

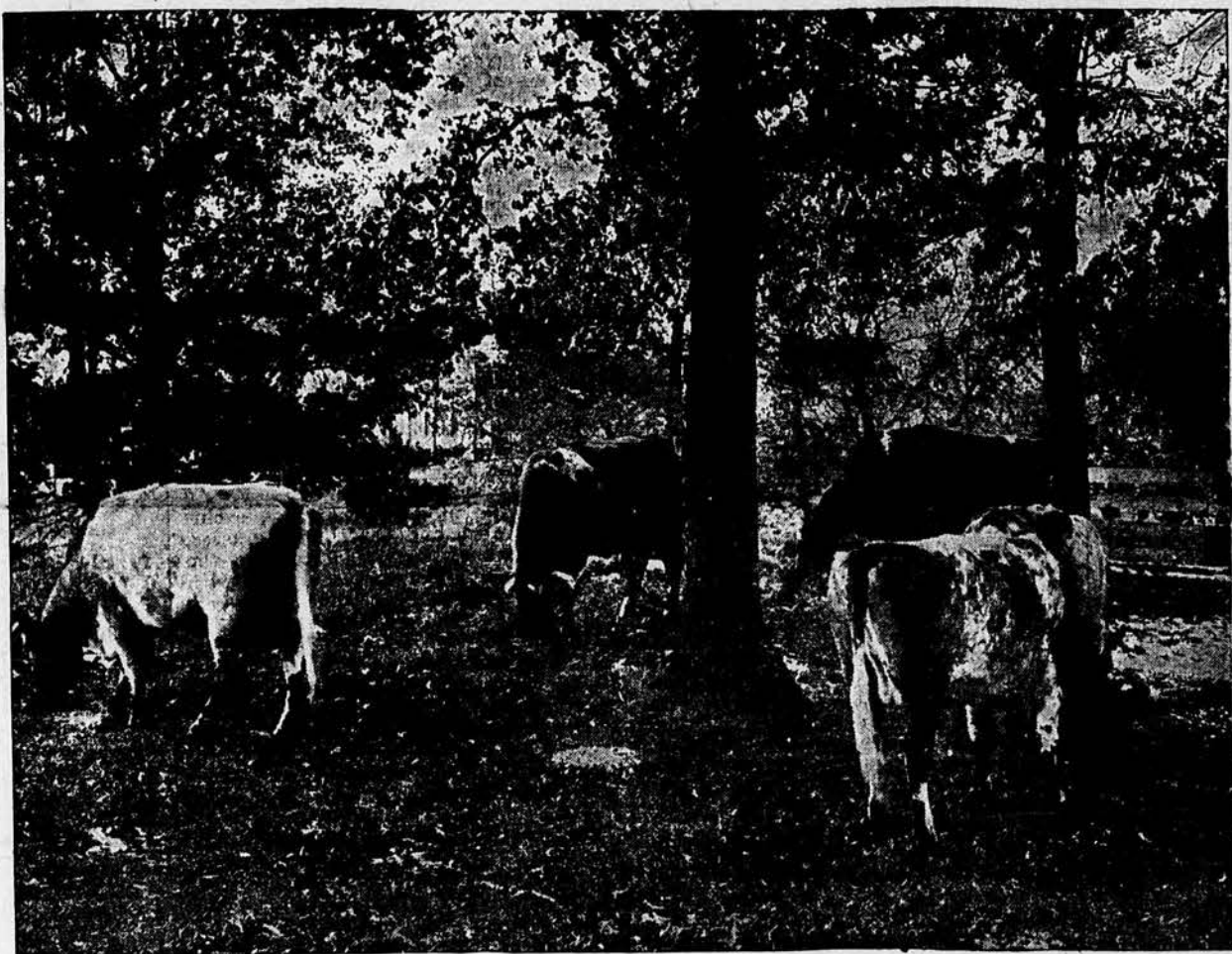
KANSAS FARMER

For the improvement



of the Farm and Home

Volume 54, Number 36. TOPEKA, KANSAS, SEPTEMBER 2, 1916. Established 1863. \$1 a Year



LIVE STOCK farming in all countries and in all times, has been found the most profitable. The census has shown that live stock farming in the Corn Belt pays from 18 to 48 per cent more income to the acre than does grain farming. In Kansas, the income from live stock is 36 per cent of the state's total income, wheat being 21 per cent and corn 25 per cent—each for a 20-year period.

It will be seen that live stock in Kansas—in spite of the fact that hundreds of farmers sell no live stock or live stock products—is already a considerable factor. When the growing of live stock becomes a practice in Kansas as general as is the growing of grains for market, the farmer's income will be greatly increased.

Live stock gives to the Corn-Belt farmer the highest market for his grain and for this reason a greater acre income from the grains grown.

—T. A. BORMAN, in "Sorghums: Sure Money Crops"

FEED TRADE PROSPECTS

Kansas Farmer's Market Correspondent's View

SHALL I buy corn now or wait for a later market? Shall I ship my oats or hold for better prices? Is alfalfa and prairie hay too low today? When should I lay in a supply of cottonseed feed or mill feed or linseed cake?

In view of the fact that Kansas will harvest less than 50,000,000 bushels of corn this year, according to Secretary J. C. Mohler's estimate, farmers of the state are asking such questions, on the feed situation with greater interest today than in many months. It is well that Kansas, as well as other feeders, are asking these questions. Kansas has a prospect now for 92,000,000 bushels less corn than it harvested in 1915, and the crop is expected to be the smallest since 1875 with the exception of 1901, when 42,600,000 bushels were harvested, and 1913, when the crop was only 18,420,000 bushels. Kansans therefore feel that this is a time for more intelligent and more careful handling of feed problems.

In Kansas, Oklahoma, Missouri and Texas combined, corn is extremely short. These four states probably will harvest only 320,000,000 bushels, against 649,000,000 in 1915 and 440,000,000 in 1914. States east and north of these have fared far better. In the United States as a whole the present crop indication is for 2,600,000,000 bushels, against \$3,054,535,000 in 1915 and the record crop, 2,672,804,000 in 1914, and 2,446,000,000 in 1913. However, the big 1915 crop included a large percentage of commercially unmarketable corn, owing to excessive moisture. On the other hand, the present farm reserves of old corn are light. Corn is already bringing prices never before witnessed at this season, the level of quotations at Kansas City being 10 to 15 cents a bushel higher than a year ago, and 10 cents over the market at this time in 1913. As feeding requirements will be reduced at this level, there is a feeling that prices have discounted the enormous destruction of the grain by dry weather in the Southwest. However, if the remainder of the corn-growing season does not prove favorable, higher prices are expected for the near future. In mid-winter and next spring, any further advance will have a restricting influence on the consumption, and then will come increased marketings and reactions in prices.

So far as corn consumption is concerned, hogs alone furnish strong incentive to handlers of meat animals. The hog market is high enough to warrant feeding expensive corn. While feeding lambs and sheep are high, there is some optimism over the finishing of stock on corn. In the cattle market the prospects for the feeder who uses corn at present levels is not bright unless very cheap unfinished stock forced to market by the dry weather is handled. So long as the war continues the packers will have a huge demand for hog products for export, and probably will seek to hold the hog market at a profitable level to growers. In the event of peace, however, hog demand would decrease, and then the finishing of porkers on expensive corn would become less profitable. There has been some talk of a twelve-dollar market for fat hogs next year, if corn losses increase, but there will be no advance to that level without a continuation of Europe's war, according to many market students. And the late fall and early winter hog markets, when packers depress prices, may not be remunerative because of the large pig crop obtained this year.

It is necessary to look closely into live stock market conditions in studying the feed trade because the coming year probably will witness a closer relation than ever before between feed and live stock prices. Feeders who lost heavily on cattle the last few years are not, as a whole, in a mood to risk expensive corn in making beef when the market gives signs of weakness. So, in case of recessions in prices of fed stock, there will be almost simultaneous marketing of corn and declines on that cereal. It is too early to make any definite statement on feeding of corn to cattle, but thus far the live stock market developments point to a considerable reduction. However, there is still time for a change.

With a general reduction in the acreage and with prospects for lighter average yield, the sorghum grains are very strong. They show the sharpest advances in prices of any feed product on the Kansas City market. The dry weather is not the only reason, however. There is a heavy demand for the sorghum grains for use in manufacturing alcohol, which is selling in enormous quantities to gunpowder makers. No. 2 white kafir is 60 cents per hundredweight

higher than a year ago. It is worth almost twice as much as in February.

The expectation is for a crop of 1,100,000,000 bushels of oats, although 1,274,000,000 bushels were indicated on August 1, for the United States. The reduction is due to deterioration in northern states. Last year the crop reached the record total of 1,540,362,000 bushels; in 1914, the harvest was 1,041,160,000 bushels; in 1913, 1,121,768,000 bushels. Prices have recently averaged about 5 cents lower than a year ago, but producers are now showing a disposition to hold for a better level, and dealers, in consequence, are predicting higher returns from the grain. With corn short and with the European demand still heavy for army purposes, oats ought to bring more money.

Alfalfa appears stronger than any other hay on the Kansas City market, having advanced two dollars a ton since the low time in July and promising a further rise. Alfalfa is showing most bullishness on account of the light yields on the second and third cuttings, which were checked by dry weather. Later crops are also expected to be light. In the Far West, notably New Mexico, Colorado and Idaho, the early growing season for alfalfa was unusually cool, so crops there are less than last year. As New Mexico and Colorado have had extensive dry areas and as Texas is a heavy buyer from them, the alfalfa handlers of the two western states are more bullish than some Kansas dealers on alfalfa. This is an exceptional condition. Alfalfa consumption usually increases when corn is high and scarce, and this is an important factor in the market. The better grades, however, are most promising to holders, common forage being plentiful in the areas which draw alfalfa from Kansas.

Alfalfa has suffered a greater reduction in yield from dry weather than has any other hay crop. So far as other hay is concerned, the season has been one of the most favorable in history. The dry weather, it should not be forgotten, did not come until the timothy, prairie and clover crops had made good growth, and these crops were put away under almost ideal weather for hay. As a result, the production of hay, exclusive of prairie and other wild grasses, is estimated at 84,000,000 tons in the United States this year, compared with 85,200,000 tons in 1915, which is the record harvest. In 1914 the crop was 70,071,000 tons; in 1913, 64,116,000 tons. The territory east of the Mississippi River, which imports hay annually, has a larger crop than in 1915, while the territory west of the Mississippi, which generally sells, has less than last year. The crop this year is the second largest on record, and probably higher than ever before in quality.

There will doubtless be larger consumption of hay because of higher prices for other feeds, but the abundance and the high quality should not be overlooked. Also, the farmers who have good hay suitable for market and little or no corn, are likely to sell their hay to obtain cash and feed the commercially unmarketable rough feed on their farms. Prairie hay has already advanced in price since the dry weather began in the latter part of June, and somewhat better prices are probable, but only a severe winter and further deterioration in corn can make a high market for it, many dealers assert.

Of the more common commercial feed products used in Kansas, including mill feed, cottonseed cake and meal and linseed cake and meal, only cottonseed feed will be in larger supply than in 1915. The increase in cottonseed feed, however, will be much less than anticipated some weeks ago owing to serious deterioration in cotton in Texas and Oklahoma. Cottonseed cake has advanced one to two dollars a ton on this deterioration, but it is now the cheapest protein feed available. There is nervousness over the export outlet for cottonseed feed, owing to British interference, but the present market appears quite attractive to buyers, especially while cotton is deteriorating. Mill feed is not so attractive just now. Kansas mills and those of other states have been running rather lightly because of slow flour trade. When they begin to sell more flour they will have more mill feed for sale. Mill feed prices have jumped sharply with corn, bran being four dollars a ton higher than a year ago. Linseed meal is considerably higher than cottonseed feed, due to the advantageous position of the northwestern producers for exporting through Atlantic ports. Besides, the production of linseed feed will be lighter than last year.



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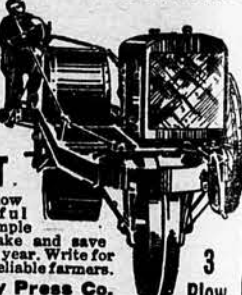


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BOARD OF AGRICULTURE REPORT

The corn estimate given out by the State Board of Agriculture, as a result of reports made covering the crop conditions up to August 19, is that Kansas' 1916 crop will be approximately 50 million bushels. There were 6,921,000 acres planted to corn in the state. There will be little real merchantable corn in many counties except in occasional valley spots or those having received local rains. However, if the corn grown in these counties is saved properly, it will add materially to the amount of feed for live stock.

The four northeastern counties—Doniphan, Brown, Nemaha, and Marshall—bid fair to have unusual yields as compared with the general prospect, the average acre yields promised being 28, 25, 18, and 19 bushels, respectively. Riley County will probably be next in order, with an acre yield of 16 bushels, then Atchison with 14 bushels. The prospective acre yields for Jewell and Smith counties—ranking first and second in acreage planted—are 11 and 10 bushels, respectively. In eleven counties the estimate aggregates over one million bushels each, these being: Marshall 3,458,000 bushels, Brown 3,085,000, Nemaha 2,867,000, Jewell 2,247,000, Smith 1,923,000, Doniphan 1,813,000, Pottawatomie 1,272,000, Riley 1,264,000, Republic 1,260,000, Dickinson 1,037,000, and Cloud 1,021,000 bushels.

Throughout the state much of the corn has been cut and put into silos, which is indeed a wise practice, for every bit of the feeding value the corn possessed at the time of cutting will in the silo be saved.

While the sorghums have suffered, on account of their dry-weather-resistance they will still make creditable yields where rains are received. In this, as in other dry seasons, the sorghums have been put to the test and have shown their ability to wait for rain longer than corn. The average date of first killing frost in Kansas is October 1 to October 20—the first named date applying to the northwestern corner of the state and the last named to the southeastern corner. With favorable average conditions from now on, there is still time for a big improvement in the sorghums crop, which will add materially to the general prospects for the coming winter.

The average condition of the broom corn crop is given as a little over 45 per cent. This crop is confined to seven or eight counties in the extreme southwestern part of the state. There is an increased acreage this year over last, of eight thousand.

The output of prairie hay, which crop is of excellent quality, is nearly two millions tons or an average of about one ton to the acre.

A considerable amount of the third cutting of alfalfa was left for seed.

In only 29 counties of the state—these located for the most part in the eastern two-thirds of the southern tier and the eastern three tiers—is there a shortage of grass. The report from 45 counties is that pastures, though dry, are affording sufficient grazing, and in 31 counties pastures are fair. Water for stock is reported scarce in several of the first named 29 counties. With occasional exceptions, elsewhere the water supply is meeting the needs, and 50 counties—most of them in the western half of the state—report abundant water.

It is estimated that about 60 per cent of this year's wheat crop is still in the hands of the growers and that 85 per cent of the total crop has been threshed under very favorable conditions for the clean separation of the grain and straw.

GENERAL FARM APPEARANCE

Not long ago we were driving through a section of country in another state, noted for its productive land and general prosperity. We had looked forward to the trip with much pleasure, but as we look back upon it the thing that we remember before we do the level stretch of fields of abundant crops, is the general appearance of the farm buildings. There were many exceptions, but there were far too many farms on which all or most of the buildings were unpainted. It was hard for us to believe a lack of

funds was responsible for this condition for there were evident luxuries more than enough to offset the cost of paint needed. It seemed to be simply a lack of appreciation of the value of paint and its importance in adding to the general appearance of the farm.

The man who allows his buildings to go unpainted and his fences unrepaired; will not make a financial success, neither will he be getting favorable advertising as he goes along.

UNITED EFFORT COUNTS

Whether it be in a state, a city, or a rural community, no great victory can be won for any cause if there are many factions working in opposition. On the other hand, no task is too big to undertake if there is a community interest great enough to inspire working for it.

It is our observation that one of the greatest needs in most places is someone who will "start the ball rolling." Once started, it is easy to help it along, and we are more apt to find people willing to give it a lift than to block its passage. But who is willing to take the initiative and do the starting? The responsibility is our own and we cannot shift it to anyone else. The feeling within us that we would like to have better school accommodations for our children, should be an inspiration to set about to make it possible for all the children in the neighborhood to have these lacking educational advantages. In most instances, a little "sounding" on the subject will reveal to us that several of our neighbors feel the same way about the matter and may even be contemplating a change of residence in order to supply the need. Such neighbors are worth keeping, and would it not be far better to bring the educational advantages into the community than to have its best families leave—each perhaps going to a different place—in search of them?

If we realize we are becoming self-centered, and indeed narrow, because of a lack of community social life, if we will but keep our ears and eyes open we will detect the same feeling in others and will find that a movement having for its object the occasional bringing together of the families of the neighborhood, will meet with hearty approval and many willing workers to this end will be found.

In either case, the accomplishments possible through united effort are almost boundless, while if the unmistakable inspiration goes unheeded or is allowed only to develop unrest within ourselves, we will have lost one of life's greatest opportunities—that of having a part in making the community in which we live, better and more fruitful.

REPUTATION LONG-LIVED

We often hear it said that scandal or an evil report travels fast, but it is our belief that a good reputation or a report

of a worthy accomplishment shares equally in the publicity received.

The man who misrepresents an animal or a piece of land which he is selling is sure, sooner or later, to receive free advertising, but does not also the man who habitually leaves some of the good points of the animal to be found out by the purchaser, or who allows the prospective buyer to find out some of the possibilities of the field through questioning rather than through what may seem an unreasonable or boastful guarantee? Having dealt once with this man, the next time we are in the market for anything which we think he may have for sale, he is the first man visited or written. And should we conclude a deal with him by correspondence and find he has given us the same honest treatment as though we dealt in person with him, he has completely fortified himself with us as to his integrity and we gladly recommend the man and his wares to any who may inquire of us or who, we know, may be in need of the things he has to sell.

A good reputation is easily built and retained, but once lost, the rebuilding is a slow and uncertain process.

