trouble so common.

"This spring the season between grass and hay is the most serious I have ever seen," says A. L. Haecker, of Nebraska, who has long been an enthusiastic advocate of the silo. "Hay in this country is \$40 a ton and pastures are just starting. Few men have hay and they have turned their stock on pasture. They really should not have been turned on the grass for another three weeks in order to get the best grass and the best production from the animals. Those who have silos have grass all the time, for silage is grasslike and is a substitute for pasture, so there is no season between grass and hay with the silo owner."

"I have found by experience in feeding dairy cows during the spring season that it is important to have a good supply of silage at the time when the cows are turned on the grass. It is better to conserve silage even at the expense of cutting out its feeding during the month of March than to force the animals to go without it during April. The feeding of silage should con-

has been regarded as the best method of planting corn and the grain sorghums through the sorghum belt. This has been generally adopted by farmers. However, many fail to recognize the fact that thorough field preparation in advance of the listing is necessary to obtain the best results. Many a crop of corn, cane or kafir has been planted with a lister in hard, weedy ground. Such use of the lister does not give a proper seed bed. Those who have been most successful in growing the grain sorghums and corn have adopted the practice of either blank listing the fall before or thoroughly disking the ground as early in the spring as possible.

At the Hays Experiment Station the best results have followed blank listing in the fall. This blank listing has prevented the soil drifting in the winter and has caught the snows and thus held moisture where it was most needed. As early in the spring as possible these lister ridges should be worked down with the disk cultivator. When heavy rains come before planting time the harrow may be used to conserve moisture. In planting the fall listed ridges are split with the lister.

Those who did not list in the fall will find it necessary to begin the preparation of the seed bed by thorough double disking of the surface. This work thoroughly pulverizes the crust that has formed during the winter and helps to conserve moisture stored in the deeper

bushels of peas, while corn planted in the usual manner yielded practically nothing, and the average yield for the whole county that year was but five bushels to the acre.

These demonstrations were continued another year, twenty-four farmers handling 113 acres according to the plan. On these farms the wide-row corn averaged 21.7 bushels to the acre, with an average yield of 10.6 bushels of peas, while similar land on the same farms planted in narrow rows produced but 12.4 bushels to the acre.

This method of planting commends itself to sections where the moisture is limited and where the soil has become very much depleted in fertility. In sections where wheat is grown this method of planting rowed crops is being quite generally advocated in preference to a summer fallow as a preparation for wheat.

What Crop for Silage?

Corn has long been considered the standard silage crop. A good many beginners with the silo have been led to believe that corn must be grown for silage, because most of their information has come from those whose only experience with silage has been in the states to the east and north. Now that the value of silage made from cane or kafir has been thoroughly demonstrated, it has become almost entirely a matter of tonnage yield here in Kansas. Even in the sections of our state best adapted to corn, cane will outyield corn in tons of silage to the acre.

It is just as essential that the right varieties of cane be selected as it is to grow corn of varieties adapted to your section. Varieties of cane that do well in Eastern Kansas are not adapted to Central or Western Kansas. East of a line through the western edge of Jewell County, through Barton and Commanche counties, Kansas Orange and Sumac cane will give best results on the bottom lands and the richer uplands. Red Amber is recommended for the poorer uplands in this section. West of this line and as far as Norton County on the north and Stevens on the south, Red Amber and Western Orange are the best varieties to grow. West of this line these same two varieties can be grown with fair results, and in addition Freed's sorghum. The Black Amber also does well, but is not as good a feed cane as the varieties mentioned above.

At the Hays Experiment Station Red Amber cane has produced an average yield of 9.5 tons to the acre for the years 1913 to 1917, inclusive. The lowest was 3.1 tons in 1913, and the highest 18.2 tons in 1915. Dwarf black-hulled white kafir produced an average tonnage yield to the acre of 6.5 for the same period, while corn produced but 3.4 tons to the acre. At the Manhattan Experiment Station, Kansas Orange cane produced an average of 18.02 tons to the acre for the five-year period of 1912 to 1916, inclusive. Blackhulled kafir produced 11.88 tons to the acre for the same period, and corn 11.8.

Silage for Young Stock

The ability to grow and develop young stock properly is one test of a successful live-stock farmer. Failure at this point means failure all along the line. It is largely a matter of feed and management. A. L. Haecker, of Nebraska, relates an instance coming under his observation showing the results of using silage in feeding young stock. A breeder called his attention to the value of silage in rearing and developing farm animals by comparing the animals found on two farms which he operated, one equipped with silos and the other without silos. "I was greatly surprised," said Mr. Haecker, "to note the difference in size and quality of the young stock that were liberally fed silage with alfalfa hay. They were not only larger but were in better condition. This convinced me that the silo should be used more for this purpose, and I have since that time often found examples to prove the value of silage for young growing animals. The breeder of pure-bred stock, whether dairy or beef cattle, has much need for silage in the economic development of his herd. The cost of the product, whether beef or milk, is the principal item of expense for the breeder to consider and in this age of high priced hay and grain, the cost of the ration becomes the most important item and the one on which depends the profit for the breeder.

"Any man who keeps ten head or more

of cattle will find a silo an economic equipment on his farm. It is necessary for nine-tenths of our milk and cream producers to grow and develop their young stock and the silage which furnishes the succulent ration to the milk cows will also form the best kind of ration for the young stock.

"Liberal feeding is the only profitable kind, for there is no money in half-feeding stock. An animal must be boarded and if only a boarding ration be given there is no profit but really a loss. It is that part of the ration which is over and above the food of maintenance, or board, from which we derive our profit. On this basis an animal will earn money in proportion to the amount of food she consumes, and this is largely true. Good feeding is supplying animals with their required nutriment at the lowest possible cost. Any one with plenty of money can feed an animal well, but to feed an animal well and economically requires a knowledge of the subject. The two great food elements which are necessary are known as carbohydrates and protein. Silage is our cheapest form of carbohydrate and clovers, or the legumes, furnish our protein in the cheapest forms. Young stock, from the time they are weaned, will make a splendid growth and development on silage and clover or alfalfa hay without any grain, and this ration is a cheap one and within the reach of practically every breeder.

"The silo will prove of great economy not only in the growing and developing of young stock but also the growing of colts or maintenance of idle horses. Silage has been likened to pasture and it is very properly considered from this viewpoint when used for the growing and developing of all our live stock.

Pasture Land Improvement

(Continued from Page Four)

suggests itself in this connection is to discontinue overstocking where it is now practiced. A part of this same procedure in some parts of the state, especially where the pastures are large, is to improve the water supply. This can be done in many instances by providing more wells or reservoirs, so that the vegetation near the present watering places will not be overgrazed while more remote parts of the pastures are undergrazed. A re-location of the well or other watering place is advisable in a large number of pastures in order to distribute the grazing more uniformly throughout the inclosure.

One of the greatest difficulties lies in the uncertainty as to what the stock-carrying capacity of a pasture will be in any given season. A pasture may carry its stock satisfactorily up to the time when the drouth gets very severe and again after the drouth is broken, if overgrazing does not take place during the dry period. This fact suggests the desirability of providing a "safety valve"; in other words, supplementary feed to be used when the vegetation in the native pasture is threatened with serious damage.

Provide Supplementary Feed Crop

Kansas is not lacking in supplementary feed crops. Certain of the sorghums can be used effectively as silage and fodder. Sudan grass, which is itself a sorghum, can be used for hay or advantage can be taken of its high carrying capacity as a pasture crop. In many parts of the state sweet clover, especially on the bottom lands along the creeks and rivers, can be pastured advantageously or even used for hay. Then, of course, there is alfalfa, the greatest of all forage crops, which does well even in dry years in Western Kansas, on the bottom lands.

Advantage can be taken of one or more of these crops to relieve the pressure on grass lands when the latter are undergoing a drouth. To do this requires an expenditure for preparedness, but it is a good investment when it prevents damage to the native pastures which may require years to repair, and the loss of cattle flesh which does serious injury to the individual bank account and to the beef industry. To grow and use these supplementary crops requires that the cowman become, in part, a farmer. This combination is not unknown in the Sunflower state. It is rather common in Eastern Kansas. The prospects are that with the growing need for greater productive efficiency in the beef industry the tribe of cowman-farmers will increase.

