KANSAS FARMER

FOR THE IMPROVEMENT OF THE FARM AND HOME

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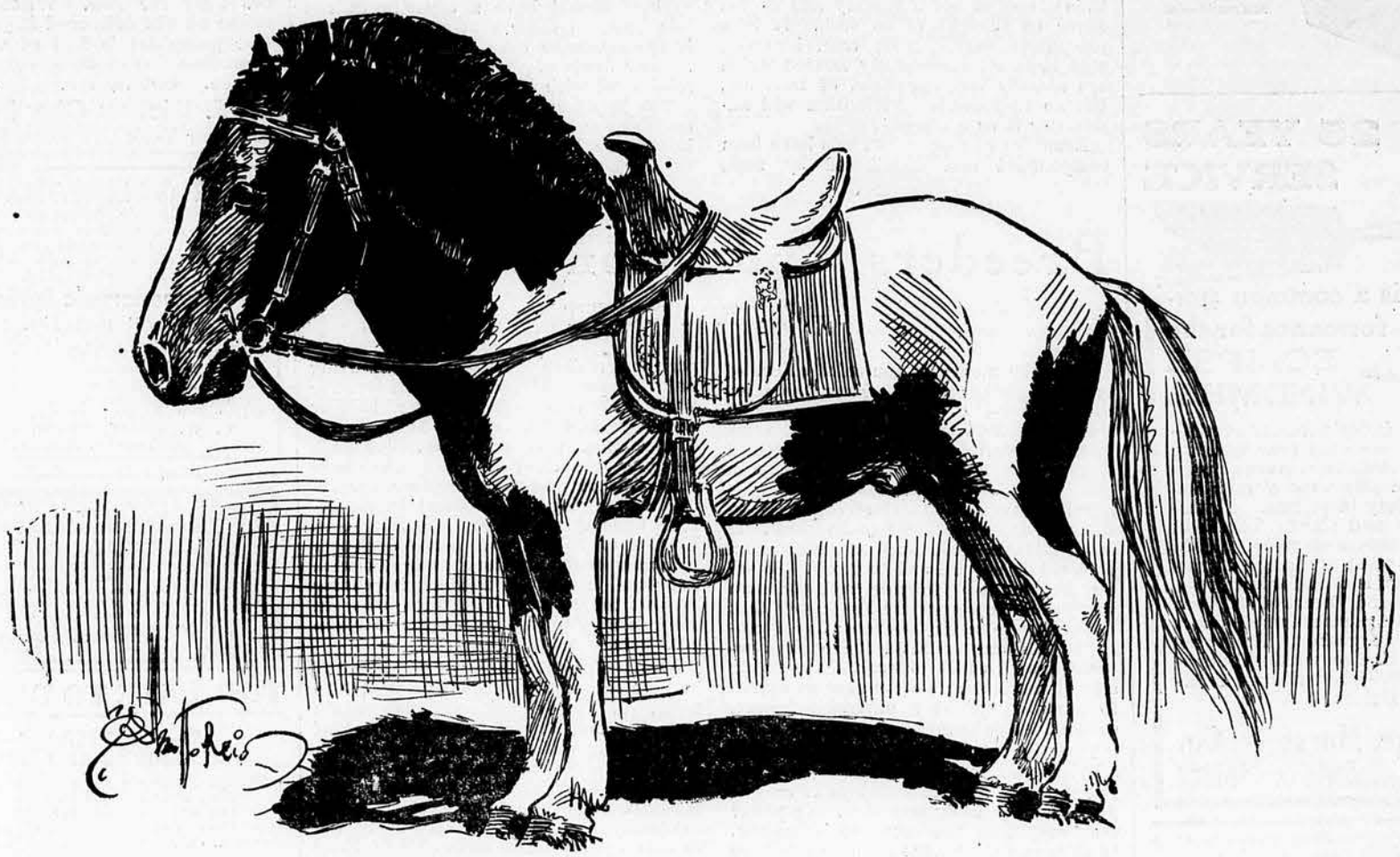
NO nation or people on earth ever attained pre-eminence without the horse.

From the frozen zones to the tropics he has been at once companion, friend and servant of the man who was worth while. Carrying him into the grim stress of battle; transporting his gear to the far side of the beyond or dragging the homely plow the horse has ever been the motor which advanced civilization and made its wheels to turn.

From him man gains sturdy qualities—courage, self-reliance, faithfulness—without which he were less a man; and what the horse is to the man, the pony is to the child—and more. A teacher, a playmate, a companion which helps him into life with strength, courage and pleasure.—*I. D. G.*



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CHOLERA TREATMENT

VACINATION THE ONLY SAFEGUARD AND VIGILENCE THE PRICE OF SECURITY

REMEDY FOR HOG CHOLERA.

The following remedy for hog cholera has been used with good results: Take equal parts of four per cent solution of carbolic acid and two per cent solution of morphine sulphate, and give once daily, hypodermically, 20 to 40 drops, according to the size of the hog. Inject on inside of fore or hind leg above the knee or hock joint, using proper precaution as to cleanliness. Separate well hogs from the sick, treating them the same as the sick.

Kansas Farmer will be glad to have those using this remedy report results.

At this season of year there is always more or less trouble experienced from attacks of hog cholera, and inquiry as to preventive or remedial measure becomes frequent.

Apparently no one has discovered just why the cholera should be worse in its ravages in the fall than at any other season, yet such seems to be the case, and careful inquiry among experienced hog raisers has thus far failed to bring out any substantial reason.

The fact that hog cholera is present in some part of the corn belt at all seasons and in all years is sufficient to warrant the hog raiser in providing himself with any remedies or preventive measures which may be available. To be forewarned is to be forearmed, and that farmer who realizes the ever possible danger from hog cholera and is always prepared to combat it. by means of the best known and most thoroughly tested remedies, is the man who will win more frequently than his neighbor.

As a preventive measure, the anti-hog cholera serum would seem to be firmly established as the best, the safest and the most reliable of anything yet discovered. Expert knowledge is required in the manufacture and skill in the administration of this preventive, and this tends to limit its availability in times of epidemic, when it is most needed. This serum is not a remedy and should never be thought of as such. It is a preventive only. It is true, however, that hogs are successfully treated which are already showing signs of infection, but no responsible veterinarian will administer it as a remedy.

Remedies of numerous kinds have been compounded and distributed by men, some of whom have gone so far as to claim that certain ones are specific. It is probable that no specific has yet been discovered, as all hogs are not alike, any more than all cases of cholera are alike. Remedies have been discovered and used for many years which have effected a large number, if not a majority of cures, and these are more or less valuable.

Herewith is presented one of these remedies which has been used most successfully by some of the largest and most successful hog raisers in Kansas. One of these men who relied upon this remedy was a member of the State Board of Agriculture and a thorough student of agricultural methods, as well as being an expert breeder.

To fight cholera with any hope of success the most modern and scientific methods must be adopted, and both the serum treatment as a preventive and the remedy given herewith require the use of vaccination by means of the hypodermic syringe.

This is a most important instrument, which should be present on every farm. It is equipped with a needle point for puncturing the skin, and has a plunger for filling, which acts like an ordinary pump. The barrel of the syringe should be graduated, so that the exact dose can be measured, and no more injected than is prescribed. To be most useful, the syringe should have a capacity of not less than 20 cubic centimeters, as this is the minimum dose of the serum, and smaller doses of the remedy can be administered with accuracy.

The hypodermic syringe is a necessity on the farm, and information as to where is may be secured may be had by consulting our advertising columns.

Breeders and Moneymakers

By L. E. FROST

To make money is the chief object of breeding pedigree hogs. Even the most uncommercial of men, well-to-do and seeking self-expression through some form of creative art, are better satisfied if they can make an enterprise pay in cash profits as well as satisfaction. Financial success is a sort of cap-sheaf on the crown of an artistic achievement. It is all right to make such an outcome an object, but not an end in itself. So we can find no crow to pick with the man who is breeding hogs for the money that there may be in the business; but if profit be his only motive, if he have no ideals toward which to work, if the higher side of the breeder's art makes no appeal to him, he will be a miserable failure, even although he make a fortune.

This thing of moulding animal form is a divine art for the man who sees the sweep, range and relationships of animal life. It keeps a big man close to a power that cultivates the best that's in him. If he have a keen sense of inner sight the breeding and care of animals will keep before him a vision of wondrous beauty, alive with the interest that nature maintains in all her creatures.

To the sensitive man who is more of a man than a hog, the dealer, the trafficker, the uncouth moneymaker or the uncharmed seeker after the dollar are thorns in the inner flesh. He (the sensitive man) admires business ability and financial success, but he wants both linked up with something nobler. He is instinctively drawn to the man who experiences a deep, quiet joy in improving animal types, and, because of his creative work, grows to be a stronger, happier and more useful man in his home, township, county, state and nation. Live stock breeding, practiced by men who have some comprehension of the forces which the art employs, is cultural in its effects upon them. It was the late L. H. Kerrick of Illinois who declared that a bad man could not long associate with pure-bred live stock without improving his own morals or ruining the stock. In other words, good stock helps to make good men.

A man finds that for which he seeks; he gets out of things what he puts into them. If money making is his mania and obsession he will get money out of live stock, but if he gets nothing else he has failed. We need men in the field of stock breeding who are creative, constructive breeders. At present there are too many dealers and traffickers in the business. They make money by handling what others have created. They are not masters of the fine art of animal breeding, although in their special niche they serve useful purposes. We can have, as we already have, too many men of this type, but we can never have too many real breeders of the classic type, represented in the early days by such men as Cruickshank, Thomas Bates, Colonel Holloway and David Magie. We are glad that many Berkshire breeders are working toward the same high ideals which these old worthies sought in their noble work.

GO TO SCHOOL AT OUR EXPENSE

FARM AND FIRESIDE, for thirty-three years the National Farm Paper, is going to send a number of boys to State Agricultural School this winter. It offers a Short Course at the State College Manhattan, Kan., for one or more boys in every county. The FARM AND FIRESIDE Scholarship of $100 in cash will pay for your board, room, tuition, fees, and railroad fare and other necessary expenses.

To qualify for this Scholarship of $100 you are required to give references as to your industry and character and to do a small and definite amount of extension work in your community. The Scholarship Diploma, which is a handsome and imposing document, will be sent you as soon as you are accepted as a candidate.

There is nothing competitive about this great Scholarship offer. One hundred dollars in cash will positively be awarded to every candidate who fulfills the conditions of this offer. Naturally, a great many more candidates will be nominated than there will be Scholarships to go around. But it will be a case of "first nominated, first elected." So if you wish to obtain a Scholarship, apply at once, giving references.

