

KANSAS FARMER

For the improvement of the Farm and Home

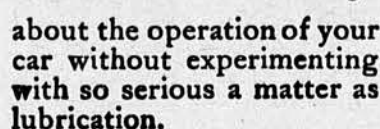
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*The Farm Mother Deserves all the Comforts the City Mother Enjoys.
One of the Greatest of These is a Warm, Evenly-Heated House*

FARM POWER

Items of Interest About Automobiles, Engines, Tractors, and Motorcycles



For 50 years we have specialized in lubrication. In our study of the automobile motor we have found that each make and model presents a distinct lubrication problem demanding scientific analysis.

The Lubrication Chart shown below which represents our professional advice, has for a number of years been a standard guide to correct automobile lubrication.

You may be assured that the oil specified for your motor will give you really scientific lubrication—your greatest protection against premature motor noises, which means premature wear.

If your car is not listed below, a copy of our complete Lubrication Chart will be sent you on request.

In buying Gargoyle Mobiloils from your dealer, it is safest to purchase in original packages. Look for the Gargoyle on the container. For information, kindly address any inquiry to our nearest office.

Friction is relentless. Gradually it wears down the moving metal parts. Snug fits become loose fits.

The common cause of premature motor noise is incorrect lubricating oil.

Surely there is quite enough for you to learn **Mob** *A grade for e*



A grade for each type of motor

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

Gargoyle Mobiloil "A"
Gargoyle Mobiloil "B"

Gargoyle Mobiloil "E"
Gargoyle Mobiloil "Arctic"

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

MODEL OF	1916	1915	1914	1913	1912
CARS					
Stearns	Stearns	Stearns	Stearns	Stearns	Stearns
Winton	Winton	Winton	Winton	Winton	Winton
Com'l	Arc	Arc	Arc	Arc	Arc
Model 48	A	A	A	A	A
Model 49	A	A	A	A	A
Model 50	A	A	A	A	A
Model 51	A	A	A	A	A
Model 52	A	A	A	A	A
Model 53	A	A	A	A	A
Model 54	A	A	A	A	A
Model 55	A	A	A	A	A
Model 56	A	A	A	A	A
Model 57	A	A	A	A	A
Model 58	A	A	A	A	A
Model 59	A	A	A	A	A
Model 60	A	A	A	A	A
Model 61	A	A	A	A	A
Model 62	A	A	A	A	A
Model 63	A	A	A	A	A
Model 64	A	A	A	A	A
Model 65	A	A	A	A	A
Model 66	A	A	A	A	A
Model 67	A	A	A	A	A
Model 68	A	A	A	A	A
Model 69	A	A	A	A	A
Model 70	A	A	A	A	A
Model 71	A	A	A	A	A
Model 72	A	A	A	A	A
Model 73	A	A	A	A	A
Model 74	A	A	A	A	A
Model 75	A	A	A	A	A
Model 76	A	A	A	A	A
Model 77	A	A	A	A	A
Model 78	A	A	A	A	A
Model 79	A	A	A	A	A
Model 80	A	A	A	A	A
Model 81	A	A	A	A	A
Model 82	A	A	A	A	A
Model 83	A	A	A	A	A
Model 84	A	A	A	A	A
Model 85	A	A	A	A	A
Model 86	A	A	A	A	A
Model 87	A	A	A	A	A
Model 88	A	A	A	A	A
Model 89	A	A	A	A	A
Model 90	A	A	A	A	A
Model 91	A	A	A	A	A
Model 92	A	A	A	A	A
Model 93	A	A	A	A	A
Model 94	A	A	A	A	A
Model 95	A	A	A	A	A
Model 96	A	A	A	A	A
Model 97	A	A	A	A	A
Model 98	A	A	A	A	A
Model 99	A	A	A	A	A
Model 100	A	A	A	A	A
Model 101	A	A	A	A	A
Model 102	A	A	A	A	A
Model 103	A	A	A	A	A
Model 104	A	A	A	A	A
Model 105	A	A	A	A	A
Model 106	A	A	A	A	A
Model 107	A	A	A	A	A
Model 108	A	A	A	A	A
Model 109	A	A	A	A	A
Model 110	A	A	A	A	A
Model 111	A	A	A	A	A
Model 112	A	A	A	A	A
Model 113	A	A	A	A	A
Model 114	A	A	A	A	A
Model 115	A	A	A	A	A
Model 116	A	A	A	A	A
Model 117	A	A	A	A	A
Model 118	A	A	A	A	A
Model 119	A	A	A	A	A
Model 120	A	A	A	A	A
Model 121	A	A	A	A	A
Model 122	A	A	A	A	A
Model 123	A	A	A	A	A
Model 124	A	A	A	A	A
Model 125	A	A	A	A	A
Model 126	A	A	A	A	A
Model 127	A	A	A	A	A
Model 128	A	A	A	A	A
Model 129	A	A	A	A	A
Model 130	A	A	A	A	A
Model 131	A	A	A	A	A
Model 132	A	A	A	A	A
Model 133	A	A	A	A	A
Model 134	A	A	A	A	A
Model 135	A	A	A	A	A
Model 136	A	A	A	A	A
Model 137	A	A	A	A	A
Model 138	A	A	A	A	A
Model 139	A	A	A	A	A
Model 140	A	A	A	A	A
Model 141	A	A	A	A	A
Model 142	A	A	A	A	A

also may be lubricated efficiently with Gargoyle Mobiloils. On request we will mail you a separate Chart specifying the correct grade for each make and model of tractor.

VACUUM OIL COMPANY, Rochester, N. Y., U.S.A.

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Rubbish on Roads

Any county engineer, county road superintendent or road gang foreman who allows men under his direction to pile sod, brush or rubbish in the center of the road and leave it there to be beaten down by the traffic, should be "fired," the Iowa State Highway Commission recently stated. This commission also expresses the opinion that any community which permits such road work to be done by any road crew on its highway deserves just what it is getting. There is no necessity and no excuse for such road building. If a mild protest to the authorities does no good, make the protest violent, the commission advises. Sod and rubbish should not be thrown into the road in such a manner that it cannot be covered by good clean earth. Where such roads are already built, the road men should disk the sod and rubbish until it is thoroughly pulverized. The brush and weeds which cannot be cut up should be thrown off with forks, and then the road should be harrowed and dragged or shaped with a blade grader until it is in good condition. Road men will do the work this way is a community demands it, but not otherwise.

Automobile Brings New Life

The 170,000 automobiles in Kansas are "rounding up" the people of the state and bringing about a revolution in the social life of the rural community.

The automobile is no respecter of country, but may be seen spinning over the prairies where the railroad has not yet penetrated. The farmer does not have to stay at home now and "rust" because he is so far from the railroad and the city that old Dobbin is not equal to the journey. He gets into his car with his family and they occupy the best seats at the wheat show, the farmers' institute, the chautauqua, mountains or sea shore, or whatever form of entertainment that is going on to make life better and richer.

Pottawatomie County has been particularly benefited through the introduction of the automobile. The people living in the inland section of the country were so far from the railroad that it was not possible to get them back and forth conveniently in a stage coach, but now the auto bus makes the trip and opens the way to the outside world. Many of the farmers have their own machines and the result is a happier and more contented people.

In some counties of Kansas the con-

solidated school can be a reality only by using the auto bus. In Seward County many of the pupils could not reach the school were it not for the motor car. The automobile demands good roads, and thus traffic is benefited. The rural mail routes have been extended and the country communities broadened since they have been kept in touch with the world's affairs through Uncle Sam.

When there is an automobile on the farm, the boys and girls get a new insight into industrial education. They soon learn the mechanism of the machine and it often creates a desire to obtain additional knowledge along mechanical lines.—WALTER BURR, K. S. A. C.

Glaring Headlight Problem

A practical solution of the headlight problem is near at hand. The fear of drastic legislation has led the American Automobile Association to urge that the Society of Automobile Engineers give the headlight problem right of way over other questions upon which it is at work.

The automobile manufacturers have put the situation up to the lamp makers who, through their association, are co-operating with the Society, which is so near a solution that a report is promised before the first of the new year when many of the state legislatures begin to assemble. Not a few fairly satisfactory devices for glare elimination have been put on the market and have found the approval of the officials entrusted with law enforcement in several states. Unfortunately on many cars the devices not only eliminate the glare but also smother the light to such an extent that the road is not sufficiently illuminated.

It is a hard matter for a farmer to figure out the proper kind of oil for a particular part of any machine. It is impossible for him to put any lubricating fluid to all the necessary tests to find out whether it is suitable for his needs. What he should do is to rely upon the company for which he buys his tractor or other machine for oiling instructions. Every reputable tractor company has a special department devoted to testing oils for the purpose of determining which are the best for lubricating their particular line of machines. The results of their experiments are of absolute importance to every user of their machines. The companies realize that their machines cannot do their best work and last for the greatest period of service unless they are properly lubricated, and their recommendations along this line should be heeded by every user of their tractors. No tractor owner should be guilty of saying "I want some oil," but he should specify in plain English, and in a manner that will impress the dealer, that no other kind but just the oil he should use will do.

If a water-cooled engine is not carefully guarded in cold weather and the water is allowed to freeze in any part of the system, pipes or radiator will break or a water jacket will crack. When leaving the car for the night or for a long time during the day, the safest plan is to drain the water out of all parts of the system. The engine may then be allowed to run for a few minutes to make sure that all the water has been removed. If the car is used a great deal in cold weather, it may be advisable to use a non-freezing solution. A mixture of denatured alcohol and water has proved good for this purpose. A mixture containing 20 per cent of alcohol will freeze at 10 degrees above zero; a 30 per cent solution will freeze at 5 below; 40 per cent solution at 20 below, and 50 per cent solution at 35 below.

If you could make more corn on the same land, with the same labor at no additional cost, would you? Why not spend a day with a sack in your corn field before gathering, selecting good ears from the kind of stalks you would like your whole crop to be? Tests have shown an increased yield of from three to five bushels of corn to the acre the first year from field selected seed over seed taken from the crib.



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DAIRY ASSOCIATION MEETS

The importance of production records was the central feature of the program of the State Dairy Association which met in Mulvane last week. About seventy-five were in attendance at this meeting. The Helvetia Milk Condensing Company has a plant at Mulvane, capable of handling 100,000 pounds of milk daily. On nearly every farm for several miles around, cows are being milked and the product sold to the condenser. At the present time the daily cost of milk at this plant amounts to one thousand dollars. This daily return is what makes dairying so attractive from a business standpoint. The establishment of this plant at Mulvane has changed the system of farming in this community from one devoted almost exclusively to grain production with its uncertainty and soil-depleting effect, to a system of dairy farming where a finished product is sold each day for cash, and where the soil, instead of running down, is becoming more productive.

Mr. Kaylor, manager of the condenser, extended many courtesies to the visiting dairymen, and it was apparent to all that the interest of the company and the producers of milk were so closely related as to bring about the most cordial feeling between them.

After visiting a number of the dairy farms of the community, those in attendance gathered at the place of the meeting and the program was opened by President Enns, who introduced Dr. J. T. Axtell, of Newton. Doctor Axtell told of his search for a thirty-pound sire to head his Holstein herd. After making a trip extending as far east as New York, and including visits to some of the most noted herds in the country, he returned without purchasing a bull, although having options on several. The search for a herd bull combining the desired individuality and breeding, with high records in his pedigree, is not an easy task. The story Doctor Axtell gave the association was full of interest and the breeders were made to realize that good records are a most important factor to success in breeding dairy cattle. We will have more to say later about this particular point.

The subject of records was continued by Prof. O. E. Reed, whose subject was "Cow Testing Associations." He made some statements relative to the manner in which official records are being commercialized, that greatly impressed the dairymen present. Professor Reed said he would much rather have a bull from a cow that had made 500 pounds of butter fat a year for several years, than one from a cow having a thirty-five or forty-pound weekly record, or even a single year's record of 900 or 1,000 pounds butter fat. Professor Reed knows how some of the official records have been made. A number of instances were cited of cows that had made big records but had not produced a calf following the close of the record and were of little value for the year following. Some were mentioned that never produced a calf after making the big record. Whenever a remarkable official record has been made, it is certain there is a skillful feeder and care-taker responsible. Some of the thousand-pound yearly records really represent three years' work. For a year before the record begins the cow is being skillfully prepared. The year following she does not produce a calf, and by the time she is in normal condition and ready to begin production, three years' time has been taken to produce the official record. Of course, there are cows that have made remarkable records and continued them for several years. These are the kind of cows from which to get herd bulls, and such records of continuous high production are of far greater value than the one big record made by a cow that never amounts to anything after the record has been made.

Some of the record associations are now encouraging the ten-months' official test, and this is to be commended, for it does not place a premium on not breeding a cow in order to get the highest

possible twelve-months' production.

All official testing is expensive, and the value of the cow testing association for the average dairy farmer was set forth by Professor Reed, who used the results obtained by the Dickinson County Cow Testing Association to clinch his arguments. KANSAS FARMER readers are familiar with the work of this association. Its reports have been printed from time to time ever since its organization. They will recall that in our report of the first year's work the best cow returned \$3.59 for every dollar's worth of feed consumed, and the poorest cow returned but 65 cents for the dollar's worth of feed. The best five cows of the 134 included in the first year's work averaged over 9,000 pounds of milk and returned profit over cost of feed ranging from \$81.11 to \$145.21.

This association has continued its work and at the present time has a waiting list for membership. Some of the first members have dropped out. They found they were not making a profit from their cows and, rather than change their ways, they ceased to keep records.

The cow testing association makes it possible for its members to secure the kind of records they need and which they would be unable to keep if each worked by himself. The year-in-and-year-out records are the ones that count, and in a cow testing association it is possible to have official records made at much less cost than when the individual must make them alone. C. A. Nelson, the veteran breeder of Holsteins from Waverly, Iowa, who addressed the meeting, further emphasized the importance of production records.

So much enthusiasm was created on this subject of records that steps were taken following the meeting to organize a cow testing association, and possibly two, covering the territory around Mulvane, Winfield, Derby, Wichita, Sedgwick, Valley Center, and Newton. If this meeting in Mulvane results in the forming of even one cow testing association, it will have been a meeting well worth while. The State Dairy Association has been much strengthened through the holding of these meetings in different parts of the state. We anticipate a renewed interest when the annual meeting is held in Manhattan the first week in February, during the State Farm and Home Week.

SHELTER FOR MILK COWS

Dairy cows often suffer seriously from exposure to storms and cold weather before the real winter begins. After the steady cold comes they are generally stable. Exposure to the cold rains of the fall and early winter is often more injurious than the colder weather that comes later in the season. The dairy cow is not protected from cold by a layer of fat, as is the fat steer. Bad weather frequently causes a big drop in milk production. As long as the weather remains dry it may be just as well to leave the cows outside the stable at night, but they should by all means be protected from every cold rain.