The Policy of The Standard Oil Company

(Indiana)

IT IS the policy of the Standard Oil Company of Indiana to conduct its business in fairness to all: to the consumer, to the employe, to the stockholder and to the competitor.

To deal fairly with the consumer by manufacturing the best petroleum products, distributing them widely and selling them at lowest prices.

To deal fairly with the employe by giving him steady work, compensating him liberally, and as far as possible, insuring him against unemployment.

To deal fairly with the competitor by standing squarely on the broad, general principle of live and let live—by maintaining open prices and never deviating from them.

The Standard Oil Company knows that, by reason of its refining and distribution facilities, and the service it renders to customers, it has no need to disorganize the market to get its fair share of the business. That is all it expects and wants.

It is because of adherence to these general policies that the Company has prospered, and the Directors have been able to give a creditable accounting of their trusteeship to the 4623 stockholders who have money invested in the Company.

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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.

High Wool Prices

They're paying big money for long, even wool—but not for second cuts. Shear with a machine and get all the wool in one clip. Get a Stewart No. 9 Ball Bearing Machine. Gets 15% more wool and does away with second cuts. Ideal for flocks up to 300 head. Only \$14. Send \$2—pay balance on arrival. Write for catalog.

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Starting Dairy Herds With Calves

THERE are several ways to get started with a herd of good dairy cows. If you have plenty of money you can go out and buy a few foundation cows and a high class herd bull and have a herd in a comparatively short time. Buying young calves from good dairy cows is a cheaper and a very satisfactory way of starting a dairy herd. Ordinarily the method advocated if you are limited in capital is to grade up common cows with a pure-bred bull, requiring a number of years of patient selection and breeding—a period sometimes discouraging to an energetic dairyman. Frequently this causes those who want results too quickly to change breeds.

It is expensive to buy mature dairy cows that are free from disease, that have good breeding and show desirable productive ability. Often, especially in new dairy sections, a beginner buys mature dairy stock without being properly prepared to care for it, and many discouragements follow. To a great extent most of this difficulty can be avoided by buying good grade or pure-bred heifer calves from herds of well established milk production. In some dairy regions it is a common practice to sell the heifer calves for veal. These calves, while only grades, are usually from good producing ancestors, and carry a productive ability much greater than common cows.

The buying of such calves to start dairy herds has been tried in several states with excellent results. Of course, the cost of small calves is much less than mature animals, and the danger of disease is also greatly lessened. In general, shipping is simpler. Calves may be shipped by express at from two to four weeks of age, depending upon the distance, with good results if they are properly cared for upon arrival.

In buying it is important to deal only with dairymen. Do not buy from men who purchase calves at stock yards to ship back to the farmers, because it is not always possible to determine the breeding of the calves; and calves that are physically unfit may be shipped.

In some cases shipments are made C. O. D., which enables the buyer to see the calves before paying for them. A man who sells calves in this way makes a special effort to please his customers. It seems desirable, especially in sparsely settled sections, that more attention be given to perfecting a satisfactory system of distributing dairy calves.

Advantages in buying small calves as a foundation for a dairy herd might be summarized as follows: Small investment, better breeding, greater freedom from disease, smaller loss in case of accident, raising calves stimulates interest and in consequence causes better care to be taken of live stock, and finally a satisfactory herd can be established more rapidly than by grading up common cows.

Ten Years of Progress

From an average annual butter fat production per cow of 215 pounds to an average of 280 pounds is the record of ten years of progress made by the oldest cow-testing association in the United States. Do cow testing associations pay? Such a record made by dairymen who have consistently carried on the cow testing association work for ten years furnishes ample evidence that it pays and pays well. Records from hundreds of other associations which have been in operation for shorter periods tell the same story.

Association members say: "I am making three times as much net profit from twelve cows as I formerly made from eighteen." "Through the work of the association I have saved one-third of my feed bill." "The association has returned more than 500 per cent on what it has cost me." "I am perfectly astonished at the results. I thought I had a very good herd of butter cows, but have found many of them worse than worthless."

The first cow testing association in the United States, referred to above, began its work in Newaygo County, Michigan, in 1906. The cows of its members were undoubtedly considerably better than the average, for the average butter fat production for the first year was 215 pounds per cow. It increased the second year to 220 pounds. It rose the third year to 253 pounds. The next year it passed the 260-pound mark, and it has been higher than that every year since. The average production of the last three years was sixty pounds of butter fat above that of the first year. How much the average of the first year exceeded that of the year before the work began is not a matter of record, but doubtless the first year of association work showed some striking gains. Even aside from those, however, and counting only the sixty pounds of butter fat, the gains are still far above the cost of testing.

The war temporarily stopped the work of the Newaygo County Association. At the end of the tenth month of the eleventh year the tester then at work resigned his position to fight for his country on the battlefields of Europe. The association will be reorganized as soon as a satisfactory tester can be found.

The estimated average butter fat production of all the dairy cows in the United States is about 160 pounds a year. From eighty yearly summaries of cow testing associations, including the records of 26,710 cows, their butter fat production averaged 245 pounds a year. That is more than 50 per cent above the country's average production, and a large part of the gain may fairly be attributed to association work.

From every point of view, therefore, the cow testing associations seem to be successful. Measured by the strict rules of the investigator they have made good; tried out in the field of practical experience they have proved true; weighed in the balance of public opinion they have not been found wanting.

Market Types of Beef Cattle

In the April bulletin of Armour & Company eight degrees of quality in beef cattle are enumerated and described in some detail with a range in prices of from \$20.45 down to \$5.50 per hundred-weight. These eight classes of cattle are described as follows:

Prime Heavies—Two years and up, not often under two years. Weigh 1,350 to 1,500 pounds. Can get all of the best or prime cuts from them.

Medium Natives—Bullocks weighing from 950 to 1,400 pounds (generally run from 950 to 1,200 pounds). These usually come in the class of cattle fed in the neighborhood of sixty to a hundred days.

Fair—Cattle that carry a fair amount of flesh and have had some grain and showing a general covering of fat. Weigh generally from 850 to 1,100 or 1,150 pounds, although their flesh and fat are more of an item than the actual weight.

Common—Cattle that have not been cared for. Have had no special feed and have lived on whatever they could get.

Canners—Just thin cows with a certain amount of age. Some thin, light steers from the Southwest—Texas, Oklahoma, and Arkansas used also, but generally cows.

Baby Beef—Anywhere from 800 up to 1,150 pounds. Young, of excellent quality, and long fed, well finished cattle.

Grass-Fed—Graded as "westerns"; good, medium and fair. They do not have quite the conformation that the native cattle have and the meat is coarser, due to the immense amount of exercise they get.

Bulls—In a class to themselves. Used for bologna and other sausages and for some special trade.

The most expensive thing in the world is getting even, and it isn't worth the price.

IF A BOY selects a pure-bred pig, feeds him from a self-feeder, gives him plenty of water, and a sanitary place to sleep, he is going to make money.—LEO SCHNEIDER, Doniphan County, State Pig Club member who fed two pigs last year at a profit.

Arresting Alien Enemies of Live Stock

ACCORDING to calculations made by the Bureau of Crop Estimates, on the first of January American farmers had 21,500,000 horses, nearly 5,000,000 mules, more than 23,400,000 dairy cows, in excess of 44,000,000 other cattle, about 50,000,000 sheep and over 75,000,000 hogs. This is a greater live stock population than we have ever had.

The quarantine division of our Bureau of Animal Industry has as its task the protection of our vast investments in live stock from foreign diseases. The average citizen probably has never heard of the quarantine division of the Bureau of Animal Industry of the United States Department of Agriculture. Yet the men of this service do not work in secret. They have offices in our ports, in various towns and cities on the borders and at the big live stock markets, and some men are stationed in foreign countries that ship much stock to our shores.