Scholarship Committee, Dept. G
FARM AND FIRESIDE
Springfield, Ohio

A $100 CASH SCHOLARSHIP AT YOUR AGRICULTURAL SCHOOL

The President Says Of Farm Drainage:

"Deep drainage permits both soil and subsoil to crumble and disintergrate and through mechanical and chemical changes become friable and capable of taking on and holding the right amount of moisture for plant growth, while the water which runs out through the drain is clear, without carrying the soil with it, and therefore without erosion."

That's the way President Taft recommended tile drainage in his address to the Conservation Congress, in Kansas City last week. What you want to do, is to get the one best tile for the purpose on the market—at the lowest cost to you. We've got it—

Dickey Hard Burned Tile

Meets every requirement of a standard farm drain tile, yet, at present special prices, it will save you two to three dollars a thousand feet. That's the kind for you. Write today for prices on tile delivered at your station. Our pamphlet is full of valuable information based on government facts—free. Get it, too.

W. S. Dickey Clay Mfg. Co.,
204 New York Life Bldg., Kansas City

HOG CHOLERA TREATMENT

by hypodermic injection is strongly urged by competent authority. Begin it, before cholera is on the place. Whether cholera is now with you or not, it pays to be prepared. We furnish

Hypodermic Syringes

FOR $3.00 We will mail you, postpaid, a large, strong syringe for treating hogs; holds 1 ounce, glass barrel, metal encased, graduated plunger, with three needles and a trocar in silk lined case. Order today or write for further particulars.

G. W. STANSFIELD, Druggist,
Topeka, Kansas.

Make $25 to $50 Weekly

selling the Automatic Combination Tool in your home county. A Fence Builder's Tool, Post Puller, Lifting Jack, Vice, Wrench, etc. Used by Farmers, Teamsters, in Factories, Mills, Mines, etc. Weight 24 lbs. Capacity 3 tons. No experience necessary. Free instruction. Write for special offer to live agents. Send no money. Name county where you live.

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50—PERCHERONS—50
STALLIONS AND MARES.

Bishop Brothers have 25 big boned stallions that weight 1,700 to 2,100 pounds that they can and will sell for less money than any firm in the business, quality considered. Write us what you want.

BISHOP BROS.,
Towanda, Kansas.

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Best blood lines. Spring gilts at special prices. J. F. Haynes, Grantville, Kan.

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Herd headed by Scottish Gloster and Harry, a grandson of Choice Goods and Russilla. Young stock of both sexes for sale.

WILLIAMS & SON,
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FINE PRINTING FOR REASONABLE prices. Catalogs, circulars, letter heads. Everything in the printing line. Write for samples and prices. Western Printing Co., 625 Jackson St., Topeka, Kan.

KANSAS FARMER EDITORIAL

With which is combined FARMER'S ADVOCATE, established 1877.
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PICTURES—Good photographs, drawings and plans are especially solicited. Senders' names should always be written on the back of each picture. KANSAS FARMER can not be held responsible for any picture submitted, except under special written agreement.

CONTRIBUTIONS—KANSAS FARMER is always glad to have correspondence on all farm, live stock or household subjects. Your name should be signed to all communications and they should always be addressed to

KANSAS FARMER COMPANY, TOPEKA, KANSAS.

ARTIFICIAL PONDS AND FISH.

The exigencies of the season have served to awaken interest in the problems of irrigation and the conservation of moisture and, incidentally, in fish culture.

There can be no doubt that much more interest than ever has been aroused in the possibilities of irrigation by means of pumping, and already many farmers have put their gasoline engines and rotary pumps at work with such success that plans for enlarging these operations are now being made, while other farmers are planning to make the same experiment.

The gasolene engine will solve the problem of getting water upon the land in a way that has never been extensively attempted before, but its effectiveness is made more effective if the water supply is abundant and the lift is not too great.

In planning for irrigation on most Kansas farms, the pond or lake is naturally suggested as the most available water supply and when the pond is once built the idea of stocking it with fish naturally suggests itself.

To assist such farmers as may be interested in the construction of ponds and the growing of fish, the State Fish and Game Warden has issued a series of pamphlets on "Ponds," "Pond Fish" and "Pond Fish Culture." The first one is devoted to the construction of ponds and will doubtless prove of great value to those who have had difficulty in preventing seepage in newly constructed ponds. These bulletins may be had free of charge by addressing the State Fish and Game Warden at Pratt, Kan.

A large movement is on foot to establish a chain of general stores throughout the country which shall be operated upon a so-called co-operative basis, much as are the grange stores now in existence. Members of the grange and other farmers are asked to promise their patronage, with the assurance that they will receive a rebate of 6 per cent on the amount of their purchases if these amount to $100 or more each year; they will be afforded a better market for their produce, which will be handled only by the corporation's accredited agents. This proposition has attracted attention and given rise to many inquiries, but there does not seem to be any assurance that the rebate will be paid unless the stores earn the money, nor is it made plain that this corporation, whose members are not farmers, will pay the producers more than others. Co-operative stores are good things when well managed and you do the managing.

The activities of the railroads in conducting demonstration trains for the benefit of the farmers along their lines has proved of such vast importance that the Government has taken cognizance of this work by issuing a bulletin dealing with this subject. This bulletin shows that special demonstration trains were hauled over 40,771 miles of road and lectures delivered at about 2,000 stations. Since these facts were secured the railroads have been even more active and the figures for the past year will probably be larger. In practically every instance these trains have been followed by increased freight business, and this is surprising as but little in the way of immediate results was to be expected. The communities through which these trains have passed have been benefited and a better feeling towards the railroads generated. The farmer's gain is great though it cost him nothing.

Uncle Sam has established agriculture as a required study and industrial feature in all government schools in our insular possessions. This has also been the accepted policy in the government Indian schools of continental America, and in both cases the results have more than justified the measure. It has been proved by years of experience that such teaching affords the quickest and surest means of bringing these savage peoples into civilization and of opening a path for the possible acceptance as citizens. If this be true in regard to savage children, how much greater benefits would accrue if our own children had the same advantages? With the heritage of ages of civilization behind them, would not the children of American homes who are now deprived of this advantage, advance in useful knowledge in a way that would make their present progress seem but cruel and halting? Kansas realizes this and is making a start. Other states will follow.

PRESIDENT TAFT IN KANSAS.

It is not often that Kansas has had the pleasure of entertaining the President of the United States, and the welcome which has been accorded to President Taft during his four days' tour of this state speaks at once for the loyalty of our people and the pleasure derived from a visit by the chief executive of our great nation.

Beginning with an address before the students and invited guests at the University of Kansas on Sunday, the President had a strenuous four days' visit, which ended at Topeka on Wednesday on the occasion of the dedication of the new Memorial Hall, and the state-wide reunion of the soldiers and sailors of the late wars.

President Taft's eulogy of the state and her material progress was a classic, and his speeches everywhere have made personal friends of many who were but admirers before.

The President has a magnetic personality which attracts, and he was everywhere accorded the most hearty welcome and the most careful attention. His tour will become historic and should be the example after which others may pattern.

Soil management is the great topic of the hour. Men now realize that farming is not simply a vocation depending upon signs, the phases of the moon and luck. They now know that farming is an occupation that needs and can use to a profit more of scientific methods than any other. More than this, it affords greater opportunities for initiative, adaptibility and inventive skill than any other. They also realize that the old methods of farming have served to deplete the native fertility and that conservation is now necessary. The soil miners have given place to the soil culturists.

The demand for fertilizers has been growing so rapidly, especially in the eastern states, that Congress was induced to make a special appropriation to enable the Geological Survey to make search for minerals which could be used as fertilizers or the source of them. Nitrogen, phosphorus and potash are the three most important and those which are most rapidly consumed in cropping. Up to the present time the Survey has discovered more than 2 million acres of phosphate bearing rock from which this fertilizer may be taken. Action by Congress is now awaited to make this land available.

His needs and how to satisfy them, the farmer has had to discover for himself. Now if he can get the school teacher to sympathize with these in an active way and set his boys and girls to doing farm problems instead of measuring silk ribbon across a counter; if he can get this teacher to give the young people a peep into the mysteries of plant and animal life and know something of that fascinating world from which he draws his sustenance, he will have done more than all else to properly interpret the meaning of the word "living."

FARM LABOR PROBLEM.

The farm labor problem is always so pressing that it springs anew with each recurring season. Just now there is quite a clamor being made for a change in our national immigration laws, so that the cheap labor of the Orient can be admitted more freely. It is claimed that the Chinese and Japanese laborers will come in numbers, if permitted to do so, and will work for a very low wage and "find themselves." A dollar to a dollar and a half per day seems to be the maximum wage for these people, and they board and house themselves, and it is urged that congress can admit these people for farm labor and house servants under such restrictions that there will be no real danger of the "yellow peril." All this may be so, and yet it would be only the part of wisdom to carefully and exhaustively study the whole situation before the bars are let down. It is questionable whether we want the Chinese tongs on our farms.

Following the lead of the Shawnee Alfalfa Club which, for three years, claimed to be the only alfalfa club on earth, the people of Arizona have organized a state alfalfa club; Illinois has a state alfalfa growers' association, and now comes Wisconsin with the recently organized "Alfalfa Order of the Wisconsin Agricultural Experiment Association." The reports of proceedings of the Shawnee Alfalfa Club are quoted generally by the agricultural press from Maine to California, and its influence has been great.

The land hunger which always exists in the civilized and home loving peoples of earth, together with the slogan, "Back to the farm," have brought into existence a large number of real estate dealers, some of whose methods are not above reproach. The government has made some effort to control the actions of these "hot air" merchants who sell to unsuspecting persons land that is either worthless or that has no existence except on paper. Now the states and commercial bodies are taking this matter up and warning the public against buying without inspection.

The gorgeous representations of the land agents fall upon fertile soil in the minds of those who become discouraged with results under local conditions and think the grass is greener just beyond. Such men are the material of which pioneers are made, and it is only a plain duty they owe to themselves to investigate by personal inspection before they are induced to invest their savings and, only too often, their entire capital, in land they have never seen in a country about which they can know but little.

Besides the hundreds of young women who received instruction in domestic science and went forth into life the better equipped for its duties, there were 50 of them who left the Kansas State Agricultural College last June as expert teachers of this most important branch of human learning. Few institutions can show such a record, and few states have benefited in this direction as has Kansas.