It is not necessary to go to any great expense on most farms to make the cows comfortable. Even a straw shed will protect cows from cold and storms. The main thing in sheltering cows is to have the walls tight so there will be no draft or wind, and a roof that will keep out the rain and snow. Care should be taken in arranging stalls in the form of a platform of the right length, having a gutter of sufficient depth to hold the manure. The cleanliness of the milk depends to a considerable extent upon having the stalls so built as to enable the cows to be kept clean.

IS THE ROAD-HORSE SAFE?

It is a dangerous practice to drive a horse that scares at any of the things commonly met on public highways. If the combination of gentleness and speed cannot be found, speed might better be sacrificed than gentleness. Few times in the experience of the average man is

speed necessary to save life, but life is endangered every time an easily frightened horse is hitched up and driven on the public road. Most horses, if trained properly and treated kindly, can be driven safely. However, when a horse that has been bought after his training years, shows fright, it is wiser to replace him with a gentle one than to risk human life with him.

If the road-horse is unsafe, it usually means that the women of the family get away from home very little and then only when it is convenient for some of the men to go, and this is not right. The farm woman should have a safe horse to drive so that she can make her business or pleasure trips at her own convenience.

GRAIN STANDARDS REGULATIONS

The new United States Grain Standards Act becomes effective December 1, 1916. The rules and regulations concerning its administration are now ready. They define terms, provide for the licensing of inspectors, appeals from inspectors' decisions, the reference and disposition of disputes as to grade, the taking of samples in appeals and disputes, the assessment of departmental fees and charges, the making of reports on shipments of uninspected grain, the holding of hearings governing misgrading and misrepresentations as to grade, and other procedure under the act.

Copies of the rules with the act appended can be secured by interested parties on application to the Department of Agriculture, Washington, D. C.

SIZE OF SEPTIC TANK

In our November 4 issue appeared an article telling how sewage from the farmhouse can be successfully handled. The septic tank of two or three compartments, and a system of tile to distribute the overflow so it can be absorbed in the surface layers of the soil and there purified, are essential to sewage disposal on the farm.

In the article referred to, no mention was made of the size or capacity of the tank needed. This depends entirely on the number of persons in the family which it is to serve. It is safe to assume that each individual will use from twenty to forty gallons of water a day, a large part of which finds its way into the sewer. Since the septic chamber must be large enough to hold from two to three days' average flow, it is evident that the tank must have a capacity of at least 75 gallons of sewage for each member of the house. To accommodate a family of six persons, the septic chamber should hold about 450 gallons, which is equivalent to sixty cubic feet.

FARM BUREAU DIRECTS AGENT

Many people seem to be under a misapprehension as to the exact duties and responsibilities of the county agricultural agent. The agent is not the "boss" of the farm bureau, but its servant. For the information of those who seem to think that the agricultural agent rides around over the county issuing orders to the farmers, we quote the following from the weekly news letter of the agent in McPherson County:

"The advisory council of the farm bureau will meet at the farm bureau office, Saturday, November 4, at 2 P. M. This council consists of the president and secretary and the vice-presidents from all townships in the county. The duty of this council is to advise the county agent what lines of work to take up and to suggest methods of making the work of the bureau more efficient."

In like manner farm bureaus in other counties are directing the work of their county agricultural agents. No plan or project can be put into operation except as authorized by the bureau.

One of the instructors at the State School at Parsons recently purchased an automobile with the proceeds from his flock of poultry. Who said chickens don't pay?

DRAIN WET LAND

Proper drainage would redeem many waste acres on Kansas farms. Land is getting too high in price to warrant farming around these wet spots which are full of plant food and will yield big crops when relieved of surplus water. Frequently a single line of tile correctly placed will do away with a seepy spot that has long been an eyesore. Fall is a good season of the year to do this work of laying tile.

The most important part of a tile drainage system is the outlet. Unless the system has a good outlet it cannot work satisfactorily. The ditch is important and great care should be used in digging. Ditch digging for tile is more than just manual labor—it is a science.

The employment of a good engineer to make the preliminary survey is a money-saving proposition. The ditches must be dug to exact measurements in order to get the best possible drainage over the widest area. Only one familiar with the work can establish these measurements and see that the tile is laid in the proper manner.

Perhaps the commonest kind of wet lands is the seepy hillside which are wet and unproductive because of the water that comes up from below. These spots usually appear near the foot of a slope, but occasionally two or more seepy places are found on the same slope. This is due to the structure of the soil. Rock ledges prevent the water from going down, thus forcing it to follow the sub-soil or rocky ledge down the slope. Such land becomes sour and cold and can only be made productive by proper draining.

We recently talked with a Riley County farmer who drained some wet land six years ago. We were familiar with this piece of land long before the present owner bought the farm. It had never produced a crop on account of its being so wet. There were about twenty-six acres of this wet, seepy land on the farm. An alfalfa field now includes about half of this former wet spot. The tile for draining it cost \$468. The first year's crop of corn—that of 1911—paid all the expense of tilling. The second year alfalfa with oats was seeded on a half of the tiled land. The oats yielded 600 bushels and the alfalfa has produced good crops every year since. Corn was on the remainder of the drained land this year, and it only took eight and a half acres to fill a silo fourteen feet in diameter and forty-five feet high.

This farmer was fortunate in securing the services of a man who had extensively handled tile drainage in Illinois. Such services were considered very important. It is easy to make serious mistakes in laying tile.

We believe that on many farms in Kansas a little money invested in tile properly laid would bring big returns.

Interest in the International Live Stock Exposition, which will be held the first week in December in Chicago, increases as the time for the event draws near. Its suspension for two years, due to the foot-and-mouth outbreak, has whetted the appetites of the exhibitors and visitors until both are eagerly awaiting the event. Such an exposition is of great educational value. It is designed to educate away from the use of the "scrub" and show what type of animals return the greatest profit. We hope many of our readers will find it possible to attend this great exposition this year. It will be an experience of a life-time, both in interest and profit.

Contagious abortion is rapidly becoming one of the most costly of animal diseases. It is estimated that it costs the dairy industry \$20,000,000 a year in dead calves and dry cows.

The annual meeting of the Kansas State Bee Keepers' Association will be held at the Commercial Club Rooms, Topeka, November 20-21. A splendid program has been arranged. All interested in bees are urged to attend.

BUILDING UP DAIRY HERD

Requires Good Foundation Stock and Practice of Careful Business Methods

By CHARLES L. HILL, In De Laval Dairy Handbook

WE SHOULD start any building on a good foundation. Too often those who begin dairy herd improvement are advised to start with high-priced pure-bred stock; to do so is almost to guarantee a failure from the start. Pure-breds should be purchased only by those who have first succeeded with grades.

Any farmer who has a herd of cows is certain to have one or more as good for foundation animals as any he can buy, but only a careful system of feeding and weeding will determine which ones they are.

Only a small proportion of cows are fed so they can produce anywhere near their maximum yield. Before condemning a cow she should be fed for an entire year an abundance of a well-balanced ration. Having done this you are ready to weed out the unprofitable cows. But this can be done intelligently only by careful weighing and testing the milk from each cow for an entire milking period.

While it will not be necessary to weigh the milk of every milking to get a record approximately correct as an estimate of the cow's yield, still any dairyman who has tried it will testify that the weighing of the milk of each individual cow every milking pays enormous returns for the time it takes to do it.

Every milker takes an interest and pride in keeping up the yield of the cows he milks. Such weighing will also often foretell any ailment or trouble with the cows, or call the owner's attention to any shortage of the feed when the cows show more than a normal shrinkage.

It does not take as long to weigh and record weight of milk as one would think. Ten seconds, twice a day, will be the average time required to weigh a cow's mess and record it on the sheet. This is equal to three cows a minute, or ten minutes a day for a herd of thirty cows.

While a 25-cent spring balance will do the work accurately enough, a regular milk scale made for this purpose and costing \$2.50 to \$3 will be found the cheapest in the long run. This scale is divided into pounds and tenths of pounds and weighs up to thirty pounds.

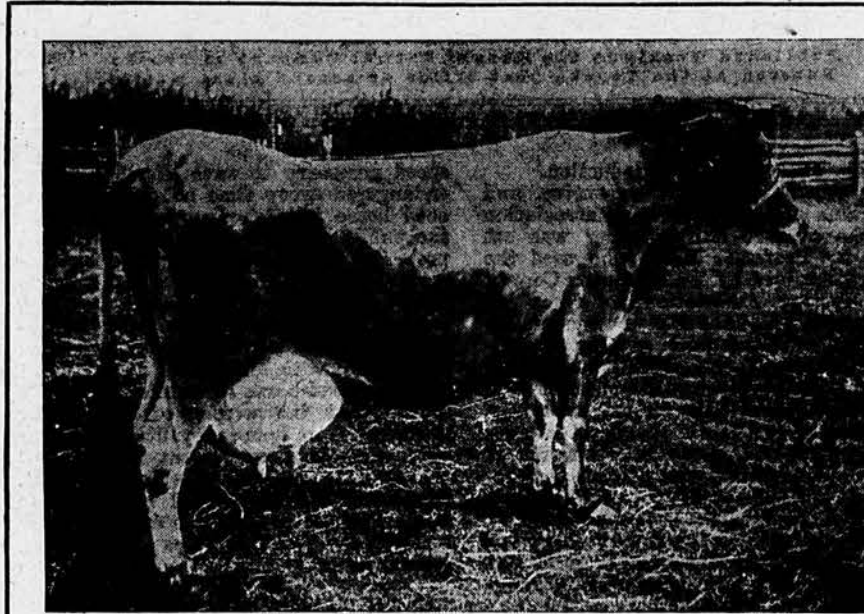
The owner who first weighs the milk of his individual cows for a year is in for a great surprise in their relative yields. Some cows that never gave a large daily yield, and therefore are not considered of the best, will, because they are persistent milkers, be almost certain to lead the herd for the year.

TESTING THE MILK

While weighing the milk is the first great step in weeding out the poor cows, it is only one step. Once each month each cow's milk should be tested by the Babcock test. About the middle of the month, a small sample of the milk, from both morning and evening milkings should be placed in a pint fruit jar with closed top. This sample is best taken by using a small dipper made especially for the purpose, and holding an ounce or two, sample being dipped from the milk pail as soon as the milking is done. An inexpensive Babcock tester can be bought that will test two samples at a time and do the work as well as a larger and more expensive machine. In any herd of five cows or more I would advise the purchase of the best cast-iron twelve-bottle tester to be had. With the rules sent with every machine, whether large or small, any person of average intelligence can make an accurate test from the samples saved in the fruit jar. The weight of the milk given for the month, multiplied by the per cent of fat as shown by this test, will give the butter fat yield for the month for each cow and at the end of the year the sum of the months' totals will give the yearly production of each cow.

As great a surprise awaits the owner who first tests his cows as when he first weighs their milk. Whatever the breed, a difference of 2 per cent will be found between the highest and lowest testing cows. Official yearly records of pure-bred cows show that the highest testing cow of each breed gives milk about twice as rich in butter fat as the lowest testing cow of the same breed. While in a herd of grade cows no such wide variation can be expected, still surprises are always in store for those who first test their cows.

The yearly yield of milk or fat is not



ROSALIND OF BASING, FARTHEST NORTH JERSEY, PRODUCED IN FOUR YEARS AT ALBERTA, CANADA, 51,872 POUNDS OF MILK AND 2,673 POUNDS BUTTER FAT

the final factor in determining which is the most profitable cow; some cows eat nearly twice as much as others. As a general rule a cow consumes food in proportion to her size, but great variations will be noted in individual cows. Having determined the best cows, the right foundation is made for developing a herd. But all cows have their off years in milk production, and allowance for a cow in her off year must be made. The per cent of fat in a cow's milk is however a very stable quantity, and little variation will be found from year to year.

There are now being organized in many states cow test associations. By joining an association a dairyman is enabled to have his individual cows tested at a cost of \$1 each a year. While he can do it even cheaper himself, nevertheless, it is wise to join an association.

BUYING A BULL

The statement so often made, "The bull is half the herd," falls far short of the truth. The whole future success of the business depends on the bull. By far the best bull to buy is an old bull that has proven his ability to sire good cows in some other herd. As a general rule a bull if well cared for should be good for service until he is ten years old, and many bulls have been good sires up to twenty years old.

The next best way to get a bull is to get a young one whose maternal ancestors for many generations have made good yearly butter-fat records. The bull should be kept in a clean, light, well

ventilated stall, and either exercised by working him on a tread power, or turned out into the strongly-fenced yard, where he can have a barrel or stump that he can throw around.

The right bull crossed on the selected cows should work marked improvement at once and his two-year-old heifers should with their first calves produce nearly as much as their mothers did at maturity.

The largest yearly production from cows properly cared for, can be obtained from cows that calve in October and November, and the best calves to raise are those born at that time of the year.

It seldom pays to make veal of the bull calves. While they may pay fair returns for the milk they suck from their mothers, a cow will nearly always give enough more milk in the year, if the calf is taken away at once, to more than make up the difference.

Take the heifer calves that are to be raised away from their mothers when two to four days old. Put them out of sight and hearing of the mother, and let them go fifteen to eighteen hours before you try to feed them, as they will then be hungry enough to want food. It will pay for the first three or four weeks to feed them three times a day, using not over three pounds of new milk to a feed, and add enough hot water to bring the milk up to 100 degrees. With your fingers wet with milk coax the calf to put its nose into the milk in the pail.

Do not let the calf suck your fingers, but as soon as it gets started withdraw

from mouth and hold them just over the nose. Continue the process till the calf drinks alone. Often the calf will learn the first time, and nearly always by the second or third feeding time. At this period of the calf's life it is very important that it should either be put in a small box stall by itself, or fastened up when fed its milk so that it will not acquire the habit of sucking other calves' ears, teats or navels. A little whole oats and bran mixed should be kept in a clean manger before it. It will learn to eat grain much earlier in life if a little of the mixture is put in its mouth right after it has had its milk, and while its mouth and nose are still wet. This also reduces the inclination of the calves to suck anything in sight.

RAISING THE CALVES

Keep the choicest hay available always within reach. Hay made of June grass or second crop clover is the best for this purpose. Alfalfa hay fed to very young calves is apt to keep their bowels too loose.

At two to four weeks old change gradually from new milk to skim milk, fed if possible direct from the cream separator while still warm with the animal heat. Scrupulous cleanliness of stalls, mangers and feed pails is the price of success in calf raising.

Increase the calf's ration of bran and oats up to the time when it will eat three or four pounds a day. Until the calf is eight or ten months old the whole oats are better for them than ground, but as soon as they begin to pass through the calf's stomach whole, feed them ground.

Feed the calf skim milk as long as it can be spared, even up to two years old. In any case feed it milk at least twice a day up to the time it can be turned to grass late the next spring.

Even if turned to grass, continue the grain ration, and if milk is fed, the calf will make wonderful growth, but in this case keep the calf fastened up in stanchions, or tied with a halter, until the mouth and nose are dry, so it will not suck its companions.

Small amounts of corn silage will be good for the calf at all times. The second winter calves should be fed liberally of clover or alfalfa hay, corn silage, and a moderate grain ration but without anything tending to fatten. We want to develop a large capacity to eat roughage.