Even before the Bureau of Animal Industry was organized, in 1884, there was a quarantine division for the purpose of keeping out animal diseases. In the beginning it was a part of the treasury department. Men interested in American agriculture in those days saw the danger that was coming with better transportation and more world trade. They also saw that as our live stock population became denser disease would spread more rapidly and more extensively and would be harder to eradicate.

The men who have charge at the various stations of the quarantine division are trained veterinarians and they are particularly well equipped to recognize the plagues that are most dangerous to our industry. Outside of the staff in Washington there are around forty trained men who devote all their time to watching the condition of the four-footed animals brought to our shores or over our borders and enforcing the regulations. Many more men in the Bureau of Animal Industry give part of their time to this work.

Once in a while it is deemed necessary to look up conditions in countries that ship stock to this country and experts on diseases are sent there, usually for only a short time. However, a representative is kept in England continually and formerly two were kept there. This is on account of the large volume of business in live stock between the British Isles and this country. The inspector in the London office of the Bureau of Animal Industry makes an inspection of all live stock shipped to this country and tests all cattle for tuberculosis. He also keeps informed as to outbreaks of disease in the islands. The British government to be sure always notifies this country of any outbreak of a dangerous disease, but a special representative furnishes more detailed information and often earlier.

For a period of two years the bureau had a veterinarian studying live stock conditions in Argentina, Uruguay and Brazil. Men have also been sent to Colombia, San Domingo, Honduras and to Porto Rico before it became a part of the United States.

The chief of the Bureau of Animal Industry through the quarantine division has control over practically any kind of animal that a man might desire to import. Most domestic animals such as cattle, sheep, horses, mules, asses, swine, goats and dogs are mentioned in the regulations, but the chief may take action regarding any kind of domestic or other animal. Menagerie specimens must go into quarantine so that we may be sure they are free from any infectious disease that could be transmitted to our domestic animals.

The men whose duty it is to keep out contagion have no small job on their hands. Among other things, they must look for indications of glanders and farcy, dourine, distemper or strangles, epizootic lymphangitis, anthrax, contagious pleuropneumonia, splenetic or Texas fever, tuberculosis, foot and mouth disease, rinderpest, surra, variola, foot rot, scabies, hog cholera, swine plague, swine erysipelas. Some of these diseases are well known in this country. Some of them—for instance, foot and mouth disease and contagious pleuropneumonia—have bothered us occasionally but have been wiped out. It was an outbreak of the latter disease in our cattle in 1884 that resulted in the establishment by Congress of the Bureau of Animal Industry.

Extreme precautions are taken against the possibility of introducing the more

dangerous diseases that are not present in this country. Contagious pleuropneumonia, a very destructive disease of cattle, exists in the herds of Australia and in order to be sure that our herds do not get that contagion again we prevent absolutely the importation of cattle, sheep or swine from that continent. New Zealand, however, is free from the contagion and importations are permitted. We get some sheep from those islands.

When foot and mouth disease breaks out in this country, as it does occasionally, the infection usually comes in some roundabout way from continental Europe or from South America. Therefore, the guardians of our live stock say that no ruminants or swine can come to our shores from those countries.

In Asia and Africa there is a terrible plague known as surra. It kills great numbers of animals and no cure is known for it. The introduction of such a disease would be a calamity to our breeders and farmers and, therefore, the government takes no chances. All domestic animals from those countries are barred from our ports. Wild animals for menageries and zoological parks can be brought in under special permission and thorough examination and quarantine.

The only animals that can be brought to this country from the Philippine Islands are monkeys for use in experimental work in laboratories. They must be brought over in cages closely screened against flies and they must be shipped at once to the laboratory that is to use them.

There is a specially careful examination of dogs at the quarantine stations. Sheep dogs, and this includes German police dogs, collies and shepherds, from many foreign countries are the hosts for a certain tapeworm which is one stage of a parasite that causes gid or staggers in sheep, a very destructive disease.

Not only are precautions taken with

the animals themselves, but hay and bedding are carefully examined and disinfected. Ships and cars that are used for these animals must be cleaned and disinfected according to regulations that have been carefully worked out. It is indeed a hardy and a slippery germ that can get through the lines of defense. The animals are examined in the country of origin before they are shipped, then again on the boat before they are landed at our port, again on land and finally after they have been kept in quarantine for periods varying with the kind of stock and its origin. When it is discovered by an inspector that animals are affected with a contagious disease or exposed to it they are either prevented from being landed or are put in special quarantine. In case of certain diseases the animals are appraised and slaughtered.

The same officials who are so careful to prevent the entrance of dangerous animal plagues into this country also keep watch on animals going out so that the United States may not be guilty of infecting the herds and flocks of other countries with the diseases we have here. All cattle exported for breeding purposes are tested for tuberculosis by bureau veterinarians. Certain countries such as Canada, Argentina, Brazil and Uruguay, require that there shall have been no hog cholera nor swine plague within five miles of the farm on which the shipment originated within six months preceding the day the hogs were shipped. Just to be sure our export stuff is free from cholera we make this rule apply to all breeding swine exported.

For a long time continental Europe would not receive any of our cattle except for immediate slaughter, giving fear of disease as the reason. France has now taken down the bars and a shipment of one hundred dairy cows is now being assembled at the port of New York by the French High Commission for export to France. These animals will be tested for tuberculosis before

leaving this country.

The men who have been doing this important part in protecting the health of the nation have an excellent record behind them. It is very seldom that an animal having one of the more dangerous contagions ever sets hoof upon our shores even in a quarantine station. Since the beginning no dangerous outbreak has been traced to a break in the wall maintained by the quarantine division. Since the organization of the Bureau of Animal Industry, of the several epizootics of foot and mouth disease not one has been traced to infection that came through on live animals.

The more our live stock population grows and the more valuable the herds and flocks, the greater is the need for the best men that can be found for this first line of defense. One little slip might possibly destroy all the industry had gained by years of careful breeding.

Selling \$5,000 Bull for \$50

When a certain farmer a few years ago sold his registered Holstein bull to his local butcher, no records had been made by any of the bull's daughters. Within a year eleven of the daughters freshened at the ages of two and three. Records were made of milk and butter fat production, and to the astonishment of everybody the average milk production was 14,502 pounds and the average butter fat production was 573 pounds.

But before these records were available the bull was dead and his hide had become leather. Because there were no records, a \$5,000 bull had been sold for \$50. The cow testing association tests the dams and daughters, and the bull association makes it practicable to keep a bull until his daughters have been tested. These two associations would have saved that bull.

Registration alone can not guarantee production. Registered dairy bulls should be backed by good production records. Without record backing a bull may be very well bred, but there is nothing to prove it.

The Allover Overall

All the protection you need, with all the freedom you want

This overall gives you the greatest amount of protection, with the most freedom and comfort. It covers and completely protects your clothing, yet leaves your arms free. It fits better than a one-piece overall and is more

comfortable in hot weather. To be had in either khaki or heavy-weight Eastern indigo-dyed blue denim. Made roomy and strong like all Oshkosh B'Gosh garments. Our guarantee—They must make good or we will.

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

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

AGENTS WANTED

AGENTS—MASON SOLD 18 SPRAYERS and Autowashers one Saturday; profits \$2.50 each; square deal; particulars free. Rusler Company, Johnstown, Ohio.

AGENTS—MAKE A DOLLAR AN HOUR. Sell Mendets, a patent patch for instantly mending leaks in all utensils. Sample package free. Collette Manufacturing Co., Dept. 103, Amsterdam, N. Y.

SEEDS

WHITE BLOSSOM UNHULLED SWEET clover seed. E. S. Fox, Larned, Kansas.

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.

FOR SALE—GERMAN MILLET, \$3.00; Black Amber cane, \$2.00. Sacks free. F. M. Kellie, Wauneta, Neb.

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, Kincaid, 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.

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

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 SLING—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.

SAVE ALFALFA—DEATH TO GOPHERS—No poison, no traps, get them all. Cost a trifle. Send \$2 for recipe to W. A. Fitzsimmons, 334 N. 41st, Omaha, Neb.

DEHORNING.

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

CATTLE.

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

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

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

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

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.

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

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.