PRESIDENT TAFT AT K. U.

Under the auspices of the Y. M. C. A., President Taft gave an address, on Sunday, at the Kansas University. He was greeted by an audience of perhaps 2,500 people, and the occasion was made a most delightful one.

The President took for his theme the work of the Y. M. C. A. round the world, and there are perhaps few people who have had better opportunities or a better will to observe this work. His commendation was hearty and sincere and, while his speech contained no important revelations in regard to this great work, it was full of the personality of the man and, as such, was valued.

President Taft occupies the most important office in the world, and his utterances carry the weight, not only of his position, but of the qualities of the man which have made of him the first gentleman of America.

This meeting was the initial one of a series held in different parts of the state and, whatever their purpose and whatever the subjects upon which he spoke, Kansas was glad to extend the hand of greeting to the man who guides the ship of state; who is the acknowledged peer of the great of earth, and who yet remains the plain, everyday American—Citizen Taft.

Land is getting scarcer each year when measured on the surface and the land hunger seems to develop more keenly as the scarcity increases. A few more Indian reservations may be opened up and a little more land be brought under irrigatoin, but this will hardly be appreciable with our increasing population. The land we have is all that is left, but of this only a little has been used for farming purposes. Under our common practice of years only the merest surface has been farmed. Now the outlook is down, not out. Beneath the land which has heretofore been used there lies a wealth of new and untouched land that can only be reached by the plow. Plow deep and open up a new farm.

Said an old-time plainsman: "The results, or lack of them, obtained in this season's operations on the great plains east of the Rockies again bring up the question as to whether dry farming should be practiced by amateurs and tenderfeet who are not accustomed to western conditions. A man accustomed to arid regions who practices the methods of dry farming known as the Campbell system may be able to grow many crops from otherwise almost useless land, but whether or not it is the wise thing for the tenderfoot with small capital to stake his all on dry farming is another matter. Dry farming is a most excellent practice for the arid regions, but all methods fail in extreme seasons."

The government reports show that there are nearly 2,000 Kansas farms under irrigation and the weather conditions have been fairly satisfactory for these, though disastrous to others. The man under the ditch enjoys plenty of sunshine without rain, while even the dry farmer must have a little cloud moisture. As the rain belt and dry method farmers are still in the majority, a goodly supply of rain water at the growing season is appreciated. The irrigation idea has a firm hold and is here to stay. The next season will see more pumping plants installed for irrigation purposes than ever before. These will pay as protective measures, even though not used during the ordinary season.

The farmer is a practical man. In the past he has sometimes been rather too practical and not enough of a theorist. His business in life is to make a living, and both theory and practice combine to determine just what is a living. Now it means, not simply three meals a day and a roof to keep out the rain, but those things which add to the comforts and pleasures of the home as well. Telephones, bath-rooms, running water in the kitchen, rural mail delivery, good machinery, good live stock and even automobiles are now included in the meaning of the word "living." Some of these things the farmer was slow in adopting but now he is glad he has them and is ready for others of equal value.

While Boston still claims to be the Athens of America and the leader in culture, just look where it stands in the National League.

CULTIVATION INCREASES YIELD

Results Obtained Through Application of Scientific Methods to Problems

By PROF. A. M. TEN EYCK

How to increase the acre yield of staple crops, is the important problem which the American farmer must solve in order that the world may not go hungry, and also that his own prosperity may continue. The average crop yields in this country are too low. It is possible to double our acre yields of staple crops by adopting better farming methods.

There are three principal factors which have to do with increasing crop yields: 1. Increasing the productive power of the land by fertilizing the soil. 2. Planting seed of high-bred and better producing varieties. 3. Practicing proper and more thorough cultivation of the soil.

Better Seed.—The work, in testing varieties and breeding crops at the Kansas Experiment Station, has shown that it is possible to increase the average yield of the standard crops in this state 25 per cent by the single factor of introducing and planting pure seed of well bred and high producing varieties. To illustrate: One of the improved varieties of winter wheat grown on the Kansas Agricultural College farm actually produced 12½ bushels more grain per acre each year, or a net profit of nearly $7 per acre per annum, as an average for three years, above that produced by common scrub wheat of the same type. Farmers all over the state who have planted this improved wheat have reported similar results, the increase in yield from the well bred wheat being often much larger than the differences secured at the station. It is hard to believe that one variety of wheat, improved by breeding and selection, will out-yield another strain of the same variety which has not been improved, as much as 50 per cent; but a large number of reports from reliable Kansas farmers indicate that this has occurred, when the two strains of wheat were grown in the same field, side by side.

Corn is more susceptible to soil and climatic changes than wheat, so that the well bred seed does not always give the best results from the first year's planting; but breeding will tell in the corn crop, as shown by experiments at the Kansas station, in which the "high yielding row" seed has produced from 10 to 20 per cent larger yields per acre, and 25 to 35 per cent more good seed ears than the average corn from which the improved strain was originated.

The possibilities along this line of increasing the yield of corn by the planting of better seed are shown by the reports which have been received from Kansas farmers, reporting sixty and eighty bushel yields where the average for the county was twenty or thirty bushels.

Greater Soil Fertility.—The soil of our western states is abundantly fertile; but mismanagement and continuous cropping with corn and wheat has reduced its productive power. It is possible by the proper use of barnyard manure to double the yield of corn and increase the yield of wheat 33 per cent, as shown by the results of the experiments at the Kansas station. A single experiment in manuring wheat land previous to planting to alfalfa increased the wheat yield 33 per cent, and doubled the crops of alfalfa for the first two years after seeding, making a total increase in the returns per acre of nearly $45 for the three years, or $15 net increase per annum.

It is possible, by a proper rotation of crops, including alfalfa, clover, and grasses, to double the productive capacity of thousands of acres of our western corn and wheat lands. This is shown by the experiments at the Kansas staton, and by the reports of farmers. In 1906, a careful investigation of the corn yields of Jewell County, Kansas, made by Hon. J. W. Berry, formerly a member of the board of regents of the Kansas State Agricultural College, showed that the average yield from land previously in alfalfa was over eighty bushels per acre, while similar land on the same farm and adjoining farms, which had not been in alfalfa, yielded less than sixty bushels per acre, on the average; and the average yield of corn in Jewell County for that year was less than thirty bushels per acre.

Better Culture Methods.—It has been shown by the experiments carried on for the last six years at the Kansas station that it is possible to increase the yield of corn 10 per cent simply by practicing better methods of preparing the seed bed. When corn has been planted with the lister, winter or early spring plowing or listing of the ground previous to the planting has given an increase in crop as an average for six years, amounting to six bushels of corn per acre each year, as compared with ground which received no cultivation previous to planting.

BY USE OF A TRACTOR ANY DEPTH AT ANY SEASON MAY BE REACHED

Different methods of cultivation of corn, deep or shallow, etc., have not affected the yield so much as different methods of preparing the seed bed, except where the cultivation of the corn was neglected. The lack of sufficient cultivation means greatly reduced yields or crop failure.

It is possible to increase the wheat yield of Kansas 50 per cent by practicing better methods of seed bed preparation. As an average for two years' trials, 1908 and 1909, at the Kansas Experiment station, the yield of wheat due to preparation of seed bed alone varied from 21.6 to 37.4 bushels per acre, an increase of 73 per cent in yield due to the better preparation of the seed bed.

In 1911, one of the driest years which Kansas has ever experienced, this experiment was repeated, with remarkable results: The most poorly prepared seed bed (ground disked, not plowed) yielded a little over four bushels of wheat per acre, while the largest yield was thirty-eight bushels per acre from early deep plowing, which received frequent cultivation after plowing until seeding time. Ordinary loose ground, plowed late, yielded fourteen bushels per acre, while ground cultivated early with the lister plow and leveled with the disk harrow gave thirty-five bushels per acre. The better methods of seed bed preparation employed in these experiments are such as may be successfully practiced throughout the western winter wheat belt.

Of the three factors concerned with increasing the acre yields, the last named, "Practicing Proper and More Thorough Cultivation of the Soil," is the simplest and most readily applied. Probably more low yields and crop failures are due to insufficient or improper cultivation than to any other single factor over which the farmer has control in the production of any particular crop. With a soil of average fertility, the preparation of the seed bed by the proper tillage and cultivation methods very largely determines the yield of the crop.

Proper Cultivation.—There are four important objects to be accomplished by cultivating the soil: 1. To secure a proper physical condition of the soil favorable to sprouting seed and promoting plant growth. 1. To kill weeds. 3. To conserve soil moisture. 4 To develop or prepare plant food.

The texture of the soil is nearly always more important than mere richness. Many "worn" lands have simply been robbed of their organic matter, often still containing an abundant supply of the mineral elements of plant food. Others have been injured in texture and hence in productiveness by careless or faulty management.

The Science of Plowing.—The maintenance and improvement of soil texture is more dependent upon plowing than upon any other operation of tillage. A finely divided, mellow soil is more productive than a hard, lumpy one of the same chemical composition, because it affords greater feeding ground and more favorable environment for the plant roots, absorbs and retains more moisture, has better aeration, and less variable extremes of temperature. Also, because it promotes nitrification and the development of available plant food by giving favorable conditions for the development of soil bacteria, and for the decomposition and solution of the soil minerals. In all these ways and others, "mellowness" renders plant food more available and affords a more congenial, comfortable place in which the plants may grow.

Plowing, especially in the spring, tends to ventilate, warm and dry the seed bed, and if properly done, lessens evaporation from the deeper soil by the development of a soil mulch above it.

Deep plowing brings up new stores of inert plant food, enlarges the moisture reservoir, deepens the seed bed, gives more root room and more material for the soil bacteria to work over into available plant food. Deep plowing or subsoiling also serves to break up the "furrow-sole" or "hard-pan," thus loosening up compact, impervious, clayey subsoils.

Plowing is an efficient means of destroying weeds. It also destroys many kinds of injurious insects which prey on farm crops. Hard clayey or "gumbo" soils are mellowed by late fall or winter plowing, due to the effects of freezing and thawing or winter weathering. Further, proper and timely plowing is the most efficient and practical means of preparing a suitable seed bed for nearly all farm crops. Too many farmers who have allowed their land to become deficient in fertility seek to restore its productively by applications of expensive commercial fertilizers, without first putting it in good tilth. This is a great mistake. The way to treat such land is to "plow" it well, and work up a physical condition suitable for the best growth of crops. After all this is done, the application of concentrated commercial fertilizers may give profitable returns.