Breed so as to calve at twenty-four to twenty-eight months of age. After five or six months in calf it will do no harm to begin to lay on fat so that by the time she calves she will be fat enough for beef. As she is dairy-bred, and reared right, she will soon turn this fat in her body into butter fat in the milk pail with profit to her owner.

Let her give milk a full year, the first milking period, thus calving the second time fourteen to fifteen months after the first time. This will help establish the habit of persistent milking.

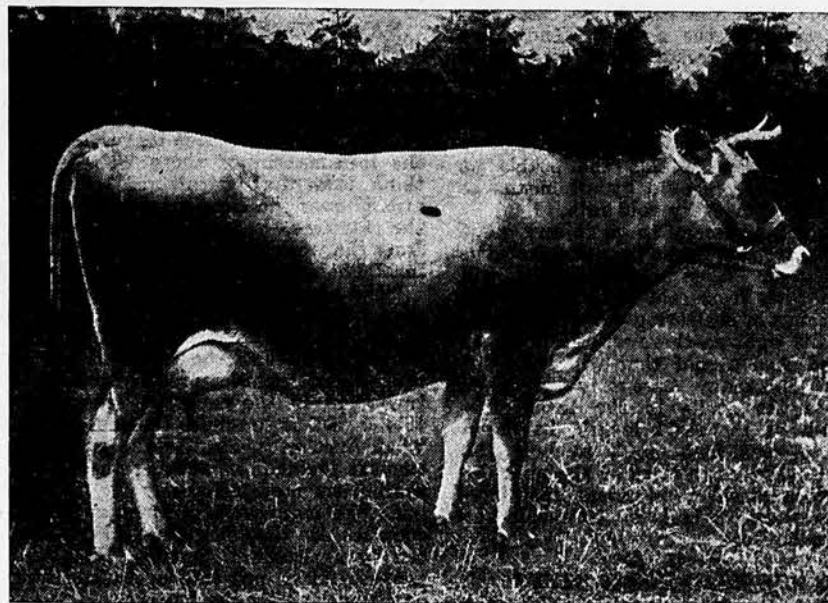
If she was a spring-born heifer, have her drop her first calf in June after she is two years old, and the second one a year from the following September or October, thus giving her a long milking period, and at the same time making a fall cow of her.

From calfhoo handle her kindly and especially after she is bred, rub her udder frequently; when she freshens there will be no "breaking her" to milk. When you do milk her the first time, fasten her if possible in a stanchion next to a wall or partition where she cannot move, and proceed kindly to milk her whether she acts willing or not. All heifers should be trained to stand at right angles to the stanchions or stalls, and to permit the milker to pull her back to place, with his hand in front of right leg, grasping the left hock, thus teaching her at the start that she must stand as you wish. Milk her quietly and rapidly; nearly all cows give their maximum yield when milked quickly.

Remember your heifer is a mother, with all a mother's instincts. You will obtain her maximum production in such a measure as you make her think you are her friend, or even her calf.

Proceed to test her the first year so that you can be sure you have a good cow, or else that you selected the wrong bull for her father.

From first to last attention to details is the price of success.



LADY OF COLLINGWOOD, AGE FIVE YEARS. — PRODUCED IN THREE YEARS 29,909 POUNDS OF MILK AND 1,863.4 POUNDS OF BUTTER FAT.—OWNED IN NEW ZEALAND

WATER PROBLEM SIMPLIFIED

Inexpensive Equipment for Supplying Hot and Cold Water in Farm Kitchen

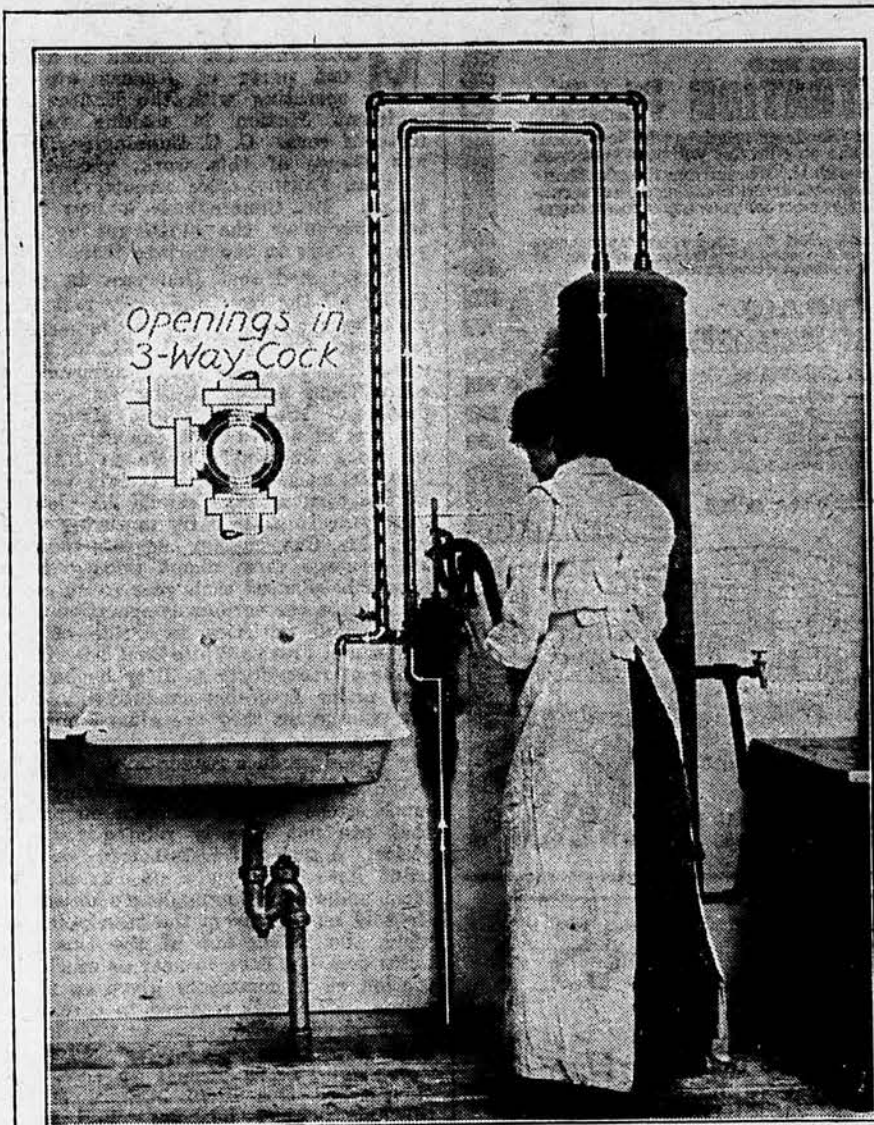
"INEXPENSIVE Plumbing for Farm Kitchens" is the title of a pamphlet just issued by the Kansas Agricultural College. The installation of the equipment described gives the housewife cold, warm or hot water as needed and the actual material used was quoted by a Manhattan plumber last April at \$25. This includes a reasonable profit. The additional lengths of pipe that will be required if water is piped to other rooms, the water-front in the range, and the drain pipe and sewer for the sink will increase this cost in amounts that will vary with the conditions of installation. If the pump displaces another one over the cistern, the additional cost of obtaining running water in the kitchen by this device, not including the sink and its drain, may be estimated, approximately, at \$15.

"Running hot and cold water is commonly regarded as the 'crying need' of the farm home," says W. A. Etherton, author of this bulletin. "It is, without doubt, a very important item, and an improvement quite necessary to lighten the burdens of farm women. But this improvement has not been an easy one to make for farmers of average means."

The working out of this device for supplying water in the kitchen was one of the important problems to be solved recently by Prof. Etherton in developing the plans of a small farmhouse which is to be heated only by an open fireplace and a kitchen range. The solution of the problem has now reached a stage of practical usefulness, and it is published with the hope that it will find a place in thousands of farm homes for which more expensive and elaborate systems of plumbing can not now be provided.

The device in its simplest form is described as a step between the pitcher pump at the kitchen sink and the attic tank system of plumbing as commonly installed, and, like the pitcher pump, it is intended for use only in connection with cisterns or shallow wells near the house. It can, however, be used over a well too deep for a house pump is the well is placed directly under the pump so that the pump cylinder can be lowered to within twenty-five feet of the surface of the water. It can also be used to some advantage in connection with a gravity or pressure system of water supply. It can be used further, and with but slight changes, to supply hot and cold water to additional fixtures in the kitchen or adjoining rooms.

The apparatus described in this bulletin involves no new principle of plumbing. All that is unusual in its make-up is the combination of ordinary pipe fittings and cocks, which when put together make a new kind of pump spout.



SOLID LINE SHOWS COLD WATER GOING TO BOTTOM OF BOILER, DOTTED LINE HOT WATER FROM BOILER TO SPOUT

completely to prevent freezing without wasting the water in the range boiler. Hot, cold, or warm water, as the kitchen worker may need it, can be had through the pump spout.

The pump can be primed by a very simple operation.

Very little of the plumbing work is concealed, and, for the simplest installation, but one hole need be cut for it. In fact, the apparatus is portable, and the tenant who will provide his own plumbing rather than do without it can easily move this device and set it up in another house, providing an agreement to that effect is had with the owner.

Excepting makeshifts, it is the cheapest scheme yet devised for piping hot and cold water to the kitchen sink. All of the materials required for it can be bought for about double the cost of a cistern bucket pump which it may displace.

The apparatus is very simple. The several parts can be purchased from the local plumbers or from plumbing supply houses and put together by the farmer "on the job," or the apparatus may be made up at the plumbing shop or supply house and then disconnected at the union couplings as may be necessary for transportation.

The simplicity of the device will be appreciated by referring to the cut on this page. In this cut the position of the ports or openings in the three-way cock is shown in the upper left hand corner. With the cock in this position, operating the pump forces cold water into the boiler and hot water is forced out into the sink. The solid lines and arrow heads show the flow of cold water through the feed pipe which goes to the bottom of the boiler. The dotted lines and arrow heads show the flow of hot water from the boiler to the spout. The different operations of pumping hot water, cold water, siphoning warm water from the boiler, or draining the system, all depend upon different positions of the three-way cock.

The bulletin gives full details for installing this simple water system. It can be secured by addressing Extension Division, Kansas Agricultural College, Manhattan.

Stockers and feeders should be dehorned before going into winter quarters. It will result in economy in feeding and sheltering the cattle and when shipped they will bring a slightly better price.

Farm Loan Act and Renter

THE question has been frequently asked, "How can a renter who has not saved 50 per cent of the purchase price of land make use of the Federal Farm Loan Act to get land of his own?"

This question was answered by P. W. Goebel of Kansas City, Kansas, president of the American Bankers' Association, at the hearing of the Federal Farm Loan Board in Topeka. Mr. Goebel's verbatim statement covering this matter follows:

"I heard several gentlemen say this morning, 'But how are you going to advance the interests of the tenant farmer that has not got the 50 per cent saved up to buy his land?' Why, if the tenant is the right kind of man there will be no trouble whatever. And here the per-

sonal equation comes in. The Government must require absolutely the same maximum requirements from everybody that does business with these banks, and the local banker will take into consideration the personal equation of a man wanting to buy the land; and, as a banker, I would not hesitate to say that I would loan freely on second mortgages. I would not in a commercial bank, but in a trust company or investment bank I would lend freely on second mortgages so long as I could see that the interest and the amortized payment on the first mortgage and the interest on the second mortgage and taxes and upkeep of the land would still be less than the rental value of the land.

"We will say a young man who has worked for a farmer for a number of years, or a man of middle age whom I have known for years who has rented a place, comes to me and he says, 'I have \$1,000, and I have two span of horses and some cows and some sows—enough reasonably to stock eighty acres of land. I have got to pay \$50 an acre for the land. I can get a loan through the National Farm Loan Association of Staunton Township for \$2,000. Will you loan me the other \$1,000?'"

"Now it is a very easy proposition to figure it out. I will figure that on the first mortgage of \$2,000 he will pay \$120 interest at 6 per cent. I am figuring now on the maximum. He will pay \$20 on the amortization fund. Now, I loan him the \$1,000 at 7 per cent, if you

please. He will pay me \$70, and I will figure that his taxes cost him \$50, which makes a total of \$290.

"Now, that eighty acres of land if he rented it would cost him anywhere from \$325 to \$400 a year rental. It goes without saying that he will take more interest in that piece of land as an owner than as a renter. He will take better care of it and improve it. It will be improved rather than deteriorated. It does not take a great stretch of imagination to see that this man with the \$1,000 I loaned him can pay on an average of \$100 a year on the principal. In other words, he can retire the \$1,000 I am loaning him in ten years. Then, he will simply have a proposition that with any intelligent work at all he will absolutely make a living, and the small sum he pays yearly to retire his loan finally will hardly be taken into consideration. In fact, it is my opinion, based on years and years of observation of the farmer and continuous financial and other business I have had with him, that with any intelligent work he will have something that will make him an absolutely sure living for a good sized family.

"The result of these long-time loans will also be that more of the income from the farm can be placed into equipment for the farm; equipment not only to bring larger returns in dollars to the farmer, but that will make the family feel like they want to stay there. To my notion the greatest lure of the city is the fact that these farmers' wives and

daughters come into the city to visit friends perhaps who have modern equipment in their houses. It appeals to them more strongly than anything else, and makes them more dissatisfied with farm life than anything else. Now, with the bugaboo that the mortgage is going to come due in two or three years, I don't know how I am going to be able to renew it, or I don't know what I have to pay; there may be stagnation in land values—with that bugaboo removed, why, anyone who has the welfare of the farmer at heart can readily advise him, 'Now, put some money into your house and make it modern so that you can have the same chances for comfort and pleasure as the average laborer has in the city.'"



GRAND CHAMPION BERKSHIRE SOW, TOPEKA FAIR.—OWNED BY SUTTON & PORTEOUS, DOUGLAS COUNTY



GRAND CHAMPION BERKSHIRE BOAR, TOPEKA FAIR.—OWNED BY R. C. OBRECHT, SHAWNEE COUNTY

City, Mo.

CLUETT, PEABODY & CO., Inc., *Makers*

also Factory Price Catalog of Trappers' Supplies, Guns, Traps, Ammunition at actual factory cost. We'll include free catalog of Fur Goods and Tanning.

E. W. BIGGS & CO., 433 Biggs Building,
Kansas City, Missouri

The work being done through the experiment station in studying the points having to do with high yields in corn and in testing varieties, is of great value, and we hope that in the near future some definite information will be avail-

THIS was the fourth dry month in succession in Kansas and in the western part of the state it was the second successive month with barely enough moisture for present needs. The weather the first fourteen days was too dry to sprout wheat in most western counties, but conditions improved during the latter part of the month and, when it closed, wheat was nearly all up, though it was small for the time of the year and not much good for pasture. In some extreme western counties seeding was not finished. In the eastern counties fall pastures made good growth and another cutting of alfalfa was secured. At the close of the month a good rain was needed to insure the winter growth of wheat in the western counties.

help to reduce winter-killing and that nearly always means increased yields and in some instances makes the difference between no wheat at all and a profitable yield.