1915 CORN ON HAND

According to a report from the State Board of Agriculture, the assessors' returns March 1, this year, showed that a little over 37,614,000 bushels of last year's corn crop was still in the hands of Kansas farmers on that date. This left-over corn will help very materially in making up for the shortage in the present crop.

Those counties leading in the amount of last year's corn on hand March 1, are as follows: Smith 2,304,678 bushels, Jewell 1,759,575, Marshall 1,468,125, Mitchell 1,000,090, Nemaha 1,001,952, Phillips 1,220,605, Republic 1,250,655, and Washington 1,151,596 bushels.

The amount of last year's wheat crop on hand in the state March 1, was 15,387,525 bushels, the largest amount in any one county being 542,971 bushels in Pratt County.

Morton County reported no 1915 wheat or corn on hand, and Stanton County had none of last year's wheat.

WHERE IS FARM MACHINERY?

A binder in the far corner of a field from which the wheat has been harvested weeks ago, brought to mind that there are still those who do not reckon the deterioration of the farm implement when left out where the sun, wind, and rain have free access to it. The damage done by weeks of weathering is not offset by the work accomplished in the brief time it would require to bring the binder to the barn for shelter.

The time it takes to put the machine away when it has finished the season's work is little, and the results of this bit of labor should be counted in dollars.

Another Test Year For Sorghums

AS IS their custom, the sorghums are withstanding the present season's dry-weather test heroically and still have the vitality to produce creditable yields with the help of late rains.

True it is, that under growing conditions most favorable to corn, the sorghums produce their largest acre yields of grain and forage, but it is also a fact that under conditions which are unfavorable for corn the sorghums are far more certain of profitable yields. This difference is attributable to the ability of the sorghums to control transpiration. When the leaves of sorghums curl, the amount of water passing from them is greatly reduced and it is this process that has given them the reputation of "waiting for rain." Not so with corn—the curling of its leaves due to extreme heat or dry weather means undoubted injury to the crop.

The doubter as to the merits of the sorghums can find no more convincing argument in their favor than that brought out through a study of the comparative acre values of corn and the sorghums for Kansas for a period of years. These comparisons for the different sections of the state are carefully worked out in the book, "Sorghums: Sure Money Crops."

A true comparison of corn and the sorghums is impossible unless the sorghums are given an equal chance in the way of seed bed and cultivation, and as yet this is not the rule. Nevertheless, for the thirteen-year period of 1901-1913, the acre value of kafir and milo combined was \$11.41 as against an acre value of \$8.76 for corn.

The live stock farmer will do well to study the adaptability of these dependable crops to his section.

VALUE OF AGRICULTURAL FAIRS

The real value of the agricultural fair is found in the lessons it teaches of the possibilities of the section it represents. We are all more susceptible to object lessons than to hearsay, and are more impressed with results which we see for ourselves than with those about which we are told.

Every agricultural fair, regardless of how small or large, has object lessons well worth our consideration, and the time and effort required to attend can be made remunerative.

The man who exhibits live stock or farm products, becomes a part of the fair and knows its full value. He is on the alert and compares his exhibit with all others and satisfies himself as to just wherein it excels or falls short. He also ascertains the judge's reasons for his placings and compares these with the reasons in his own mind, and if he is fair-minded, this comparison will be helpful.

Those who do not bring products to the fair may find as they go about that they had animals or specimens of crops at home which might well have competed. Even though he does not find this to be the case, the producer cannot help appreciating the exhibition of the fine specimens which are representative of his particular section.

No fair is made for the men only. As much thought is given to interesting the women and children as is spent on the men. Indeed, most men will find, if they will take the trouble to investigate, that the other members of the family are as keen as they, in noting the good points of the live stock or farm products exhibits. But there are departments designed specially for the women and children in which much time can be profitably spent.

In addition to the educational features, the visit to the fair affords recreation, and all members of the family will feel refreshed and will be able to work better and accomplish more upon returning home.

The agricultural fair needs our heartiest co-operation, and the extent to which we give this co-operation will determine the benefit we will receive from the fair.

ALFALFA WEB WORM

In many Kansas fields the alfalfa web worm has been found in great numbers and this pest is causing no little amount of concern. The entomologists at the Kansas Agricultural College advise that if farmers do not wage war on the next brood, which will hatch before winter comes, serious damage will result. They suggest the following method.

Where many of the worms are found, the hay should be immediately cut. The worms will then feed on the shoots near the ground and can be killed with a harrow made of brush or with a smoothing harrow having a piece of old wire fence woven into the middle of it.

There are several generations of these worms each year but seldom before late summer do their numbers become great enough to injure the alfalfa, which is accomplished by tying the tops together with a web and eating the foliage.

The small buff-colored moths fly up and a short distance when disturbed in the field.

These worms pass the winter in their pupal cell about an inch below the ground surface and their injury can be checked by renovating the field.

LEAVENWORTH'S NEW AGENT

Ira N. Chapman of Geary County is the man selected as agricultural agent for Leavenworth County to succeed P. H. Ross, who will be county agent leader for the State of Missouri after September 1.

Mr. Chapman is a practical farmer and has taught in the Geary County schools for a number of years. He is a Kansas Agricultural College graduate and his latest work has been that of assisting in the farm demonstration work in Kansas conducted co-operatively by the agricultural college and the Federal Department of Agriculture.

WHEN TO SEED KANSAS WHEAT

Experience Has Shown There is a Right and Wrong Time

BULLETIN BY L. E. CALL, S. C. SALMON AND C. C. CUNNINGHAM, K. S. A. C.

THE time of seeding is one of the most important factors in growing wheat in Kansas. Wheat that is sowed late usually winter-kills much, the roots do not penetrate the ground as deeply as when it is sowed early, and it is more subject to injury from dry weather and hot winds. Late sowed wheat tillers very little and so usually gives a thin stand. It ripens late, and in the eastern part of the state is more likely to be injured by rust than wheat that is sowed somewhat earlier. The quality is usually poor as compared with wheat planted early.

On the other hand, wheat sowed too early is practically certain to be injured by Hessian fly if these insects are present in the neighborhood. In dry seasons very early seeding is often detrimental because the heavy growth uses all the moisture stored in the soil and leaves the crop entirely dependent on seasonal rains. This happens frequently in Western Kansas.

The best time to seed varies with different sections of the state, with different seasons, and with different conditions. For these reasons no definite date for planting can be given. The proper time for seeding must be settled according to the locality, and local and seasonal conditions.

HESSIAN FLY AND SEEDING DATE

The best time to seed wheat in Central and Eastern Kansas is determined largely by the Hessian fly. The damage by this insect has been estimated at sixteen million dollars for 1915 and fifteen million dollars for 1916. Most of this damage could have been prevented. The map indicates that Hessian fly was present this past season in all counties in the central part of the state and was fairly well distributed over the eastern counties. This does not mean that fly always causes damage in this area, but that it has been found there this past season and is, therefore, a source of danger to future crops. The Hessian fly can readily be detected by examining the wheat stubble. If they are present in large numbers, they will certainly injure the next crop unless they are controlled.

HOW TO CONTROL FLY

There are two effective and practical ways to control Hessian fly. One is to kill all the fly in the stubble and in volunteer wheat before they can hatch and lay their eggs in the grain. The other is to destroy the volunteer wheat and delay seeding so that most of the flies will have ceased laying eggs by the time the wheat is up.

The best way to kill the Hessian fly in infested stubble, where it exists in the pupa stage, is to plow early and at least four or five inches deep. If the ground is then worked down with a disk, the fly will be buried so deep and the ground above packed so firmly that very few of them will be able to get to the surface.

Burning the stubble also kills the few Hessian flies above ground, but probably does not kill the majority, which are below the surface. Since burning destroys the organic matter in the stubble, which is badly needed in most Kansas soils, and does not destroy a very large per cent of the Hessian flies, it cannot be recommended as a general practice. Early deep plowing, to be fully effective, must be practiced by the entire neighborhood, and must include all infested fields since the flies sometimes migrate considerable distances. As it is usually impractical to plow all fields in a neighborhood early and deep, the only way to insure safety from the fly is to avoid early seeding. It is also necessary to destroy the volunteer wheat which starts before the fly-free date, since it may become infested, carry the flies through the winter, and infest the fields in the spring.

SEEDING DATE EXPERIMENTS

In 1911 the Kansas Experiment Station began experiments at six different places in Kansas to study the effect of the time of planting wheat upon the yield and the injury by Hessian fly. These tests were located in Marshall, Marion, Sumner, Osborne, Ellsworth and Pratt counties—that is, in representative counties in the main wheat-producing area of the state where the Hessian fly is likely to cause serious loss. Each test consisted of seeding a series of plots at weekly intervals for six or seven weeks, beginning the second week in September. Similar but more extensive tests were also conducted at the experiment station at Manhattan, in Riley County.

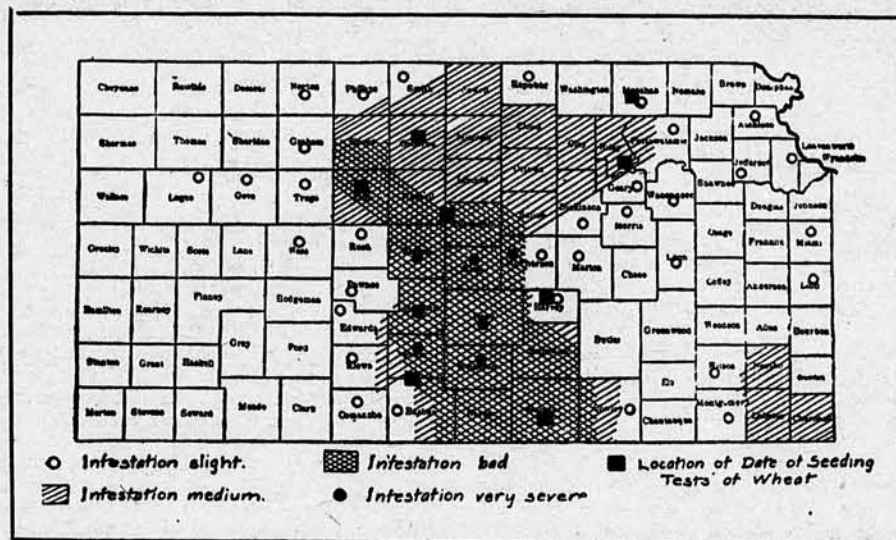
The Marshall County test was conducted by H. J. Bornhorst, two miles

southwest of Marysville, on fertile river bottom land. The ground was well prepared each season, and because of the good preparation and fertile soil the late sowed wheat undoubtedly produced better than would have been the case on less fertile upland soil in that community.

The tests at the experiment station in Riley County were conducted on well-prepared upland silt loam. The tests in Marion and Harvey counties were conducted in 1911 by Firebaugh Bros., Marion; in 1913 and 1914 by W. A. Bailey, Peabody, and in 1915 and 1916 by F. B. Lawton, Newton. These tests were located on upland silty clay loam soil of average fertility, excepting the test of 1911 which was located on river bottom land. Chinch bugs in 1912 destroyed the wheat and in 1912-'13 rains interfered in planting on the last date, while in 1913-'14 the ground was too dry

seeding September 29 to October 1. In Riley County the best yield was secured in two seasons from seeding September 21 to 27, in three seasons from seeding September 28 to October 3, and in one season each from seeding October 5 to 10 and October 12 to 17. The experiments show a very clear and definite decrease in the infestation of Hessian fly with late seeding. In one season—1914—in Marshall County about 50 per cent of the wheat sowed before September 20 was infested, while none sowed after the first week in October had any flies. A few flies were found in wheat sown in the Riley County tests as late as October 5 to 10, but not enough to cause any serious loss.

In Marshall County in 1912 and in Riley County in 1906, 1908, 1911, 1912, 1913 and 1914 there was practically no damage from Hessian fly. In all these seasons the best yields were obtained



to seed when the first seeding should have been made. In 1914-'15 Hessian fly practically destroyed the early sowed wheat in the fall, and the spring brood of flies greatly damaged the late seeding.

In Sumner County the tests were conducted by E. Laney, Wellington, on upland silt loam soil of average fertility. In 1912 the early seeded wheat failed to grow because of dry soil, and in 1914 the first date of seeding was omitted because seed was not available at the time the wheat should have been planted.

The Smith and Osborne County tests were conducted in 1912 by H. H. Smith, Smith Center, and from 1913 to 1915, inclusive, by John H. Nonamaker, Osborne. On the Smith farm the plantings were made on well-prepared silty clay loam upland soil, and on the Nonamaker farm on silt loam second river bottom soil.

L. G. Brown, Wilson, conducted the Ellsworth County tests. The soil was upland sandy loam of medium fertility. The seed bed was well prepared each season.

In Pratt and Barber counties the tests were conducted for the season of 1912 and 1913 by C. F. Hertline, Pratt, on upland sandy loam soil, and in 1914 and 1915 by Miss Mary Best, Medicine Lodge, on sandy loam river bottom soil. The ground was in excellent condition each season.

NORTHEASTERN KANSAS SEEDING DATES

Experiments conducted for three years in Marshall County and for seven years in Riley County show that the best yields of wheat are obtained when the grain is sown from about September 25 to October 3.

In Marshall County the best yield in one year was obtained from seeding September 22 to 25, and in two years from

from seeding either the fourth week in September or the first week in October. This shows that where no fly is present there is usually no advantage from very early seeding, and this is especially true if the ground is well prepared.

It is seldom advisable to seed in Northeastern Kansas earlier than September 25. In the extreme northern part of the state it may be advisable on infertile ground or on a poorly prepared seed bed, where there are no Hessian flies, to begin seeding a little early, or unfavorable weather may delay planting until too late to obtain the best yields. If Hessian fly is present in large numbers, however, it is always advisable in this section to delay seeding until at least September 25 in the extreme northern part, and until September 28 or October 1 in Riley County and the counties east of Riley. It should be understood that seeding at these dates will not absolutely prevent damage from Hessian fly. For that reason if the flies are extremely numerous and the area to be seeded is limited, better average results will be secured if the grain is not planted before October 3 or 4.

SOUTH CENTRAL KANSAS SEEDING DATES

Twelve tests have been conducted in South Central Kansas to determine the relation of time of seeding to Hessian fly damage and yield. These tests include three years' work in Marion County, one year in Harvey County, two years in Pratt County, two years in Barber County, and four years in Sumner County.

In the tests in Marion and Harvey counties the best yields have been obtained with seeding between September 27 and October 5, in all years but one, when the best date was October 19 to 24. Hessian fly caused practically no

damage, however, in these two seasons. In 1915 all plots sowed before October 1 were practically destroyed by the fly, and the late sowed wheat produced very small yields because the fly which infested the early plots flew over into the late plots the next spring and then deposited their eggs in almost as large numbers as in the early planted wheat. If the early seeded plots of wheat had been plowed up in the fall or early spring the flies in them would have been destroyed and the later wheat saved, providing there were no other badly infested early sowed fields in the neighborhood.

This instance shows very clearly that late seeding in itself is not insurance against fly damage from the spring brood unless all farmers co-operate in late sowing, kill all volunteer wheat, and plow, in the fall or early spring, all stubble in which the fly may winter.

The tests in Pratt and Barber counties are somewhat contradictory. This is explained by the fact that the best time to seed in this area depends more on the fall rains than is the case in Eastern Kansas; also because Hessian fly did no damage during the four years in which the test was conducted.

In 1912 the highest yield was obtained from seeding the second week in October, in 1913 from seeding the third week in September, in 1914 from seeding the fourth week in September, and in 1915 from seeding the first week in October. It will be seen, therefore, that where no flies are present, as was the case in this experiment, seeding earlier than the middle of September gives no better yields than somewhat later seeding. When flies are present, later seeding, up to October 1 on poor soil or until October 6-7 on fertile soil and a well-prepared seed bed, will give better results than early seeding.

NORTH CENTRAL KANSAS DATES

Somewhat earlier seeding is desirable for North Central Kansas than for points east or south. This is because the elevation and latitude shorten the season and grain must be sowed earlier to get the same start before winter. Also the Hessian fly disappears earlier in the fall so there is not so much danger from this source with early seeding.

Tests to determine the best date were conducted for four years in Smith and Osborne counties and Ellsworth county. The Hessian fly did no material damage during these tests.

The experiments show that the best yields have been secured from September seedings, the average favoring late September. Probably the best date for this section on the average is about September 20 to 25, but this will vary with local conditions. As in other sections of the state, if a large acreage is to be seeded and it is known that there are few Hessian flies, it is advisable to begin seeding reasonably early since unfavorable weather may delay seeding until too late for good results. If, on the other hand, a small acreage only is to be sown and flies are present in abundance, the seeding should be delayed until near the end of September or even until October 1.

TIME TO SEED IN WESTERN KANSAS

Western Kansas differs markedly from the rest of the state with respect to the best time to seed. In the first place, flies are seldom found west of the eastern border of Norton, Graham, Trego, Ness, Hodgeman, Ford and Clarke counties—hence the question of damage from fly need not be considered in the average season. In the second place, the farmer has less choice with respect to time of seeding because of dry falls. It is usually not advisable to seed in dry ground and to expect a rain later to germinate the wheat. There may be just enough moisture in the ground to germinate the wheat, but not enough to keep it growing. The result is that the wheat starts to grow and then dies for lack of moisture. There may be enough moisture to allow fungi in the soil to grow on the wheat kernels and destroy them and yet not enough to cause germination. In either case the seed is lost.

On the other hand, there is less danger of winter-killing in Western Kansas due to late seeding than in the eastern part of the state. It quite frequently happens that the seed sowed as late as November makes a fair yield. While it is not ordinarily advisable to seed so late, such late seeding with favorable conditions is usually better than early seeding with poor conditions and better than seeding spring wheat.