The Seed Bed.—In order to secure the ideal condition for seed germination and plant growth, a seed bed for planting small seeds should not be too deep and loose; rather, the soil should be mellow, but well pulverized only about as deep as the seed is planted. Below the depth at which the seed is planted the soil should be firm and well settled, making a good connection with the subsoil, so that the water stored therein may be drawn up into the surface soil.

The firm soil below the seed, well connected with the subsoil, supplies the moisture to the seed, while the mellow soil above it allows sufficient circulation of air to supply oxygen and favors the warming of the soil by gathering the heat of the sunshine during the day and acting as a blanket to conserve the soil heat, maintaining a more uniform temperature of the soil during the night.

The mellow soil above the seed conserves the soil moisture, acting as a mulch to keep the water from reaching the surface, where it would be rapidly lost by evaporation. The same condition favors the upward growth of the young shoots into the air and sunshine.

The loose, deep seed bed is almost wholly dependent upon rains for sufficient moisture to germinate the seed and start the young plants. If the crop starts, it is very apt to be injured by short periods of dry weather, because of the rapid drying out of the loose surface soil. In such a seed bed the crop is more apt to "burn out" in summer, or "freeze out" in winter, than a crop grown in the "ideal" seed bed described above.

It should not be inferred from this description of the "ideal" seed bed that the soil should not be plowed deeply; rather, deep plowing should be encouraged, but timely, so that the soil may settle and fill with moisture, and such cultivation should be given after plowing as to secure a favorable physical condition of the seed bed.

Conserving Soil Moisture by Systematic Tillage.—So cultivation is concerned there are three principal steps in the conservation of soil moisture:

1. The soil must be loosened to a considerable depth in order to prepare a reservoir to receive the rain and carry the water downward into the soil. This may be accomplished by deep plowing, by listing, or by disking unplowed lands.

2. The water which is carried down into the subsoil must be brought back again into the surface soil where the seed is germinating and the young roots are growing, and to accomplish this a good connection must be made between the furrow-slice and the subsoil, and this is the purpose in the use of the subsurface packer immediately after plowing.

3 Finally, in order that the water which is drawn up again towards the surface may not reach the air and be wasted by evaporation, the upper two or three inches of the soil must be kept mellow in the form of a soil mulch, and this is accomplished in the growing of crops, by frequent cultivation, which is not so practicable with wheat and other small grains as with corn and other intertilled crops.

Preparing the Soil to Receive Water.—The most important step in soil moisture conservation is to get the water into the soil. When this has been accomplished, the keeping it there and returning it gradually to the growing crop is a relatively simple matter. Many farmers have yet failed to learn this

(Continued on page twenty)

DOES SERUM PREVENT CHOLERA?

Have you tried the serum treatment for hog cholera? What results did you secure? Were the hogs inoculated before or after the cholera had appeared in your herd?

What is your opinion, based on experience, as to the value of the serum treatment as a preventive of hog cholera?

Conflicting reports reach this office in regard to the results obtained from the use of the serum treatment, and Kansas Farmer would like to have the experience of its readers. Please give your experience for the benefit of all.

LIME FOR FARM PURPOSES

Application of This Mineral Increases Crops Even on Limestone Land

By A. J. and J. A. JEFFERY

A great deal of interest has been exhibited during the past year in the use of lime for agricultural purposes. This circular is issued to supply the demand for information on this subject, but the authors do not wish it to be understood as an unqualified recommendation for the use of lime. It is undoubtedly true that there are soils in the state that will be benefited by the use of lime just as there are soils that will be benefited by the use of some form of commercial plant-food; but it is equally true that there are many soils that would receive no appreciable benefit from the use of lime. Up to this time no reliable laboratory method has been devised by which this information may be obtained. The litmus paper test has been relied upon for the purpose, but is is very untrustworthy, since with soil solutions having very finely divided soil particles in suspension the paper is often reddened, while the solution, freed from the soil particles, gives an alkaline or neutral reaction. This phenomenon is explained, perhaps, by the fact that the soil particles have a great absorbing power, and the blue litmus dye being more soluble than the red litmus dye, is absorbed, leaving the paper red. Perhaps the most reliable indicator of the need of lime is the failure of clover to make a satisfactory stand when all other conditions are favorable.

The practice of using lime is almost as old as agriculture itself. The Chinese were probably the first to use lime on the soil; it was also used by the Romans, and by them the practice was introduced into England and France. In England the practice of marling the soil has been followed for centuries, and often with marked results. The first mention of lime in connection with American agriculture is found in the contributions of Ruffin in the "American Farmer" in 1818. Although lime has been used more or less extensively by the farmers of the United States for the past century, its action upon the soil is not generally understood. Lime should never be considered as a fertilizer in the same sense that barnyard manure or commercial fertilizers are. It can never take the place of these materials, but should be used in connection with them. Generally speaking, all soils contain a sufficient amount of lime to meet the plant-food requirements of crops for this element for all time, consequently the benefits from lime are shown in another way. It is usually spoken of as an "amendment" or "modifier" because it is capable of correcting conditions that may be inimical to the best growth of plants.

Lime may act upon the soil in three ways, viz: chemically, physically and biologically.

Chemical Action.—Lime acts upon the insoluble potash compounds in the soil, changing them into forms available as plant-food. This action should not be depended upon, however, as a means of supplying the crops with available potash to the exclusion of artificial fertilizers, for unless the soil contains an almost unlimited supply of potash, we are only hastening the time when the soil will be depleted of this form of plant food. Whether or not lime affects the availability of the insoluble phosphoric acid compounds is a disputed question.

The most important chemical action of lime upon soils is to "correct acidity." Soils that have been cultivated for a great many years may become acid due to the accumulation of organic acids produced by the decomposition of organic matter. Many crops are affected by an acid condition of the soil and in such cases are greatly benefited by the addition of some form of lime or material containing lime, such as marl or hardwood ashes.

Physical Action.—Heavy clay soils that puddle and bake after a rain are benefited by the addition of lime. It acts beneficially upon a soil in this condition by binding the fine particles together in "crumbs," thus making the soil more friable and easy of cultivation. It also makes it more open and porous, thus facilitating the movement of air and water in the soil. The action of lime on sandy soils is quite the reverse of that on clay soils, since it binds together the loose particles of sand and makes the soil more retentive of moisture.

Biological Action.—The decomposition of organic matter added to the soil in the form of barnyard manure, green manure, stubble, etc., is brought about by the action of the numberless bacteria that live in the soil. Certain of the soil bacteria living in connection with the roots of legumes, such as the clovers, vetches, alfalfas, beans and peas are able to take nitrogen from the air and change it into a form that is available to plants. In order for these bacteria to accomplish the most good, the soil conditions must be favorable for their best development, and this condition may sometimes be improved by the addition of some form of lime.

There are several forms of lime that may be used for agricultural purposes, and the choice of the form should depend upon the purpose for which it is to be used and also upon the price.

Ground Limestone.—The word lime as ordinarily used, refers to burned lime or calcium oxide, but it is very often used to designate any form of lime without regard to its composition. Limestone in its natural state consists of lime or calcium oxide in combination with carbon-dioxide and is known as carbonate of lime. It usually contains more or less of magnesium carbonate together with some iron, aluminum and sand. It was originally supposed that magnesium limestone was injurious, especially if used on the same soil for several years, but later researches have proven that this belief is untrue and that it is equally valuable as the pure calcium limestone, for use on soils. Good limestone should contain at least 90 per cent calcium and magnesium carbonate.

The availability of the ground limestone depends upon its fineness. It should all pass through a sieve of 80 meshes to the inch. Material coarser than that may remain in the soil for several seasons before becoming available. This form of lime may be applied to the soil in almost any quantity without danger, although it is generally recommended at the rate of 2,000 to 2,500 pounds per acre.

Burned Lime.—This is also known as "stone lime," "lump lime," "quick lime" and "caustic lime." It is produced from the raw lime rock by burning. One hundred pounds of limestone will produce 56 pounds of burned lime. This is the most active form of lime and may be used at the rate of 1,000 to 1,200 pounds per acre. Much larger quantities are sometimes used, but the above amounts should be sufficient in most cases.

This form of lime is usually put upon the markets in lumps and before being applied to the soil must be reduced to powder form. This is conveniently done by placing the lime in small piles about the field and covering it with three or four inches of moist soil. The lime will absorb the moisture from the soil and gradually break down into a fine powder, when it may be spread with a shovel.

Ground burned lime may be purchased at a slightly advanced price.

Hydrated Lime.—When burned lime is treated with water or steam it enters into combination with the water and forms what is chemically termed calcium hydrate or hydrated lime. This form, like burned lime, is caustic but it is always in the powder form and may be readily applied to the soil. Fifty-six pounds of burned lime are equivalent to 74 pounds of hydrated lime. This form of lime is also known as slaked (slacked) lime.

Air Slaked Lime.—When burned lime is exposed to the action of the air for any considerable length of time it gradually takes up moisture and carbon dioxidle and changes to the hydrate and carbonate forms. If exposed for a sufficiently long time it will all change to the carbonate form, or the state in which it was before burning. Its value lies somewhere between that of hydrated lime and ground limestone.

Refuse Lime From Sugar Factories.—Burned lime is used in the process of recovering sugar from the sugar beet, and this waste lime is partly hydrated and partly carbonated and is consequently very similar to air slaked lime and should be used in about the same amounts. This lime also contains small amounts of nitrogen, phosphoric acid and potash absorbed from the beet juices.

Marl is found quite extensively throughout the state and many of the deposits are very pure calcium carbonate. When the cost of laying down marl on the farm in a dry powder form does not exceed $1.50 per ton it may profitably be used as a substitute for commercial use.

Leached hardwood ashes contain from 65 to 70 per. cent calcium carbonate and under favorable conditions may be used as a substitute for commercial lime. Unleached ashes are more valuable for the potash they contain and should not be used as a source of lime except in cases where this element is also needed.

Burned lime, hydrated lime and air slaked lime are caustic, diminishing in degree, however, in the order named. The fine powder is irritating to the skin and nostrils and its application to the soil is usually attended with more or less discomfort by the persons doing the work. Ground limestone is not caustic and consequently is not irritating to the skin.

THE PROGRESSIVE FARMER'S FIRST ASSISTANT.

When the lime is to be used on heavy clay soils to correct the physical condition, the burned lime or hydrated lime is recommended, as these forms act more rapidly than the ground limestone. For use on light sandy soils the ground limestone or marl is recommended.

Equivalent Weights.