DELICIOUS EXTRACTED HONEY ON approval quality guaranteed. Thirty pounds, \$7.35; sixty pounds, \$14.90; 120 pounds, \$29.75. Sample, 15c. Wesley Foster, Producer, Boulder, Colorado.

REAL ESTATE.

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. Cliver, Santa Fe Land Improvement Company, 405 Santa Fe Bldg., Topeka, Kansas.

WANTED

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

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. Irish Shepherds. Pups, grown dogs, and brood matrons. Large descriptive list, 5c. W. R. Watson, Box 128, Oakland, Iowa.

Real Estate For Sale

HOME FARM, 320 ACRES

Out 6 1/2 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

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

T. B. GODSEY - EMPORIA, KANSAS

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

Modern Rural School Building

Fairview is one of the best equipped school houses of Reno County, being built during the summer of 1917 at a cost of \$4,500.

It is a two-story building of brick and stucco. The walls are made of dark rough brick trimmed in a smooth red brick. The porches and gables are finished in stucco.

The upper story is divided into a study room for the pupils, a small manual training room, library, and cloak rooms. The study room is large enough to accommodate forty students. It is finished with the adjustable table and seat desks.

The basement is equipped with a play room, coal room, and furnace room. Indoor toilet facilities are also provided in the basement. The play room is fixed so that it may be used by the community for neighborhood meetings and dinners.—R. A. OSBORNE.

A faded silk waist or hair ribbon may be easily brightened up by washing in a small amount of warm water with one of the soap dyes on the market, then rinsing in cold water and pressing while still damp. A white waist that is turning yellow may be colored any delicate tint in the same way. Or it may be washed in the usual way and crepe paper of the desired shade used to color the rinse water. For darker colors this method does not seem to give as good satisfaction as the boiled dyes.

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.

Discarded Winter Clothing

BEFORE winter underwear, hose, petticoats, etc., are laid away for the summer, they should be carefully put in order, necessary patching and darning done and missing buttons replaced, so that the garments will be ready for use when needed. Some pieces too badly worn for further mending may be laid aside to make over for children at your leisure. If they are not good enough for this, cut them up into wash cloths, dust cloths or mops, or discard them at once. Do not store old clothing that is useless. It is always in the way, collects dust, increases fire hazard and may furnish a convenient refuge for mice or moths.

Do not allow a supply of old worn-out shoes to accumulate in your attic or closets. If they are worth salvaging, have them mended or half soled, the heels built up or buttons sewed on when you lay them aside for lighter summer footwear. The ones you will never wear again may as well be put in the kitchen stove at once. If you are not too hard on heels it will probably pay you to have the worn layers of the heels removed and replaced by rubber heels, instead of having them built up again with leather. When the uppers are good enough to warrant, it sometimes pays to have the heels removed entirely and a new pair of leather heels put on. This is particularly true if you are the unfortunate possessor of a pair of high-heeled shoes which may not have been uncomfortable when worn occasionally as dress shoes in their better days, but are certainly not adapted to every-day wear by a woman who must be on her feet most of the time. While low heels cannot be substituted for high ones without ruining the shape of the shoe, French heels can be very satisfactorily replaced by military heels, which are a little lower and, because of their broader foundation, much more comfortable.

"Weighted" Silks

The nature of the silk fiber is such that it will absorb large amounts of foreign material. Textile chemists have made the most out of this property in order to meet the demand for cheap fabrics of good appearance, without regard to their wearing qualities. That they have been highly successful in their efforts is proved by the fact that much of the silk which we buy contains more of the foreign material, technically known as weighting, than of the silk itself. Among the substances used for this weighting are salts of tin, iron, and aluminum, sugar, gelatin, glue, and various dye stuffs. Small amounts of these are not harmful, they may even be beneficial, but large amounts very seriously impair the wearing qualities of the silk. This may be because the fibers have been so stretched as to be weakened or because they are worn through by the sharp edges of crystals of mineral salts.

To determine the exact amount of weighting in silk requires careful methods of analysis beyond the reach of the housewife, but its presence may be detected by burning a sample of the fabric. Silk itself burns similarly to wool, giving as a residue a gummy ball. If, however, large amounts of weighting are present, there remains after ignition a blackened brittle fabric retaining the shape of the original sample.—EVELYN G. HALLIDAY, Colorado Agricultural College.

Protection from Moths

The best protection against moths is the old-fashioned treatment of cleanliness, air and sunlight. If it is possible to have a window in the closet, this is an ideal arrangement. In any case the closet or wardrobe should be thoroughly cleaned before clothing is stored in it, and should be kept clean through the summer.

Garments should never be stored unless they are clean. Brush under lapels,

braids, and the top of hems. Turn cuffs down and brush, turn pockets wrong side out and brush. Leave no place for the larvae or eggs to hide. After a thorough brushing, woollens should be aired and exposed to sunlight.

If the garments are not already stocked with eggs or larvae, such repellents as tobacco, camphor, naphthalene cones or balls and cedar sprigs or chips will help to keep the parent moths from coming to deposit their eggs as long as the odor is strong. As the odor weakens, the protection decreases. If moths or their eggs are already present, these odors will have no effect on their development.

Woolen garments and furs may be stored in boxes or trunks lined with the heavy tar paper used in building. Tared paper moth bags may be purchased which are of some value in keeping moths out. Careful wrapping in brown paper or newspapers before packing away is also helpful. A large paste-board box with a strip of wrapping paper pasted around the edge so as to seal up the box completely gives excellent protection if no moths or eggs are present when the garments are stored. Articles that are not wrapped and packed away should be exposed to air and sunlight occasionally through the summer and examined for evidences of moths. If any are found, a thorough brushing should again be given to remove any eggs that may have been deposited.

Living Things Appeal to Child

We live in a world of living nature. What do we know of the grass under our feet, the trees of forest and plain, the insects whose apartment houses fill the dead twigs, the birds which nest in the woods and fill the world with music, the stars overhead, clouds, rain, hail, wind, mist, dew, or the sun which shines over all? The study of nature has to do with living things or things that are doing something. The stars are twinkling and making light. The snowflakes are falling, making patterns and bringing us messages from fairyland.

The birds are hopping, flying, singing, building nests, laying eggs and feeding their young. The worms are crawling and plowing the ground and so helping to make things grow. Pussy is our pet; she is good company and will play with us and purr when happy. The dog is our friend; he guards the house at night and will run, jump and do tricks for us, bark, howl and scratch. His body must be made strong so he can chase away his enemies as ours, jump for his food, bark for joy, growl when danger is near, and scratch to dig holes in which to bury his bones. Why is his nose so pointed and his eyes so far back? Where does he live? How many legs, ears and eyes has he?

The fruit, vegetables and flowers are all growing and vari-colored. The fruit and vegetables are good to eat and help us grow. The flowers are fragrant and beautiful.

Nature study will help the child to make simple, truthful observations upon the things about him, to appreciate the beautiful in them, and to express his thoughts in his various activities.

The habit of accurate observation is very important. Some authority has said that there are few errors which arise from wilfulness, compared to those which arise from want of care and exactness in noticing things quite easily noticeable.

In the study of nature, do not try to teach too much in one lesson. Notice first the characteristic features and qualities of whatever is under discussion. Let the child examine the object if possible. Remember that children are more interested in what things do than in their form.

Let the child examine a little plant, seed and all. Lead him to observe that it does something; it pushes its roots

down and its stem up; it eats and drinks, breathes, sleeps and wakes. It makes things: leaves and flowers, seed and fruits. Incidentally, notice the form and color that these activities give to each individual plant.

Nature study need not be dull or difficult; it provides plenty of life and action. It is mostly our own interest that is dead, or our senses that need quickening.

Grasp a few fundamental principles, and nature study will become a daily delight.—MRS. BERTHA LEWIS, for United States Bureau of Education.

Like a Cradle Rocking

Like a cradle rocking, rocking
Silent, peaceful, to and fro,
Like a mother's sweet looks dropping
On the little face below,
Hangs the green earth swinging, turning,
Jarless, noiseless, safe and slow;
Falls the light of God's face bending
Down and watching us below.