[Continued on Page Nine]

THE EFFECT OF THE TIME OF SEEDING ON THE TILLERING OF WHEAT
NUMBER OF TILLERS PER PLANT

	1912	1913	1914	1915	Average 4 Years
September 8 to 11, inclusive . . .	5.8	4.8	4.8	3.6	4.7
September 13 to 19, inclusive . .	6.0	4.1	4.2	4.9	4.8
September 21 to 25, inclusive . .	4.3	3.1	3.8	4.1	3.8
September 27 to October 2, inc. .	2.7	3.0	3.7	3.7	3.3
October 4 to 9, inclusive	1.8	2.1	3.2	2.8	2.5
October 11 to 17, inclusive . . .	1.4	1.1	1.9	2.4	1.7

KIND OF WHEAT TO GROW

Hard Turkey Type Best For Greater Part of The State

—By S. C. Salmon, K. S. A. C.

MANY farmers in the hard wheat belt of Kansas are making a serious mistake in their choice of wheat for seeding this fall. Soft wheat varieties have given exceptionally good yields on many farms the past two seasons and this fact is encouraging many farmers to grow soft wheat next year in spite of the fact that in average seasons hard wheats will give much the best yields.

A prominent farmer in Saline County, for example, writes that he intends to seed practically all soft wheat this fall, although in past seasons he and his neighbors have grown hard wheat almost exclusively. Another farmer inquires where soft wheat seed may be obtained, stating that hard wheat only is grown in his neighborhood. Sumner County, which is one of the hard wheat counties of the state, grew many acres of soft wheat last season and apparently the acreage will be increased next year.

This situation is unfortunate for several reasons. The first and most important is that, on the average, hard wheats in the areas mentioned will give the best yields and best quality of grain. They are more resistant to dry weather and will stand more severe winters than will the soft varieties. The only reason the soft wheats have produced the highest yields the past two seasons is because of the abundant and sometimes excessive supply of moisture. They have stiffer straw than the hard wheats and for that reason are less likely to lodge and be damaged by wet weather.

Another advantage of hard wheats is the higher price it usually brings on the market. In some seasons when there is a short crop in the soft wheat belt, a higher price is paid for the latter because there are certain mills and dealers who handle soft wheat and soft wheat products exclusively. They must have soft wheat to supply their trade and for that reason pay more, if necessary, than for hard wheat. As a rule, however, hard wheats bring the highest price.

Kansas is known the world over for the quality and milling value of her wheat. This reputation depends on the growing of hard wheat. It would be unfortunate if soft wheat became generally grown in the hard wheat belt, for the average quality would be reduced and the price would drop accordingly.

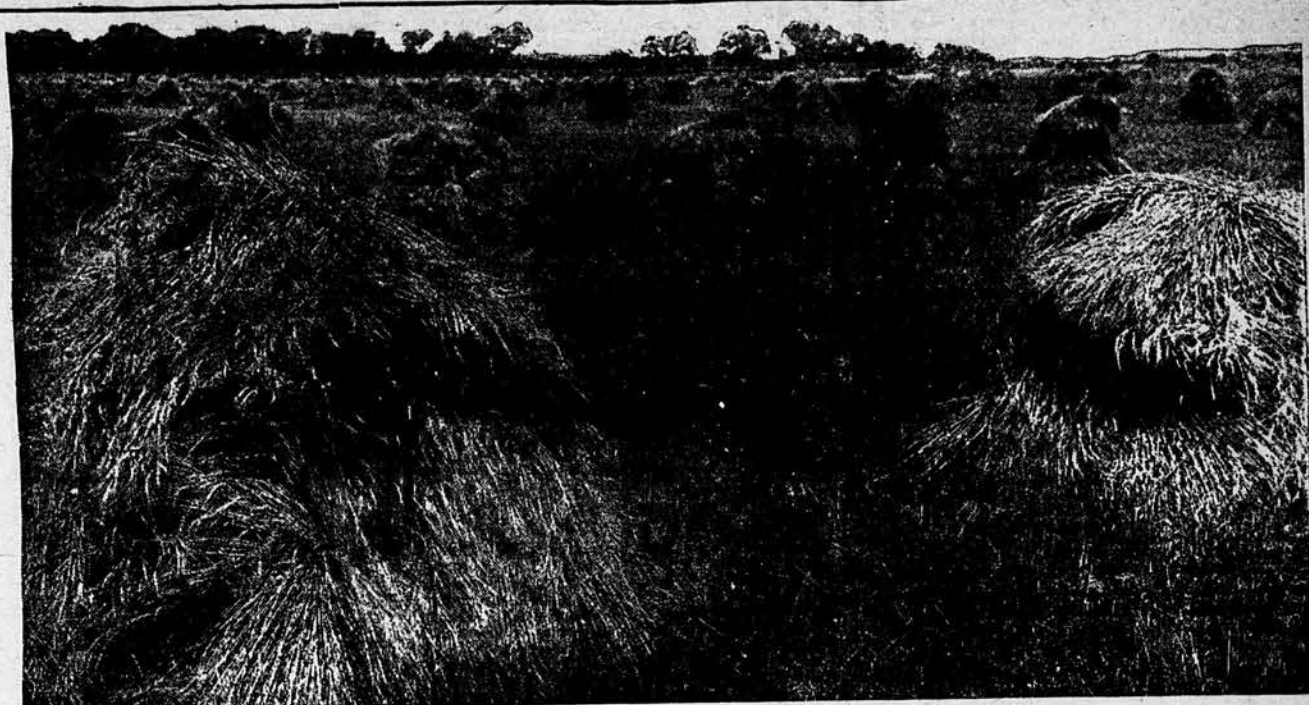
WHEAT BELTS OF KANSAS

The accompanying map shows the approximate boundary line between the hard and soft wheat belts. These lines cannot be drawn exactly because the soil and the season have considerable influence on the kind of wheat that is best to grow. As a rule, soft wheats give the best yields east of the heavy line. This is especially true on bottom land. Occasionally on upland or in seasons with severe winters, hard wheat gives the best yields in the northern part of this area because of its greater hardiness and drouth resistance. On the average, however, soft wheats give the best results.

West of the heavy line hard winter wheats will, on the average, give better yields and better quality of grain than any other kind. This difference becomes greater the farther west one goes. On bottom lands in the eastern part of this area soft wheats quite frequently give the best yields. On the uplands, however, and usually on the bottom lands also, hard wheats are decidedly the best. This fact is indicated by tests conducted by the agronomy department of the Kansas Agricultural College in various counties in the state.

RESULTS OF FARM TESTS

In Cowley County two tests were conducted last season, one on bottom land and the other on upland. In one the best variety of hard wheat produced 25.6 bushels an acre and the best soft wheat 22.1 bushels an acre. In the other test the hard wheat produced 48.8 bushels and the soft wheat 38.4 bushels an acre. In Dickinson County the best hard wheat yielded 28.6 bushels and the soft wheat 23.3 bushels an acre. In Marshall County the best hard wheat



FIELD OF THIRTY-FIVE-BUSHEL WHEAT ON EARLY AUGUST PLOWING, KANSAS EXPERIMENT STATION FARM, 1916

produced 32 bushels an acre and the best soft only 24.7 bushels an acre; in Lyon County the yield of the best hard wheat was 59.1 bushels and the best soft wheat 46.6 bushels an acre. In another test in the same county the yield of the best hard wheat variety was 15.4 bushels and of the soft wheat 12.6 bushels. Of all the tests conducted in this area not one showed a distinct advantage for soft wheat and in most cases the hard wheats produced from three to thirteen bushels more per acre. In some of the tests there was too much rain for the best growth of wheat. This would give the advantage to the soft wheats, since they are better able to stand wet weather. It is quite likely that in a series of years the hard wheats would have more advantage than is shown by these tests.

KANSAS WHEAT HISTORY

The value of the hard wheat varieties to the wheat industry of Kansas is partly shown by the history of wheat growing in the state. The first settlers of Kansas brought with them seed wheat from the states east of the Mississippi and Missouri rivers. These were mostly or entirely of the soft winter varieties. They proved quite satisfactory for several years since they were grown only in that part of the state where they were well adapted. As settlement pushed westward, however, many crop failures were recorded. Spring wheat was then introduced and grown quite extensively in the northern and western counties because of the repeated failures of the soft winter varieties to withstand the cold of winter or the dry of summer.

In 1873 Russian colonists emigrated to the United States, some of them settling near Newton, Halstead and Moundridge, Kansas. Each family brought with them a quantity of the Crimean or what came to be known as Turkey wheat which they had grown in Russia. Later the United States Department of Agriculture introduced and distributed the Kharkof.

The good qualities of these wheats were not generally recognized for a long time. The acreage gradually increased, however, until a few years ago there was practically no soft wheat grown in

Central or Western Kansas and no spring wheat except in Northwestern Kansas, where a small acreage is still sown because of dry fall weather which makes it difficult to get fall wheat started.

It is generally recognized at present that profitable wheat production in Nebraska, Montana, Oklahoma, and much of Kansas depends on the hard winter varieties. For Kansas to again take up the growing of soft wheats where the hard wheats are now generally grown, would be a step backward instead of forward.

SOFT WHEAT NOT FLY RESISTANT

Many believe that soft wheat is more resistant to Hessian fly and grow it rather than hard wheat for that reason. There is probably no doubt that in many cases the fly will attack hard wheat rather than soft wheat where both are grown in the same field. Soft wheats are not resistant to fly, however, and if grown exclusively and sown early in a fly-infested locality, they are just as certain to be injured as are the hard wheats. As far as known, there are no varieties of winter wheat able to resist the attacks of this insect.

That soft wheats are not resistant to fly is shown by the fact that this insect first made its appearance in the United States and now does the most damage in areas where soft wheats are grown almost exclusively. Since the Hessian fly can be controlled by seeding at the proper time and by destruction of the fly in the stubble and volunteer wheat, the best practice is to seed the kind of wheat that on the average will give the best yield and quality. For most of Kansas, this unquestionably is some one of the hard wheat varieties.

The best varieties of soft wheat for Southeastern Kansas appear to be the Fulcaster and Red Wave, both of which are bearded varieties, and Currell, which is a beardless variety. Fultz does well on bottom land. In all tests conducted by the agronomy department, the widely advertised Miracle—or Marvelous, as it is sometimes called—has so far failed to substantiate the claims made for it. It appears to be no better than many other

varieties grown in this part of the state and is inferior to some. The Harvest Queen is one of the best soft varieties to grow in Northeastern Kansas and is probably more widely grown than any other.

BEST VARIETIES OF HARD WHEAT

The best varieties of hard wheat are the Turkey and Kharkof and selections from them. There is practically no difference between Turkey and Kharkof, either in appearance, quality of grain or yield. Both came from Russia and were probably originally the same variety. The Kharkof is thought to be slightly more hardy than the Turkey in northern states. Many attempts have been made to produce a beardless hard wheat equal to Kharkof and Turkey in yield, but so far all efforts have failed.

Two new selections of hard winter wheat have been recently produced which are giving decidedly better yields than any other varieties tested. The agronomy department has no more seed for sale of any of these varieties.

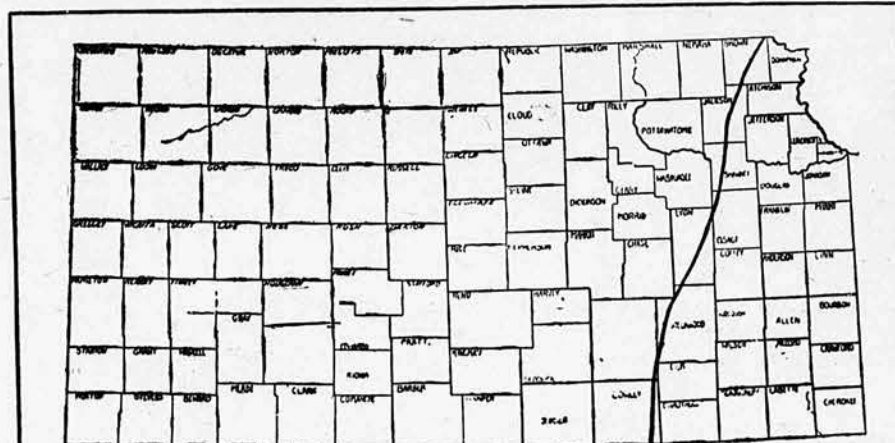
Don't Plant All to Whea

Before deciding—on account of any past successes with wheat—to plant just every acre possible to this crop for the coming year, look carefully into the possibilities of wheat year after year, and the permanency of this kind of farming. Look up the state's figures for a period of years, or those covering your immediate locality, and see if it has been the exclusive wheat farmer who has made the permanent success or the man who has grown some wheat along with the practice of diversified farming.

We are all apt to overestimate the present success without justly comparing it with successes along other lines, but we would do well to remember the benefit derived from the milk cows and other classes of live stock, and make provision for growing feed for as many animals as possible. Live stock and dairying are year-in-and-year-out businesses, while strictly wheat farming is a gamble.

"A roof or covering of some kind is an absolute necessity for a pit silo. If it is left uncovered, dirt, trash and snow will blow in, and there is also danger of small children and stock falling in. A convenient way to cover it is to build a shed over the silo and to run the carrier track from it to the barn or shed where the feeding is to be done. If the silo is not too large in diameter, a platform, made of heavy timbers and having a hinged door, may be used for a covering. On the other hand, the silo should not be kept closed tightly. Some provision should be made for circulation of air, as moisture may collect on the walls if there is no ventilation. The air in the silo should be as fresh and dry as possible."

Don't use a solid wrench on a nut too small for the wrench; it wears both nut and wrench. Don't use the monkey-wrench for a hammer; try and keep a hammer near by, to be used if needed. Don't make a shining brush of your file; feed it on the forward stroke only, thereby cutting the file expense at least one-third.



MAP SHOWING WHEAT BELTS OF KANSAS.—HARD WHEAT BEST ADAPTED TO AREA WEST OF LINE



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MANSFIELD LAND CO., OTTAWA, KAN.

160 ACRES, Two Miles Osage City, Kansas.
Eighty acres corn; 30 acres hog pasture, balance pasture and meadow. Eight-room house, good cellar and cistern; large barn, dairy barn, wind mill. One thousand catalpas. Price, \$65 per acre. Easy terms. Will consider trade for smaller farm.
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Square Section Smooth Wheat Land
Unimproved, all in grass; seven miles from railroad shipping point; eight miles from state irrigation plant. Free from rock, best of soil and underlaid with an abundance of soft sheet water. Price, \$7.50 an acre. \$2,000 can run three years, 6 1/2% interest.
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Write us about the 471 small tracts, near and adjoining McAlester, city 15,000, sold last January by government at auction. Fine for vegetables, fruit and poultry. Sell at low price. Terms.
SOUTHERN REALTY CO., McAlester, Okla.

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New town; fair improvements; \$600. 120 acres, 60 cult., good improvements, \$2,500, to trade for merchandise. 280 acres, well improved farm, 5 miles out, \$35 per acre.
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OVERLAND RED

A Romance of The Moonstone Canon Trail

SYNOPSIS OF PRECEDING CHAPTERS

A lonely prospector, thinking always of his wife and child left behind, follows the lure of the desert in his search for gold. In the desert town men begin to notice the regularity of his comings and goings. They are green with envy and decide to beat him out of his claim. Meanwhile, in the lonely canon he hoarded the little yellow bits. As weeks rolled by the water decreased; he carefully stowed his gold in a pouch and prepared to leave the canon. After a fateful search he finally comes to a railroad. Here he is found by a man, who gives him water, but being so exhausted the water is of no avail—a flash comes over him and his vision is forever darkened. Louise Lacharme and Boyar of Moonstone Ranch accidentally come upon the camp of Overland and Collie (whom Overland has picked up along the way). Tenlow, the detective, finds the prospector by the railroad and rides up to the camp to arrest Overland, whom he suspects; but after some strenuous arguing, Overland tactfully leaps on Boyar and, through precarious moves, escapes the detective. Tenlow's horse slips and rolls headlong to the bottom of the cliff, leaving Tenlow lying halfway down the hillside. Having turned toward the foothills, Overland releases Boyar and disappears in the brush. At the suggestion of Louise, Collie goes for the doctor and is afterward arrested. Louise tells Walter Stone, her uncle, about the arrest, and finally coaxes him to go with her and get Collie. Walter Stone, being a very influential ranchman and having secured Collie's release, takes him back to the ranch, where he gives him work to do. After several days work with Williams, the foreman of Moonstone Ranch, Collie learns the "ins" and "outs." He finds Overland Red in the mountains near the ranch. Overland goes to Los Angeles and is grubstaked and returns to find the streak of gold. Arriving at the desert town he finds the man who grubstaked him already there, and is persuaded to let him go with him in search of the gold.

CHAPTER XII. "FOOL'S LUCK."

GAUNT, unshaven, weary, Winthrop rested on the crest of the northern range. Overland, looking for water, toiled on down the slope. Winthrop rose stiffly and shuffled down the rocks. Near the foot of the range he saw the burro just disappearing round a bend in a canon. When he came up with Overland, the tramp had a fire going and had pitched the tent. The canon opened out to a level green meadow, through which ran a small stream. They had come a long day's journey from the water-hole on the other side of the range. They were safe from ordinary pursuit. That evening beside the fire, Overland told again the story of the dead prospector, the gold, and the buried papers. In his troubled slumbers the easterner dreamed of pacing along the track counting the ties, and eventually digging in the sand, digging until his very soul ached with the futility of his labor. Waking, he never lost faith in the certainty of finding the place. He now knew the tramp well enough to appreciate that the other had not risked his own life and nearly killed one of his pursuers through sheer bravado, or fear, or personal hatred. Something more potent was beneath the tramp's motives—some incentive that was almost a religion. So far, Winthrop was correct. He erred, however, in supposing Overland to be obsessed with a mania for gold for its own sake. The erstwhile sheriff of Abilene had dreamed a dream about an adopted wife and a beautiful young girl. The dream was big. Its fulfillment would require much money. There was more of the poet in Overland Red than his best friend had ever imagined.

Three days they rested in the wild seclusion of the canon. The silence, the solemnity of the place, fascinated Winthrop. The tiny stream, cold and clear, the vegetation, in a region otherwise barren-gray and burning—the arid Mojave with its blistering heat, the trees, the painted rocks—ochre, copper, bronze, red, gray, and dim lilac in the distances—the gracious shade, the little burro, half ludicrous, half pathetic in its stolid acceptance of circumstances—all had a charm for him that soothed and satisfied his restlessness.