1,000 pounds burned lime is equivalent to:

1,351 pounds hydrated lime.
1,786 pounds ground limestone or marl.
1,351-1,786 pounds air slaked lime.
About 3,000 pounds of hardwood ashes.

After several years of careful experimenting upon the use of lime on various soils and with many different crops, Dr. H. J. Wheeler of the Rhode Island Experiment Station has made a classification of plants according to their action with reference to lime.

The following is based on Wheeler's classification:

Plants benefited by lime—Beans, beets, celery, onions, cabbage, pea, alfalfa, clover, barley, wheat, oats, timothy, Kentucky bluegrass, seed fruits, stone fruits.

Plants indifferent to lime—Corn, millet, golden rye, potatoes, carrots, red top grass.

Plants injured by lime—Watermelon, blue lupine, sheep sorrel.

In a number of cases in this state lime has been found to be very beneficial for clover and alfalfa.

How to Apply.

If the lime is being applied for the benefit of any immediate crop, it should be applied, in whatever form used, after the plowing has been done and should then be thoroughly harrowed into the surface soil. It is best to make the application some little time before sowing the crop.

Whatever form of lime is used, if it is in a fine condition, either as the result of grinding or of slaking, the best method of applying it to the soil is by the use of a lime spreader, of which there are a number of kinds on the market. The ordinary fertilizer drill does not spread any of these materials well except the very finely ground limestone.

It is occasionally recommended that lime in whatever form, if in a fine condition, be applied to the soil by hand, much as one would sow grain by hand. In windy weather this method is likely to prove very disagreeable to the sower. At any time unless gloves are used, the lime is very likely to irritate the hands.

A very satisfactory way is to distribute the material in piles two rods apart each way, and then later each pile can be spread with a shovel over an area extending about one rod in all directions from the pile—each pile is spread so as to cover four square rods of area. A fairly even distribution can be made in this way, and the distribution is improved when the lime is harrowed into the soil. By this method there will be forty piles to the acre. The amount of material to be put in each pile is found by dividing the rate of application in pounds per acre by forty. If the rate be 800 pounds per acre, 20 (800÷40) pounds is the amount per pile. If the rate be 1,200 pounds per acre, 30 (1,200÷40) pounds is the amount per pile.

In applying unground or unslaked burned lime, probably the best way is to distribute in piles as described above and allow to stand until slaked. It will not require a long time for the air to accomplish the slaking. A small amount of water may be applied to each pile, though this might prove something of a task. 9 few shovelfuls of moist soil thrown upon each pile is said to accomplish the slaking in a very short time. When the slaking has been accomplished the spreading should be done as indicated above.

The manure spreader has been recommended for spreading lime. The method proposed is to load the spreader just full with manure, being careful to level the load evenly. A proper amount of lime is then spread over the top of the load and is thus spread with the manure. Some objection has been offered to this method in windy weather. The amount of lime to be added to each load of manure may be determined by dividing the intended application per acre by the number of loads of manure which is being applied per acre. If six loads of manure is the rate of application and 900 pounds of lime is to be applied per acre, 150 (900÷6) pounds is the weight of lime to be added to each load of manure. If 1,200 pounds is the rate at which the lime is to be applied per acre, then 200, (1,200÷6) pounds of lime is added to each load.

Cautions.—Lime should not be applied to manure piles nor to the litter in the barn.

Lime should not be applied to land being prepared for potatoes.

A Worm Pest in Alfalfa.

Mr. Oscar Yunghaus of Piper, Kan., has had his alfalfa fields considerably damaged by a small worm which had practically destroyed the foliage in sections of the field. Samples of the plant and the worm sent by Mr. Yunghaus were submitted to the department of entomology of the agricultural college for identification and recommendations. Prof. E. M. Peairs of that department replies as follows:

"The insect is the common garden or field webworm, and while it may do considerable damage this year, it is not likely to be present in injurious numbers next year. If possible, it would be a good plan to harvest the alfalfa while the worms are still at work on it, for by so doing you will destroy a large number of them. It is rarely necessary or advisable to plow up a field of alfalfa.

"I am enclosing herewith copy of circular published at this station some years ago, which will give you further information about the insects."

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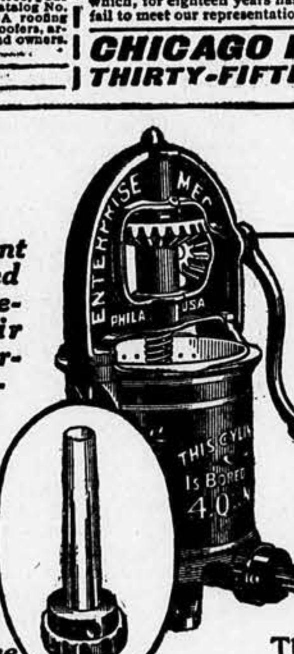

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Alfalfa and the Brood Mare.

Alfalfa hay has a very great field of usefulness in feeding all classes of live stock under western conditions. It cannot be safely fed to brood mares, however, in unlimited quantities.

From some sections of the irrigated belt have come reports of a large percentage of colts born dead or weak and deformed. In some cases an over used and defective stallion is undoubtedly responsible. In many cases, however, when colts are lost in the manner before mentioned, the farmers are feeding alfalfa hay and alfalfa alone to their mares. It should not be so fed. For best results with the brood mare some grain should be fed in addition to the hay. In case it is desired to feed a large amount of hay as compared with the grain, the hay ration will be improved and made safer by combining wild hay, timothy, or even oat or wheat straw with the alfalfa. In no event should a brood mare weighing 1200 to 1500 pounds be fed more than fifteen or sixteen pounds of alfalfa daily.

A sole ration of alfalfa hay contains a much larger proportion of nitrogen than the in-foal mare needs or can use. The surplus must be eliminated as a waste and this condition lays an extra burden on the digestive tract and on the organs of elimination. Especially heavy is the labor placed on the kidneys.

There are probably many cases where large quantities of alfalfa have been fed to brood mares without apparent injurious effects. There is unquestionable danger of abortion and weak and defective colts from such practice. The farmer and horse breeder will be wise to play safe and substitute grain or other hays in place of a portion of the alfalfa.—F. J. Iddings.

Homesteading Experiences

By H. VAN DYKE, South Dakota

I am a homesteader in the famous Rosebud country, and am located in Tripp county, South Dakota. It occurred to me that some of those who may be contemplating to come out into this country when the next counties—Todd and Millet—are opened, which will be in a few months, as I understand it, might like to know something about the cost of homesteading under the lottery system on reservation land, under which system the counties mentioned will be opened. Before going into the matter of cost, I want to say a word about the mad rush of the people from all parts of the United States when there is a chance to get land. The government first selects a half dozen towns or so, to one of which all must go to register in order to get a chance on a 160-acre farm. The only exception to this is made to old soldiers, who may send their applications for registration with a second party.

For many people, this first trip to register, which is by no means an assurance of getting a quarter section of land, is a sort of vacation trip. Thousands upon thousands of people came to register in 1908 with very little hopes of getting land. In the mobs that accumulate in the registration towns under this lottery system, one may learn a good deal about human nature. Each man tries to get ahead of the other; the brutality of the land-hungry mob is something terrible! At these registration points one meets graft of every description, and it can be found throughout the whole homesteading process. Restaurant and hotel bills go to enormous proportions in a few days, but if you want to eat, and most people, do you have to pay the price and keep still. When you have registered, you want to take a trip out to see some of the land that you may get a chance to file on. For this purpose automobiles are at your service at the nominal fees of $25 to $100 a day. An automobile, for which you are charged $100, will carry five people, including the driver. A team costs you from $10 to $15 a day. When you have spent your money for something to eat and a drive or two, you go home and await the outcome of lottery day. Usually about one out of five makes a lucky draw. The remainder remain landless and disappointed.

We will suppose that you have been lucky enough to draw a claim. The next thing is to return to the land and pick out the quarter you want in accordance with the number which you have drawn. You can't do this yourself, so you hire a stranger and take his word for the quarter you get. Only about one out of every hundred picks his own land. The rest go to a locater's office and pick their land according to his map. Here you take another chance. You may get a good quarter, you may get a pile of rocks, or you may get a lot of hills. The land is divided into three classes and is sold for $2.50, $4 and $6 per acre. I know of several men who had drawn good numbers and who thought they could go out and pick 40 or 50 quarters and surely get one out of the lot for their own, but they failed and in the end had to depend upon the locator, and then possibly got located on worthless land. Of course, in such a case, you can relinquish back to the government and get another chance at the end of the line, so the locater is discharged, only to be hired again by some other person.

All parties want to get as close to the railroad as possible. It must be understood that the railroads are not built in these counties until they have been settled, so there are a thousand and one rumors as to the exact location of the prospective roads. Some locating firms even go so far as to make surveys over lands in which they are especially interested in order to attract people thereto. I happened to be a lucky chap, as a railroad has been built one and one-half miles from my farm. I am five miles from one town and six and a half from another. After one finally secures the land, one has six months to get onto it, and then begins an important turn in the life of those homesteaders who come from the city. Many a man gets a good number, but for lack of capital has to give it up. Others again who have not sufficient money to prove up, get mixed up with some land shark who stakes them. Then, after they prove up, the land shark gets their land for little or nothing. Again, these men who have not sufficient money of their own are urged by the land sharks to sell their relinquishments to men whom they—the land sharks—hold in readiness to buy. Relinquishments sell for from $300 to $500, while the land may actually be worth several times that much. The fact is that I know of several relinquishments that have been sold for that price, when land but a short distance north sold for from $5,000 to $8,000 a quarter. Others, again, who have a thousand dollars or so think they have plenty of money, so go at the work of improvement in earnest. There are many expenses, the extent of which the average man, who has had no experience in homesteading, does not realize. A few items are given herewith:

Shipping of car and incidentals, $100; cost of four horses, $600; cost of one cow, $50; cost of two pigs, $20; two dozen chickens, $10. Total, $780.

All these things are necessary if a man expects to do anything on his claim. When you get your goods to the railroad station, from which they must be transported to the claim, you are up against a haul anywhere from five to 60 miles. I had 16 miles to go. You will have to build a house, and the lumber will have to be hauled to the homestead. You will, therefore, have the following expenses to meet:

Lumber for house, $150; lumber for barn, $50; digging well, $15; horse feed and hauling, $15; transportation of family, $25. Total, $260.

Finally you find yourself on the homestead, and the rush begins. You will soon have to incur more expense. For example, you will need more feed. This account will run as follows:

Ten tons of hay, $100; 100 bushels of corn, $50. Total, $150.