Grain Grading Legislation

In order that grain be sold on its merits it is essential that it be properly graded at the markets where sold. Many objectionable features have crept into the present method of grading grain. The United States Grain-Standards Act, which was passed at the last session of Congress, has for its purpose the alleviation of some of the difficulties with which the producer has to contend in marketing his grain. The effectiveness of the new grain inspection regulations in bringing about the desired results remains to be seen. Probably many of our leaders are unfamiliar with the provisions of the Grain-Standards Act. The following synopsis of the provisions of this act is taken from the Experiment Station Record:

"The United States Grain-Standards Act authorizes the Secretary of Agriculture to investigate the handling and grading of grain, establish official standards, license grain inspectors, and otherwise administer its provisions. After the standards for a grain have become effective, all shipments by grade in interstate or foreign commerce must either be inspected by a licensed inspector at the point of shipment, during transit, or at the point of delivery, or, if there are no inspection facilities available, may be marketed uninspected but subject to the right of either party to the transaction to refer any dispute as to the grade to the Secretary of Agriculture for his determination. An appeal to the Secretary may also be taken as to the true grade of grain which has been inspected. The findings of the Secretary in cases of dispute and appeals are made prima facie evidence in court proceedings.

"The certifying of an official grade on shipments subject to Federal supervision is restricted to inspectors holding Federal licenses. These licenses are to be issued to persons authorized to inspect and grade grain under State laws, or may be issued to any competent and disinterested person, and may be suspended or revoked for cause. A complete system of records and reports is required of inspectors, and penalties are provided for false grading, interference with officials, and other violations of the act.

"The legislation is designed to facilitate the use of more uniform grades in handling grain, thus simplifying the relations between the producer, dealer, and consumer. Since the final decision as to the grade of a shipment rests with the Department, it is also expected that the grower may more readily obtain higher returns for a product of superior merit, thus supplying him with a financial incentive to improve its quality. An appropriation of \$250,000, available until expended, is made for the enforcement of the act."

Name Wanted for New Wheat

The new and valuable strain of wheat developed by the Kansas Experiment Station is as yet unnamed. It is being designated by its row number, P-762, given when the single head from which it originated was first planted. The following names have been suggested for the new variety: Kansas Aggie, Kansas No. 7, K. S. A. C. No. 7, Paragon, Riley, Czar, Alexis, Kanred (Kansas Red), Imperial, Clarion, Selected Crimean, Pedigree Crimean, and Kansas Crimean.

What name would you suggest? If no other name than those already proposed occurs to you, what would be your preference of those?

The above requests are being made by Prof. L. E. Call in a letter from which we quote the following statements concerning this improved strain of wheat:

"It has been tested in comparison with our pure improved Turkey wheat in variety test plots at this station since 1911. The average yield for the six-year period 1911-1916 has been 30.7 bushels, as compared with 26.5 bushels for the Turkey wheat during the same period, an increase of over 15 per cent. In the extremely unfavorable season of 1912 when wheat winter-killed severely, it produced 48 per cent more than the Turkey, and this last season—1916—during which there was also considerable winter-killing, this variety again outyielded the Turkey over 49 per cent.

"This improved variety appears, from

all our observations, to be more hardy than our common strains of Turkey wheat. It therefore winter-kills less and produces correspondingly greater yields in seasons when there has been considerable winter-killing. The young plants of this variety apparently have a more extensive root system and the wheat ripens from three to five days earlier than the ordinary Turkey wheat.

"In 1914 and in each season since that time this variety has been planted on the farms of a number of farmers in the western three-fourths of Kansas—the hard wheat district—where the variety has been grown in comparison with the local wheat that the farmer was growing on his own farm.

"In most cases the local variety was Kharkof or Turkey that had been secured in the past years from this station and was therefore better than much of the

wheat planted in the state. As an average of fifty-two tests on twenty-nine different farms, extending over a period of three years, the new variety produced four bushels more than the local variety, an increase of over 17 per cent. If this variety of wheat had been planted on all the farms in the hard wheat belt of Kansas during the past three years and had produced the same increase that was obtained on the twenty-nine farms on which the comparison was made, the increase in value based on the average price of wheat at the Kansas City market would have been \$62,845,000.

"We feel that we have sufficient information regarding this wheat to warrant us in concluding that we have a variety of outstanding merit and one that should be generally distributed throughout the hard wheat belt of Kansas as rapidly as possible. At the present time

nineteen farmers in different sections of Kansas are growing the variety in large enough fields that the seed may be kept pure. About fifty acres of ground on the different experiment station farms have been seeded to this wheat. With normal weather conditions there should be several thousand bushels of seed available from these different sources for seeding next season.

"Before the wheat is distributed extensively it is important that it be given a name. Send in your suggestions."

While it is preferable to apply lime to a field when preparing the seed bed, it is better, when badly needed, to spread it during the fall or any time during the winter rather than to neglect it altogether. Ground limestone will not injure either the winter wheat fields or clover meadows.

HUDSON SUPER-SIX Excels All in Endurance

Save \$175 Before December 1st

Things the Super-Six does are less important than the way it does them. In breaking world's records it has hardly shown an effort. And after 7000 record-breaking miles, a Super-Six motor showed no evidence of wear in any part or bearing.

The Hudson Super-Six, in most cities, has broken all local records. Most of you have seen them broken.

It has elsewhere broken all worth-while records which have any bearing on stock cars. But all these wondrous things are done without a sign of effort.

Most stock motors go to pieces in attempting speedway tests. Also in hill-climbing feats. They never arrive at all.

But most of our stock-car records were won with a single Super-Six. It made a speed record exceeding 102 miles per hour. It broke all touring car speed records up to 100 miles. It ran 1819 miles in 24 hours, exceeding the record by 52 per cent.

Yet that Super-Six motor, after 3800 miles of that terrific strain, showed no wear whatever. The motor's condition was to experts almost unbelievable.

Another Super-Six broke the ocean-to-ocean record, solely because of endurance. It ran from San Francisco to New York in 5 days, 3 hours and 31 minutes. Then the same 7-passenger Super-Six turned around and went back to San Francisco. The round trip was made in 10 days, 21 hours, 3 minutes. It was the first car to ever finish in a coast to coast and return trip against time.

Last spring the best one-way time made by a famous 8 was 7 days, 11 hours, 52 minutes. In 2½ days more the Super-Six made the round trip. No test of endurance ever equaled that.

That's What You Want

That's why men buy the Super-Six—men wise in motor cars. Not for excessive speed or power. But to render every-day performance without vibration, wear or effort.

The Super-Six at half capacity can match another car's supreme exertion. That means a long-lived motor, low upkeep, small repairs.

The great fact is that the Super-Six has almost ended vibration. It has reduced motor friction to almost nil.

Made Hudson Supreme

The Super-Six has made the Hudson undisputed king. It now outsells any other fine car with a price above \$1100. In six months we have quadrupled our output, but 3500 cars per month still fail to meet demands.

Yet this is the first season of the Super-Six. Last spring it entered the market a stranger, with all a stranger's uncertainties. And men have only begun to realize what this new-type motor means.

The end of the season will find 25,000 running. It finds the Super-Six in possession of all the worth-while records. It finds a car so perfect that not one change is necessary for the coming year.

Then every motorist must concede the Super-Six supremacy. And men who have bought cars with a lesser motor will realize their mistake.

The Super-Six is not one of the passing sensations. Ours is not one of those claims to motor supremacy which yields in a year or two to another. Mark what these records mean. There is plenty of evidence now to convince you that it cannot be superseded.

You Can Save \$175 Now

By buying now you can save \$175. The price will be advanced December 1st. The models will not be changed. You get the same Super-Six motor, the same wonderful chassis, and the same beautiful body. Your car you get now will be identical with those we shall sell after December 1st.

On that date we start a second production of the Super-Six. Material costs have increased enormously. That forces this raise in price.

Phaeton, 7-passenger . . . \$1475
Roadster, 2-passenger . . . 1475
Cabriolet, 3-passenger . . . 1775

Touring Sedan \$2000
Limousine 2750
(Prices f.o.b. Detroit)

Town Car \$2750
Town Car Landaulet . . . 2850
Limousine Landaulet . . . 2850



HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

It's a Snap With a LOUDEN Litter Carrier



Barn cleaning is fun for the boy when a Louden Litter Carrier is used. It is no longer slow, laborious, disagreeable and wasteful.

Louden Carriers embody more real, important exclusive patented features than all others combined. They are strong, light-running, safe, trouble-proof. The hoisting gear is the least complicated and most powerful—has no dangerous hit-or-miss ratchets or brakes.

The Emancipator Carrier on a Louden track will carry a ton safely; a 10 or 12 year-old boy can operate it. Every pound of pull on the chain lifts 40 pounds in the box. Has roller-bearing trolleys; runs smoothly around curves and over switches.

Made to Fit Any Barn

Louden Litter Carriers are built in four styles, suitable for any type or size of barn, and at a wide range of prices. We can fit up your barn at small cost with a system that will pay for itself in a few months.

K. L. Slotten, owner of Walhala Stock Farm, Somers, Iowa, writes, "The Louden Litter Carrier has been in daily use for four years and has given good results. It has not given me any bother and is as good today as when I bought it; can clean the barn in half the time."

We'll Gladly Send You Our Big New Catalog

It is a valuable book of 224 pages, with hundreds of illustrations. Contains much information about equipping the modern money-making barn.

The Louden Line of Sanitary Barn Equipment Includes:

Litter Carriers	Weather Vanes	Garage Door Hangers	Horse Stalls	Calf Pens
Feed Carriers	Hay Carriers	Water Basins	Feed Racks	Bull Pens
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Harness Carriers	Cow Stalls	Manger Divisions	Feed Boxes	Sheep Pens
Barn Door Hangers	Water Troughs	Hay Barn Equipment	Cow Pens	Ventilators
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The Louden Machinery Co.

(Established 1867)

Fairfield, Iowa

Kansas Farmer Dairy Club

How To Take Good Pictures

WE are anxious to have our club members get good pictures of their cows. There is more to taking good pictures than simply pointing the camera at the animal and pushing the button. The camera records what the lens sees.

The first point in getting a good picture is to make the exposure from a point of view that gives the animal a pleasing appearance to your own eyes. Do not get too close. You wish a general view of the cow and you ordinarily examine an animal at a reasonable distance. About twenty-five feet is a good distance for taking the picture. When you have found the point of view from which the cow looks best you have found where the picture can be taken.

You must remember, however, that the camera sees more than does the human eye. When you are looking at your cow you usually do not see surrounding objects clearly. The camera will record whatever there may be in the background just as clearly as it records the object being photographed. Whenever possible, have the sky or some distant landscape serve as the background for the upper part of the picture. Never take a picture of a cow close to the barn or directly in front of a fence. If trees form the background they should not be close.

When taking the broadside view of an animal, the camera should be just about opposite the middle. If you get nearer the head than the flank, the head and fore part of the animal will appear too large in the picture. In taking the picture of a cow, it is important to show her udder and for that reason it is well to take the milk cow from a position just a little nearer the rear than the head, but not enough to exaggerate the size and development of these parts.

When you have selected the background and have your cow ready for the picture, do not be in too much of a hurry. Have someone coax her to stand in the desired position. The hind leg on the side you are taking, should be back far enough to show the udder. The front legs should be just far enough apart to show that there are two legs. It always gives more life to the picture if you can get the cow to turn her head toward the camera enough to show an eye. Giving a low whistle, or making some other unusual sound will quite often give the desired result.

To take a snapshot, you should have sunlight on the side toward you. An exposure of one-twenty-fifth second with your stop at 16, will be about correct for taking a picture with the sun shining on the cow. At this time of the year the best time to take pictures is from ten o'clock in the forenoon to three in the afternoon. On days when the sun is obscured by light clouds, you can take a picture, but you should open your lens to stop 8 and give one-twenty-fifth of one second exposure.

If your camera does not have different openings for the lens and has only one speed of exposure, you should not try to take pictures unless the sun is shining or is slightly obscured by light, fleecy clouds.

Never try to take a picture with the camera pointing toward the sun.

This Department Helps Him

Enclosed you will find my records for October. I received your letter yesterday with my milk test.

I am feeding my cow two parts corn, one part bran, and one part shorts. I could not get any oil meal where I trade, so I thought I would get some shorts and feed this until I could go to Leavenworth. I give her twenty pounds of alfalfa hay at night and let her run on pasture through the day. I am going to let her run in the stalk field and a timothy and clover meadow which joins the stalk field, just as soon as we get the corn shucked.

I read Kansas Farmer dairy club department every week and I find lots of valuable helps in it.

The picture which I had taken of my cow and myself was not good, but I will have another taken right away.—ERNEST S. ASBURY, Leavenworth County.

Shorts cannot be considered a substitute for oil meal. It contains 13.4 per cent digestible protein, 46.2 per cent carbohydrates, and 4.3 per cent fat. Linseed oil meal contains 31.7 per cent di-

gestible protein, 37.9 per cent carbohydrates, and 2.8 per cent fat. The alfalfa hay your cow is getting supplies over two pounds daily of digestible protein, and when you put her on the timothy and clover meadow she will be getting pasture that is rich in protein. She ought to do well then without heavy grain feeding. Four to six pounds daily of the mixture of corn four parts, bran two parts, and oil meal one part, ought to be enough if the alfalfa hay is of good quality. If you feed your corn, ground cob and all, there is less need for the bran. Corn meal or chop should not be fed without putting some bran with it. The bran makes it less likely to cause digestive trouble. Corn and cob meal contains the finely ground cob and this lightens it. When bran is as high in price as at the present time, we would suggest that you mix corn and cob meal four parts and oil meal one part.

Grinding Feed

In our issue of November 4 an article on grinding feed appeared on page three. We refer to this, thinking perhaps our dairy club members do not look in other parts of the paper for articles that will help them in their work.

You are all interested in the subject of grinding feed for you want your cow to get all the feed value possible from what you give her. If she has to use a lot of energy grinding ear corn or other feed, she has that much less material to turn into milk. Early in the season before the corn gets hard it is eaten with a relish in the ear. One club member writes to explain that while the corn was too soft to grind he was feeding ear corn to his cow. While it is in this condition there would probably be nothing gained by going to the expense of grinding, but old corn should be ground for the milk cow. Kafir or milo should be ground also. These grains are so small and hard that there will be a good deal of waste when fed whole.

Look up the article on grinding feed in the November 4 issue of KANSAS FARMER on page three, and read it.

Well Pleased With Her Cow

My cow is doing fine. I have sold my calf for thirty dollars. I now have seventy-two dollars in the bank. I am glad I joined the dairy club for I certainly have a fine red cow.

We have built a new cow barn and I put her in and feed her a large mangerful of the best fourth cutting alfalfa hay. It is almost impossible to get grain out here this year.

My cow will be fresh April 19, 1917. I received my test this morning and am sending you my reports.