Meanwhile the indefatigable Overland spun yarn after yarn of the road and range, and rolled innumerable cigarettes with one hand, much to Winthrop's amusement.

The third morning Winthrop had awakened feeling so completely refreshed that he begged Overland to allow him to make an attempt to find the hidden papers and the little bag of gold. Overland demurred at first, fearing that the easterner would become lost or stricken with the heat. Throughout the day Winthrop argued stubbornly that he ran no risk of capture, while Overland did. He asserted that he could easily find the water-hole, which was no difficult task, and from there he could go by compass straight out to the tracks. Overland had told him that somewhere near a little culvert beneath the track was the marked tie indicating the hiding-place of the dead prospector's things. It would mean a journey of a day and a night, traveling pretty continuously.

Finally Overland agreed to Winthrop's plan to make the attempt the following day.

At the foot of the range Overland gave his companion a canteen and a piece of gunnysack wrapped round some hardtack and jerked beef.

"Don't I need my gun this time?" queried Winthrop.

"Nope, Billy. 'Cause why? You don't generally kill a little gopher or a little owl that's settin' up tendin' to his business, because you ain't scared of them. But you will go off the trail to kill a rattler, a sidewinder, because he's able to kill you if he takes a notion. Correct. Now a tenderfoot totin' a gun is dangerouser than any rattler that ever hugged himself to sleep in the sun—and most fellas travelin' the desert knows it. Why, I'm plumb scared of a gun-totin' tenderfoot myself. Not havin' a gun will be your best recommend, generally speakin'. Stick to the bugs, Billy; stick to the bugs."

"Well, you ought to know."

"I got seven pockers in my hide to prove what I say. Six of 'em were put there by plumb amachours in the gun line; fellas I never took pains to draw on quick, never suspectin' nothin'. The other, number seven, was put there by a gent that meant business. He died of a kind of lead poisonin' right immediate."

They shook hands, the battered, sun-burned adventurer, rough-bearded, broad-chested, genial with robust health, and the slender, almost delicately fashioned easterner, who had forgotten that there were such things as lungs, or doctors—for the time being.

"Say, Billy, you need a shave," commented Overland, as the other turned to begin his journey across the desert.

Winthrop grinned. "You need—er—decapitating," he retorted, glancing back. Then he faced the south and strode away.

Overland, ascending the range, paused halfway up. "Decapitating," he muttered. "Huh! That's a new one on me. De-cap—"

Let's see! Somethin' to do with a fella's hat, I reckon. It's easy to run a word down and hole it if you got brains. Mebby Billy meant for me to get a new one. Well, the constable's friend only put one hole in her—she's a pretty good hat yet."

Overland found his slow way back to the hidden canon. He felt a little lonely as he thought of Collie. He gave the burro some scraps of camp bread, knowing that the little animal would not stray so long as he was fed, even a little, each day.

It was while he was scouring the fry-pan that he noticed the black sand across the stream. Lethargically he rose and scooped a panful of the sand and gravel and began washing it, more as a pastime than with an idea of finding gold. Slowly he oscillated the whispering sand, stopping the water out until he had panned the lot. He spread his bandanna on a smooth rock and gently emptied the residue of the washing on it. "Color—but thin," he said. "Let's try her again."

He moved farther upstream—this time with one of his regular pans. He became absorbed in his experiment. He washed panful after panful, slowly, carefully, collectedly. Suddenly he stood up, swore softly, and flung the half-washed dirt of the last pan on the rocks. "I'm a nut!" he exclaimed. "This livin' in civilization has been puttin' my intellec to the bad. Too much eastern sassiness." And with this inexplicable self-arraignment he stooped at the tent-door, buckles on his gun, and started upstream. He glanced from side to side of the steep and narrowing walls as he advanced slowly. He passed places where the stream disappeared in the sand to find some subterranean channel and reappear again. Rounding an angle of the cliff, he dropped to his knees and examined some tiny parallel scratches on a rounded rock—the marks made by a bootheel that had slipped. For an hour he toiled over the rocks on up the diminishing stream. "Gettin' thin," he muttered, gazing at the silver thread of water rippling over the pebbles. A few feet ahead the cliffs met at the bottom in a sharp-edged "V," not over a foot apart in the stream-bed, but widening above. Overland scrambled through. On the other side of the opening he straightened up, breathing hard. His hand crept to his hip. On a sandy level a few yards ahead of him stood a ragged and faded canvas tent, its flap wavering idly in a breath of wind. In front of the tent was the rain-washed charcoal of an old fire. A rusted pan, a pick, and the worn stub of a shovel lay near the stream. A box marked "Dynamite" was half-filled with odds and ends of empty tins, cooking utensils, and among the things was a glass fruit-jar half filled with matches.

Slowly Overland's hand dropped to his side. He stepped forward, stooped, and peered into the tent. "Thought so," he said laughing queerly. Save for a pair of old quilts and an old corduroy coat, the place was empty.

"Fool's luck," muttered Overland. "Wonder the Gophertown outfit didn't find him and fix him. But come to think of it, they ain't so anxious to cross over to this side of the range and get too close to a real town, and get run in or shot up. Fool's luck," he reiterated, coolly rolling a cigarette and gazing about with a critical eye. "They's another trail into this canon that the prospector knowed. I got to find it. Billy'll be some interested."

CHAPTER XIII. THE RETURN.

Overland Red lay concealed in an arroyo at the foot of the range. He could overlook the desert without being seen. It was the afternoon of the day following Winthrop's departure.

Since discovering the dead prospector's camp and all that it meant, the tramp was doubly vigilant. He tried to believe that his anxiety was for his own safety rather than for Winthrop's. He finally gave up that idea, grumbling something about becoming "plumb soft in his feelin's since he took to associatin' with sassiness folks." However, had Winthrop been of the West and seasoned in its more rugged ways, Overland would have thought little of the young man's share in recent events. While he knew that Winthrop looked upon their venture as nothing more than a rather keenly exciting game, Overland realized also that the easterner had played the game royally. Perhaps the fact that Winthrop's health was not of the best appealed to some hidden sentiment in the tramp's peculiar nature. In any event, Overland Red found himself strangely solicitous for his companion's return.

Far in the south a speck moved, almost imperceptibly. The tramp's keen eyes told him that this was no horseman. He rolled a cigarette and lay back in the shade of a boulder. "He's a couple of points off his course, but he can't miss the range," he reflected.

Desiring to assure himself that no horseman followed Winthrop, Overland Red made no sign that might help the other to find the trail over the range. The rim of Winthrop's hat became distinguishable; then the white lacing of his boots. Nearer, Overland saw that his face was drawn and set with lines of fatigue.

[Continued on Page Fifteen]

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KANSAS FARMER
TOPEKA, KANSAS

Overland Red.—Copyright, Houghton Mifflin Company.



Stock Farmer Needs Veterinarian

THE live stock farmer, in case of an attack of sickness among his live stock, often debates in his own mind, "Shall I call a veterinarian?" In analyzing the question he tries to figure what the charge for the visit will be, whether the veterinarian will be able to render any assistance and whether the animal in question is worth spending money on. He has a right to ask all of these questions to himself because the calling of a veterinarian is primarily a business proposition. In too many instances, however, the farmer may not decide correctly because of prejudice against a veterinarian as an adviser, or because of not valuing the sick animal at a fair price. In a large percentage of cases the farmer will only be doing himself justice by consulting a competent graduate veterinarian who holds a state certificate of practice.

Too many people fail to differentiate between a "hoss doctor" and a veterinarian. The days of the old fashioned "hoss doctor" are over, thanks to education, scientific research and practical experience. The man who used to hang up his shingle as a horse doctor has practically disappeared. This particular fellow twenty years ago picked up a good many dollars by cutting open and packing with salt and pepper a cow's tail for the very severe affection still spoken of as "wolf in the tail." No wonder the stockman became disgusted with this sort of practice.

It is right and just that a farmer should understand what qualities constitute or make a successful veterinarian in the present day. A successful practicing veterinarian of today in a farming community should be well posted and up to date in all methods of treatment of our common live stock diseases. He will be more successful if he has had several years farm experience and he must have knowledge of the care, feed and management of farm animals. He must be sober and above all things have the faculty of using his head. A veterinarian can be excused for not having read the latest treatment for azoturia but never excused for using poor judgment. A level head, combined with broad-mindedness, good judgment and fairness will carry any veterinarian through the rough spots even if his ability or knowledge of his work is slightly in error. A stockman has a right to expect, when he calls a veterinarian, to obtain something useful from the visit. This something may be in medical or surgical aid rendered to the sick animal or advice in the prevention of disease in the future. But our farmer friend says, "How many veterinarians fill these requirements?" At least 75 per cent of all practicing veterinarians will be worth the price charged for a visit to your farm in case of sickness among live stock. The standard of efficiency of the veterinary profession is rising and with a little patience on the part of live stock men a thoroughly competent veterinarian will be located in every live stock community in the near future.

It must be remembered that there are good and poor lawyers, good and poor bankers, good and poor preachers, good and poor men in any line of work as well as good and poor veterinarians. What the veterinary profession asks and

needs is worthy and fair consideration of the 75 per cent of the men of the profession who are rendering good service to live stock men through the application of medicine in the treatment of disease, through scientific investigation, and through live stock sanitary measures that protect the live stock industry of our country.

The veterinarian is being trained now and will be trained more in the future along animal husbandry lines in addition to his major work of medicine and disease.

The failure of a good many veterinarians is due to a lack of live stock knowledge. Institutions offering a course in veterinary medicine have recognized this fact and in recent years have increased the scope of the work to include such important courses as the feeding and breeding of animals, judging work and live stock management. Students considering entrance to a veterinary school should give preference to the college which offers at least a four years' course of veterinary work with a liberal supply of animal husbandry subjects. The veterinarian is in a good position to carry the gospel of better live stock directly to the farmer. It behooves a successful practitioner to offer suggestions to his clients if these suggestions will mean the correction of certain faults in live stock management. In future years there is bound to be a closer relationship between the farmer and the veterinarian.

Let every person boost for better veterinarians, better farmers, better live stock.—H. H. HAVNER, in National Stockman and Farmer.

If any of the farm animals has a sore, do not neglect it. Even though it is not serious at the start, failure to give it attention may cause it to become dangerous in its development. If it is serious, neglect may be paid for dearly.

Never forget that the animals need water. This should be given as regular attention as is given their feeding. Don't think that the live stock does not suffer from lack of water the same as do humans.

The horse that is in the harness all day appreciates the freedom of the pasture after his evening meal. This relaxation of his muscles puts him in better trim for the next day's work.

Usually the long, hard day for the farmer is equally long and hard for the farm horse. Don't leave him for the night until you know his needs have been supplied and he has been made comfortable.

Are you making provision for carrying through the winter all the live stock you can handle? Many a man can testify as to the profitability of this winter crop.

In your feeding operations do you make use of only the crops grown on the place, or do you know the part each feed in the ration has in the development and growth of the animal?

Have you visited the salt boxes in the pasture lately, to see whether or not they are empty?



BUNCH OF FEEDING LAMBS ON THE FARM OF CHARLES S. PERKINS, LABETTE COUNTY.—THEY ARE THE FIRST CROP RAISED FROM BAND OF WESTERN EWES

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COLUMBIAN METAL SILOS

Turn Certain Loss Into Profit. Buy a Columbian Galvanized Metal Silo—save your corn before it dries up and becomes worthless. Have plenty of the finest feed for your stock. There's no such thing as a crop failure for Columbian silo owners; they are independent of weather conditions and the speculator.

Easy to Erect. The easiest silo in the world to erect with the smallest expenditure of time and money. In a few hours two or three men can easily erect a Columbian Silo. There's no delay—no waiting for walls to set and dry before filling. If necessary you can start filling a Columbian before it is completely set up. No skilled labor is required in the erection of these silos and you can have one ready for filling in five or six days after placing your order. Think what this means just now.

Patented Features. Special features in construction found only in Columbian Silos account for their universal success. They are made of heavy galvanized sheets 3 ft. by 8 ft. accurately punched and formed, ready to be bolted together with the large square head bolts that are furnished. The patent air tight joint is so simple that it makes erection an easy task and produces a permanent silo that remains air tight. Columbian silos are built to last a life time and they will not crack, swell or burst when full.

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Prices. Our prices are just the same as last year—no increase although the price of metal has increased nearly 50 per cent since last year's prices were made. Take advantage of this offer and buy a Columbian Metal Silo while our present stock lasts. Buy direct from the factory and save the agent's commission.

Prompt Shipment is assured if you will place your order at once. Although our manufacturing capacity is the largest in the country we cannot promise immediate deliveries very long. This means that you must get your order in right now. Send the coupon below telling us the size of silo you wish and we will quote you our low price and our Silo Folder.

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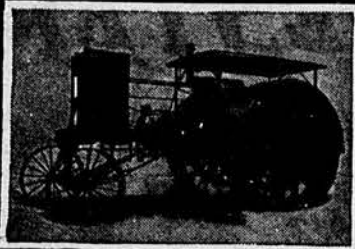
I will need a ____ ton silo. Kindly send me your lowest prices and your Silo Booklet.

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KANSAS CITY**

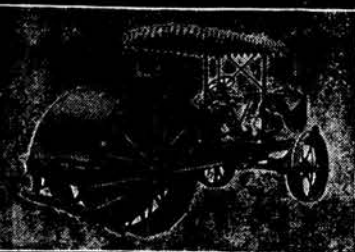


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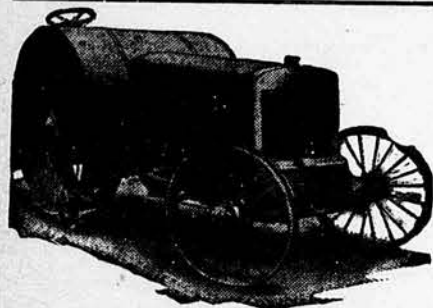
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I have been building engines right here in Kansas City for 30 years, and am given the highest credit by Dun's and Bradstreet's. I do not tell you this boastfully, but just to let you know that I must be dependable or I could not have been so constantly successful in a business extending over so many years. This record also enables me to buy the very highest quality materials at lowest cash, big-quantity prices.

I have always built the very best engine I could, regardless of price and profit. I sell direct from factory to user—the one small factory profit is all you pay. Formerly the retail prices of my engines were double. I can sell at a very, very close margin, because of my big business—if I only make one dollar clear profit on every engine I can buy a good farm every year!

30-Day Trial; 5-Year Guarantee;
Cash or Easy Terms of Payment.
Built in 2, 3, 4, 6, 8, 12, 16 and 22 H.P. sizes, in different styles for Kerosene, Gasoline, Naphtha, Distillate or Gas, stationary, portable, saw-rig type. Write for new book, "How to Judge Engines," prices, etc.—**Ed. H. Witte, WITTE ENGINE WORKS,** 1805 Oakland Avenue, Kansas City, Mo. 1805 Empire Building, Pittsburgh, Pa.



LITTLE GIANT TRACTOR

Model "A," 26-35 H. P., 6 Plows, \$2,000
Model "B," 16-22 H. P., 4 Plows, \$1,250
Each model has 17 set Hyatt Roller Bearings, besides numerous ball bearings. Glyce bearings on crank shaft and connecting rods. Built on automobile lines from high grade automobile material. In design, material and workmanship, will compare favorably with highest priced automobile made. Has three speeds forward—1 1/2, 3 and 6 m.p.h. per hour, and one speed reverse. With proper care will outlast any automobile. Orders filled promptly. Owing to great demand for our tractors, we will not exhibit this year at any tractor shows.

MAYER BROTHERS COMPANY
154 W. Rock St. Mankato, Minn., U. S. A.



Self Feeder For Hogs

IS THE self-feeder practical? Will the hogs balance their own ration? What feeds can be fed in a self-feeder? How do the "self-fed" hogs gain compared with the "hand-fed" ones? What about the feed required for 100 pounds of gain? How much trough room is necessary? Are self-feeders difficult to make?

Questions like the above come to the mind of every farmer considering a self-feeder. There is a good deal of labor in connection with feeding hogs and it is important to reduce this to the smallest amount possible. One of the biggest advantages that can be expected to follow the use of a self-feeder is a lessening of the labor required.