This will last you till fall, you think, and by that time you will have all the feed you will need; but wait. Raising crops on new land is a different thing from farming on old ground, so that by fall it may happen that your crops don't amount to much and you are up against further expense for another year. You must buy another plow, perhaps two or three, before you get one that will turn the soil right. It costs to experiment. And here goes another $50 for various items that you had never figured on. Then comes another very important matter that must not be overlooked, and that is the possibility of one or more of your horses dying. If you have shipped horses into this country, the chances are that you will have trouble. My advice to every homesteader is not to ship horses into a new country, but to buy them in that country, even though at what seems high prices. I am safe in saying that one out of every three homesteaders in this section has lost from one to three head of horses that have been shipped in. So here comes another expense account:

Loss of horses, $150; household expenses for one year, $250; seven tons hay, $70; fence for pasture, $40. Total, $510.

Perhaps you wonder if there is any way for a homesteader to make a living on his claim. Yes, but he can't do it by farming. Remember that there is a homesteader on every quarter section or 80 acres who is in the same boat that you are, consequently prices for labor are very low and the bulk of the work is freighting. For this the lumber and coal dealers and the merchants have regular freighters who are equipped for their special business, so you have strong competition to meet.

I have failed to mention the payments that must be made on the land. There are five payments in all. The first must be made at the time you register on your land, and the next a year later, and so on, so you really have two payments to make the first year. If $6 an acre is the price you have to pay, this will mean $384, plus $14 for filing fees, or a total of $398.

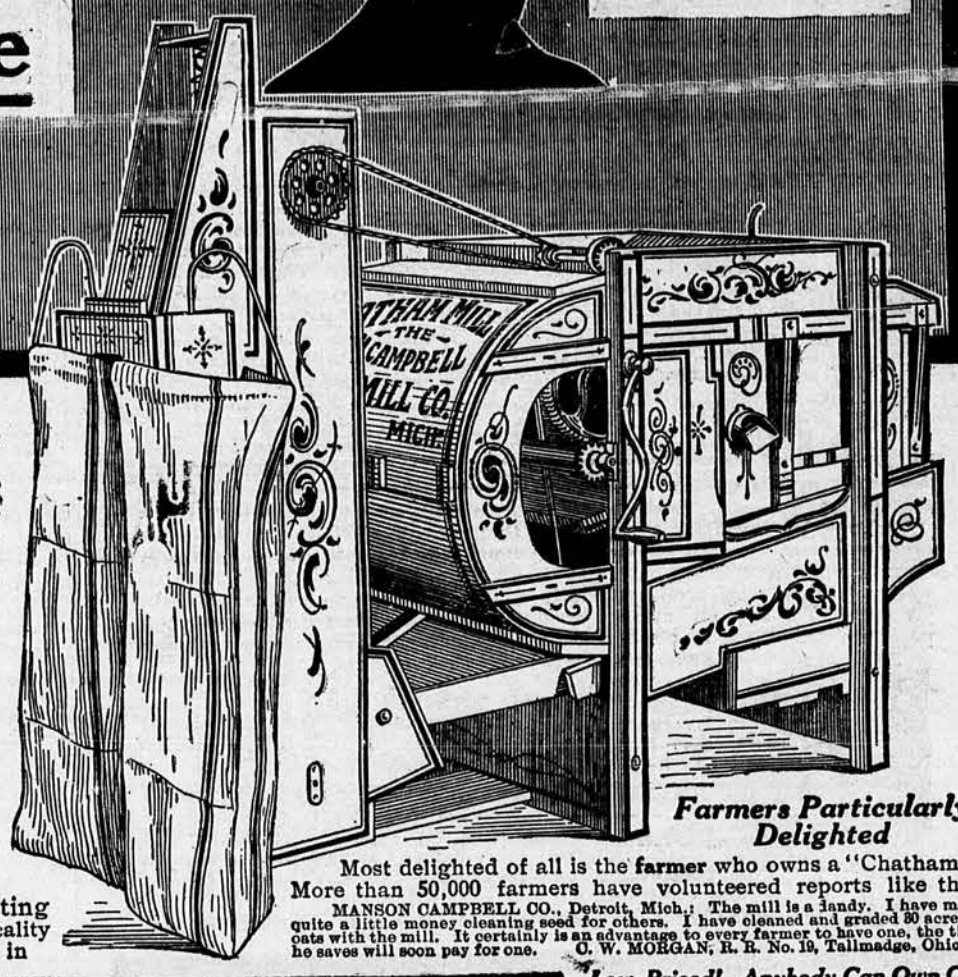
Now, let us sum up the first year's expenditures and examine the total. This shows that we have already expended $2,198. Suppose we have earned $200, we are then $1,988 behind, or have that much invested. If we raise nothing the first year, the expense is repeated in a way, so the logical thing to do is to prove up at the end of 14 months and make a loan on the place. We are then handicapped with a mortgage on the farm.

Now, the question arises: Does it pay to make such an adventure? I must answer this in the affirmative, provided the land is worth from $35 to $60 per acre, say an average of $45. That would make $7,200. Now deduct your expenses $5,000, and you will still have a credit of $2,200. This is not so bad for one year, is it? However, along with all of this, never overlook the hardships of homestead life.

Greatest Money-Making Farm Machine On Earth

The Man Behind the Chatham

Manson Campbell (picture here shown) is the original maker of Grain Cleaners, Graders and Separators. He has spent 44 years in the business. The mill you see here is his *masterpiece*.



You see here a perfect picture of the greatest farm money-maker in the world.

—a machine that will earn you *dollars* where other machines earn *dimes*.

—a machine that will make you hundreds and perhaps *thousands* of dollars every season.

—a machine that has *doubled* the net crop profits of thousands of farmers.

—a machine which, on farms of 40 to 80 acres, as well as on *big* farms, is a veritable "*money mill.*"

—a machine which costs so little and *pays* for itself so *quickly* that anyone can own one and scarce miss the money.

Over a Quarter Million in Use

Although this Implement has been but little advertised, over **Two Hundred and Fifty Thousand** farmers are quietly getting rich from it. When one man buys one, a dozen to twenty in the same locality are apt to follow. Thus, in some communities you see hundreds, while in other communities you see but few.

Farmers Particularly Delighted

Most delighted of all is the **farmer** who owns a "Chatham." More than 50,000 farmers have volunteered reports like this:

MANSON CAMPBELL CO., Detroit, Mich.: The mill is a dandy. I have made quite a little money cleaning seed for others. I have cleaned and graded 80 acres of oats with the mill. It certainly is an advantage to every farmer to have one, the time he saves will soon pay for one. C. W. MORGAN, R. R. No. 19, Tallmadge, Ohio.

Chatham Mill

Grain Grader, Cleaner and Separator

Breeds Fat Crops

This Implement—the **Chatham Mill**—is the world's Champion Crop Breeder.

It gives you the very thing you have long wanted and needed **most—clean, fat, healthy** seed. Seed that produce a **strong, healthy, even stand of grain—full heads and ears—prize grains.**

For the owner of a Chatham Mill plants no shrunken seed, no unhealthy seed, no weed seed, no dirt, no chaff or no husk. Just **pure, perfect** seed. And Nature, true to her promise, fills your bins, your cribs, your mows and your granaries with bounteous fine crops.

Crop Brings Fat Prices

Not only at seeding but at **market** time, the Chatham Mill proves your "right hand" man. It grades, separates and cleans so fast and runs so easily that you run your grain through it before selling it. The valuable screenings you keep at home to feed, instead of **giving** them to the grain buyer.

You've disarmed the elevator man, too! Your grain is clean and **no longer has he any excuse to "dock" you.**

Makes You Independent of Seed Dealers and Elevators

Who wants to be running to a seed dealer every year to buy expensive seed or to haul seed grain to an elevator and get it cleaned there? It's so much trouble and expense that it's no wonder some farmers plant their own seed—dirt, weed seed, sickly seed and all.

Why not have pure seed—all you want—**cheap**—and at the same time be independent of elevators and seed houses—grade, separate and clean your seed at home with your own implement? Breed up your own seed. It's easy, inexpensive and it pays **big.**

Kill Off the Weeds!

Are weeds stealing a lot of your rightful profit every year? Do you realize that you sow millions of these weed seed if you plant ordinary, uncleaned seed? Well, you do. But farmers who grade, clean and separate their seed before planting don't plant any weed seed. The way to kill off the weeds is **not to let them get started.**

An "All-Purpose" Machine

The Chatham Mill, at **one operation,** cleans and grades Oats, Wheat, Corn, Barley, Flax, Clover Seed, Timothy Seed, or any **other** kind of seed. It removes all dust, all dirt, all foul seed. It bags all the good, healthy grains and deposits the poor, scrawny, irregular ones by themselves in a box. Moreover, if you have a mixture of grains (say, wheat and wild oats) the Chatham Mill not only cleans and grades but, **at the same time, it separates** the two kinds of grain.

This magic machine, handling almost every conceivable kind of grain, with utter precision, works **like lightning.** Cleans, grades and separates as high as 100 bushels per **hour!**

Anybody can adjust it, anybody can **turn** it. It almost runs itself. Yet it has a convenient power attachment for those who have gas engines.

The Chatham Mill, in its present form, is the crowning achievement of 44 years, being the evolution of the old-fashioned fanning mill. From season to season its popularity has grown, until today, it requires the output of two immense factories to supply the public demand in the U. S. and Canada.

Officially Endorsed Everywhere

Wherever scientific farming is preached or practiced, you'll see the Chatham Mill. On the great railroad Seed Trains, at State Agricultural Colleges, at State Fairs and on 250,000 Farms you see it. Its power, its capacity, its ease of operation, its simplicity and its ability to **bring bumper crops,** astonish the Agricultural World.

Low-Priced! Anybody Can Own One

If you had to pay two to three hundred dollars for a Chatham Mill, you would make big interest on your investment, but it doesn't cost near that much. Doesn't cost near a **hundred,** or near **half** a hundred dollars. The average cream separator, gasoline engine or manure spreader easily costs double a Chatham Mill. Don't let mere money stand between you and owning this greatest of all money-making farm implements. It costs so **little** and pays for itself so **quickly** nobody should hesitate at the price.

30 Days' Free Trial—No Freight to Pay—No Money Down!

For the benefit of those who have never had a chance to see the magic Chatham Mill **perform,** we have decided to make a free loan of 2,000 Mills. If you wish to try our mill free, please notify us at once. We will pay the freight and you won't be asked to put up a cent or to make any agreement, except to return the mill at the end of 30 days or keep it and pay for it, whichever you choose.