And as feeble babes that suffer,
Toss and cry and will not rest,
Are the ones the tender mother
Holds the closest, loves the best,
So when we are weak and wretched,
By our sins weighed down, distressed,
Then it is that God's great patience
Holds us closest, loves us best.

Oh great heart of God! whose loving
Cannot hindered be nor crossed,
Will not weary, will not even
In our death itself be lost—
Love divine! Of such great loving
Only mothers know the cost—
Cost of love, which, all love passing,
Gave a son to save the lost.
—Saxe Holm.

"Increasing Home Efficiency" is a very readable book by Martha Bensley Bruere and Robert W. Bruere. Some of the subjects taken up are: What is the home for, the basis of efficiency, first aid to the budget maker, home administration, the cost of children, launching the child, savings and efficiency. A careful study and summary of the budgets of seventy-six families of different oc-

cupations and varying incomes is given in the appendix, showing the relative amounts expended for food, shelter, clothing, advancement, etc. The authors have not lost sight of the fact that the economic problems of the farm home are not identical with those of the city home, and both receive their share of attention. This book is published by the Macmillan Company, 66 Fifth Avenue, New York City. Price, \$1.50.

Making Cream Lace of White

When shopping for cream lace one often finds a desirable piece of white. Miss Charlotte E. Carpenter, of the Colorado Agricultural College, tells how this may easily be changed to cream:

"Mix a teaspoon of ochre powder with one teaspoon of cornstarch. Put the mixture in a box with the lace which has been unfolded and put in loosely. The box must be large enough so there will be plenty of room. Fasten the cover on and shake vigorously for a minute, then remove the lace and brush out the surplus of powder.

"If a deeper cream is desired, a larger proportion of ochre should be used."

Persistent Stains

Mildew may be removed from white goods by soaking the stained portion in a solution of lime and water. The material should not be allowed to remain in this solution longer than necessary to remove the stain, as the lime is injurious to the goods.

Rust or iron stains will often yield to treatment with lemon juice and salt. After being rubbed with the cut surface of a lemon, then sprinkled with salt and laid in the sunshine for a little while, the stain can often be washed out in clear water. If it is too deeply seated to be removed in this way, oxalic acid should be applied and the stain washed out at once in clear water. Oxalic acid acts quickly and is too strong to be left on the material.

If an ink stain cannot be removed by soaking in milk or washing in gasoline, use hydrochloric acid, working quickly, as it is very strong. Be sure to neutralize any acid which remains after the stain is removed with ammonia.

Neither lime, oxalic acid nor hydrochloric acid could be used on colored goods without taking out the color.

Renovating Floors

If a wooden floor that has been stained or varnished begins to show signs of wear, apply a good floor varnish, containing a color pigment. It will thereafter probably look as good as new.

If the floor is covered with linoleum or oilcloth, the same kind of a varnish will lengthen the life of the covering, and if it has begun to show signs of wear and the design or pattern is wearing off, a coat of buff floor or deck paint will renovate it and give a very pleasing and durable finish. This will save the cost of a new floor covering unless the linoleum or oilcloth is actually wearing through.

Boston Baked Beans

If you don't "know beans," says the United States Department of Agriculture, try them and find out how good they are. Since beans are lower in price, they make a good substitute for more expensive foods in other places than Boston. To most New Englanders "Boston baked beans" means beans cooked in a covered bean pot for a long time, which are very moist when done and which have been seasoned with a little molasses.

Here is a recipe which is such an old favorite that it needs no recommendation:

Soak a quart of beans and cook until tender, but not so soft that they will fall apart. If desired, a quarter of a pound of salt pork or a small piece of bacon or even a piece of bacon rind may be cooked with them. When tender, add half a teaspoonful of mustard, a tablespoonful of sugar, or two tablespoonfuls of molasses, and a tablespoonful of salt. Bake in a covered dish for one and one-half hours, leaving them uncovered for the last fifteen minutes so that they will brown on top.

Different Ways to Cook Eggs

Eggs in Nest

Carefully separate the white from the yolk of an egg. Beat the white until stiff and pile lightly on a nicely trimmed slice of toast. With a spoon make a depression in the top of the white and slip the egg yolk into it. Place on a

baking dish in a moderate oven and when the white has become a golden brown, remove and serve. It may be seasoned to taste.

Delicate Eggs

1 1/2 tablespoons butter
1/2 teaspoon pepper
1/2 teaspoon salt
1/2 cup milk
6 eggs

Break eggs into a bowl and beat only enough to break the yolks. Add the seasoning and milk. Pour mixture into the upper part of a double boiler in which the butter has been melted. Continually stir and scrape from the bottom of the pan, allowing to cook until of a creamy consistency.

Shirred Eggs

Cover the bottom and sides of a small baking dish, preferably an earthen one, with fine bread or cracker crumbs. Break each egg into a saucer and carefully slip it into the dish. Cover with seasoned buttered crumbs and bake in a moderately hot oven until the whites are firm and crumbs are a golden brown.

Creamed Eggs

1 cup milk
4 hard boiled eggs
1/2 teaspoon salt
2 tablespoons butter
2 tablespoons flour
1/2 teaspoon pepper

Separate whites from the yolks of the hard cooked eggs. Make a white sauce and add to this the yolks which have been pressed through a strainer. The

whites may be cut into small pieces and also added to the sauce. Creamed eggs are particularly nice when served on toast.—Bulletin, U. S. Department of Agriculture.

Salmon en Casserole

Cook one cupful of rice. When cold, line baking dish with it. Take one can of salmon and flake. Beat two eggs, one-third cupful of milk, one tablespoonful of butter, a pinch of salt and a dash of paprika. Stir into the salmon lightly, cover lightly with rice. Steam one hour, serve with white sauce. This may also be made with barley instead of rice.—Circular, Bureau of Fisheries, U. S. Department of Commerce.

The manager of a co-operative creamery in South Dakota has offered to install steam vats where the women may blanch and process their materials to be canned. This will enable the women of the community to do their canning under most favorable conditions with practically no expense for fuel. One woman will serve as overseer. The home demonstration agent is now ascertaining the wishes of the women preparatory to arranging the details.

Most housewives know that stale bread or cold biscuits may be freshened by dipping lightly in cold water and heating in the oven.

A New Way to Sell Real Estate

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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

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

RINGLET BARRED ROCK EGGS—PEN stock, \$3 and \$3 fifteen; range, \$1; parcel post paid. R. Sonnenmoser, Weston, Mo.

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

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

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.

HIGH-SCORING BARRED ROCK EGGS, fifteen for \$3, best pens; others, \$1.50-\$6.00 hundred. Woods Duroc Farm, F. F. Wood, Wamego, 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.

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

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

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

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 36 years and are extra good layers. Eggs, \$3 per fifteen, from five pens; \$5 per fifteen from first pen. Expressage or parcels post prepaid. Thomas Owen, Route 7, Topeka, Kansas.

BIG BONED IVORY WHITE ROCKS, bred ten years, won five ribbons at 1918 state show and seventeen ribbons, including three firsts, in sweepstakes at Kansas State Fair. Farm range flock eggs, \$6 per hundred; select pens at \$2, \$3 and \$5 per fifteen. Minnie Clark, Haven, Kansas.

TURKEYS.

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

BRAHMAS.

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

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

SEVERAL BREEDS

EGGS—BUFF ROCKS, BUFF LEGHORNS \$1, fifteen; \$5 hundred. Albert Nagenast, Jewells, Nebraska.

S. C. REDS AND WHITE ROCKS—Raise your prize winners from our reliable baby chicks and hatching eggs. We guarantee safe delivery and good fertility. Reliable Poultry Farm, University Place, Neb.

LARGE FIVE POINT SINGLE COMB Brown and Rose Comb White Leghorn eggs, \$5 hundred; Barred Plymouth Rock eggs, \$6 hundred. All pure-bred. Satisfaction guaranteed. Oak Grove Poultry Farm, Dannebrog, Neb.

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. W. LEGHORNS, HEAVY WINTER laying strain. Eggs, \$1.50, fifteen, \$4 fifty, prepaid. Steever, K-671, Bridgeport, Neb.