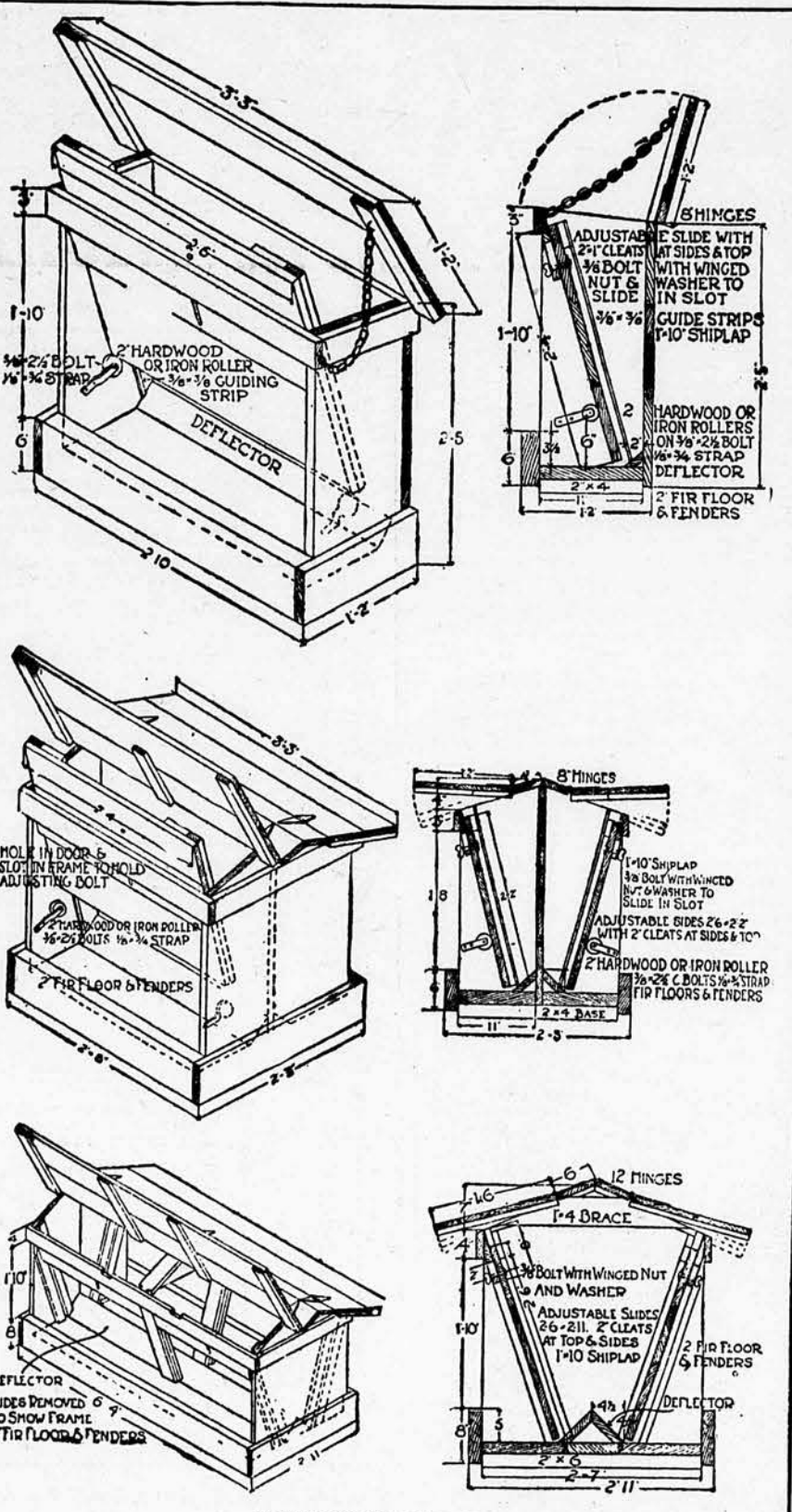
A few years ago Prof. John M. Evvard of the Iowa Experiment Station started a series of tests to find the answers to some of the questions being asked about self-feeders. For quick fattening of well grown shoats he soon found the self-feeder method had much merit. One of the first tests was the finishing of seventeen 225-pound shoats, feeding them sixty-eight days on bluegrass pasture. The lot fed with self-feeders ate an average of 7.39 pounds of shelled corn apiece daily. Of meat meal containing 60 per cent protein, each hog consumed .18 pound daily. They also ate .07 pound daily of oats, and .04 pound daily of wheat middlings, .01 pound daily of oil

meal, and a small amount of charcoal and rock salt. They had free access to all these different feeds.

The gains made during the sixty-eight days were at the rate of 1.75 pounds per head daily, and it took 4.4 pounds of feed for each pound of gain. Charging the corn at 50 cents a bushel, meat meal at \$2.50 a hundred, middlings at \$1.45 a hundred, charcoal at \$3 a hundred, salt \$1 a hundred, oats 38 cents a bushel, and pasture \$6 an acre, the cost of gain amounted to \$4.22 a hundred. With hogs bringing \$6 a hundred, the corn would have returned a value of 72 1/2 cents a bushel.

Pigs were also self-fed from weaning time to 250 pounds weight in comparison with others fed by hand. All had alfalfa pasture. The pigs getting shelled corn and meat meal in self-feeders reached 250 pounds in weight in 180 days, and the gains had cost at the rate of \$3.83 a hundred. Hand-fed pigs getting ear corn and meat meal required 206 days to reach this weight, and the feed cost was \$3.96 a hundred. The self-fed hogs were only eight months old when they were sold at a weight of 250 pounds, twenty-six days before the hand-fed hogs were ready to go.

Considerable labor was saved by the self-feeding method and from the standpoint of gains and profits the results were highly satisfactory. The feeding



PLANS FOR SELF-FEEDERS

Are Your Hogs Lousy?

Act Now

It is natural for a hog to wallow. Provide a wallow close to the feeding grounds, to which add Dr. Hess Dip and Disinfectant occasionally. The hogs will constantly pass back and forth from the wallow to the feed trough; while the DIP will kill the lice and cleanse the skin, the DRIP will destroy the germs of disease and the worms that pollute the ground.

Dr. Hess Dip and Disinfectant

One gallon makes 70 to 100 gallons solution

is excellent for sheep dipping; it is a guaranteed remedy for sheep scab and ticks; it destroys germs and foul odors—in short, its use as a disinfectant around your farm will keep away disease. Invaluable for disinfecting sinks, drains, troughs, garbage cans, outhouses, etc. Good alike for home and stable. Sold in pint bottles, quart, half-gallon, gallon cans and barrels.

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Except in far West and Canada

Dr. Hess Fly Chaser
Does not gum, color or blister. Makes stock comfortable.

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Removes Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from any Bruise or Strain; Stops Spavin Lameness. Allays pain. Does not blister, remove the hair or lay up the horse. \$2.00 a bottle, delivered. Book 1 K free.

ABSORBINE, JR., the antiseptic liniment for mankind. For Synovitis, Strains, Gouty or Rheumatic deposits, Swollen, Painful Varicose Veins. Will tell you more if you write. \$1 and \$2 per bottle at dealers or delivered. Manufactured only by **W.F. YOUNG, P. O. F., 211 Temple St., Springfield, Mass.**

F. S. H.

A Remedy for Sick Hogs and Poultry.

A worm destroyer and general tonic for hogs. Used in roup, limberneck, white diarrhea and other diseases peculiar among poultry. Satisfaction guaranteed.

Testimonials from many users on application. Price, \$1.00 per bottle, postpaid. Enough for 30 hogs or 3,000 chickens.

OLEPHEN CHEMICAL CO., Wamego, Kan.

2 Heaves CURED OR MONEY BACK

Baird's Heave Remedy permanently cures heaves or your money is refunded. Give Baird's Heave Remedy in animal's feed and keep it working. If one package fails to cure, send for your money. Write for free descriptive matter.

BAIRD MANUFACTURING CO.
Box 711, Purcell, Okla.

If on the market for pure-bred stock, read KANSAS FARMER live stock advertisements. You will find what you want.

of shelled corn and meat meal in separate self-feeders is thoroughly practical.

Old sows were also fattened for market very satisfactorily with self-feeders. Mature hogs require very little protein supplement and it was found that the sows made no mistakes in balancing their own ration when the corn and meat meal were both supplied in self-feeders.

In the tests made the allowance of trough space for feeding corn was ten feet for either thirty to fifty pigs, twenty to thirty 100-pound shoats, fifteen to twenty-five 200-pound sows, or fourteen to twenty old sows.

As a result of the experience gained in these experiments, Professor Evvard offers the following self-feeder "Don't's" to help the beginner:

"Don't use the self-feeder for all classes of hogs.

"Don't self-feed if you don't want rapid gains.

"Don't self-feed if you want to 'grow your pigs along slowly.'

"Don't self-feed pregnant sows excepting early in the breeding season, or unless you mix bulky feed such as ground oats, alfalfa meal, or bran with feeds.

"Don't expect the self-feeder to save all the work.

"Don't think that because the 'self' method works out meritoriously in many circumstances with hogs, the same would be true with other farm animals.

"Don't always expect the hog to economically balance the ration, no matter what feeds you allow. The hog is not an economist. He will eat to suit himself. He disregards the price. But it is surprising how well the hog likes corn. In the corn belt it is the one great feed for swine, but just now its relatively high price gives it a narrow margin compared to wheat, rye, barley and oats.

"Don't you know that 'hogging-down' corn pays—and don't you know that it is the 'self-feeder method' of harvesting corn?

"Don't self-feed unless you keep water before the hogs always.

"Don't self-feed tankage or meat meal if you limit the corn ration; when the pig gets hungry it's eat tankage or nothing, and he eats the tankage.

"Don't expect the self-feeder to be a panacea for all feeding troubles.

"Remember that the self-feeder is still in an experimental stage and that the principles and laws which govern its use are not yet fully worked out."

Self-feeders are not difficult to make. The materials are within the reach of everyone. From the drawings here shown anyone should be able to build a self-feeder. The drawings are those prepared by the Iowa Experiment Station. Cut No. 1 shows a single way feeder, front view and cross section. In the front view the slide is lifted so as to show the incline for the feed. This slide can be entirely removed when it is necessary to clean the feeder. When a feed guard is put in there is no need of having the roller shown in the cut. By simply boring two-inch holes through where the rollers are indicated, and putting a gas pipe through, neither feed guards nor rollers will be needed. The adjustable slide will work up and down, the front side always resting on the gas pipe.

Cut No. 2 shows the same kind of feeder changed into a double way feeder. These feeders can be built almost any size by simply enlarging the dimensions.

Cut No. 3 shows an enlarged type of feeder which will hold half a wagonload of corn. A feeder of this size can be built at a cost not to exceed \$14 including the feed guard.

Have You Winter Feed?

The man who knows he has enough feed for his stock for the coming winter, is fortunate. If he does not have this assurance, he will do well to begin now to make his plans. The relative values of feed and live stock should be figured

carefully and conclusions reached after a thoughtful study of the situation.

It may be that the feed needed can be purchased in the immediate neighborhood if the need is made known, thereby making possible a saving on account of eliminating carrying charges. There may be a surplus of one kind of feed which can be sold and the proceeds used for supplying the lacking element.

When to Seed Kansas Wheat

[Continued from Page Five]

The best thing to do in this area is to have the ground prepared early, the seed cleaned and treated for smut if this is necessary, and be ready to seed when conditions are most favorable. The common practice of delaying the preparation of the ground until sufficient rain comes to germinate the seed, should be discouraged. By the time the ground is prepared, all the moisture may have evaporated, and the grain must be sowed in dry ground or seeding delayed until another rain comes.

Probably the best date for seeding in Western Kansas, when all conditions are favorable, is about the middle of September. Extremely early seeding should be avoided, especially under conditions favorable for germination and early development of the wheat, since the heavy growth that will result takes all the moisture from the ground, leaving the wheat entirely dependent on seasonal rains to complete its growth. Early sowed wheat also sometimes makes so thick a growth in the spring that it is easily injured by hot winds and dry weather.

SEED BED AFFECTS TIME OF SEEDING

It has been noted that early deep plowing is very effective in controlling Hessian fly. It is also very effective in promoting a rapid growth of the wheat in the fall. For this reason wheat may be sowed considerably later on ground that has been plowed early and deep than if it has been carelessly prepared. When ground is plowed early, plant food is developed very rapidly and water is usually stored in the soil for the growth of the plant. As a result, growth is rapid, the plants tiller abundantly, and strong roots are developed before winter. Rather late seeding on a well-prepared seed bed will give much better yields than early seeding on poorly prepared ground even when the Hessian flies are present. Also, wheat that has made a good growth is better able to resist attacks of the fly since it tillers more and there are more stalks to take the place of those destroyed.

THE RATE TO SEED

The rate to seed wheat bears a very definite relation to the time of seeding. Wheat that is planted early tillers abundantly and produces many heads from a single grain. On the other hand, late sowed wheat often germinates poorly and produces but one or two heads per plant. This is indicated in the table herewith, which gives the average number of tillers produced by a single plant when sowed at different dates from September 8 to October 17.

On the average, the early sowed wheat produces nearly three times as many tillers per plant as that sowed in the middle of October or later. A part of this difference can be made up by increasing the rate of seeding.

Experiments to determine the best rate to seed with different times of seeding have been conducted at the experiment station at Manhattan for four years.

The rate of seeding made very little difference in the yield when the grain was sowed before September 28. When sowed after this date the higher rates of seeding gave the best yield. This result agrees with the general farm practice of sowing more grain when seeding late than when seeding early.



FIELD OF DWARF ESSEX RAPE AFTER SHEEP HAD GRAZED IT A FEW DAYS — THE BARE STEMS WILL THROW OUT NEW LEAVES AND IT CAN BE GRAZED AGAIN LATER

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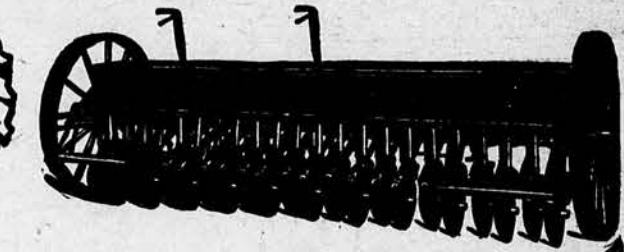
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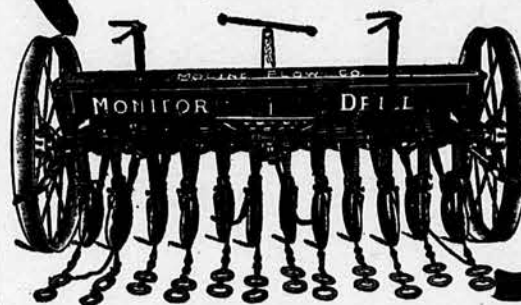
Suppose you had ten grains of wheat and it was imperative that they grow. Would you toss them carelessly over the seed bed and rake them in? Certainly not—you would expect each seed to grow—you wouldn't expect to feed the birds or bury some of the grains so deep the plants would never come up. You would use extreme care in placing each seed, at just the right depth in the soil and then properly cover. Such grains would germinate at the same time, grow and ripen uniformly.

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They save seed—by seeding at a uniform depth, every good seed grows. They increase the yield—more room to stool, more stalks, more heads. They improve the grade—uniform growing means even ripening—no dead ripe grain threshing out while some are still in the milk stage.

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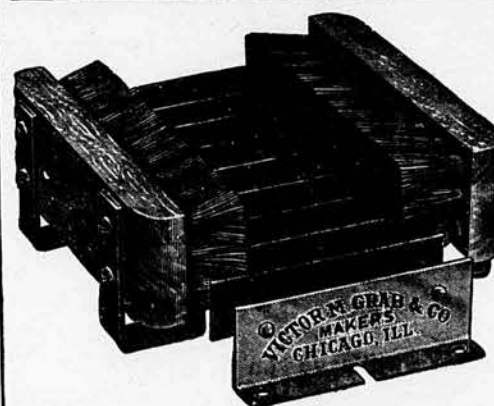


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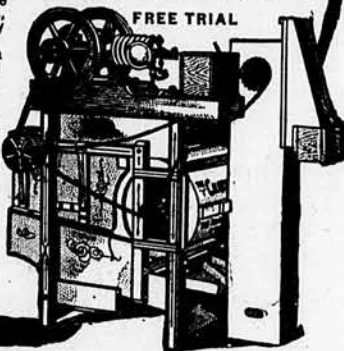
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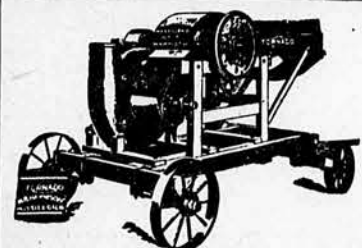
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Kansas Farmer Dairy Club

Hot Weather and Milk Flow

HAS your cow's milk flow been as good as usual during the extremely hot weather, or has it been lowered?

If it has been lowered, have you come to her aid by giving her extra feed, or have you just allowed her to worry along and do the best she could? Perhaps you have thought of giving her extra feed but have felt it was so high in price that you were not justified in adding this expense to your dairy club business. But have you figured the value to you of keeping up the milk flow and whether or not the additional butter fat produced by your cow on account of the extra feed given her, would offset the cost of the feed? This you can know by studying the article, "Next Winter's Feed," in the Dairy Club Department, issue of July 29.

Remember it is much easier to keep up the milk flow than to regain it.

Read the article above referred to, in KANSAS FARMER of July 29, and then sit down and figure out whether or not you are feeding your cow properly for the production of milk.

Winter Quarters for Cow

Although the weather is warm now and will be for some time yet—that is, warm enough so that your cow will not feel the cold—winter will be here on of these days, and every time your cow has to use her feed to keep her warm while she stands out in a cold, wet storm, she will have just that much less feed to use in making milk.

It is certain your cow will use her feed for warming her body before she will make milk, so if you do not want her to rob your milk pail during the winter you should provide comfortable winter quarters for her. It is not necessary for you to make this provision yet, if you can do it quickly when the time comes, but it is well enough to be thinking about it so that you will know what you can do when it becomes necessary to give her shelter. But see to it that you do not compel your cow to stand out in one cold, wet, blustery storm of the winter, for if you do you will be sorry when your record for that week or month is complete.

Is Your Business Interesting?

We hope the interest of our Dairy Club members is increasing each month. Judging from the letters we receive we believe it is, and it should be, for as the records of each month's work are completed they add to the comparison.

At the close of each month your business experience is that much greater. Do you study the results of your work and know the cause for the gain or loss in your measure of success for the month? At the close of the month, the city business man goes over his accounts and compares them with the last month's figures, also with the figures for last year. In this way he knows whether he is gaining or losing and tried to find out the cause.

You will get the greatest good from the work of the year if you will spend your spare moments studying your work and your results. First, learn the capacity and requirements of your cow. The first article in the Dairy Club Department of KANSAS FARMER issue of

May 27, and the last article in the same department in the issue of June 10, will help you do this. When you know your cow's requirements and capacity, you should watch the prices of the different feeds and see to it that you supply her a milk-making ration at the lowest possible cost. By this we do not mean you should ever cheat your cow, but we do mean it is possible for you to keep down your production cost by supplying the proper amounts of protein, carbohydrates and fat in the most economical feeds. You will understand the meaning of this when you have studied the articles mentioned above.

Never forget that your Dairy Club work is a business and that you will succeed in it in proportion to the thought, study and work you put into it. If there are any terms used which you do not fully understand, take them to your mother and father and ask them to explain them to you, or write the editor of KANSAS FARMER, who will be glad to write you personally on any matter. There are things about which we must all ask questions and the quicker we do it the less time we will spend working in the dark.