If you don't want the mill, we pay all the freight coming and going. Our friends say this is too liberal and that people will take advantage of us, but in dealing with farmers for nearly 50 years we have learned that 99 out of every 100 are square if you treat **them** square. **Try** a Chathm Mill scot **free.**

"The Chatham System of Breeding Big Crops," Free!

Write for this fine, free book. It reveals the famous Chatham System of Breeding Big Crops. It is not a mere catalog that tells about Chatham Mills. It is a large illustrated volume. We spent $5,000 to produce it and have had it copyrighted in the U. S. Patent Office. Send and get **your** Free Copy today. And if you wish to try a Chatham Mill free, let us know at once. Use pencil and postal, letter or coupon below, whichever you find handiest. **Write nearest office.**

Clip Out and Mail NOW!

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Detroit, Mich. Kansas City, Mo. Minneapolis, Minn.
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Please send me your Free Copyrighted Book, "The Chatham System of Breeding Big Crops," and all about the Chatham Mill, its price and how I am to try one if I wish.

Name.....

Postoffice.....

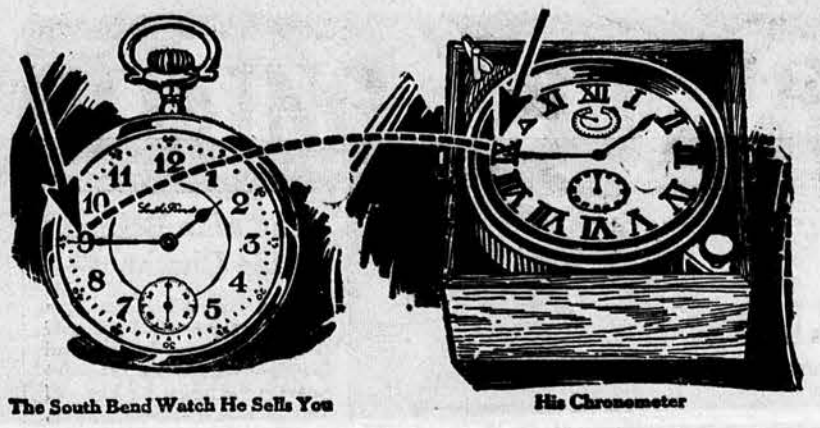
R. F. D. ..... *State*.....

THE MANSON CAMPBELL COMPANY

Detroit, Mich. Kansas City, Mo. Minneapolis, Minn.

See the Chatham Mill at your dealer's. If he hasn't it and won't get it, tell us and we will see that you are supplied

DEALERS! **There are still a few localities in which we have no retail representatives where we will be pleased to make you a good proposition on one of the fastest-selling farm machines in the world. Territory going fast. WRITE US TODAY!** (4)



The South Bend Watch He Sells You — His Chronometer

What the Jeweler Does for Watch Buyers

EVERY watch, no matter how well made, needs to be regulated to your personality by a capable watch man. That's because the way *you* carry a watch affects it and the way *Neighbor Jones* would carry the same watch would affect it still differently.

We'd have to go into scientific principles to explain why that's true, but it *is* true. *Every* watch needs personal regulation.

"The South Bend Watch" — *The Master Timepiece*

That's why it is seldom that a mail-order watch gives good satisfaction. There's only one place to buy a good watch and that's of a reliable retail jeweler who is a watch man of experience. Only such men sell *South Bend Watches*. Every one is a picked man. Every one of these men can make the South Bend Watch you buy keep time second for second with his expensive chronometer. It's this *time service* that you get in a *South Bend Watch* that raises this watch above the hoard of common watches on the market and makes it the Master Timepiece. And it's this *Jeweler-Service* that makes the time-service *possible*.

Engineer Floyd of the famous "*Twentieth Century Limited*" between New York and Chicago, carries a South Bend Watch because he knows he can depend upon it. The lives of some two hundred people a day depend indirectly on that watch. You can get a South Bend Watch exactly like Floyd's from your jeweler.

You can have a South Bend Watch in a solid gold case for $75, or in gold-filled and other metal cases at reasonably low prices.

* * * * *

Let your jeweler show you the South Bend Watch. If he hasn't one, there's a jeweler near who has.

Write for the free book, "How Good Watches Are Made." It tells all about watches — things you should know before buying a watch. Send a post card for the book now.

THE SOUTH BEND WATCH COMPANY, Dept. 194 South Bend, Ind.
(75)

No Sick, Scrawny, Runty Hogs When Merry War Lye Is Fed

Every farmer knows that if he can keep his hogs on their feed and free from worms he need not worry about his pork profits.

Thousands of farmers all over the country have learned by experience that MERRY WAR LYE is the best and cheapest hog conditioner in the world. It makes sick hogs well and thin hogs fat.

How Adam Schultz of McLouth, Kansas Conditioned His Herd—

"Before I began feeding MERRY WAR LYE my hogs did not eat as they should and they looked rough. Sometimes some of them would not eat at all, and some would eat a little and then go off and lay down; but after I had fed MERRY WAR LYE about eight or ten days, I could see a marked improvement in my herd. They began to all come out at meal time and take a hold as they should to eat, and they now look sleek and thrifty. I consider MERRY WAR LYE the best remedy I have ever used, and the cheapest. I have spent a good deal of money at times, but I never got the results from any of the so-called Hog Cholera and Worm Cure remedies as I have from MERRY WAR LYE."

Not An Expense

MERRY WAR LYE is not an expense. It is an investment that yields an actual profit, because it not only prevents hog losses from Cholera, Worms, etc., but also puts on many pounds of good healthy flesh and fat.

Feed "Merry War" Lye Every Day

The best thing you can possibly do to insure your pork profits is to feed MERRY WAR LYE EVERY DAY, just as regularly as you would the ordinary ration of swill or dry feed. Try it today. It will make your hogs fat quicker than anything else.

IMPORTANT WARNING!

Don't infer that ordinary, or regular lye can be used as a hog remedy.

MERRY WAR LYE is prepared ESPECIALLY as a hog remedy and it is the only lye that is guaranteed to be absolutely safe to feed to hogs.

Save These Directions

Follow these directions carefully: Mix one tablespoonful MERRY WAR LYE with slop for 10 hogs, or ½ can with barrel of swill. Stir well and feed night and morning. If your hogs are on a dry feed ration, mix ½ can MERRY WAR LYE to each barrel drinking water.

At All Leading Dealers

Most dealers handle MERRY WAR LYE. If yours can't supply you, write us, stating your dealers' names, and we will see that you are supplied and will also send you, free, a valuable booklet on, "HOW TO GET THE BIGGEST PROFITS FROM HOG RAISING."

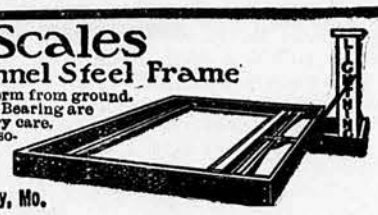
MERRY WAR POWDERED LYE comes in 10c cans, full case of 4 dozen cans for $4.80, at Grocers', Druggists' and Feed Dealers'. There are no substitutes.

E. Myers Lye Co., Dept. 12 St. Louis, Mo.

Lightning Pitless Scales

New Pattern. Solid Channel Steel Frame

Channels are seven inches which is the height of platform from ground. Levers are octagon in shape giving greater strength. Bearing are Toolsteel. This scale will last a life time with ordinary care. Equipped with compound Beam Free. Furnished absolutely complete except platform planks. Guaranteed accurate and tested to more than its capacity. Write for our prices and description before buying.



KANSAS CITY HAY PRESS CO., 129 Mill St., Kansas City, Mo.

THE FARM

Last week in farm notes we had much to say about the lack of appreciation of Kafir and milo as grain producing crops for the central and western Kansas farms. After a trip of several days last week through Dickinson, Clay, Cloud and Republic counties we are more than ever convinced that these crops are being neglected, and that the farmer can ill afford such neglect. Generally throughout the above counties corn has yielded well the past five years. This year many farms will have no corn, some will have 8 to 10 bushels per acre and an occasoinal farm will have two times as much, but the corn will be chaffy and will not have the feeding value of sound ears. These crop conditions apply to the upland. Some bottom fields will produce a fair crop of sound corn. Five to ten years ago these counties were growing a great deal of Kafir; in fact, farmers thought they could not afford to risk a season without Kafir. The past five years, however, little Kafir has been planted because of the feeling that dry seasons were a thing of the past and corn wouldn't fail. A number of farmers to whom we talked said they had formerly depended on Kafir, but had gotten out of the habit of planting during recent years. These same farmers said this year they had learned the value of Kafir, and from this time on they would plant it early and give it good care, because, if anything made a crop, it would. One farmer whose corn was a total failure, but who had 15 acres of Kafir that will yield 25 to 30 bushels per acre, said: "It's mighty satisfying to look over that Kafir field." He didn't give the Kafir a chance, either, because he listed late in wheat ground. This was the only field in the neighborhood of Kafir planted for grain, and its owner will have all the grain required for his live stock and some for sale. It is our guess that one field of Kafir to nine of corn was the proportion through the territory traveled. The Kafir will make a crop of grain in every field. That is, when planted for grain. Farmers, investigate the dependence you can place in Kafir. Study its feeding value compared with corn. Learn how to harvest it most economically and conveniently. After you have done this you will lean heavily on it, and gain much in so doing.

In the above-named counties wheat sowing was nearly done on September 21, and in a lifetime spent in Kansas we have never seen wheat sown under more favorable conditions. Every field was clean, the soil well packed and every other condition of the seed-bed appeared perfect. It was plain to see the plowing was done early, else there would have been some plowing still undone. It was plain to see that a great deal more work was done on the wheat ground this fall than in the years past. On every hand there was evidence of better wheat farming, and we are justified in saying that should wheat in this section fail next year, the failure cannot be attributed to poor seeding methods. We learned from several farmers that a large acreage in Cloud county would be seeded with pure-bred seed obtained either directly from the State Agricultural College or from some reliable farmer who a year ago obtained his seed from the college. We were told of a farmers who sold his entire crop of Karkhoff wheat for $1.50 per bushel for seed and that the grain was engaged while it yet stood in the field. All these things are intensely intersting from an agricultural point of view, since they show advancement in farm methods and a greater prosperity agriculturally.