It keeps me busy taking care of my cow and going to school. I am going to high school next year. I have a fine school record. I have never missed a day and have not been tardy since I started to school eight years ago this fall.

My cow is all that her recent owner represented her to be. I am certainly pleased with her.—LELA MAE HAYNES, Rawlins County.

Of 16,700 cows tested through forty-seven Wisconsin cow-testing associations last year, 3,375 were disposed of as unprofitable.

Bull associations reduce the cost of the services of a pure-bred bull for the dairy herd. The average annual cost of service in a large number of associations investigated by the United States Department of Agriculture was \$3.48 for each member.

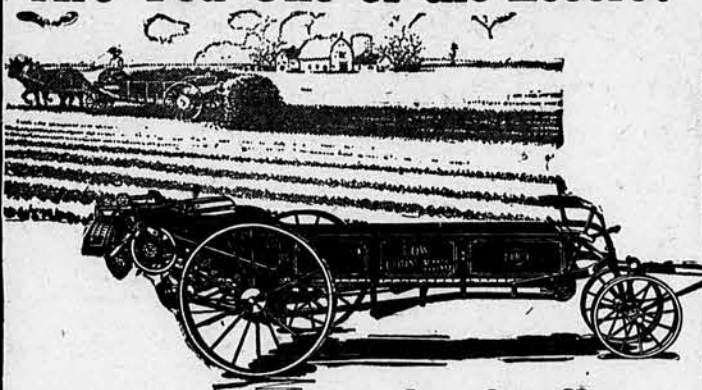


The skimming bowl comes out

for washing without disturbing the spindle this year. This new advantage places our Economy King Cream Separator still farther in the lead. See our big General Catalog for prices.

Sears, Roebuck and Co., Chicago.

Are You One of the Losers?



Low Corn King Low Cloverleaf

SOMETIMES Americans wonder why they get only about half the crop yields from an acre that are produced in other countries. Well, here's one reason—a large majority of the farmers in this country own no manure spreader. One corn belt state lost \$20,000,000 last year by the wasting and poor handling of manure. Are you one of the farmers who shared in this loss? If you are, you need an IHC manure spreader.

International Harvester spreaders, Low Corn King and Low Cloverleaf—besides being low, strong, durable, simple in beater and apron mechanism, with good traction, light draft, and plenty of clearance—have a really successful wide-spreading device.

Low Corn King and Low Cloverleaf spreaders are low for easy loading and narrow for easy handling in yard, stable or field. From a box 45 inches wide either of these spreaders covers an even strip of ground 8 feet wide, or better. It saves time and labor, and keeps wheels and horses well away from the slippery manure already spread.

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Spray For Poultry House

USE a kerosene spray for the interior of the poultry house, in preference to whitewash, advised N. L. Harris, superintendent of the poultry farm at the agricultural college, in an address given at the Wakarusa farmers' institute which we attended last week.

A spray consisting of 97 per cent kerosene and 3 per cent of any of the standard stock dips is best for this purpose. When this is used there is no tendency for the mixture to scale off, as is the case with lime wash. The lime mixture leaves ideal places behind the scales for the propagation of parasites.

Lime wash is effective inasmuch as it covers the parasites and thereby kills them, but as soon as it begins to peel it is worse than useless. If lime wash is used, a 3 per cent solution of carbolic acid should be added to provide a disinfectant.

Selecting Layers

The Missouri Poultry Experiment Station recently made a test of selecting good layers by external indications. Two White Leghorn hens were selected as typical of high and low egg producers. The high producer had a well developed comb, white ear lobes, bleached shanks, had not molted, and was a good wedge shape. The other had a small pale comb, creamy ear lobes, yellow shanks, had molted and had a nice coat of new feathers, and the body was small and ill shaped. The two hens were exhibited at the state fair and were given to the person estimating most accurately the number of eggs produced by each in six months, from January to July. The blanks on which the estimates were recorded contained a space to give reasons for making the estimates. The good hen produced 125 eggs while the poor hen laid 52 during the six months. Approximately 75 per cent of the people over-estimated each of the hens. All estimates averaged missing the good hen 30 eggs each, while they missed the low producer 43 eggs each. Approximately 50 per cent of the people gave reasons for their estimates. All who gave reasons for the estimates averaged missing the good hen 21 eggs, while those who didn't give reasons missed the record 39 eggs—or a difference of 18 eggs.

The hens were won by a seventeen-year-old boy of Sedalia, who raises some Leghorns on a city lot. He estimated the good hen to lay 125 eggs and gave as reason for the estimate a large, red comb and pale shanks. He estimated the poor hen to lay 50 eggs and gave as reasons for the estimate pale comb and yellow shanks.

This emphasizes the fact that there are simple, practical methods of selection for egg production which the average person can use and if these methods are observed, the flock can be culled in such way that the one part will produce two eggs to one produced by the other.

High Prices for Poultry

Reports from cold storage houses disclose a great shortage of stored poultry and eggs, and conditions indicate that prices will be higher than ever before this season.

Prices ruled high early last year, and packers bought sparingly, awaiting a drop in price that did not come. This year, like last, finds the price high and little poultry stuffs in storage. As demand outstrips supply, prices will continue to soar. For this reason, a producing flock will be worth more than ever before.

Guard Against Roup

Fully 75 per cent of the farmers and poultrymen of this country calmly submit to an annual invasion of roup, or some closely allied respiratory disease, into their flock. This disease is second to white diarrhea in its mortality.

Roup is always most prevalent in the fall, attacking the birds at a time of lowest body vitality, at the close of a long season of egg production, or during the moulting period. The sharp, chilly nights of late fall and occasional damp, rainy days are also conducive to the disease, for it frequently finds con-

ditions made more favorable for its development by colds and exposure.

Roup is an infectious disease. While comfortable houses, freedom from drafts, plenty of exercise and wholesome food will go a long way toward prevention, it is not sufficient. One of the chief means of communication of the disease germs is through the drinking water.

The following antiseptic is one of the most effective: In the bottom of a quart jar put a layer of potassium permanganate crystal and add cold water, always being careful to keep more crystals than the water will dissolve. This will constitute your stock solution, and from this jar add just enough liquid to give the drinking water a deep violet color. This will mean one or two teaspoonfuls to a ten-quart pail.

Make it a practice not to allow your birds to drink any water without this antiseptic, and you have taken a big step in preventing roup.—C. A. ANDERSON, Colorado Agricultural College.

The Great Bend Poultry Show will be held December 4 to 7, inclusive. This is one of the good shows of this section of the state. Judge Atherton of Emporia will make the awards.

You must provide green feed for your fall and winter layers. Root crops of various kinds, such as turnips, stock beets or sugar beets, are good substitutes for the green feed of the summer season. Some of these crops should be stored for the hens.

A new mechanical device has been placed on the market to keep a hen from sitting. It is so constructed as to compel the bird to stand at all times. It would appear that such device would not only keep a hen from sitting, but from roosting or scratching.

The man who says his chickens rustle their own living is the man who will borrow money this fall to pay the grocery bills. A few eggs and a few pounds of cream each will pay the store bills and often produce a nice little bank account besides.

It is said that money is much more scarce and hard to procure in election years than at other times, owing to the uncertain feeling among capitalists. Some such fear must have developed this year in the poultry yard, else why the high prices and scarcity of eggs? Can it be that hen politics have overshadowed home duties?

What will be the price of good breeding stock next spring? Those in need of stock this fall are delaying the purchase while every breeder is culling his flock very closely. To make money from the sale of cockerels means that a long price will have to be charged next spring. It might be good business to buy this fall while the breeders are anxious to sell.

At the recent Beloit fair there was a very large poultry exhibit. Over 500 birds were cooped. The quality was far above the average. All this interest in poultry denotes the trend of the times. There is no side line on the farm that pays as well as a few properly cared for chickens. Like all other living creatures, they must be intelligently handled. Don't expect the hen to roost on the cultivator and gather her living in the hog pen, if you want eggs. Such methods are used on too many farms and no eggs during the winter months is the result.

The country schoolhouse is coming to be the community center in many localities. Many of the best farmers' institutes have been held in these fall. A splendid meeting was held October 14 in a schoolhouse five miles west of Galena. There were two speakers from the Kansas Agricultural College and several subjects were handled by local talent. The subject most discussed was poultry. There seems to be an increased interest in the old hen when crops are a failure. Men, as well as women, are realizing that when everything else fails, the hen and dairy cow will keep the wolf from the door.

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pairs of IDEAL heating, repay many times the cost.

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Need of Live Stock Insurance

IN THESE days of high-priced live stock of all kinds few doubt the value of insurance if the cost can be kept low enough to prevent it from being too great a burden. Of course, for every dollar's worth of property destroyed some one must pay. Insurance simply distributes this loss that it does not fall so heavily on the man who happens to be unfortunate. The efficient company will give the greatest possible protection for the least possible cost in addition to the actual payment of loss.

In writing on this subject J. O. Rankin, of the Missouri Agricultural College, calls attention to the fact that there are farmers' mutual companies in this country claiming to handle over a million dollars in risks at a cost of less than \$200 a year, excluding, of course, the losses paid. The typical farmers' company can do things of this kind because it pays no salaries or only a very small salary to a secretary. Often there is no payment except a small amount per day to a secretary and adjuster for the time actually given in adjusting losses. In addition to this there is some slight expense for postage in case members are notified of meetings and assessments by mail and for paper, envelopes, and a few simple office supplies of this kind.

Practically all farmers' mutual companies in this country simply divide each loss among the members and assess each in proportion to the insurance he carries. If several losses occur within a very short time, then they may be combined in one assessment, but the pay-as-you-can plan is followed pretty closely. Our European cousins quite frequently follow this plan, but their other methods may be of interest. Perhaps the simplest and easiest plan and the one which requires the least bookkeeping is employed by a French company which meets occasionally and listens to the secretary's reading of the losses and expenses. The roll is then called and after each man's name comes a statement of the amount of his assessment. He goes immediately to the desk of the secretary, makes his payment, and when all the payments have been received, the men who have suffered losses are paid. As this all occurs at the same meeting, the cash on hand and the bookkeeping are both kept down to the lowest terms.

Some companies undertake to charge a premium, payable when the member enters and once a year thereafter to maintain a fund sufficient to meet every loss as soon as it can be properly adjusted, while others combine the premium and assessment plan by making the premium small with the expectation that some assessments will be necessary before the year's end.

The first form of agricultural co-operation to develop in this country and in some others was mutual live stock insurance. It appeared along the Atlantic seaboard but has moved steadily westward until it is found in practically every part of the country. The mere fact that it is so prevalent is pretty good proof that it is needed, but it is not nearly so urgently needed in this country yet as it is in Europe, where it has reached a very much greater development that has many lessons for us. Many a man in Europe would be left destitute or at least embarrassed for life by the loss of a horse or cow not covered by insurance. Many a man who prefers to buy one good cow would buy two poorer ones for fear the one good one would die and he would lose all he had if he could not protect himself by live stock insurance. In England he may insure not only the cow but practically everything else on the farm, from the laborer in the field to the bees in the hive.

In this country conditions are every year becoming more and more like those across the water which demand such a great development of live stock insurance, now a desirable thing, will become absolutely necessary and each man will have to decide whether to join a mutual company or patronize a commercial company.

In some of the older countries the mutual company has practically driven all others out, while in others the vari-

ous companies thrive side by side and the farmer may choose whichever he prefers, as in this country. In some countries the government leads in organizing and financing the companies while in others it gives practically no aid except through regulatory laws.

Ring the Bull

Ring the bull should not be delayed until he reaches a size that makes it absolutely necessary to put him under restraint. The best plan is to put a ring in his nose while he is still a calf. If the insertion of the ring is left until an emergency arises, serious results may follow. Instances are on record where the bull has been tried to a tree or post while in a furious temper following the ringing process. The result has been that the animal broke loose, tearing out the membranes of the nose, so that future control by this means became impossible. This sort of wound seldom heals, and the bull never forgets the injury. He will hold his tormentors to account and be on the watch for an opportunity for vengeance.

The ring should not be used as a means of restraint immediately after it has been placed in the nose. For the time being the bull should be handled entirely by the halter. When the nose has healed he can be handled by the ring.

In ringing a bull it is not a good plan to use an instrument that will cut a piece out of the membrane between the nostrils. This destroys some of the fine nerve filaments. The best method is to use a small steel tube or canula that has been brought to a point. The open end of the ring can be placed in the tube and the point quickly passed through the septum of the nostril, the ring following the canula. This can be removed and the ring brought together and fastened. As the bull calf grows older a stronger and larger ring can be placed in his nose as needed.

If the bull shows any disposition to be vicious, a good way to tame him is to hang a chain, three or four feet long, to the ring in his nose. This chain dangling from his ring will make him very cautious in the way he handles himself. If he steps on the chain it will jerk his nose, and he soon learns that he must move with extreme care to avoid the resulting pain.

Protect Colts from Storms

Horses can stand more exposure than cattle, but young horses and colts are often seriously injured by the early storms of the season.

Four yearling Percheron fillies with an average weight of 1,169 pounds on pasture and fed a ration of six pounds of corn and oats—one-half of each by weight—daily, shrunk an average of thirty-two pounds each during the spell of severe weather on October 18 to 20 of this year, at the Missouri Experiment Station farm. Aged mares in loaf lost only slightly during the same period.

Growing horses should not be housed too closely. It is important that they have plenty of exercise, but they should not be subjected to extremely bad weather if they are expected to make satisfactory growth.

Independent Packing Plant

An independent packing plant has been established in Kansas City, according to news dispatches. It is capitalized at \$1,500,000 and is known as the Thomas Ruddy Company. Its general offices are in the Live Stock Exchange building at the stock yards.

The old Ruddy Brothers plant in Kansas City, Kansas, is being remodeled. Brick and concrete buildings, especially planned with attention to sanitary and lighting facilities and other modern features, will also be constructed.

Corn is too high in price to feed to hogs as the sole ration. Corn supplemented with tankage or meat meal will make much cheaper gains than corn alone. A good ration for hogs being fattened in a dry lot is a mixture consisting of corn chop 60 parts, shorts 32 parts, and meat meal or tankage 8 parts.

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OVERLAND RED

A Romance of The Moonstone Canon Trail

(Chapter XXI—"Borrowed Plumes"—Continued.)

"It looks awful bad for good fruit and vegetables and fish to be thrown away when folks have to pay ten cents for a loaf of bread no bigger than a watch-charm," said Collie.

"It is bad. Crookedness in real-estate transactions is bad. We don't want to waste our time, however, in feeling worried about it. What we want to do is to show the other fellow that our work is successful and straight."

"Yes, sir. A fellow has got to believe in something. I guess believing in his own state is the best."

"Of course. Now, about your leaving us. I had rather you would stay until the Marshalls go. Louise and Mrs. Stone depend upon you so much."

"Sure I will! You see, Red don't say to come, in his letter, but he sent the check for three hundred if I did want to come. There's no hurry."

"All right. Hello, Louise! Dinner waiting?"

"Yes, Uncle Walter. How are you, Collie?" And Louise nodded to him. "What are you two hatching? You seem so serious."