Cooling the cream quickly is as important as separating thoroughly.

Before calving, the cow's food should be reduced in quantity and of a laxative nature.

Treat your cow kindly, and do not use the milk stool to make her mind. All cruel treatment will affect her milk flow.

Be sure to give your cow all the clean, fresh water she can drink. She cannot make milk without water in abundance. If it is hard sometimes to pump all the water she wants, remember how you suffer when you do not have all the water you want. This will make the work of pumping seem easier.

Are you trying to produce just as clean milk as possible? Many a dairyman has built up his trade on cleanliness and care, and many others would lose their trade instantly if their customers should go to the trouble of seeing how the milk they use is produced.

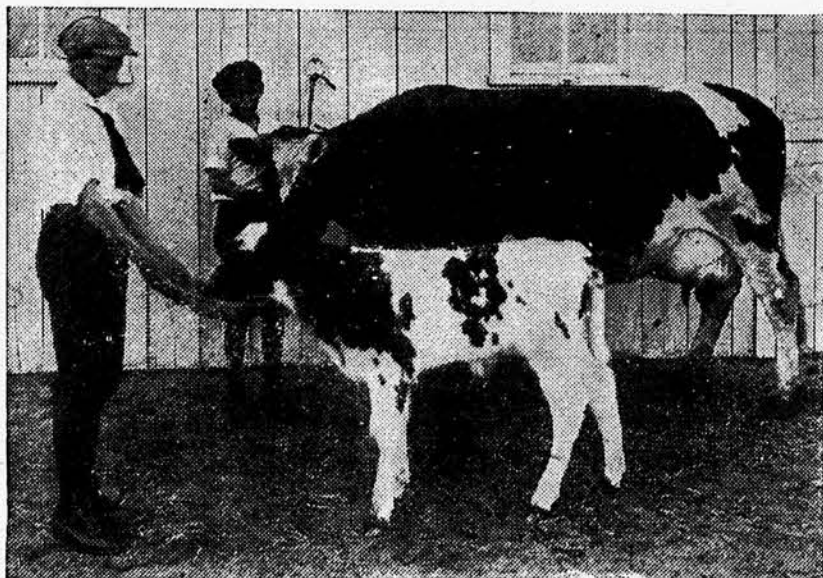
In your Dairy Club work, remember that success comes to the greatest number as a reward for daily efforts patiently put forth, and by making use of the little business lessons learned each day. This will be an encouraging thought on those days when the work seems hard or you think you would rather be doing something else.

"Start to Good Herd"

My cow and calf are doing fine. I feed the cow oats, alfalfa hay and bran. The calf is fed its mother's milk, separated, and oats. It also has a good pasture to run in and plenty of fresh water daily.

The calf is a heifer and I call her "Rosebud." If she is like her mother I will have a start to a good herd, thanks to your Dairy Club contest.

I will send you a picture of my cow and calf as soon as I get one.—JOE READICKER, JR., Franklin County.



RUDOLPH ENNS, A HARVEY COUNTY KANSAS FARMER DAIRY CLUB BOY, HIS YOUNGER BROTHER, AND RUDOLPH'S COW AND CALF



Sterilizer for Dairy Utensils

THE ordinary washing of dairy utensils is not sufficient to insure freedom from bacteria. The only safe method of destroying germs which affect the hygienic and keeping qualities of milk and cream is by sterilizing the utensils used. Even when dairy utensils appear clean, if they have not been properly sterilized they may harbor vast numbers of bacteria which contaminate milk or cream that comes into contact with them. Live steam at a temperature of at least 205 degrees Fahrenheit is a thoroughly effective agent and one that this home-made apparatus makes readily available on the average dairy farm.

A simple and efficient home-made steam sterilizer which can be built at a cost not to exceed \$5 to \$10 is described in a new Farmers' Bulletin, No. 748, prepared by the Dairy Division of the U. S. Department of Agriculture, Washington, D. C.

When placed on a stove or oil heater the apparatus in question develops steam in a shallow pan and introduces the live steam through a pipe into milk cans and buckets. In sterilizing separator parts, small articles and strainer cloths, a galvanized iron box is placed over the steam outlet and used as a sterilizing chamber.

CONSTRUCTION OF STERILIZER

The sterilizer for cans and milk pails consists of (1) a roasting pan, (2) a specially prepared insulated cover for it, and (3) a steam outlet pipe that runs through the cover. An ordinary roasting pan of standard size, about 20 inches long, 14 inches wide, top measurement, and 3 inches deep, will be satisfactory.

The insulated cover for the pan is in three layers, the lowest of which is a sheet of galvanized iron covering the roasting pan and lapping a little over the edges. On the bottom of the cover solder flanges to meet and fit the inside edges of the pan and make a tight cover.

For the steam pipe, cut a hole 1 1/2 inches in diameter and around it solder securely a steam outlet pipe 1/2 inches high and 1 1/2 inches in diameter.

To make the second layer of the cover, use a piece of asbestos board five-sixteenths of an inch thick and slightly smaller than the metal sheet. In the center cut a hole which will fit tightly around the steam outlet pipe.

For the top layer of the cover make a shallow pan of galvanized iron 14 inches square with sides five-eighths of an inch high, and cut a hole for the steam pipe. When the pan is pressed down tight on the asbestos, solder it firmly to the steam outlet pipe.

On the pan, solder, on edge, four strips of stiff galvanized iron three-eighths of an inch wide. They should start one inch from each corner and should run to within one inch of the outlet pipe. These strips provide ridges which raise the milk can from the pan and permit free circulation of steam.

Paper may be used instead of asbestos for the middle layer of the cover. Pack papers tightly to a height of three-eighths of an inch over the galvanized iron bottom and on top place another galvanized iron sheet of the same size. Solder these two sheets all around the edges so as to make a tight seam. This makes an insulated cover and pad about three-eighths of an inch thick, which will be found as satisfactory and even preferable to the asbestos insulation.

SOURCE OF HEAT

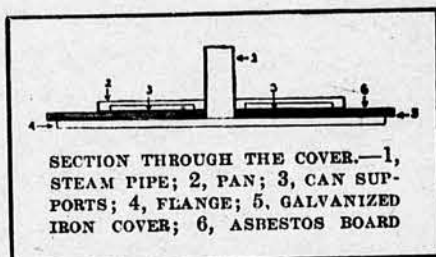
The sterilizer may be used on the

kitchen stove, or other stove, or over any other heat that is sufficient to furnish steam at the end of the outlet pipe at least 205 degrees Fahrenheit, or preferably 210 to 211 degrees Fahrenheit. A thermometer, if placed in the outlet pipe, will show whether the steam is hot enough.

OPERATING THE STERILIZER

Place the outfit, with one inch of water in the pan, on the stove, and see that the cover fits tightly. The first steam that comes from the apparatus will have a temperature of about 140 degrees Fahrenheit. Wait until a thermometer placed in the outlet pipe shows at least 205 degrees Fahrenheit. Then place the milk can—previously washed and rinsed—inverted over the steam outlet and resting on the ridges. Sterilize for five minutes; remove, shake out any water, and place the can upright on the floor. The can should be absolutely dry in one or two minutes. If not, it is an indication either that the steam was not hot enough or that the can was not washed clean. Remember that the steaming does not remove dirt, so that previous washing is essential.

In winter or in cold rooms an insu-



SECTION THROUGH THE COVER.—1, STEAM PIPE; 2, PAN; 3, CAN SUPPORTS; 4, FLANGE; 5, GALVANIZED IRON COVER; 6, ASBESTOS BOARD

lating cover for the milk can is desirable, since otherwise the can may be cooled so quickly that it will not dry thoroughly. An insulated cover that will serve this purpose can be made from a blanket.

Sterilize the milk receiving tank and separator parts and all milk pails in the same way and for the same time.

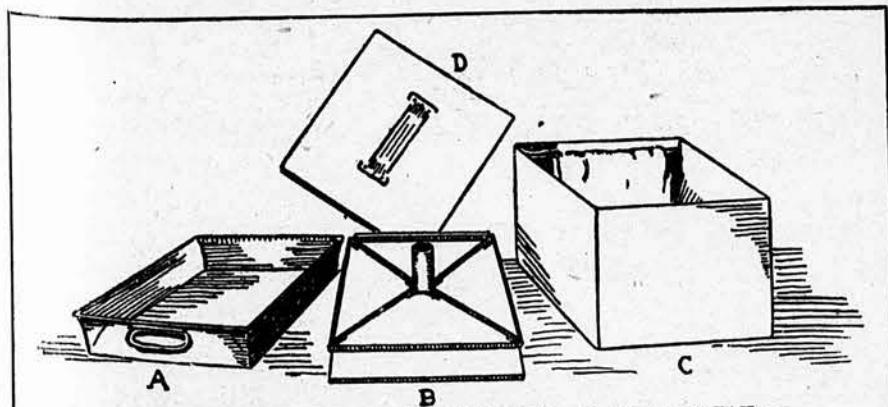
Before strainer cloths, separator parts, can covers, and small utensils can be sterilized, it is necessary to provide a bottomless galvanized iron box 15 by 15 by 11 inches high, to be used as a sterilizing chamber. The four sides of the box should fit tightly into the shallow pan and the box itself should be provided with a tightly fitting metal cover equipped with a handle.

To handle strainer cloths, string a wire across one side three-fourths of an inch from the top and one-half inch from the side. Before placing the box in position, hang the strainer cloth on the wire, folding it so that one edge may be reached easily without handling the entire cloth. Set the can covers upright along the sides of the box inside, with the tops of the covers against the box. The box should hold three covers at one time.

AFTER STERILIZING

After steaming, place covers on cans as soon as both are dry and do not remove until the cans are to be filled with milk. The pails, as well as the tank and separator parts, should be kept always in a clean place, out of reach of dust.

If it is impossible to clean a vessel soon after use, it should be kept filled with or immersed in water.



PARTS OF HOME-MADE STEAM STERILIZER.—A, ROASTING PAN; B, COVER TO PAN; C, GALVANIZED IRON BOX; D, COVER OF BOX

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"How a Dairyman Made Good"—a real story of a real farmer, who starting with almost nothing, built up a fine dairy herd and made a big success.

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"How to Judge a Dairy Cow."—shows by illustrations what points to look for in a dairy producer—explains the essential qualifications of a good dairy cow.

"Building Up a Dairy Herd"—a practical breeder gives some sound advice on this important subject.

"The Farm that Won't Wear Out"—shows that the farm where cows are kept, and the fertility returned to the soil, improves instead of deteriorates.

"The Care of Cream on the Farm"—quality is as important as quantity. It costs little and brings big returns.

"Silos and Silage"—one of the best chapters in the book. Full of silage facts that every farmer ought to know.

Then there are splendid articles on "Alfalfa," "Ventilation of Dairy Barns," "Breeds of Dairy Cattle," "Improving the Herd with a Good Bull," "Care of Freshening Cows," "How to Test Cows," etc. Numerous dairy ration tables, suitable for various sections of the country, are given, and various milk and dairy tables as well as tables of weights and measures, silo capacities, etc. that every farmer has occasion, at some time or other, to refer to.

Thousands of dollars have been spent in the preparation of this book, and if you keep cows you certainly ought to write for a copy and read it from cover to cover. The book is absolutely free. Just fill out the coupon or send the information requested on a post card, mentioning this paper.

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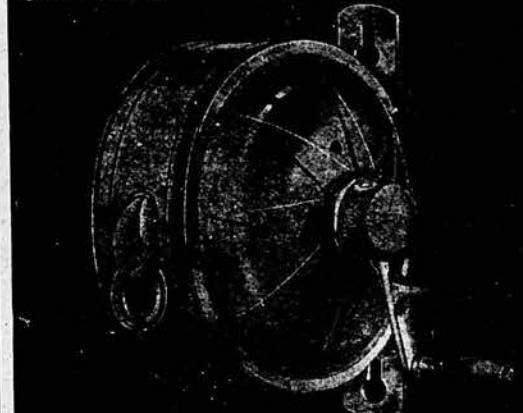
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Little Talks to Housekeepers

Helpful Hints Here for the Women Folks of the Farm

"Speak gently to the little child, Its love be sure to gain; Teach it in accents soft and mild, It may not long remain."

Registration of the baby at birth is essential, and is required by law. This protects the child in many ways and makes accurate statistics more possible.

A warm room may be made much cooler and more pleasant by hanging thick wet towels or other cloths in the windows and doors. This suggestion is especially useful in sickness.

Grass stains can be removed by soaking in common cooking molasses before washing in soap suds. Kerosene or alcohol will also prove effective.

After washing windows, wipe them with a piece of chamois well wrung out of lukewarm or cold water. This will save the tedious polishing.

Save the waxed paper which comes around some cereals and inside cracker

boxes. There is nothing better upon which to turn warm cakes or gingerbread from the pans. It is also good to line cake pans or to wrap sandwiches.

The brown stains which come upon dishes which are in constant use, can be removed by rubbing with damp soda. Stains on silverware can also be removed by boiling in soda water. Rinse well in clear water and polish.

"It is better to put a fence at the top of a precipice than to maintain an ambulance at the bottom," is the motto which heads a column on the care of babies, contributed by the New Zealand Society for the Health of Women and Children, to newspapers of that country. How applicable is this truth to the care of children.

New Place for Keeping Silver

We know one housewife who is obliged to economize in cupboard space, and who has in use a series of pockets tacked securely upon the inside of the

FASHION DEPARTMENT — ALL PATTERNS TEN CENTS

This department is prepared especially in New York City, for Kansas Farmer. We can supply our readers with high-grade, perfect-fitting, seam-allowing patterns at 10 cents each, postage prepaid. Full directions for making, as well as the amount of material required, accompanies each pattern. When ordering, all you have to do is to write your name and address plainly, give the correct number and size of each pattern you want, and enclose 10 cents for each number. We agree to fill all orders promptly and guarantee safe delivery. Special offer: To anyone ordering a pattern, we will send the latest issue of our fashion book, "Every Woman Her Own Dressmaker," for only 2 cents; send 12 cents for pattern and book. Price of book if ordered without pattern, 5 cents. Address all orders for patterns or books to Kansas Farmer, Topeka, Kansas.



No. 7916—Girls' Apron: Cut in sizes 4, 6, 8, 10 and 12 years. Cut with a square yoke front and back, this little apron becomes interesting. The upper edges of the front and back are gathered to the lower edges of the yokes and the joining is bound. Long or short sleeves may be used. No. 7938—Ladies' Shirtwaist: Cut in sizes 36 to 44 inches bust measure. A sensible and smart design in a shirtwaist with style features quietly brought in; contrasting goods is one. The "tailored girls" of the center, also the collar that rolls high or low. No. 7957—Child's Yoke Dress: Cut in sizes 2, 4 and 6 years. You can reproduce this design, using remnants of light and dark material, and glory in the result. At back, the dress body is gathered to a square yoke; in front, the yoke extends either side in a tab and has embroidery decoration. So has the belt, with its ends lapping at back. No. 7923—Misses' Dress: Cut in sizes 14, 16, 18 and 20 years. A pleasing version of the overblouse effect is offered in this model, which has the three-gored skirt attached to the bib section that is arranged over a separate gumpie with shoulder straps of overblouse. They are stitched at back and button to the front of the Fully entitled to credit for good lines and attractive trimming features is this skirt, cut in two gores—the upper edges of the back gore being gathered—and built on a raised waistline. The closing is at the left side. No. 7962—Ladies' Apron: Cut attractively made, we may put this apron. Cut in one piece with a yoke facing, divide the fullness, and a diagonal pocket with a stitched trimming band to evenly the yoke facing and the sleeve finish.

cupboard doors. These pockets—or cases—are made of ticking, from four to six inches in depth, stitched into narrow compartments just wide enough to admit a spoon, knife or fork. She has one of these cases for each different kind of silver, and keeps in them only that which is in daily use.

Bags Are Useful

The "bag habit" is a good one and once acquired is not often lost. It has its disadvantages, but also has many advantages.

When cutting out new garments, try the plan of at once sorting the scraps which are left, instead of rolling them all together and laying aside until a more convenient time. It takes a very few minutes and saves time in the end.

Select the pieces suitable for patches and keep in a box or bag, sorting often enough to avoid an accumulation of out-of-date scraps. Put those pieces for quilts or comforts into a bag, and provide another one for such pieces as can be used for carpet rags.

All scraps too tiny for anything else may be put into a bag to themselves and kept for the rag man, for in these days even paper rags bring a few cents and are worth saving.

Children learn to put away their shoes and stockings if each child has an attractive bag or wall pocket with an initial or other mark to denote ownership.

Also have a bag for cleaning rags. Make it with an open mouth in order to get what you want easily and quickly, and hang it in a handy place.

Have a bag with a wide mouth hanging under your sewing machine at your right hand, if possible, and notice how easy it is to drop the scraps and threads into it instead of allowing them to fall where they will.

Value of Work for Children

Not long ago we visited in a home where the two children—a boy of six and a girl of eleven—responded willingly and cheerfully when called upon to do any of the numerous things they were so capable of doing. No day was crowded full of work for these children, nor were they called from their play to do things that might easily have been done by the mother while she was calling them, but each day they made themselves useful in a number of ways, and many times did the little tasks of their own accord.

Often at the end of the noonday lunch the little girl would take the baby sister upstairs for her nap, joyfully humming words that entertained her until the baby eyes were closed in sleep to dream of the things of which Sister had sung. Then her help was offered on the lunch dishes, or at least she did not slip out to play without permission.

Daily the lad of six followed his father to the garage and when the car needed any repairs or adjustment, he was as interested in the work as was his father, and was of much help, judging from the way the father called upon him.

We could not help noticing the way in which these children entered into both play and work, and it convinced us more than ever that all children would gladly be more useful if they knew it was ex-

pected of them and if they were asked pleasantly to help.

These little daily tasks save the mother many steps, this helpfulness to others is valuable to the child in his development, and there are no times when he wonders what he can play. He is a better child for having play and work mixed.

Try placing a scrap basket in nearly every room and see how much litter is avoided.

Every child has the right to be well born.—Ruskin.