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, 108 for \$5; chicks, 15c. Mrs. C. C. Cole, Levant, Kan.

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

SINGLE COMB GOLDEN BUFF LEGhorn eggs, 100, \$8; postpaid. Walter Ax-tell, Astell, Kansas.

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

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

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

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

FOR SALE—EGGS FROM PURE-BRED White Leghorns, Brown Leghorns and Buff Rocks, \$6 per hundred. Mrs. P. S. Ralston, Mankato, Kansas.

PURE-BRED R. C. B. LEGHORN EGGS, Kulp strain, \$5 per fifty, \$8 per hundred. Few choice cockerels, \$3 each. Mrs. Gris-wold, Tecumseh, Kansas.

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

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

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.

WYANDOTTES.

WHITE WYANDOTTE EGGS FROM MY prize winning stock, always took first, \$3.50, forty-eight; \$5, seventy-two. Valley View Poultry Farm, Concordia, Kansas.

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

WHITE WYANDOTTES—THE WORLD'S greatest laying strains. Eggs, fifteen, \$2; 100, \$9, prepaid. Farm raised. Females mated with males from trapnested hens with annual records of 227 to 272 eggs. H. A. Dressler, Lebo, Kansas.

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.

SINGLE COMB RED EGGS, HUNDRED, \$5; fifteen, \$1. Large dark red layers. Mrs. F. B. Smith, Route 2, Lawrence, Kan.

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

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

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

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

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

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

MINORCAS.

S. C. BLACK MINORCA EGGS FOR SET-ting. Extra layers. Eggs from pen birds, \$2 per fifteen eggs. Mrs. E. G. Sharp, Pro-tection, Kansas.

LANGSHANS.

BLACK LANGSHAN EGGS, 100; CHICKS, 20c. Mrs. G. W. King, Solomon, Kansas.

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

SCORED BIG BLACK LANGSHANS, laying strain, guaranteed. Cockerels, pul-lets, 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 EM-gal 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.

HELPFUL POULTRY HINTS

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

ONE early hatched pullet is as profitable as two late-hatched. A farmer who keeps records of egg production states that he received more eggs from sixty early-hatched pullets last winter than he did from an equal number of late-hatched pullets in the two preceding winters combined.

Give Chicks Good Care

"A few baby chicks well taken care of will give better results than double the number that are neglected," says H. R. McLean, of the Colorado Agricultural College.

"Keep the hen and chicks free from lice and in comfortable quarters, otherwise look out for losses.

"Feed the baby chicks a little feed after they are 36 to 48 hours old. More chicks are killed the first three days after hatching by over-feeding than during any other period.

"If you keep the body growing you will find no chicks with drooping wings. Skim milk that is allowed to clabber furnishes the best animal protein for the growing chick. Give it to them slightly warm and start them out on it, the lactic acid helps clear the intestinal tract and a lot of bowel trouble is avoided by its use. If fed in connection with bread crumbs, johnny cake or a good commercial chick feed, you can give them all the milk they need without harmful results.

"Don't change from sour skimmed milk to sweet or butter milk, but feed one kind to avoid throwing them off their feed.

"Chicks should have access to good, clean, coarse sand, or the fine commercial chick grit."

The poultry house should be built as low as possible without danger of the attendants bumping their heads against the ceiling. A low house is more easily warmed than a high one.

In the location of the poultry house, if it is impracticable to select a soil that is naturally dry it should be made dry by thorough underdrainage.

Earthen Jars, Egg Banks

Resurrect the old earthen jar from the cellar. Filled with waterglass it possesses magic akin to Aladdin's wonderful lamp. Eggs put in it now can be taken out next fall and winter when high prices return, and it is not unlikely they will double in price in that time.

Poultry specialists say that there will be a great increase in the number of eggs preserved this season as compared to former years. This is of benefit to the producer and to the consumer alike. It benefits the producer because it stimulates the consumption of eggs which usually falls off during the period of highest price, and it benefits the consumer by making it possible for him to have good, wholesome eggs for liberal

FOR SICK CHICKENS

Preventative and curative of colds, roup, canker, swollen head, sore head, chicken pox, limber neck, sour crop, cholera, bowel trouble, etc. Mrs. T. A. Morley of Gallien, Mich., says: "Have used Germozone 17 yrs. for chickens and could not get along without it." Geo. F. Vickerman, Rockdale, N. Y., says: "Have used Germozone 12 years; the best for bowel troubles I ever found." Frank Sluka, Chicago, Ill., writes: "I have lost but 1 pigeon and no chickens in the 8 yrs. I have been using Germozone." C. O. Petrain, Moline, Ill., says: "I never had a sick chick all last season." Bernard Horning, Kirksville, Mo., says: "Cured my puniest chicks this spring." Ralph Wurst, Erie, Pa., says: "Not a case of white diarrhoea in 8 yrs. I raise over a thousand a year. Good also for rabbits, birds, pet stock."

GERMOZONE is sold generally at drug and seed stores. Don't risk a substitute. Write for Omaha postpaid in new 2c, 5c and \$1.50 sizes. Poultry books free.

Geo. H. Lee Co., Dept. 415

OMAHA, NEB.

Income from Farm Hens

Mrs. J. M. Garvey, who lives near McCune, keeps a flock of Barred Plymouth Rock hens. She showed me her record of sales for 1917 and 1918, giving amounts taken in for eggs and poultry during these two years. In 1917 she sold \$199.68 worth of eggs, and \$127.68 worth of poultry. And in 1918 the eggs brought \$228 and the poultry sold amounted to \$103.30. This was an average of \$329.33 per year.

Mrs. Garvey hatches about 300 chicks each year, and raises all she can of them. During the summer the young chickens furnish poultry for table use for the family, and by October the young stock is reduced by sales of culled and cockerels until only fifty hens and fifty pullets are left. These are kept for winter laying. Then, after eggs for hatching have been supplied, the flock is reduced to sixty hens. Usually the flock is so reduced about the first of April. Also, after no more eggs are needed for hatching, the roosters are either sold or penned away from the hens, and infertile eggs are sold during most of the year.

Usually the chickens eaten by the family will pay for the feed which must be bought.—J. E. PAYNE, Oklahoma.

Grange Notes

At the last session of the State Grange of Kansas a resolution was passed urging the discussion of similar subjects in all of the subordinate granges at the same time. There are many great issues of national importance which should be thoroughly discussed in our local meetings. Let us take them up one at a time and become acquainted with the facts and not be influenced by some catch phrase or funny story which does not illustrate the topic under discussion. For instance, if your grange is discussing the League to Enforce Peace, get the proposed constitution of the League of Nations and see just what it is, see if the covenant requires the sending of an army to foreign lands, see if there is any way in which a nation can be forced into war against its will. The establishment of the League of Nations is one of the great questions before us and its discussion should take place in every Grange.

In all our discussions let us not forget ourselves. Farmers should discuss the whys and wherefores of the farm. One of the things of vital importance is soil fertility. H. J. Waters has repeatedly stated that a large percentage of the Kansas farms have used up their stores of soil fertility. Fertility is what makes a farm valuable. You may talk hard-surfaced roads and baths in the farmhouses till your hair is gray and still not prevent your farm from getting into the condition of many farms in the East which can be bought for less than the buildings and improvements originally cost. You ask why. Some of these places have baths and hard-surfaced roads right at their doors. It is not roads and improvements that make the farm valuable, but fertility. I am persuaded that we are running after the "gilded balls" and failing to see that what we need is permanent agriculture.

125-Drybread Herefords at Auction - 125 Independence, Kansas, Tuesday May 13



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

Cows include three-year-old to mature cows with calves at foot or bred to Roehampton 1st, Judge Fairfax, a grandson of Perfection Fairfax, Stanway Disturber or Gay Lad. Heifers are bred to one of the above good bulls. Yearling heifers are the get of Roehampton 1st, Gay Lad and other noted sires. Herd bull prospects, such as Stanway Disturber, a son of Bright Stanway, and out of a Disturber dam. Britton Stanway, another Stanway prospect that will give a good account of himself. Perfection Stamp by Harris Prince 16th, out of a Perfection bred dam. Balance include eleven two-year-old bulls, ten 12 to 18-months old bulls, a lot of farm and range bulls in good condition. Independence is easily reached, being on the Santa Fe and Missouri Pacific railways and connected with the Frisco and M. K. & T. by interurban lines. Write today for illustrated catalog. Address **Samuel Drybread & Sons, Elk City, Kansas** AUCTIONEERS—REPPERT AND NOBLITT.