"Plans for the ultimate glory of the state," said Stone.

"Ultimate?"

"Yes. We've been going beneath the surface of things a little. Collie expects to go even deeper, so he tells me."

Collie walked slowly toward the bunkhouse. Halfway there he took Overland's check from the letter and studied it. He put it back into his pocket. As he passed the corral, Apache nickered in a friendly way. "Haven't got a thing for you?" said Collie. "Not a bite. We're not going to town today. Tomorrow, maybe, for there'll be doings at the Oro Rancho and we'll be there—we'll be there!"

With a run and a spring the young man leaped the gate and trotted into the bunkhouse.

Brand Williams was solemnly shaving. He turned a lathered face toward Collie whose abrupt entrance had all but caused the foreman to sacrifice his left ear. "Well," he drawled, "who is dead?"

"You mean, who is alive? I guess. Say, Brand, what do you think that Yuma horse over at the Oro is worth?"

"That dam' outlaw? Ain't worth the trouble of mentioning."

"But, oh, Brand, she's built right! I tell you! Short-coupled, and them legs and withers! They ain't a pony in the valley can touch her. And only three years old!"

"Nor a man neither," said Williams.

"She's been scared to death because the fellows was scared of her and started in wrong."

"So'll the man be that tries to ride her. Say, I seen that copper-colored, china-eyed, she-son of a Kansas cyclone put Bull O'Toole so far to the bad once that his return ticket expired long before he got back. I tell you, kid, she's outlaw. She's got the disposition of a Comanche with a streak of lightning on a drunk thrown in. You keep off that hoss!"

"Maybe," said Collie. "But I notice you put me to breakin' about all the stock on this ranch that you can't handle yourself."

Which was true. Williams shaved and perspired in silence.

"Let's see," he said presently, emerging from the wash-basin. "When's that barbecue comin' off?"

"Tomorrow. As if you didn't know!"

"Sunday, eh? Well, you might as well get killed on a Sunday as any other day. I suppose your askin' about that hoss means you are thinkin' of ridin' her, eh?"

"I was thinkin' of it. They are putting her up as a chance for the man that can. She has put three of their boys to the bad. Matt Gleason, the Oro foreman, says he'll give her to any Moonstoner that can stay on her two minutes."

"He said 'Moonstoner' particular?" queried Williams.

"He did. To me. I was over tryin' to buy her."

"You're plumb loco. So he said any Moonstoner eh Any Moonstoner. By crip, I've a notion—Let's see, there's Miguel—he's too swift. Billy Dime might make it if he didn't get too much red-eye in him first. But ain't steady enough—and it wouldn't look right if I was the only rider here to take a chance. I dunno."

"What you gaspin' about?" queried Collie. "Nothin', kid. You can get hosses ready for all the ladies for tomorrow mornin' at six sharp. Sabe? I got orders to send you over with 'em. Mebby you're some proud now, eh? Well, don't fall off Apache pertendin' you're so polite you can't spit."

"What you sore about, Brand?"

"I was thinkin' what a slashin' string of riders we got. Here a little old ranch like the Oro says they'll give a hoss to any Moonstoner what kin stay on him for two minutes. It's plum sickenin'. Kids! Jest kids, on this ranch."

"That so? Say, Brand, you ain't got rid of so much English talk at once since I been here. You ought to talk more. You keep too quiet. Talking sociable will help to take the wrinkles out of your neck."

"You talk so much you'll never live to get any."

"Say, Brand."

"Uhuh."

"Will you lend me the Chola spurs and that swell quiet old Miguel plaited for you, and your Mexican bridle, just for tomorrow?"

"So that's what you been lovin' up to me for, eh?"

"Lovin' up to you, you darned old—darned old—dude, you."

"Hold on! You said it! Take the spurs! Take the quiet! Take the bridle! Take the hat and gloves with the silk roses on! Anybody that's got nerve enough to call me a dude can take anything I got. Say, you don't want to borrow a pair of pants, do you?"

Honors were about even when Collie left the bunkhouse, his arms laden with the

foreman's finery. He colored to his hair as he saw Louise coming toward him. He fumbled at the gate, opened it, and stood aside for her to pass. As she smiled and thanked him, he heard his name called. "Hey!" shouted Williams, coming suddenly from the bunkhouse. "Hey, Collie! You went away without them pants! I'll lend 'em to you—"

Collie, his face flaming, strode down the trail, the blood drumming in his ears.

CHAPTER XXII THE YUMA COLT

The Oro Rancho sent out word that the fiftieth year of its existence would be celebrated with an old-fashioned Spanish barbecue. The invitation was general, including every one within a radius of fifty miles.

Added to the natural interest in good things to eat and drink was that of witnessing the pony races. Each rancher would bring, casually, almost accidentally, as it were, one pony that represented its owner's idea of speed and quality. No set program offered, which made the races all the more interesting in that they were genuine.

The Oro Ranch had long ago established and proudly maintained a reputation for breeding the best saddle and work-stock in Southern California. In fact, the ranch had lived the competition of the automobile chiefly because it was the only important stock-raising ranch in the southland.

Good feeling went even so far as to include the sheep-ranchers of the old Spanish Grant, by special invitation.

It was the delight and pride of native Californians to ride their best saddle-horses on such occasions. True, motor-cars came from the city and from the farthest homes, but locally saddle-horses of all sizes and kinds were in evidence. Sleek bays with "Kaatucky" written in every rippling muscle, single-footed in beside heavy mountain ponies, well boned, broad of knee, strong of flank, and docile; lean mustangs of the valley, short-coupled buckskins with the endurance of live rawhide; Mexican pintos, restless and gay in carved leather, and silver trappings; scrawny stolid cayuses that looked half-starved, but that could out-eat and out-last many a better-built horse; they all came, and their riders were immediately made welcome.

Under the trees, along the corrals and fences, in and around the stables, stood the ponies, heads tossing, bits jingling, stamping, thoroughly alive to the importance of the festive occasion, and filling the eye with an unforgettable picture—a living vignette of the old days of the range and riata.

Mrs. Stone, Mrs. Marshall, Louise, Dr. Marshall, and Walter Stone were among the earlier arrivals. A half-dozen men sprang to take their horses as they rode up, but Collie gathered the bridle-reins and led the ponies to the shade of the pepper trees. Then he wandered over to the corrals. His eyes glowed as he watched the sleek ponies dodging, wheeling, circling like a battalion, and led by a smooth-coated, copper-hued mare, young, lithe, straight-limbed, and as beautifully rounded as a Grecian bronze. He moistened his lips as he watched her. He pushed back his hat, felt for tobacco and papers, and rolled a cigarette. This was the renowned "Yuma colt," the outlaw. He wanted her. She was a horse in a thousand.

In some strange way he was conscious that Louise stood beside him, before he turned and raised his sombrero.

"More beautiful than strong men or beautiful women," said Louise.

"That's so, Miss Louise. Because they just live natural and act natural. And that copper-colored mare—she's only a colt yet—there's a horse a man would be willing to work seven years for like the man in the Bible did for his wife."

Louise smiled. "Would you work seven years for her?" she asked.

"I would, if I had to," he said enthusiastically.

"Of course, because you really love horses, don't you?"

"Better than anything else. Of course, there are mean ones. But a real good horse comes close to making an ordinary man feel ashamed of himself. Why, see what a horse will do! He will go anywhere—work all day and all night if he has to—run till he breaks his heart to save a fellow's life, and always be a friend. A horse never acts like eight hours was his day's work. He is willing at any time and all the time—and self-respectin' and clean. I reckon a knowin' horse just plumb loves a man that is good to him."

Louise, her gray eyes wide and pensive, gazed at the young cowboy. "How old is the colt?" she asked.

"They say three years. But she's older than that in brains. She is leading older horses than her."

"Then if you worked seven years for her, she would be ten years old before you owned her."

"You caught me there. I didn't think of that."

"Uncle Walter says she is outlaw. I believe she could be tamed. Boyar was pretty wild before he was broken to ride."

"If you want that pony, Miss Louise, she's yours. I guess I could break her."

[To be continued.]



See page 1472

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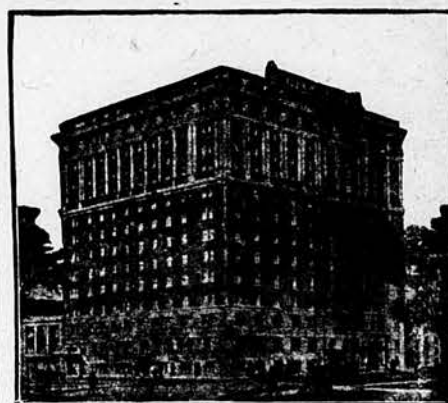
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POTATO BREAD AND ROLLS

EXCELLENT bread can be made by using three pounds of boiled and mashed potato and two and one-fourth pounds of good bread flour, according to the baking specialists of the U. S. Department of Agriculture. This bread has a rich brown crust and tender and elastic crumb. It has an appetizing odor and a very agreeable taste, which is preferred by many to that of bread made wholly from flour. When made according to the directions given below, potato bread contains more mineral matter, fiber, and moisture, but otherwise, in composition and nutritive value, is practically the same as ordinary bread. Its higher moisture content helps to keep it fresh several days longer than ordinary bread. In localities where potatoes are very cheap, potato bread costs less to make than all-flour bread. However, even where the relative market prices of potatoes and flour prevent economy in substituting potato for flour, the individual flavor and keeping quality of potato bread make it desirable as a variant in the family diet.

Potato bread as known abroad is made generally with potato flour, about ten parts of this commonly being used with ninety parts of wheat flour or a mixture of rye and wheat flours. As potato flour and dried potato flakes are not accessible to the American housewife, the specialists of the Federal Department of Agriculture conducted a series of successful experiments in using boiled potatoes with flour.

It was found that a mixture of boiled potatoes and wheat flour, in the proportions given in these recipes, gave a very desirable loaf, a trifle smaller than that made from all flour, but wholesome and nutritious. Figured to a basis of equal moisture content, the boiled potato would represent 25 per cent and the flour 75 per cent of the mixture.

The following methods for making potato bread, worked out in the baking laboratory, are recommended:

POTATO BREAD—STRAIGHT DOUGH METHOD
For four one-pound loaves, the following ingredients are required:

3 pounds potatoes
2 1/2 pounds good bread flour
3 level tablespoons sugar
1 1/2 level teaspoons salt
2 cakes compressed yeast
4 tablespoons lukewarm water

Wash thoroughly and boil in their skins about twelve potatoes of medium size. Cook them until they are very tender. Drain, peel, and wash them while hot, being careful to leave no lumps. Allow the mashed potato to cool until lukewarm. To three pounds—five solidly packed half-pint cups—of the mashed potato, add the yeast, which has been rubbed smooth in a cup with three tablespoons of lukewarm water. To get all the yeast, rinse the cup with the remaining tablespoonful of water and add this also to the potato. Next add the salt, sugar, and about four ounces of the flour—one scant half-pint of sifted flour. Mix thoroughly with the hand, but do not add any more water at this stage.

Cover the mixing bowl to avoid the formation of a crust on top and place out of the way of drafts, to rise, where the temperature can not fall below 80 degrees Fahrenheit. Where the housewife has no thermometer, she should see that the dough in all the risings is kept moderately warm, but not up to blood heat. Any water used in mixing the dough should be moderately warm, but by no means hot. This sponge, if kept at the proper temperature, should, after two hours, become quite light.

To this well-risen sponge, which now will be found quite soft, add the remainder of the flour, kneading thoroughly until a smooth and elastic dough has been formed. The dough must be very stiff, since the boiled potato contains a large amount of water which causes the dough to soften as it rises. Do not add water to the dough unless it is absolutely necessary to work in the flour. Set the dough back to rise again—temperature at about 86 degrees Fahrenheit—until it has trebled in volume, which will require another hour or two. Then divide the dough into four equal parts, reserving a tiny lump weighing two or three ounces for an "indicator." Shape the sample into a ball and press it into the bottom of a small tumbler with straight sides. The glass should be slightly warmed. Note the height of the ball of dough in the tumbler and mark the glass at twice this height.

Mold the four portions into loaves and place in greased pans which have been

slightly warmed. Place the glass containing the "indicator" beside the pans and let all rise, under proper temperature, until the "indicator" shows that it has doubled in volume. Then place the loaves in the oven and bake in a good, steady heat—400 to 425 degrees Fahrenheit—for forty-five minutes.

To Test Oven.—Where no oven thermometer is at hand, a convenient test will be to put a teaspoonful of flour in an earthen dish in the oven. If this flour becomes light brown evenly throughout in five minutes' time, the oven is right for bread-baking. If the flour scorches in that time, the oven is too hot.

POTATO BREAD—SPONGE METHOD
For four one-pound loaves are required:

3 pounds potatoes
2 1/2 pounds good bread flour
3 level tablespoons sugar
1 1/2 level tablespoons salt
1 cake compressed yeast
4 tablespoons water

Boil, peel, and mash the potatoes as directed in the straight dough method. In the evening take one and one-half pounds, or two and one-half solidly packed half-pint cups, of the cool mashed potato, add to it the salt, four ounces of flour—one scant half-pint cup—and the yeast rubbed smooth with the water, reserving one spoonful to rinse the cup.

In the morning add the remainder of the potato, the sugar, and the rest of the flour. Knead thoroughly until a smooth and very stiff dough is formed. After working the dough, set it to rise according to the directions given for the second rising under the straight dough method, and thereafter handle the dough exactly in the same way as is given under the straight dough method.

POTATO BREAD ROLLS
Very good rolls can be made from a similar mixture of boiled potatoes and flour by adding shortening and sugar. The following proportions will make one dozen small rolls:

8 ounces potatoes
6 ounces sifted flour
1/2 cake compressed yeast
1/2 level teaspoonful salt
2 tablespoons lukewarm water
2 tablespoons sugar
2 tablespoons butter

If milk or cream is used—which will greatly improve the quality of the rolls—it should be lukewarm and this much less water will be required.

Boil, peel and mash the potatoes as directed for bread-making. Add, in order, the salt, the yeast rubbed smooth and mixed with the water, the milk or cream, and lastly two tablespoons of flour. Let this mixture stand at a temperature of about 86 degrees Fahrenheit until the dough begins to collapse. Add to this sponge the butter, the sugar, and the remainder of the dough, and, if necessary, enough more flour to make a very stiff dough. Knead thoroughly until a smooth dough which is no longer sticky has been formed. Set back to rise again, and when the dough has trebled in volume, knead lightly, form into small balls and place, not too close together, in greased pans. Allow to rise until double in volume, as shown by the "indicator," and bake twenty minutes in a moderately hot oven.

A school library containing a few good books for each grade will do much in encouraging the habit of reading. The books should be chosen with great care, keeping in mind the value of good early impressions, as true of literature as of anything else. The books should be well and interestingly written but should not all be stories. Biographies, elementary history, stories about industries, and those pertaining to nature and geography should be included. Be sure that some reading is provided for the youngest children, too.

Remember, fresh air in a room warms much more quickly than does dead air.