When the recipe calls for grated cheese and your cheese is soft, rub it through your bowl strainer. The result is better and your fingers will have escaped the inevitable rasping which the grater produces.

When re-heating biscuits, rolls, or doughnuts, if they are put with a damp cloth into a covered pan or paper bag, with the mouth well twisted, it will be hard to tell they are not fresh when taken from the oven.

A tablespoonful of vinegar added to the water in which tough meat is boiled, makes the meat tender.

Clean smoky mica in stoves with vinegar.

Prune Whip

Soak three-fourths box of gelatine in one cupful cold water. Add two cupfuls boiling water, two cupfuls sugar, juice of four lemons, one-half pound stewed prunes with seeds removed. Serve with whipped cream flavored with vanilla.

Plain Chocolate Cake

- 1 cupful flour
- 1 cupful sugar
- Butter—a piece the size of an egg
- ¼ pound chocolate or ½ cupful cocoa
- Yolk of one egg—beaten
- 1 cupful sweet milk
- 1 teaspoonful soda

Melt the butter and chocolate, add milk, egg, and soda, and at last the sugar and flour sifted together.

"Never Fail" Boiled Icing

- 1 cupful sugar
- 3 tablespoonfuls cold water
- White of one egg—unbeaten

Cook in double boiler. When the water in the outer pan boils rapidly, set inner boiler containing mixture, in it, and beat the icing with a rotary egg-beater for exactly eight minutes while it cooks. Then flavor, and spread on cake.

Velvet Pudding

- 1 quart milk
- 2 eggs
- 5 tablespoonfuls cornstarch
- flour
- ½ teaspoonful salt
- Flavoring

Thicken in double boiler and allow it to cook at least fifteen minutes. Pour into a bowl and cover with one cupful of sugar—either granulated or light brown. Cover bowl closely with plate and set away to cool. The sugar melts and forms a sauce for the pudding.

This recipe may be varied by folding in the beaten whites of the eggs before pouring into the bowl.

Wanted 30,000 Men For Harvest Work on Immense Crops of Western Canada

Wages \$3.00 Per Day and Board

Cheap Railway Rates From Boundary Points

Employment bureaus at Winnipeg, Regina, North Portal, Saskatoon, Ft. Frances, Kings Gate, B. C.; Coutts, Calgary, Alberta.

No Conscription—Absolutely No Military Interference

For all particulars apply to the following Canadian Government Agent.

GEO. A. COOKE, 2012 MAIN ST., KANSAS CITY, MO.

Classified Advertising

Advertising "bargain counter." Thousands of people have surplus items of stock for sale—limited in amount or numbers hardly enough to justify extensive display advertising. Thousands of other people want to buy these same things. These intending buyers read the classified "ads"—looking for bargains. Your advertisement here reaches over 300,000 readers for 4 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.

HELP WANTED.

GOVERNMENT FARMERS NEEDED—Big salaries. Permanent job. Light work. Write Ozment, 44 F., St. Louis, Mo.

AGENTS TO SELL MEN'S HATS DIRECT from factory. Send for Catalog 30. S. & G. Hat Manufacturing Co., Morristown, N. J.

LADY OR GENTLEMAN TO TRAVEL for old established firm. No canvassing. Staple line. \$18 weekly, pursuant to contract. Expenses advanced. G. G. Nichols, Philadelphia, Pa., Pepper Bldg.

FARMERS WANTED—\$75 MONTH, MEN and women. U. S. government jobs. Short hours. Easy work. Common sense education sufficient. Write immediately for list positions now obtainable. Franklin Institute, Dept. O82, Rochester, N. Y.

REAL ESTATE.

160 ACRES IN PHILLIPS COUNTY, Kansas; 100 acres in cultivation, all fenced, fair improvements, good soil; close to town; on phone and mail route. Priced worth the money. Write. E. M. Hillyer, Republican, Neb.

FOR SALE—A MODERN HOME IN Topeka, located on a good street, near school and business district; two lots, modern seven-room house, barn, a choice location. Will sell at a bargain. No trades. Address Z, care Kansas Farmer.

FARMS WANTED.

FARMS WANTED—HAVE 7,000 BUYERS. Describe your unsold property. 514 Farmers Exchange, Denver, Colo.

WANTED—TO HEAR FROM OWNER OF farm or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

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

POULTRY.

SINGLE COMB BROWN LEGHORNS—Pullet mating only. Tiff Moore, Osage City, Kan.

MACK'S S. C. REDS—FALL SALE OF April and May-hatched cockerels and pullets; 200 cockerels, 200 pullets. Ten utility pullets and two utility cockerels for \$15. Write for prices on exhibition birds. H. H. McLellan, Box K, Kearney, Neb.

S. C. B. LEGHORN COCKERELS IN lots of twelve or more at a special low price. From greatest layers, none better. Satisfaction guaranteed. Mrs. C. Boudoux, Carona, Kan.

POULTRY WANTED.

BROILERS, 17c; SPRINGS, 15c; H. hens, 13½c; eggs, 23c; paying prices this week. Coops loaned free. The Copes, Topeka.

CATTLE.

REGISTERED JERSEY CATTLE. PERCY Lill, Mt. Hope, Kan.

REGISTERED HOLSTEIN BULL, READY for service. Two of his dams averaged 100 pounds milk in one day and 35 pounds butter in seven days officially. \$100. Wisconsin Live Stock Association, Appleton, Wis.

HIGHLY BRED HOLSTEIN CALVES, either sex, 15-16ths pure, crated and delivered to any station by express, charges all paid, for \$20 apiece. Frank M. Hawes, Whitewater, Wis.

LUMBER.

LUMBER! BUY FROM US. HIGH GRADE. Bottom prices. Quick shipment. Keystone Lumber Co., Tacoma, Wash.

LUMBER DIRECT FROM MILL TO consumer. Send us your itemized bills for estimate. Our specialty, mixed cars. McKee Lumber Co. of Kansas, Emporia, Kan.

BUY DIRECT AND SAVE SEVERAL profits. Lumber, lath, shingles, moldings, doors, windows, frames and finish at rock-bottom prices. Quality and satisfaction guaranteed. Send your lists for estimate. Sam Connell Lumber Company, Portland, Oregon.

WANTED

WANTED—ONE TO FIVE CARLOADS of good hay. Any good hay considered. Webb McNall, Arlington, Colo.

HONEY.

FOR SALE—FINEST GRADE EXTRACTED honey in 60-pound cans, \$9.50 per case of two 60-pound cans f. o. b. Merino, Colo. Write for prices on car lot. W. A. Cheek, Merino, Colo.

NEW HONEY, NEW CANS, IRON BOUND boxes, 120 pounds, fancy, \$11; choice, \$10; good, \$9. Satisfaction guaranteed. Fine chunk, 116 pounds, \$12. A. S. Parson, Rocky Ford, Colo.

FINEST EXTRACTED HONEY, GATHERED by bees and sent to you direct from the hive. Rich, smooth, delicious. Purity and weight guaranteed according to law. Following prices are f. o. b. Hotchkiss, Colo. One can containing 60 pounds net, \$5; case of two cans, \$9.50; two to four cases, \$9 each. Special price on larger lots. Ten cents brings sample. Frank H. Drexler, Crawford, Colorado.

DOGS.

COLLIE PUPS FROM GENUINE STOCK dogs that drive from the heel. Best of breeding. E. L. Dolan, Route 2, Platte City, Missouri.

AIRDALE—THE GREAT TWENTIETH century dog. Collies that are bred workers. We breed the best. Send for list. W. R. Watson, Box 128, Oakland, Iowa.

MISCELLANEOUS.

TOMATOES PICKED FOR SHIPPING, two cents a pound by express. T. F. Pine, Route 3, Lawrence, Kan.

FERRETS, SINGLE, PAIRS AND DOZEN lots. Guinea pigs, rabbits, Toulouse geese, fox terriers and Angora kittens. Jewell, Spencer, Ohio.

FOR SALE—18-INCH APPLETON ENsilage cutter, used two seasons. In good condition. Price \$120. Hinged door stove silo 16x30, creosoted and painted, price \$200. Edwin C. Nelson, Superior, Neb.

GROCERIES.

PURE CANE GRANULATED SUGAR, \$7.50 per 100 pounds. Other goods sold at same saving compared to what you are paying now. Write for our complete money-saving price list. The People's Department Store, Council Bluffs, Iowa. Address Wholesale Dept.

THE STRAY LIST.

NOTICE IS HEREBY GIVEN THAT THE following described stray, to wit: One yearling steer, weight about 550 pounds, color red with white face, white on belly and tip of tail; branded "O" on left hip, slit in end of left ear, a "V" cut in under side of right ear, was taken up on the 11th day of June, 1916, by J. A. Schriener, address Windom, Kansas. W. E. Rostine, County Clerk, McPherson, Kansas.

SHEEP

ONE HUNDRED WESTERN BREEDING ewes, \$5 per head. C. D. Wood & Sons, Elmdale, Kan.

PURE-BRED UNREGISTERED SHROPSHIRE ram lambs, extra good. K. Hague, Route 6, Newton, Kan.

HOGS.

BIG-TYPE POLAND CHINAS. U. A. Gore, Seward, Kan.

SITUATION WANTED.

MARRIED MAN, 32, NO CHILDREN, good milker, wishes position on dairy farm. Reference. E. P. Lochrie, Codell, Kan.

JOB WANTED BY EXPERIENCED farmer on stock or grain farm. Good references. James Wood, 2215 S. 61st ave., Benson, Neb.



TWO YOUNG KANSAS FARMER READERS BUSY AT THEIR VACATION WORK

FARM AND HERD NEWS NOTES

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

Address All Communications to
Kansas Farmer, and Not to
Individuals

Personal mail may have to be held
for several days, or be delayed in
forwarding, and Kansas Farmer
cannot assume any responsibility
for mistakes occurring thereby

The Royal of 1916 will have more entries of breeding cattle than any previous show. This statement can be made now, because of advance reports by secretaries, and the word that comes from many breeders as to the stock they will enter. Each of the four breeds will have more entries than in past years. The Hereford and Shorthorn breeders putting up displays that will be far beyond anything seen in the past, in respect to numbers, exhibitors, and extent of country represented. The Angus division will have by far the largest show it ever had at the Royal. One breeder has announced that he will send three carloads of breeding animals. The Galloways will be stronger this year than for several years, an especial effort being made in view of the unusually favorable conditions for the pure-bred cattle trade. Every class, it is certain, will be well filled.

Iowa is the home of a number of excellent herds of Guernsey cattle. Among them is the herd owned by W. B. Quanton of Algona, Iowa. Mr. Quanton writes that his herd is making a fine record again this year. His herd is noted as one of the heavy producers and is the result of years of breeding for producers. Many of the best Guernsey herds in the West were started with foundation stock from this herd.

O. J. Duncan has announced September 12 as the date of his big stock sale to be held at his farm near Coffeyville, Kan. His offering will include a choice lot of Holstein and Jersey cows, also registered Poland China and Duroc hogs.

W. A. Wood & Son of Elmdale, Kan., are among the Poland China breeders that have succeeded in building up a herd of Poland China hogs. They have succeeded in raising a number of early March litters this year and the choice lot of spring boars and gilts is a feature of their herd at this time.

E. J. Castillo of Independence, Kan., owner of one of the good Holstein herds in this state, reports his herd doing well this year. This herd is noted for its heavy producers and a feature at this time is the choice lot of heifers from the best producing dams in the herd.

We have just received Volume 2 of the National Duroc Jersey Record. This volume contains the pedigrees from No. 183601 to 193499; the pedigrees of females from No. 444500 to 484698, and other information valuable to Duroc breeders.

P. J. McCullough & Son of Princeton, Mo., will exhibit their fine herd of Percheron horses at the Kansas State Fairs this year. This firm showed the grand champion mare of Missouri for two years in succession and carried off a large part of the Kansas money last year.

A. H. Erhart & Son, Ness City, Kan., will exhibit a splendid herd of large Poland China hogs at the Kansas State Fairs this year. Erhart & Son are the owners of one of the best herds in the state. They were the winners of the grand champion boar last year in Major B. Hadley Jr.

W. L. Bowman & Co. of Ness City, Kan., will exhibit a splendid herd of Hereford cattle at the Kansas State Fairs this year. The herd is in charge of Ralph Johnson, a former Kansas Agricultural College boy, who is making a record as a fitter and showman. Bowman & Co. have been showing on a limited scale for the past few years and this year they will have a herd that will be a strong contender for honors.

H. M. Hill of Lafontaine, Kan., will exhibit his fine herd of Shorthorn cattle at the Kansas State Fairs this year. Mr. Hill is one of Kansas' best boosters for good Shorthorn cattle and is the owner of one of the good herds of our state.

W. A. Forsythe & Son, the well known Shorthorn breeders of Greenwood, Mo., will exhibit sixteen head of Shorthorns at the Kansas State Fairs this year. This firm owns one of the great herds of that breed and their show herd will be one of the attractions at the big fairs this year.

Dan Wilcox of Cameron, Mo., owner of the famous Crystal Herd of O. I. C. hogs, is demonstrating the value of pure-bred improved Chester as a hog for the farm and feeder. Mr. Wilcox has been breeding O. I. C. hogs fifteen years and has built up a herd of the big high-quality easy-feeding kind that are profitable market hogs. For a number of years he has been showing at the big fairs and has always taken a good share of the premiums. He has decided not to hold a fall sale this year, although he has thirty-five head of extra good strong plus nearly all sired by his great boar, Wilcox's White Giant. This boar is one of the best sires of the breed now in service. He is big and smooth, has very heavy bone, is an all-around good individual, and as a breeder has few equals.

George Fredrick of Fredrick Farm, Kingman, Kan., owns one of the Holstein herds that is making records. This is one of the richly bred herds and is made up of representatives of the best Holstein families. To anyone interested in profit producing cows, a trip to Fredrick Farm and an inspection of this herd is well worth the time and expense.

T. M. Ewing of Independence, Kan., reports his Holsteins making a good record this year. The cows that make up this herd are a fine lot of heavy producers. An outstanding feature of the herd at this time is the choice lot of young stock, including young bulls sired by Wauseona King Korn-dyke and out of 80-pound dams.

Fred B. Caldwell of Howard, Kan., is making a success with his big-type Poland China hogs. He will be at Topeka and Hutchinson fairs with the great show boar, Caldwell's Big Bob, and a young herd. Mr. Caldwell's show herd never fails to attract attention.

A Holstein cow belonging to E. C. Schroeder of Morehead, Minn., has just completed a record which places her at the head of the four-year-old class of cows of that breed

for milk and butter fat production. In 365 days test this cow produced 26,433 pounds of milk, containing 985 pounds of butterfat.

Braeburn Holstein Herd, owned by H. B. Cowles of Topeka, is one of the herds that is making a fine showing again this year. From the founding of this herd many years ago the breeding has been for producers. The sires used have been from the best producing families of the breed and breeding stock from Braeburn Farm is always in demand.

W. B. Wallace of Bunceton, Mo., held one of the best sales of the summer season on August 16. The sale was well advertised and breeders were in attendance from Iowa to Texas. Sows bred to the great boar, King Joe, were in great demand. Thirty-three sows bred to King Joe sold for an average of \$105.75. The entire offering of forty-four head of sows and gilts made an average of \$94.75. It was a splendid lot of valuable brood sows that will be an improvement in a number of herds. G. E. Petty of Versailles, Mo., topped the sale at \$280 for No. 2 in the catalog, a Big Orange sow bred to King Joe. Fred B. Caldwell of Howard, Kansas, bought the next highest at \$250, No. 1 in the catalog, an A. Monarch sow bred to King Joe.

The total cash prizes to be offered at the Dairy Cattle Congress at Waterloo, Iowa, October 2 to 8, are \$7,629. Of this amount the Holsteins will receive \$1,872, \$1,200 to be given in the regular premium list of the show and \$672 by the Holstein-Friesian Association of America. The Association prizes will be offered in all classes with the exception of the champion and grand champion. The American Jersey Cattle Club has voted to award \$500 in cash prizes in addition to the \$1,200 offered by the show. This will make a total of \$1,700 for this breed. Two handsome silver trophies will also be awarded by the club for the grand champion bull and the grand champion cow. Five other individual trophies given by individuals will be offered for special classes. The breeders of Guernsey cattle who show their herds at the Dairy Cattle Congress this year will receive a total of \$1,500 in cash and six special trophies. The American Guernsey Cattle Club will offer \$300 in cash, which will be distributed in a few of the individual classes and in all of the group classes. The club will also offer a prize to the champion cow and a cup to the premier breeder. The Brown Swiss Breeders' Association has added \$157 to the premium list for their breed. This will make one of the best lists for the Brown Swiss on the entire circuit, and together with the five cups offered will undoubtedly bring out a larger showing than in previous years. The Ayrshire Breeders' Association is offering a valuable cup to be awarded to the breeders' young herd. The regular premium list of \$1,200 will be offered for Ayrshires by the Dairy Cattle Congress and individuals will give a number of cups for special classes.

OVERLAND RED

[Continued from Page Six.]

No riders appeared on the horizon. Overland stepped out from behind the rock. "Well, how did you make it?" he called.

"Winthrop, came forward wearily. "No luck at all."

"Couldn't find it, eh?"

"I counted every tie between the tank and that little ditch under the track. The entire stretch has been relaid with new ties."

Overland whistled. Then he grinned. "You had a good healthy walk, anyhow," he observed.

"It doesn't seem to worry you much," said Winthrop.

"Nope. Now you're back, it don't. I reckon you done your damndest as the song says. Angels can do no less. Buck up, Billy. You're limper'n a second-hand porous plaster. Here, take a shot at this. That will stiffen your knees some. Did you meet up with anybody?"

"Not a soul. I thought I should freeze last night, though. I didn't imagine the desert could get so cold."

"Livin' out here on the old dry spot will either kill you or cure you. That's one reason I let you go look for them things. The harder you hit the trail, and can stand it, the quicker you'll get built up."