HOLSTEIN CATTLE.

HOLSTEIN CATTLE.

POLAND CHINAS

POLAND CHINAS.

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

HOLSTEINS!

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

T. R. Maurer & Co.
TORIA - - - KANSAS

GOLDEN BELT HOLSTEIN HERD
Herd headed by Sir Korndyke Bess Hello 165946, the long distance sire. His dam, and dam and dam's two sisters average over 1,200 pounds butter in one year. All bulls of serviceable age for sale.

E. BENTLEY, MANHATTAN, KANSAS

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

ARNWOOD FARM, WAUWATOSA, WIS.

BUTTER-BRED HOLSTEINS
Three choice registered Holstein bulls, by light service, and some bred to a 32-pound sire.

P. MAST, SCRANTON, KANSAS

The farmer will call for the other improvements as he can afford them. The leading topics for grange discussions should be "Permanency in Agriculture."

So-called daylight saving is another object for discussion. We farmers are patient. Recently I drove old Bossy up the middle of the afternoon to milk. I could attend a little doin's in town. The flies were bad, she affectionately drew her tail around my neck a time or two and brushed the dirt out of my eyes. I said, "So, Bossy," and unwound her tail from its affectionate embrace. Sooner was this done than she proceeded to stick the brush of her tail in my milk and, raising it gently proceeded to draw out one of my ears. Right here silence seemed to cease to be a virtue, and after using up my Sunday School vocabulary without regard to grammatical expression, the reasons for the old cow's actions finally began to dawn on me. She was not used to being milked in the middle of the day. She had little respect for the ideas of the town man who seldom hears the robins sing in the morning and is unable to change his lazy habits without setting the clock ahead. Old Brindle has more sense of nature than those who think they can change the time God gave us by an hour to the day. Would it be better for these people to change their habits instead of changing the time, making the middle of the day come at the middle of the forenoon and the night before sundown? Well, I didn't know. The evening programs in town will have to be scheduled an hour later to get Yours Truly to attend. A kind of time will encourage community centers in the country where farmers can attend meetings by sun time and will eventually amount to a boycott of the farmers of all meetings in town.

REGIER'S HOLSTEINS

Registered bulls ready for service and bull calves, out of good producing dams. Sire: Sir Rag Apple Korndyke De Kol and Duke Ormsby Pontiac Korndyke.

G. REGIER & SONS, Whitewater, Kansas

BRAEBURN HOLSTEINS

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

H. B. COWLES, Topeka, Kansas

Quality Holstein Heifer Calves

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

SPREADING OAK FARM, Wisconsin

Holstein Calves

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

W. C. Kenyon & Sons

Holstein Stock Farms, Box 33, Elgin, Illinois

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

run by the daylight-saving time.

Only 10 per cent of the farmers of the country are organized. Keep this in mind. It is this 10 per cent that will accomplish things for the farmer. All the petitions that are presented to Congress for farmers are originated by representatives of farm organizations. The National Grange has headquarters at Washington, and the Grange representative there is acting on the instructions received from granges all over the country. If you want to be heard, get into an established organization.

ERNEST MCCLURE, Greeley.

Cattle Feeders' Meeting

Tuesday, May 13, is field day at the Kansas Agricultural College for Kansas cattle feeders. This is an annual event. These meetings held at the close of the season's experiments in live stock feeding have been productive of a closer co-operation between the feeders and live stock farmers of the state, and the experiment station men, whose constant aim is to serve the man out on the farm. This year one of the features of the meeting will be a report of the results of feeding calves and two-year-old steers in the feed lots of the experiment station.

The baby beeves have made an average gain of three pounds daily at the end of ninety days and incidentally it is being found in this test that silage made from sorghum that did not mature grain has practically the same feeding value, pound for pound, as silage made from corn that did not mature grain, and the sorghum made 2.6 times as much silage to the acre as the corn.

The two-year-old steers have been fed in four different lots, the steers in each lot receiving a different ration. At the end of ninety days the steers of Lot 1, receiving corn, alfalfa hay, and three



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

AUCTIONEERS.

LIVE STOCK AUCTIONEER

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.

pounds of linseed meal daily, had made an average daily gain per steer of 3.25 pounds, costing at the rate of \$21.57 a hundred pounds. The steers of Lot 2, receiving corn, alfalfa hay, three pounds of linseed meal daily to the steer, and sorghum silage, made an average daily gain of 3.61 pounds for the same period, costing \$18.38 a hundred pounds. The steers of Lot 3, receiving only half the amount of corn consumed by the steers of Lots 1 and 2, alfalfa hay, three pounds of linseed meal daily and sorghum silage, made an average daily gain of 2.89 pounds, costing \$17.82 a hundred. The steers of Lot 4, receiving alfalfa hay, three pounds of linseed meal daily and sorghum silage, but no corn, made an average daily gain of 3.29 pounds at a cost of \$11.42 a hundred.

These cattle will have been on feed 110 days when the meeting is held May 13, at which time they will be appraised by buyers from four different markets. Those in attendance at this meeting will have an opportunity to see the cattle and note the appearance of the steers in the various lots.

In addition to the report of the experimental results of the feeding tests, there will be addresses by representatives of the Bureau of Markets of the Department of Agriculture, live stock exchanges, live stock associations and producers.

The Saddle and Sirloin Club, an organization consisting of animal husbandry students, is preparing to serve a luncheon to three thousand visitors in the live stock judging pavilion. The detailed program follows:

Morning session, 10 o'clock, at Auditorium. George Donaldson, Greensburg, Kansas, president Kansas Live Stock Association, presiding.

Address of Welcome—W. M. Jardine, president Kansas Agricultural College, Manhattan.

Address—Louis D. Hall, Bureau of Markets, United States Department of Agriculture, Washington, D. C.

Address—Ed Houx, president Kansas City Live Stock Exchange, Kansas City, Mo.

Address—J. H. Mercer, State Live Stock Sanitary Commissioner and secretary Kansas Live Stock Association, Topeka, Kan.

12 o'clock—Luncheon, served by Saddle and Sirloin Club, Live Stock Pavilion.

1:30 p. m.—Afternoon session, Auditorium. Address, "The Problems of the Cattle Producer and the Banker," J. C. Hopper, Hutchinson, Kansas.

Address, "Live Stock Production in the Future," H. J. Waters, editor Weekly Kansas City Star.

Address, "Relation of Live Stock Production Problems to Marketing," F. D. Farrell, Dean of Agriculture and Director of Kansas Experiment Station, Manhattan.

Review of the live stock experimental work—C. W. McCampbell, Professor of Animal Husbandry, Kansas Agricultural College, Manhattan.

Inspection of experimental and breeding herds.

JOHNSON'S BIG-TYPE POLAND CHINAS

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

V. O. JOHNSON - AULNE, KANSAS

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

25 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

E. 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.

JAS. A. THOMPSON - HOLT, MISSOURI

LANGFORD'S SPOTTED POLANDS

Bred gilts, tried sows, herd boar prospects.

T. T. Langford & Sons, Jamesport, Missouri

ANGUS CATTLE

Dietrich's Aberdeen-Angus

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

GEO. A. DIETRICH, CARBONDALE, KAN.

Cherryvale Angus Farm

Is offering six choice Angus bulls ranging in age from 9 to 11 months. All sired by Roland L. No. 187220.

J. W. TAYLOR

Route 8, Clay Center, Kansas

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HEREFORD CATTLE

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RED POLLED CATTLE

Mahlon Greenmiller, Pomona, Kansas.