It handles cold milk
without clogging or wasting butter fat. Eleven pages in our new big General Catalog tell all the advantages of Economy King Cream Separators. Priced as low as \$31.85. Fully guaranteed as usual.
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We desire to make this department just as helpful as possible, and believing that an exchange of experiences will add to its value, we hereby extend an invitation to our readers to use it in passing on to others experiences or suggestions by which you have profited. Any questions submitted will receive our careful attention and if we are unable to make satisfactory answer, we will endeavor to direct inquirer to reliable source of help. Address Editor of Home Department, Kansas Farmer, Topeka, Kansas.

The grown-up who fails to keep his promises to children, should not expect them to be honest in their dealings with him.

Does your neighborhood have the "get together" spirit? If not, can't you think of some way to make possible this atmosphere of fellowship? In the community where it is found, most things are possible, but in the one lacking it, life is apt to become uninteresting. Good fellowship and the creating of general interest in those things having a bearing on the life of the neighborhood, will be valuable in enlisting the young people in the social life of their home community.

It is a poor policy to scare children into doing things. It is much better to

be able to give them real reasons why things should be done.

The secret of success lies in the man and not in the stuff he works on.—
BRADFORD TORREY.

Sponge Cake

Yolks 3 eggs
1 cupful sugar
1 tablespoonful hot water
1 cupful flour
1½ teaspoonfuls baking powder
¼ teaspoonful salt
White 3 eggs
2 teaspoonfuls vinegar

Beat yolks of eggs until thick and lemon-colored, add sugar gradually, and continue beating. Then add water, flour mixed and sifted with baking powder and salt, whites of eggs beaten until stiff, and the vinegar. Bake 35 minutes in a moderate oven, in a buttered and floured cake pan.

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 Dress-maker," 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. 8030—Girls' Dress: Cut in sizes 4, 6 and 8 years. To capture your fancy, this little frock which slips on over the head is very much "middy style," with a laced front, shield and sailor collar of contrasting goods, the long sleeve finished with a flare cuff to match, or without a cuff, as preferred. No. 8026—Ladies' Waist: Cut in sizes 36 to 42 inches bust measure. This waist with surplice closing just sparkles with smartness in the combination effect. Simple but interesting style is shown by rolling the fronts their full length and adding covered buttons where the collar joins. A full-length sleeve is finished with a wide roll cuff of the color material. No. 8043—Children's Dress: Cut in sizes 4, 6, 8 and 10 years. This picture a little dress in the combination of blue linene with collar, cuffs and belt of poplin, and the effect is very pleasing, but you may choose other combinations for an attractive dress. Being in one piece from the shoulder to the lower edge and having front closing, you know at once that it is easy to make. No. 8009—Ladies' Apron: Cut in sizes 36, 40 and 44 inches bust measure. Neatness and smart style characterize this serviceable garment, which is cut in one piece and adjusted with back straps that cross and button over to the shoulder fronts. The straight front is adorned with a shaped pocket of good size at either side. No. 8025—Ladies' Skirt: Cut in sizes 24 to 32 inches waist measure. An unusually attractive new model for walking, sports or general utility wear. It is cut in four gores and has the back gore gathered where a partial belt joins. An under box plait at each side is used to advantage. Develop this in any of the fashionable fall fabrics and be convinced of the great worth of patterns. No. 8029—Ladies' Dress: Cut in sizes 36 to 42 inches bust measure. The nicest thing about this smart one-piece frock is its sweet simplicity. At the back it falls in plaits from a yoke; at the front the novelty of the neck holds attention. Just below it the front section is laid in plaits, while at about normal waistline the side fronts are gathered and braid ornamented and the sleeve cuffs are in harmony.

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New Cook Book Free—See Slip in Pound Can.

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THE STRAY LIST.

STRAY NOTICE.—TAKEN UP BY MRS. Thayer of Geneva Township, Allen County, Kansas, in October, 1915, one steer calf, color gray, letter H on right hip. Appraised on October 12, 1916, at \$44.50. Geo. Seymour, County Clerk, Iola, Kansas.

Real Estate For Sale

DAIRY FARM
Forty Acres, one mile out; all alfalfa land, large buildings. A bargain if sold soon. Write for list of farms and ranches.
T. B. GODSEY - EMPORIA, KANSAS

FOR SALE
1,240-Acre Farm, 8 miles from good town in Norton County, Kansas. 500 acres of good farm land in cultivation, the balance fenced to pasture; small improvements, good water. Price, \$20,000. Terms reasonable. Other bargains.
McAULEY & ELDRED, LOGAN, KANSAS

FOR SALE

320 Acres raw level land, one mile from railroad town. Fine grass and water. Every foot can be cultivated. On the Pike's Peak Highway, in the artesian water belt; also shallow water. Soil is a rich, sandy loam. Price, \$12.50 per acre. Address
CLAUDE F. GERARD
Box 61 Kit Carson, Colorado

160 ACRES, 4½ miles railroad station, good community; 6-room house, fair barn, silo, 20 acres alfalfa, 20 acres wheat, 20 acres bluegrass pasture, remainder cultivation, watered by well and cistern. Owner wishes to sell before January 1. Write for full particulars, price and location. Do it now. Mansfield Land Co., Ottawa, Kansas.

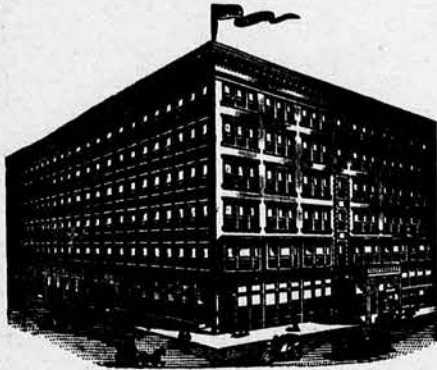
216 ACRES of highly improved farm, 3 miles from Nevada, Mo. Will trade for rental property or merchandise.
W. C. BRYANT - ELK CITY, KANSAS

30 ACRES, ¼ mile city limits McAlester, city 15,000; ¼ mile street car. 10 acres fine bottom land in cultivation, no overflow, balance pasture. Fine for vegetables and poultry. Bought government sale, which accounts for price. \$45 per acre. Terms.
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Master of Dale by the great Avondale heads herd. A few young Scotch bulls and bred heifers for sale.

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Headed by Prince Valentine 4th 842179. Families represented, Orange Blossoms, Butterflies, Queen of Beauty and Violets.

H. H. HOLMES, Route 1, Great Bend, Kan.

Grother's Shorthorns—Lavender Model by Choice Goods Model heads herd. Young bulls and heifers. Few cows for sale.

H. C. GROTH, Route 7, Pittsburg, Kansas.

LOWEMONT SHORTHORNS.

Brawth Heir 351808 heads herd. Inspection invited. E. E. Heacock & Son, Hartford, Kan.

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RED POLLED CATTLE FOR SALE—Twelve cows and heifers.

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A few 1916 bull calves for sale. Also a few cows and heifers.

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Registered, immuned Hampshire boars for sale. Valley Falls, Kansas.

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D. O. Wilson, of Winfield, Kansas, held his Shorthorn sale November 10. The cattle were presented in only medium flesh, having come right off the pastures and sold without any special care or fitting. Thirty head of registered cattle sold for an average of \$150, including a number of small bulls and heifers. A number of grade Shorthorn cows and calves were sold at very good prices. The top price was paid for a three-year-old Cruickshank Violet cow, going to Horreman Bros. at Pilot Grove, Mo., for \$325. Nothing sold high, but the prices received for the entire offering were very satisfactory to Mr. Wilson.

The Shorthorn sale recently held by W. A. Forsythe & Son, of Greenwood, Mo., was largely attended and the fifty-one head catalogued sold for an average of \$508, and the seven bulls for an average of \$396. The top price of the sale, \$1,050, was paid by E. Ogden & Son, Maryville, Mo., for a three-year-old cow. The cattle went into Texas, Missouri, California, Kansas, Oklahoma, Illinois, Washington, Kentucky, and to the Argentine Republic in South America.

J. C. Darr & Son, of Plymouth, Kansas, are among the Kansas owners of high-class herds of pure-bred Hereford cattle. They have built up a herd of the right type and the best blood lines of the breed are represented in their herd. The sires now in service are Beau D 375845, Albion 4th 458303 and Albion 3d 458302. A feature of their herd is the choice lot of young bulls ranging in age from six months to three years.

The Poland China sale held by Dr. J. H. Lomax, of St. Joseph, Missouri, at his farm near Leona, Kansas, October 13, was well attended. The offering was one of the good big-type offerings that will be sold this season. The forty-one head sold for an average of \$32 with a top of \$90. Doctor Lomax owns one of the good big-type herds in Kansas and has a type that is the profitable market hog.

W. R. Huston of Americus, Kansas, owner of one of the best Duroc herds in Kansas, reports his herd doing well and the young stock growing out fine. Mr. Huston keeps his herd immune and as a result of this and keeping all pens and feed lots clean, always has a healthy herd. He has a big smooth type of Duroc and the blood lines of his herd are the best of the breed. Gold Medal 176231 that has been in use in this herd for some time is one of the great breeders now in service and Mr. Huston greatly regrets that he is compelled to dispose of him on account of the number of his gilts now in his herd. Mr. Huston also has a very fine lot of young stock, the get of the great boar, Country Gentleman. These, with the get of Gold Medal, are a very attractive feature of his herd.

Arthur Mosse of Leavenworth, Kansas, owner of one of the noted herds of O. I. C. hogs, reports his herd doing well. Mr. Mosse's herd was established in 1900 with the best foundation stock that he could purchase and by careful breeding for years he has succeeded in building up a herd that has attracted widespread attention. His type are the easy feeding, profitable kind, and the best blood lines of the breed will be found in his herd. A feature of his herd at present is the choice lot of young stock, including both fall and spring boars and spring gilts, some of them by the great boar, Izzy O. K. Wonder.

Sullivan Bros. of Moran, Kansas, have built up a herd of big-type Polands that has attracted the attention of breeders throughout Kansas and other states. They have a type of Polands that are remarkable for size and quality. They have a very fine herd of sows and their blood lines include Long King's Equal, Major B. Hadley and Jumbo Timm by Big Timm, the Nebraska State Fair winner. A feature of their herd is the fine lot of February and March pigs, a lot of them sired by Jumbo Timm. They horn cattle in Kansas and have found that also have one of the good herds of Short-It pays to keep nothing but pure-bred stock on the farm.

H. H. Holmes, of Great Bend, Barton County, Kansas, owner of the Riverside herd of Shorthorn cattle, has one of the good herds in the West. The herd cows are from the best Scotch families. They are the good, thick, short-legged type. Mr. Holmes bought the best when starting his herd, having secured his foundation stock from some of the best herds in Iowa, Missouri and Kansas. At the head of the herd is the great ton show bull, Prince Valentine 4th. This bull was used in the Tomson Bros. herd for a while and left many good calves on the farm. A feature of the Holmes herd at this time is a number of pure Scotch bull calves that will make real herd headers.

M. H. Roller & Son and Bruce Saunders, of Holton, Kansas, have announced February 22, 1917, for their annual jack and jennet sale. This firm has been breeding jacks and jennets for thirty-seven years and has the oldest breeding farm in Jackson County. They have now on hand about forty-five head of high class jacks and jennets. The herd jack, John L. Jr., was the grand champion jack at the Topeka Fair in both 1914 and 1915. He is a five-year-old jack and about as good an individual as one can find in any state. A feature of the herd at this time is the five extra good yearling jack colts sired by John L. Jr.

Leon A. Waite of Winfield, Kansas, is one of the successful stockmen of our state. Ten years ago he bought a few of the best Hereford cows he could buy from the best herds, and now has forty choice cows. This herd is headed by a son of Old Beau Brummel 10th, one of the most noted families of Hereford cattle. This bull's dam was the great show cow, Simplicity, tracing four times to the great Don Carlos, one of the

DISPERSION SALE OF JACKS

AT MORAN, KANSAS, NOVEMBER 22.

JACKS, JENNETS, BROOD MARES, MULES AND CATTLE

Imported Belgian stallion, Voltigeur 7537 (81820); 1,900 pounds, six years. Thirteen mammoth black jacks and jennets. Four jacks, three to six years, 14-2 inches to 15-3 inches standard, 8 to 9-inch cannon bone (bring your tape line). Prompt and sure. Monster three years, black, light points, prompt and sure. Will make 1,200-pound herd jack. Nine jennets, six months to six years; six safe in foal to good jacks, three of them to W. D. Gott's 1,260-pound herd jack. Thirteen mules and mares, mostly coming three years. Moran is 100 miles south of Kansas City, twelve miles east of Iola, thirty miles west of Fort Scott, on M. K. & T. and Missouri Pacific railroads. Fifteen passenger trains daily. Send for catalog. W. J. STRONG, MORAN, ALLEN COUNTY, KANSAS.

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HORSES AND MULES.



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Have fifteen large, heavy boned, black, registered jacks, 15 to 16 hands high, good heads and ears, good style, good breeders. I have a number of jacks sired by the champion, Pride of Missouri, also several other good herd prospects. In my 1914 sale I sold the champion of Kansas State Fair, 1915, Eastern Lightning, also Demonstrator, first prize aged jack Missouri State Fair. Reference, People's Bank. Written guarantee with each animal. Have a number of Percheron stallions for sale, also saddle stallions. Barn in town. Wabash Railroad. WM. DEIERLING, QUEEN CITY, MISSOURI.

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If you are in the market for a good Percheron stallion or mare, now is the time. We can show you more bone, size, action and conformation than you will see elsewhere. Write or come today.

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SALINA, KANSAS

great bulls of the breed. Mr. Waite has for a number of years been a breeder and showman of Berkshire hogs and has a wide acquaintance among the Berkshire fraternity. With the profits from good cattle and good hogs, he has been able to build a new home on his farm costing about \$5,000, with all modern improvements and up to date in every way. A feature of the Hereford herd at this time is the extra fine lot of young bulls and young heifers, grandsons and granddaughters of Beau Brummel 10th.

W. H. Sales of Simpson, Kansas, is succeeding with herds of pure-bred Duroc and Poland China hogs. This year he raised a large number of early spring pigs that have grown out fine. They were sired by such boars as LaFollette's Last 111995, an Iowa winner; Bader's Golden Model 2d 159533, winner at Nebraska State Fair; Golden Rod 125135, McWander 68815, Big Four Wonder 72222, and other noted sires.

George W. Ela, Valley Falls, Kansas, owner of Halcyon herd of Hampshire hogs, reports his herd doing well. Mr. Ela owns one of the good herds of Hampshires in this state. His herd is made up of representatives of such boars as Gen. Tipton, Pat Maloy, Cherokee Lad and other famous Hampshire sires. This was his first year with a show herd and his herd was a consistent winner in all classes entered. A feature of his herd is the fine lot of young stock, including a choice lot of young boars.