Overland, realizing that his companion was worse than tired, that he was dispirited, became as wily as the proverbial serpent. His method, however, could hardly be compared with the dove's conciliatory cooing.

"You sure are a bum scout," he began. Winthrop flushed, but was silent.

"Bet a banana you didn't even leave the track and look for it."

"No, I didn't. Where could I have begun?"

Overland ignored the question. "I'm hungrier than a gorilla. Just send a wireless to them feet of your'n. We got some climb-in' to do afore dark."

"I'd just as soon camp here. Go up tomorrow," said Winthrop.

"So'd I if it wasn't for bein' scared some of the hills would mosey off before I got back." And Overland set a brisk pace up the mountain, talking as he climbed. Winthrop could do nothing but listen. He was breathless.

"Or that canon," continued Overland. "She might not be there if we stayed away all night. Besides, I'm scared to leave it alone by itself."

"Leave what?" gasped Winthrop.

"It. The find I made while you was out surveyin' the Santa Fe. I was feared you'd get nervous prosecution if I told you all to once, so I breaks it easy like."

"What was it?"

"Nothin' but a tent in the canon we're campin' in. But, Billy, when you find a tent and some minin' tools and other signs of trouble 'way up some lonesome old sort in the hills, you want to get ready for a surprise. Mebbe it'll be nothin' but some old clothes and bones. Mebbe it'll be the bones, somethin' else. I didn't find the bones, but I found the somethin' else, coarse, and fair dribblin' thick in the dirt. It's there and rich, Billy, rich!"

Overland Red turned and paused as Winthrop leaned against a rock.

"It's the—the real thing?" queried the easterner.

"The real thing, pardner. Now what do you think of that for high-brow stuff?"

"Meaning that you stumbled on the secret?"

"If you want to say it that way, yes. Just like fallin' into a sewer and findin' a gold watch where you lit."

"Then it's all true? We've found the gold? You really believed we should, and for that matter, so did I. I can't say why. I rather felt that we should."

"I guess I'm some class when it comes to findin' the incubator that hatches them little yella babies with the come-and-find-me eyes."

[To be Continued.]

HOLSTEIN CATTLE.

HOLSTEIN CATTLE.

KANSAS BRED HOLSTEINS

Fifty pure-bred and grade Holsteins for sale, ranging in age from three years to calves. This splendid bunch of heifers was bred in Kansas and consequently acclimated and free from diseases that are common with eastern dairy cattle. They are sired by Willow Meadow King Pontiac, whose twenty nearest dams have official records of 25 pounds of butter and 525 pounds of milk in seven days, and seven of their dams hold world's records. If you are interested in this class of stock, don't write, but come and see them, for they will surely please you.

SIMPSON & BALLOU

DODGE CITY, KANSAS

CLYDE GIROD, At the Farm.

F. W. ROBISON, Cashier Towanda State Bank

HOLSTEIN FRESIAN FARM, TOWANDA, KANSAS

Pure-bred and high grade Holsteins, all ages. Largest pure-bred herd in the Southwest, headed by Oak De Kol Bessie Ormsby 156789, a show bull with royal breeding.

Pure-bred bulls, serviceable age, from A. R. O. dams and sires.

A grand lot of pure-bred, heavy springers, in calf to pure-bred bulls, constantly on hand. High grade heifer calves 6 to 10 weeks old, \$25. Bargains. Send draft for number wanted. All prices f. o. b. cars here. Inspect our herd before purchasing. Write, wire or phone us.

GIROD & ROBISON.

CHOICE HOLSTEIN COWS

Two hundred registered and high grade Holstein cows, heifers and bulls for sale, singly or carload lots. Included are ten registered bulls, all out of A. R. O. dams; thirty-five registered females of all ages; several good A. R. O. cows; forty high grade cows; sixty two-year-olds, and seventy-five heifers, one to two years old. All tested by state or federal authorities and priced to sell. Write or come at once.

HENRY GLISSMANN

STATION B

OMAHA, NEBRASKA

TORREY'S HOLSTEINS

High grade cows and heifers and registered bulls. The best breeding. Call and see them.

O. E. Torrey

Towanda, Kansas



Purebred Registered

HOLSTEIN CATTLE

The "Dairy Belt of the Northern States," so called in the past by various writers, has vanished. Holstein-Friesian cattle will thrive anywhere, and they are thriving and adding to the fortunes of mankind all over the nation, north, south, east and west. Big, hardy, healthy, consuming enormous quantities of feed and roughage, and transmitting it into large quantities of milk. Holsteins have proven to the world that they are the dairy breed in all ways best suited to serve man, wherever he calls his home. There's big money in the big "Black and White" Holsteins.

Send for FREE Illustrated Descriptive Booklets.

The Holstein-Friesian Association of America
F. L. Houghton, Sec'y. Box 114, Brattleboro, Vt.

Greensward Holsteins—Registered Holstein bull calves at right prices. A few registered heifers. Greensward Farm, Fredonia, Kan.

FOR SALE—PURE-BRED HOLSTEIN HEIFERS

From extra good dams and sires. Pedigree of dams lost. Prices, \$40 to \$80. One heifer bred to fine Holstein bull.

E. J. CASTILLO, INDEPENDENCE, KAN.

JERSEY CATTLE.

Must Reduce Herd

Forty head of registered cows, heifer and bull calves for sale. Of the best blood lines among the breed.

I am a member of the Southwest Jersey Cattle Breeders' Association.

SWEET SPRING STOCK RANCH
Box 241 Monett, Missouri

JERSEY BULL

FOR SALE—Calf Tattoo 28, dropped March 1, 1916. Solid color, large and vigorous. Sire, Blue Belle's Owl 79641, grandson of Financial King. The Owl's Lily 2d, Ch. Flying Fox and Blue Belle. Dam, Lady Pomfret 221497, granddaughter of Interested Prince with R. M. record. Class A. A., 5,072.9 pounds milk, 528 pounds 15 ounces butter one year, average per cent of fat 5.57. A great calf from a great mother. Price registered and f. o. b. St. Joseph, \$60.00. Write.

ROLLA OLIVER, Box 701, St. Joseph, Mo.

Brookside Farm Jerseys

Registered Jersey bulls for sale. Flying Fox and Eminent breeding, good enough to head any herd. Also a few females.

THOS. D. MARSHALL, SYLVIA, KANSAS

LINSCOTT JERSEYS

Kansas First Register of Merit, Estab. 1878. If interested in getting the best blood of the Jersey breed, write me for descriptive list. Most attractive pedigree.

R. J. LINSKOTT - HOLTON, KANSAS

Jersey Cows and Heifers

140 head to select from, pure-bred and grade. 20 heavy springers, bred on farm.

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

SMITH'S JERSEYS

For Sale—Two extra good registered Jersey cows, due to freshen about August 25, fit to enter Kansas Farmer contest. One 2-year and three coming yearling bulls, good individuals. S. S. SMITH, Clay Center, Kan.

REDHURST JERSEYS

Grandsons of Golden Jolly and Noble of Oaklands for sale. Also a few fancy cows and heifers of same breeding. Write.

REDMAN & SON - TIPTON, MISSOURI

POLLED DURHAM CATTLE.

Polled Durham Cattle

HOME OF THE CHAMPION TRUE SULTAN. SEE MY SHOW HERD AT THE LEADING STATE FAIRS

Ed. Stegell

STRAIGHT CREEK - KANSAS

IN MISSOURI

Price Segis Walker Pletertje 123955 heads herd. Dam \$0.13 lbs. butter in 7 days, milk testing 5.07 per cent. A. R. O. of dam, granddam and ten nearest dams of sire, 29.75 lbs. Six of these are 30-lb. cows. His five nearest dams all test over 4 per cent. Bulls 2 to 8 months old, \$150 to \$350. Always have cows and bred heifers for sale. Everything registered Holsteins. Tuberculin tested.

S. W. COOKE & SON, MAYSVILLE, MO.

Golden Belt Holstein Herd

Canary Butter Boy King No. 70508

Herd has won more prizes from Holstein-Friesian Association for yearly production than any herd in Kansas. Young bulls for sale from heavy producing cows.

W. E. BENTLEY, MANHATTAN, KANSAS

HOLSTEIN BULLS

For Sale—A number of very fine bull calves, sired by Wauseona King Korn-dyke and out of cows that produce 80 pounds of milk per day. Price reasonable.

T. M. EWING, INDEPENDENCE, KANSAS

FOR SALE

Very High-Grade Holstein Calves, either sex, three to six weeks old, \$20. Express prepaid. If you are in the market for any of these choice calves, send order to Whitewater Stock Farm, Whitewater, Wis.

SUNFLOWER HERD

REGISTERED HOLSTEINS
Offers young cows due this summer and fall by 29 and 33-pound sires. Several EXTRA young bulls both in breeding and individuality. They are bound to please.

F. J. SEARLE, Oskaloosa, Kan.

23—HOLSTEIN-FRIESIAN BULLS—23

Best of sires. A. R. C. dams, fourteen over 20 pounds. Seven of the others from heifers with records of 14.89 to 19.2 pounds. The kind you want. We have only two cows in the herd with mature records less than 20 pounds.

Breeders for Thirty Years.

MCKAY BROS., Waterloo, low

REGISTERED HOLSTEINS

We want to cut down our herd. Will sell ten or twelve choice cows, most of them young, also a few heifers.

M. E. MOORE & CO. - CAMERON, MO.

CHOICE HOLSTEIN BULLS

Registered bull calves out of A. R. O. cows. Also a few heifers. Best breeding. Choice individuals. Price reasonable.

BEN SCHNEIDER, NORTONVILLE, KAN.

HOLSTEIN COWS

Holstein cows, springers or bred heifers. Very large, good markings, out of best milking strains, bred to pure-bred bulls of the very best blood. Special prices on carload lots. J. C. ROBISON, TOWANDA, KANSAS

CORYDALE FARM HERD

Herd sire, Jewel Paul Butter Boy No. 94245, who's eight nearest dams average A. R. O. 25.95. Eight bull calves for sale from 2 to 9 months old.

L. F. CORY & SON - Belleville, Kansas

HOLSTEINS BACKED BY RECORDS

Registered bull calves, also a few choice heifers. All modern bred with good butter fat inheritance.

GEORGE C. PRITCHARD

Route 2 - Topeka, Kansas

IOWANA DE COLA WALKER heads herd, has nine half-sisters with yearly tests ranging from 407.53 pounds to 626.21 pounds of 30% butter, the latter a senior two-year record; in fact seven were senior two-year and two were senior three-year-olds.

TREDICO FARM, Route 2, Kingman, Kan.

BUTTER BRED HOLSTEINS

Buy your next bull calf from a herd that won the butter test over all breeds.

J. P. MAST - SCRANTON, KANSAS

HOLSTEIN BULLS, "REGISTERED"

Two ready for service. Smith & Hughes, Breeders, Route 2, Topeka, Kansas.

BRAEBURN HOLSTEINS A.R.O. Bull

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

KANSAS STATE FAIR

BY THE STATE BOARD OF AGRICULTURE

Hutchinson, September 16-23, 1916

A Great Exposition of the Resources of Kansas, Arranged for the Educational Benefit of the People.

THE NATURAL MEETING PLACE OF THE BREEDER AND HIS BUYER.

It is the annual opportunity afforded Kansas breeders to meet and get acquainted with Kansas people, and live stock men of other states of the Great Southwest. Liberal prizes are offered in all live stock departments and good barns and pens are provided. Prizes are offered on Kansas-bred or Kansas-owned sheep only.

TWENTY-THREE GREAT STANDARD BRED AND THOROUGHBRED RACES

Races and heats will be interspersed by high class free attractions and vocal and instrumental music. Seats may be reserved in the grandstand.

GREAT AUTOMOBILE RACES WEDNESDAY AND SATURDAY, SEPTEMBER 20 AND 23

These races will be conducted under the rules of the International Motor Contest Association with cars specially built and driven by the best dirt track drivers in the world.

SUPERB FREE ATTRACTIONS EVERY AFTERNOON AND EVENING

Entertainment is demanded and has come to be one of the great features. High class acrobatic acts, comedians, grand opera singers, Florida troubadour singers, and concert bands.

HORSE SHOW FOUR NIGHTS

Classes interspersed with free acts and vocal and instrumental music and each evening closes with grand fireworks.

Special trains and special equipment on all railroads. Unloading facilities right on the grounds. City water and electric light.

THE BIG EVENT OF THE GREAT SOUTHWEST

Something Doing All the Time

All good roads lead to the Kansas State Fair. Send to the Secretary for information or Prize Catalogue.

H. S. THOMPSON, President, A. L. SPONSER, Secretary

Kansas State Fair Association

L. M. PENWELL, President.

PHIL. EASTMAN, Secretary.

TOPEKA, SEPTEMBER 11, 12, 13, 14, 15, 16

SIX BIG DAYS AT THE BIG FREE FAIR. The gates stand open day and night. The beautiful 86-acre fair ground, all of the twenty-four permanent buildings and every exhibit is open and free to everybody. No admission charged except races and shows.

Horse Show---Three Concert Bands---Automobile Show

Harness Races on the fastest track in the West Tuesday, Wednesday, Thursday and Friday.

Thrilling Running Races daily—The Kansas Derby—A Big Card Every Day.

THE BIG FREE FAIR



THE BIG FREE FAIR

Beautiful Horse Show in brilliantly illuminated arena — \$1,000 Saddle Championship.

Mammoth Midway—Thirty Coney Island Shows. Take a Trip on the Whip.

FIREMEN'S TOURNAMENT—DEMONSTRATION OF FIRE FIGHTING

Live Stock Judging and Parades Daily. Butter Fat Contest. Mammoth Stock Show. Ten Acres Machinery. Grange and County Exhibits. Tractor and Good Roads Demonstrations. Duroc-Jersey and Poland-China Futurities. Model Dairy. College Exhibit. Big Horticultural Display. Bee and Honey Department. Cooking School. Needlework and Textile Section.

Trotting, Pacing and Running Races

Dakota Max Wild West. Capt. Wilson's Trained Animals. Lillian Carson Murray's "Revelation." Submarine Exhibit. Dixieland Minstrels. Midget City. Nelson's Diving Dogs. American Hippodrome. Capt. Fred Owens, Aeronaut. Flea Circus. The Alligator Girl. Congress of Living Wonders. The Miracle Girl.

\$40,000 IN PRÉMIUMS PAID BY STATE AND COUNTY

HOLSTEIN DISPERSION SALE

— AT FARM NEAR HARTFORD, KANSAS —

THURSDAY, SEPTEMBER 14, 1916

FORTY-FIVE HEAD OF HIGH GRADE COWS AND HEIFERS, ALL BRED TO A REGISTERED BULL



Most of them will freshen this fall and winter. They are a well bred lot of Holsteins. Most of them are pure-bred but cannot be registered. A clean lot of cattle and all will be sold.

I will also sell by herd bull, Mechthilda Butter Boy No. 102044 by Korndyke Butter Boy, a splendid dairy-bred bull. Everything guaranteed and has been tested. If you want some good cows, don't miss this sale. Remember the date is Thursday, September 14, 1916, at farm.

J. O. STULP - - - HARTFORD, KANSAS
AUCTIONEERS, WOOD & CROUCH.

O. J. Duncan's Stock Sale

I will sell at public auction at my farm, known as the "Willow Springs Stock Farm," seven miles northwest of Coffeyville and ten miles southeast of Independence, on the Coffeyville-Independence Road, beginning at 10 a. m. sharp, on

TUESDAY, SEPTEMBER 12

114 - HEAD OF STOCK - 114

Fifty-five head of high-grade registered Holstein cattle, headed by Segis Pontiac Perfection No. 68500.

Twenty head of high-grade registered Jerseys.

Fourteen Horses and Colts.

Twenty-four head of registered Poland China and Duroc Jersey Hogs.

A few implements and other small articles.

TERMS.—Sums of \$25 or under, cash. On sums over \$25 a credit of twelve months' time will be given, purchaser giving bankable note drawing 8 per cent interest from date. A discount of 6 per cent for cash on sums over \$25. No property removed from premises until settled for.

JOHN CHILES, Clerk O. J. DUNCAN
COL. WILL J. HELLIER, AUCTIONEER.

WM. WATT & SONS

BIG TYPE POLAND CHINA SALE

GREEN CITY, MO., SEPTEMBER 12

FIFTY HEAD BIGGEST OF THE BIG, INCLUDING FOUR GREAT HERD BOARS

A sensational fall boar, son of \$1,250 King Joe, that is outstanding, dam 800-pound sow by Big Orange. She cost \$290. This boar is claimed by judges to be the best individual to sell this fall. Watt's King sells. He is one of the best sons of Pfander's 1,090-pound Long King. He is in fine shape, a sure breeder and good individual. A five-year-old that sells for no fault. Also a fall boar by Watt's King and a yearling by Long Jumbo (the McClarnon boar) that are sure to make monsters.

TEN HEAD OF OUTSTANDING BRED GILTS

Bred to I Am King of Wonders and Watt's King. Ten head open fall gilts just right to breed for winter sale. These include a great gilt by King Joe, litter mate to the grand boar that sells. Neither she nor the boar can sell too high. Twenty-five mammoth spring gilts and boars by Watt's King and I Am King of Wonders. You can't go wrong on any animal in the offering. Send for catalog.

WM. WATT & SON -:- GREEN CITY, MISSOURI
COL. HARRIMAN, AUCTIONEER.



EVERMAN'S FAMOUS BIG Boned Spotted Polands

SALE OCTOBER 24.

Sixty head of sows, the tops of 237 head. Orders taken NOW for spring boars at \$25, to be shipped at once. Write for catalog.

EVERMAN POULTRY FARM, R. 5, GALLATIN, MO.

MODERN HEREFORDS

ROBERT H. HAZLETT

HAZFORD PLACE, EL DORADO, KANSAS

World's Largest Herd of Direct Descendants of Beau Brummel, Anxiety 4th and Don Carlos.

WILLIAM CONDELL, Herdsman.

READ KANSAS FARMER'S CLASSIFIED ADVERTISING PAGE FOR READY BARGAINS