POLLED DURHAMS

C. M. Albright, Overbrook, Kan.

Horn Dorset Sheep

H. C. LaTourette, Rte. 2, Oberlin, Kan.

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. Ela, Valley Falls, Kansas**

It is not generally advisable to tamper with carburetor adjustments, but in operating a tractor or stationary engine it is not difficult to learn how to regulate the supply of gas and air so as to get the best results. You can make carburetor adjustments while the engine is running under actual working conditions. This is impossible in operating an automobile. By experimenting with the gas and air adjustments you can finally reach a point where the engine gives a maximum power with a minimum use of fuel.

I. W. Poulton, of Medora, Kansas, of one of the large herds of Red cattle, has sold his farm near Medora will change his location. The herd numbers about thirty-five head, cows and heifers. They are a useful cattle that have always made good to the farm both as beef cattle and milkers. Mr. Poulton now keeps a herd, but grows them out well. A lot of young heifers that promise to be choice herd cows.

PARK E. SALTER Shorthorn Sale

At The Forum, Wichita, Kans., May 16

45 Head of Selected Imported and Home Bred Cattle

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

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

Seven Head Open Heifers.

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

Please send for catalog and come to my sale.

PARK E. SALTER, WICHITA, KANS.

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.

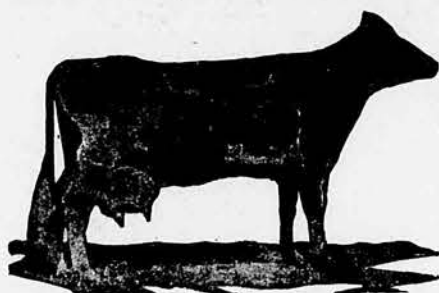
We are offering a useful lot of cows and heifers that any farmer or breeder can realize a nice profit on with a little care. The cattle are not fat, but in good condition.

Please Send for Catalog and Come to Our Sale

Jas. H. Mitchell, Manager
Valley Falls, Kansas

Auctioneer—Frank Brake, Valley Falls, Kansas

The A. S. NEALE HOLSTEIN SALE, MANHATTAN, KAN.



Monday, May 12

Promptly at 10 a. m.

**90 Head Choice
Holsteins**

Thirty to forty A. R. O. cows. Fifteen to twenty cows with records over twenty pounds butter in seven days. Thirty-five cows bred to Lakeside King Segis Albon De Kol, the great bull just purchased from Mr. E. A. Powell, Syracuse, N. Y. Several young cows soon due to the service of Paul Fobes Maud Homestead, the great 31-pound son of Canary Paul Fobes Homestead. A few bulls, and real ones, the herd heading sort, including a son of Lakeside King Segis Albon De Kol.

Eight 2 and 3-year-old daughters of King Pontiac Pauline. Eight 3-year-old daughters of King Pontiac Hengerveld Johanna. Eight daughters of Rag Apple Iuka Korndyke. Four fine show heifers, 3 years old, from a good son of Pontiac Hengerveld Parthenes.

Six grand daughters of Pontiac Aaggie Korndyke. A few royally bred heifer calves and choice yearling heifers. A wonderful A. R. O. 2-year-old granddaughter of Lakeside King Segis Albon De Kol, and her heifer calf by a 29-pound son of Rag Apple Korndyke 8th.

REMEMBER, everything over six months old tested for tuberculosis and sold with a USABLE 60-day retest privilege. Every animal insured for 30 days against death from any cause. Freight paid on individual purchases of ten or more to any point in the United States.

MANHATTAN—120 miles west of Kansas City, on the main lines of the Union Pacific and Rock Island; also on Blue Valley branch of the Union Pacific.

For catalog address

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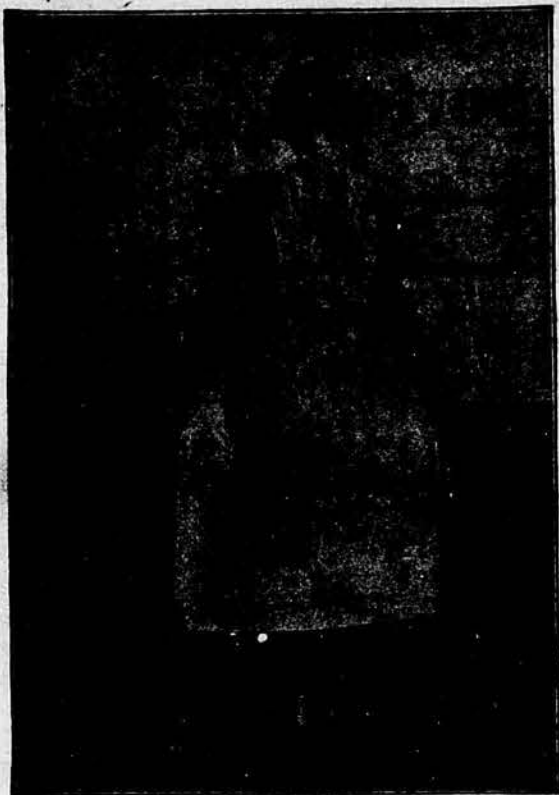
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Beautiful Waterproof Apron

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

EASILY CLEANED

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

COLOR

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

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

OUR OFFER

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

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We have only a few of these big beautiful dolls left and can not secure more of them at the same price. So hurry if you want this prize. It is really a fine doll and made by one of our best known doll makers. The doll will be given free for two subscriptions to Kansas Farmer at \$1 each, and it is well worth the effort of any girl or anyone interested in her happiness. Send us two subscriptions and get a doll before they are all gone.



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



EMBROIDERY OUTFIT

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

ORDER BLANK

KANSAS FARMER, Topeka, Kansas.

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

Name..... Address.....

Name..... Address.....

Please send.....

(Name prize wanted)

to Name..... Address.....

Eight-Piece Kitchen Set

This fine and useful eight-piece Kitchen Set, consisting of bread knife, carving knife and fork, meat cleaver, meat saw, paring knife, can opener and sharpening stone, is a practical necessity in every household. The bread knife and carving knife have eight-inch blades, the cleaver a five-inch blade, and the other articles are in proportion as shown in illustration. Every article in the set is guaranteed and will be replaced if found defective. It is a genuinely good kitchen outfit. Send for yours today.

SPECIAL OFFER.—Send us two yearly subscriptions to Kansas Farmer at \$1.00 each—\$2.00 in all—and we will send you FREE and POSTPAID one of these eight-piece Kitchen Sets. Use order blank below.

Auto Owners' Collapsible Bucket

For Gasoline and Water.
Capacity, Seven Quarts



Bucket Collapsed.



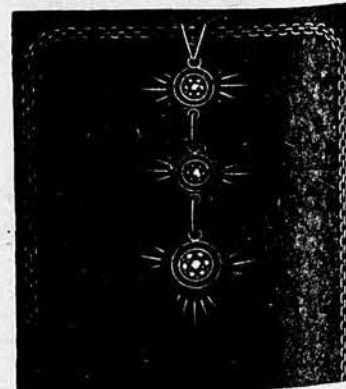
This Collapsible Bucket is made of high grade waterproof and gasoline-proof fabric, double sewed and tightly cemented. Capacity, seven quarts, and when empty can be folded into a space 7x9 inches and less than one-half inch thick. This bucket exactly meets the needs of every automobile owner. To be without it may mean embarrassment, trouble, loss of time, annoyance and expense, at almost any time. Get yours now and be prepared for any emergency.

OUR OFFER: This valuable Collapsible Bucket will be sent FREE and POSTPAID to all who will send us only two yearly subscriptions to Kansas Farmer at \$1.00 each. Use order blank below.

10 K. Solid Gold Lavalliere Neck Chains

Solid Gold Lavallier Neck Chain, open-work design, assorted stone settings and pearl pendant. The chain is fifteen inches long, with spring ring clasp. This is a piece of jewelry that will be a treasure for any girl or woman for a life time. Our special offer on this prize will be withdrawn after a limited time.

SPECIAL OFFER: Just send us two subscriptions to Kansas Farmer for one year each and \$2.00 to pay for them, and we will send you this Solid Gold Lavallier Neck Chain FREE and POSTPAID. Use order blank on this page for sending in your order.



Sterling 500-Shot Air Rifle

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

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