The seventh annual Poland China sale of U. S. Byrne of Saxton, Mo., was held as advertised for October 25. Mr. Byrne was unfortunate in selecting a date that came just after the heavy rain and storm of October 24. A good class of buyers was on hand and the offering of thirty-five head of March and April pigs were distributed to buyers of Missouri and Kansas. The total of the sale was \$1,235, or an average of \$35.60. A pleasing feature of the sale was the purchases made by former patrons of these sales. Park E. Salter of Augusta, Kansas, topped the boar sale at \$56 for No. 28 in the catalog, a very promising March pig by B. Wonder. Had the weather been favorable a much higher average would have been obtained.

H. E. Anderson of Clover Valley Holstein Farm, Whitewater, Wis., reports his herd of Holsteins doing well. This is one of Wisconsin's good Holstein herds and it is headed at this time by Sir Pontiac Chief 89699, his dam Pontiac De Nilander with a seven-day record of 20.19 pounds butter and 538.50 pounds milk at three and one-half years of age and a seven-day record of 35.43 pounds butter and 750.20 pounds milk at five and a half years of age, also a thirty-day record of 144.60 pounds butter and 3,090.06 pounds milk at five and a half years of age.

T. E. Durbin of King City, Mo., held on October 27 one of the good sales of the season. Fifty-two head of February, March and April spring pigs were sold for \$2,860, an average of \$55. A pleasing feature of the sale was a number of old customers that were strong bidders and bought. The offering was in the very pink of condition and was of the most popular blood lines of the big Poland Chinas.

Ed Stegell of Straight Creek, owner of one of the great herds of Polled Durham cattle, headed by the undefeated True Sultan, reports a good demand for high-class Polled Durhams. Among the recent sales reported by Mr. Stegell are the following: Princess Sultana and Queen Sultana to D. L. Wallace of Rising Sun, Neb.; Sultana Light to Albert Johnson, Osceola, Neb.; Sultan's Pride to J. C. Banbury, Pratt, Kan.; Sultan's Choice to S. R. Tucker, Codell, Kan., and Waterloo Sultan to W. R. Mitchell, Mankato, Kan. These cattle sold at from \$300 to \$1,000 per head.

R. G. Sartain of Fayette, Missouri, is making good with one of the good herds of old original big-boned Spotted Poland Chinas. The foundation stock of Mr. Sartain's herd was from the best herds of that popular breed and by careful mating he has combined size and quality and his big easy-feeding type of Spotted Polands are the kind that are profitable feeders. This year he raised a very fine lot of spring pigs that have grown out in good shape. They have been developed along lines that insure good herd material.

The Holstein-Friesian bull King Segis Pontiac Konigen 97988 recently changed hands for the sum of \$35,000. Fred F. Field, a Holstein man in Eastern Massachusetts, bought him from Mrs. Franc A. Smith of Alexander, New York. The bull is four years old.



JACKS AND JENNETS

15 Large Mammoth Black Jacks for sale, ages from 2 to 6 years; large, heavy-boned. Special prices for fall and winter sales. Fifteen good jennets for sale. Come and see me.

PHIL WALKER, Moline, Elk County, Kansas

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PURE-BRED REGISTERED PERCHERONS From weanlings to mature ages, either sex. Give description and prices. Address

W. S. B., IN CARE OF KANSAS FARMER.

Home-Bred Draft Stallions, your choice \$500 with the exception of two. Also mares for sale. A. Latimer Wilson, Creston, Iowa.

REGISTERED PERCHERONS, 39 heavy 3 and 4 yr. stallions, 68 rugged 2 yr. olds, 41 yearlings. Can spare 25 reg. mares. 24 reg. Belgian stallions. Sires and dams from France and Belgium.

FRED CHANDLER, R. 7, Chariton, Iowa Above Kansas City.

Barn Full of Percheron Stallions and Mares. Twenty-five mature and aged jacks. Priced to sell. AL. G. SMITH, Lawrence, Kansas.

SHEEP.

SHROPSHIRE RAMS. Chandler's aged ram won first prize and championship at Iowa State Fair, 1916. Weight and wool always win. One hundred yearling rams and ewes for sale. C. W. Chandler, Kellerton, Iowa

REGISTERED SHROPSHIRE RAMS Yearlings and two, square built, rugged, hardy bucks with weight, bone and heavy fleece. Quick shipping facilities and prices cheap. 412 head. Above Kansas City. HOWARD CHANDLER, Chariton, Iowa

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A lifetime experience proves the Rambouillet is easily the best sheep for Kansas conditions. We offer choice individuals, either sex, with good bone, size, form and fleece. B. D. KING, Burlington, Kansas.

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CHESTER WHITE HOGS For Sale—Spring boars and gilts from state fair winners. COLEMAN & CRUM Danville - - Kansas

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J. S. KENNEDY - BLOCKTON, IOWA

KANSAS HERD

Chester Whites or O. I. C's. Big, growthy spring boars and gilts. Some by Izzy O. K. Wonder. KANSAS HERD OF CHESTER WHITES, Leavenworth, Kansas.

CHOICE CHESTER WHITE BOARS Mature Stock at farmers' prices. Joseph Morin - - Orleans, Nebraska

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POLAND CHINAS.

HOLSTEIN CATTLE.

HOLSTEIN CATTLE.

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The sensation of the National Swine Show and grand champion Poland China boar at the Topeka Free Fair. Fifteen spring boars ready for service, priced to sell. Write at once. Mention Kansas Farmer.

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DEAN'S MASTODON POLANDS

Big high-quality spring boars, sired by Big Bone Model by Long Big Bone, champion Iowa State Fair. Others by Smooth Black Bone by Smooth Big Bone, also champion Iowa State Fair. Dams of offering all by noted big-type sires. All have great size and quality. If you want size and high quality, I have them. All immune.

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Immune Poland China boars for sale. Two fall boars and ten spring boars, sired by Big Bob Wonder 71999, Caldwell's Big Bob 76436 and Sir Dudley, junior champion Kansas State Fair at Hutchinson, 1915. C. B. PALMER, Route 5, MARION, KAN.

OLD ORIGINAL SPOTTED POLANDS

150 choice spring pigs left, sired by seven of the very best boars of the East and West. Priced right. Write your wants to the CEDAR ROW STOCK FARM, A. S. Alexander, Prop., Burlington, Kansas

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Twenty strictly high class boars, bred the same as our grand champion sow and other prize winners. They are herd headers. Also gilts and bred sows and 150 fall pigs. All immune.

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Big high quality March and April boars, sired by Chief Big Bone, Longfellow Again and the champion Big Timm. These boars are out of big high quality sows and are fine prospects.

JAMES ARKELL, JUNCTION CITY, KAN.

Poland China Boars and Gilts

For Sale—Two spring boars by Big Bob Wonder; 8 boars and 10 gilts by Mammoth Orange. Prices reasonable. Write at once. JOHN D. HENRY, LECOMPTON, KANSAS

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April boars, fancy individuals. Priced for quick sale. Sires, Lafollette's Last, Bader's Golden Model 2d, McWonder and Big Ex Wonder.

W. H. SALES, SIMPSON, KANSAS

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Twenty-five choice spring boars sired by the half ton A Wonderful King, the first prize aged boar at Topeka fair and first and grand champion at Kansas State Fair at Hutchinson, 1916. Write for prices.

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Boars—Serviceable, age, guaranteed to please. Breeding stock, both sexes.

T. T. LANGFORD & SONS, Jamesport, Mo.

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Spring boars sired by Blue Hadley and Geo. Garrett, out of choice big-type dams.

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Spring boars and gilts, fifteen to twenty dollars. Edgar Hartman, Great Bend, Kan.

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Two choice Hereford bulls, 2 and 3 years old, well marked, both will make ton bulls. The 3-year-old weighs 1,950. Also some choice yearling Percheron stud colts.

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150 Head in Herd. A few cows and heifers for sale. Also a lot of farm and range bulls. Priced reasonable.

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The "Oaks" Farm Herefords

For Sale—Twenty-five bulls from 6 to 36 months old. Anxiety breeding, choice ones. Herd bulls, Beau D 37645; Albion 4th 468-303; Lewis Fairfax 522709.

J. C. DARR & SON, PLYMOUTH, KANSAS

BROWN SWISS CATTLE.

"BRYN-COED"

Ten choice young bulls by well selected sires and highly-bred heavy-producing dams. Prices reasonable.

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OHIO IMPROVED CHESTERS

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For sale, 65 head March pigs, either sex. Two fall yearling boars, sired by Wilcox's White Giant. Prices reasonable. Write today.

DAN WILCOX, CAMERON, MO.

O. I. C. BOARS, all ages; big boned, long bodied, growthy fellows. Prices reasonable.

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Clyde Girod, At the Farm.

F. W. Robison, Cashier Towanda State Bank

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Pure-Bred Holsteins, all ages, strong in the blood of the leading sires of today, headed by Oak De Kol Bessie Ormsby 156789. Special offering of choice young pure-bred bulls, ready for service, from tested dams. Let us furnish you a bull and improve your herd. TWENTY-FIVE pure-bred females, young useful Holsteins with A. R. O. records from 12 to 26 pounds butter in seven days.

BEFORE YOU BUY, TALK WITH US

We have an especially large, choice selection of extra high grade young cows and heifers due to freshen this fall and early winter, all in calf to pure-bred bulls. These females are large, deep bodied, heavy producers, with large udders, all well marked individuals and the right dairy type. Our offerings are at prices that challenge comparison for Holsteins of their breeding and quality. High grade heifer calves, \$25. Send draft for number wanted. Let us know what you want in Holsteins, and we will be pleased to send you descriptions and prices. Keep us in mind before purchasing. Wire, write or phone us.

GIROD & ROBISON -- -- TOWANDA, KANSAS



THE HOLSTEIN-FRIESIAN ASSOCIATION OF KANSAS

as an organization offers nothing for sale but desires to supply valuable information free to prospective buyers. The object of this association is to protect the interests of the breed in Kansas. Are you a member?

Write W. H. MOTT, SECY, HERINGTON, KANSAS

HOLSTEIN HEIFERS

Will sell 20 head choice high-grade yearling Holstein heifers. All good individuals. Seven-eighths white and showing good udders. They are priced to sell.

B. L. BEAN, MAPLETON, KANSAS

HOLSTEIN COWS

For Sale—Holstein springers, fresh cows and two-year-old springers. All bred to registered bull. Also some registered females and bulls.

BOCK'S DAIRY, Route 9, Wichita, Kansas

REGISTERED HOLSTEINS

Priced for quick sale, 23-pound bull of serviceable age. Others 5-8 months of age from 20-23-pound dams. Young bull calves sired by a 22.52-pound bull; also a few bred heifers. For further particulars write

M. E. GUNDERSON & SONS, Oconomowoc, Wisconsin

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 BULL, King Lyons Wayne. Exceptionally fine animal. Priced right. DR. T. M. THOMSEN, Dannebrog, Nebraska

JERSEY CATTLE.

AT REDUCED PRICES

On account of severe drought in this section I will sell sixty head (one-half of my herd) registered Jerseys at sacrifice prices. Best Island-American breeding. Any age; either sex. Send for circular.

THE ENNIS STOCK AND DAIRY FARM, Horine, Mo. (Just South of St. Louis)

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. LINSCOTT, HOLTON, KANSAS

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

120 Jersey Cows and Heifers

Pure-bred and high grade. Forty bred yearlings, superior individuals, all from profitable dams, now for sale.

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

Registered Jersey Bulls, butter-bred, from high producing cows. Photo furnished. Maxwell's Jersey Dairy, Route 2, Topeka, Kan.

AYRSHIRE CATTLE.

AYRSHIRE BULLS

Age two weeks to two years, priced to move quickly at \$40 to \$80. Worth double. Bred for high production. All pure-bred and sure to get high producing heifers. Herd of nearly a hundred, established in 1906, located at Linwood, Kansas, near Kansas City. Tuberculin tested yearly, never found a reactor. Milk test over 4 per cent.

Dr. F. S. SCHOENLEBER, Manhattan, Kan.

FARM AND HERD.

Auld Bros., of Frankfort, Kansas, owners of one of the outstanding herds of pure-bred Red Polled cattle in the Southwest, report a heavy demand for Red Polled breeding stock. A feature of their herd at this time is the choice lot of 1916 calves, including some choice bulls.

An error occurred in the announcement of Tomson Bros.' Shorthorn sale to occur at Wakarusa, Kansas, November 22. The copy read: "Two bulls by Maxwalton Rosedale" instead of five, as have been catalogued. There are four bulls by Prince Valentine 4th, five by Maxwalton Rosedale and one by Dale's Cumberland, all of fashionable strains of breeding and selected especially to make a high-class bull offering.

J. B. Branson of Lincoln, Nebraska, has claimed December 12 as the date of his Holstein sale. On that date he will offer forty head of milking cows, thirty springing heifers and some registered bulls, also a lot of yearlings and calves.

IN MISSOURI

Price Segis Walker Pletertje 123955 heads herd. Dam 30.13 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.

Bonnie Brae Holsteins

A fine bunch of high grade two-year-old heifers coming fresh. Also a few young cows and one well-bred registered bull old enough for light service.

IRA ROMIG, Station B, TOPEKA, KANSAS

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, Iowa

Holstein and Jersey Cows

Two high-grade Holstein cows, four heifers, two bulls, three heifer calves. Also two high-grade Jersey cows, two heifers, one bull calf. Three heifer calves reasonable for quick disposal. Write

DR. E. G. L. HARBOUR, Baldwin, Kansas

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

Offers for sale four bull calves two to four months, sired by Jewel Paul Butter Boy 94245. These calves are all nicely marked and from good milkers.

L. F. CORY & SON, BELLEVILLE, KAN.

GOLDEN-BELT HOLSTEIN HERD

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

W. E. BENTLEY, MANHATTAN, KANSAS

HOLSTEIN CALVES

Registered and high grade Holsteins. High grade heifer calves two to four weeks old, \$20, delivered. We can supply you with anything in Holsteins.

CLOVER VALLEY HOLSTEIN FARM, Whitewater, Wisconsin

FOUR BULLS

Two of serviceable age. Priced very reasonable. Pictures and description on application. A Tredico bull will improve your herd. TREDICO FARM, Route 2, Kingman, Kan.

THE CEDAR LANE HOLSTEIN HERD

Headed by a 29.4-pound grandson of Pontiac Korndyke. Bull calves, nearly ready for service, sired by above bull, for sale at reasonable prices. Also a limited number of bred cows.

T. M. EWING, INDEPENDENCE, 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

HOLSTEIN CALVES—Ten heifers and two bulls, 15-16ths pure, beautifully marked, 5 weeks old, from heavy milkers. \$20 each, crated for shipment anywhere. Write EDGEWOOD FARM, Whitewater, Wis.

BRAEBURN HOLSTEINS

Four females to spare before stabilizing time. Always A. R. O. bull calves.

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

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Hereford Cattle, Shropshire and Cotswold Sheep, Berkshire Hogs. Thirty-five grandsons and granddaughters of Beau Brummel 10th for sale. Some extra herd headers at reasonable prices, breeding considered. Come and see my herd. Satisfaction guaranteed.

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