A thing that is improving farm methods as much, or possibly more, than any other one thing, is the use of more horse power. On the editor's trip, mentioned elsewhere in this article, we noted many wheat drills in operation, and in almost every care four-horse drills were being used. Ten years ago the two-horse, eight-hoe was the common drill. The four-horse drill of today does the work in half the time of the two-horse drill, accomplishes the work in better season, saves the expense of one man—who frequently is the hired man—and gives the farmer the satisfaction of knowing that his work is moving right along. The style of wheat drill has materially changed, too, the past few years. The old style hoe drill, which skipped along with the hoe on top of the ground a good part of the time, is a thing of the past. The disc drill so constructed that the wheat is sown the same depth from one end of the field to the other is a good implement. The drill with a wheel following in each row and pressing the soil in the row conforms more nearly to our own idea. A clean, well prepared seed-bed, good seed and the use of a drill which is sure to get the seed in the ground and to cover the seed, with the covering packed, are conditions which will come near doubling our wheat yield. Four horses on one drill accomplished much more beneficial results than four horses on two drills, and the same principles will apply to plowing, harrowing, listing, etc. Better work, less expenses and more seasonable work are the principal points in favor of plenty of horse power.

Recognition of the advantages of plenty of horse power will increase interest in and extend the use of the farm tractor. The engine for general farm work is as yet in its infancy. The development in its practicability during the next ten years will mark a change, in our opinion, as great as in the history of the automobile, and, in our judgment, it will, in a few years, be demonstrated that the quarter section farm can maintain a tractor to great advantage. We know of a 240-acre farmer who bought a gasoline tractor and plow this summer. He grows each year 80 to 100 acres of wheat. He plowed and dragged 80 acres of Kaw river bottom land in one operation in four days during the second week of July. It is this farmer's claim that the advantages accruing from early plowing alone will justify his engine investment. The advantages of deep plowing for wheat are still to be taken into consideration. The use of the tractor, too, may change our methods of corn farming. The possibilities of the farm engine have not been dreamed, is our guess.

Moles Beneficial.

Moles as a rule are beneficial to the farmer, because they feed almost entirely upon the larvae of insects, grubs, etc., which they find in the ground. The injuries to garden plants, often laid at their door, may usually be traced to mice which use the runways of the mole. It is only when they work in flower beds, lawns, cold-frames and hotbeds that moles cause serious annoyance. From the latter structures they can easily be excluded by the use of one-half inch mesh galvanized wire cloth.

Loving our enemies would not be such a beastly chore if they were not such an ornery bunch.

Danger in Disking.

We have been watching the effects of shallow plowing and disking for nearly thirty years, and still we can see no good in it. Every dry year the same thing happens. In 1908, we went over thousands of acres where the crops had been disked in on stubble. We saw oats burned out six and eight inches high; spring wheat completely fired just beginning to head; winter wheat that went only five bushels to the acre; and fields of corn on shallow-plowed sod that yielded nothing but a handful of fodder.

The disking and shallow ploying habits come from the humid states, where it rains sometimes twice a week, and small crops can always be raised by simply cultivating enough to keep the weeds out.

Farmers will sometimes say, "We can raise more by disking than plowing." This is true, because a surface farmer seldom plows more than three inches, and he can do this equally well and more quickly with the disk. Or he may plow without harrowing, let the ground dry out as he goes, and plant in a poorly prepared seed bed.

An old friend of ours used to raise indifferent crops by plowing once in three years and disking in his seeds the two intervening years. The first year his oats would be about two to three feet high; the second year, 18 inches;

and the third about a foot; but if a dry year happened, there was nothing doing. He always would persist that he could raise good crops without plowing to carry his cattle through the winter. I happened to meet him in 1909. "Well," I said, "how did you come out last year?" "Oh," he said, "I sold my cattle."

Thousands of head of cattle were sold in the fall of 1908 for the same reason. This put the market right down and the dry-farmers lost heavily.

Supposing we plant a crop of spring wheat or oats on corn stubble, what happens? Ninety per cent. of the farmers put cattle on the stubble during the winter. The ground becomes hard and overpacked; we disk this on the surface and plant the seed. For a while it does splendidly, and if the rains keep up will make a fair crop; but if dry weather comes and a crust forms on the surface or under the mulch, the crop is gone, for it is solid underneath. It has never been plowed.

It is the surface farmers who are always wailing about this crust under the mulch, but those who belong to the deep-plowing school pay no attention to it, for they still have plenty of room for the roots of their crops down below, and if the mulch above the crust is in proper shape there is no more evaporation than there is before.

A man wrote to me once and asked what he should do for the crust under the mulch. I wrote back and said: "Next year plow deep." His answer was: "How did you find out that I didn't plow deep?"

The worst consequence of disking without plowing is the effect it has on next year's crop. The ground being hard, the water penetrates very little; the available moisture is used up by the crop, and the surplus evaporates or runs off. Nothing is saved for next year.

In dry-farming, if we work only for the present, we are living from hand to mouth. The very foundation of this branch of agriculture is to farm for the future. Store up moisture in the soil next year and the year after, keep track of it with the pick and shovel or with a ground augur, and you will soon find out which style of farming pays the best.—E. R. Parsons.

ECONOMIZE

A THOUSAND DOLLARS, we will say, is your yearly income. Maybe it's $600 or $800 or $2000—but $1000 will do for an example. Now suppose that out of this $1000 you spend $600 in a year and put $400 in the bank. That means $400 saved, doesn't it? But suppose you start buying the necessities of life in an economical way like 2,000,000 other people are doing. Suppose that this year you cut your expenses down to $400 and put $600 in the bank. That means $600 saved, doesn't it? You can do it, you can cut one-third off of your living expenses and it's the easiest, most agreeable thing to do that there is. Send to us for one or more of these books which contain the articles you are going to buy this winter. You will find as all of our 2,000,000 satisfied customers have, that our prices are the very lowest and the quality of our merchandise is the very highest. The reason our prices are low is this—we buy in tremendous quantities and trim down the price on each article to the lowest possible figure. We give you the advantage of these extensive and economical business methods.

THROUGH THESE BOOKS WE OFFER YOU THE OPPORTUNITY TO SAVE 20 PER CENT TO 50 PER CENT OF THE MONEY YOU MUST SPEND IF YOU TRADE ELSEWHERE.

We guarantee every article we sell to give you full satisfaction. Without dispute, without question, we will take it back at our own expense, if it does not, and refund your money or make any fair exchange or adjustment.

MONTGOMERY WARD & CO.

Chicago Avenue Bridge CHICAGO — 19th and Campbell Sts. KANSAS CITY

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The New Furniture Book

You will enjoy this book. It is crowded from cover to cover with attractive offers that will delight you. A couple of pretty chairs or an attractive, substantial couch will make a home much more comfortable.

Whatever you need, from the kitchen table up to the furniture for the guest chamber, you will find just what you want in the pages of this Furniture Book. You have read of our economical business methods. They enable us to sell you furniture at prices that often mean a saving to you of 50 per cent on what you had intended to pay to the retail dealer. Your copy is waiting for you. Let us send it today. Ask for book number 7.

Carpets and Rugs at Factory Prices

A new carpet or perhaps a rug will "brighten up" that room you think does not look quite inviting or cozy enough. Don't imagine you can't afford one. Our carpet and rug catalogue, book No. 15 contains some price surprises for you.

SPEND THIS MUCH IN THE RIGHT PLACE AND IT WILL BRING YOU AS MUCH AS THIS WOULD IN THE WRONG MARKET

A Saving on Clothing

A well dressed man or woman makes a splendid impression everywhere. Good clothes are a recommendation in themselves. "Clothes do not make the man" the old saying goes, but we all know they often help a lot. It is easy to be well dressed and not expensive either. Let our new clothing book show you how to dress well at a small expense. It brings right into your home a wonderful collection of clothes, weaves, patterns, and colors from which to select.

Every style is new, nobby and up-to-date. Remember it costs you nothing to get this book. Better have us mail you one today. The women's book is No. 30, the men's book is No. 33.

HERE IS A BOOK THAT WILL Save 1-2 of Your GROCERY Money

The Grocery List is a mighty interesting little catalogue. You're going to spread it out under the lamp and turn its pages and just delight in comparing the money-saving prices it quotes, with the high prices that small dealers ask. Before you know it you'll have your pencil out figuring up how many Christmas presents you can buy with the money you saved on your grocery bills. But the thing that's going to give you real satisfaction is this: For less money you are getting better quality and more food! Then, of course, you know that everything is so clean and pure and absolutely reliable.

The number of the Grocery Book is 11.

When we receive your request we will put your name on our mailing list to receive the new Grocery List every two months.

Save Enough on Winter Farm Necessities to Clothe the Family

A feed cooker—a good one—that's what you need this winter. Perhaps you stand more in need of a tank heater or an incubator or a brooder or some other winter farm necessity.

Whatever you need, we have it. We carry a big variety of every farm necessity. The prices on these are of course the very lowest just as they are on all the rest of our merchandise. Send for book 8.

Stoves at 1-2 the Usual Cost

When the wind howls and the boards creak and the windows rattle and the snow sifts in under the door sill think of the comfort a warm stove and a good range are going to give you. It's going to be mighty comfortable to toast your toes on the edge of your stove or baseburner, read and talk and then doze off into a little nap in the pleasant warmth from the glowing coals.

In the morning you'll be glad that you thought about getting that good range in time when you sniff the aroma of piping hot coffee, and batter cakes browning on the griddle.

It's going to be cold this winter. You must have a good stove. You must have a good range.

Send for book No. 23, our new Stove and Range Book that has just been printed.

Check the Book You Want

Let us show you, free of all cost, how you can save money on everything you buy to eat or wear or use in any way.

Send Coupon to Nearer Address

Montgomery Ward & Co.

19th and Campbell Sts. KANSAS CITY — Chicago Avenue Bridge CHICAGO

Please send to my address below the books I have checked absolutely free of cost.

1 Paints, 2 Pianos, 3 Organs, 4 Trunks, 5 Roofing, 6 Fabrics, 7 Furniture, 8 Incubators, 9 Wall Paper, 10 Typewriters, 11 Grocery List, 12 Feed Cookers, 13 Tank Heaters, 14 Wire Fencing, 15 Carpets, Rugs, 16 Building Plans, 17 Baby Carriages, 18 Men's Fur Coats, 19 Sewing Machines, 20 Gasoline Engines, 21 Cream Separators, 22 Building Material, 23 Stoves & Ranges, 24 Underwear Samples, 25 Automobile Supplies, 26 Bicycles—Motorcycles, 27 Baby's Dress and Toilet, 28 Women's Tailored Suits, 29 Circular and Drag Saws, 30 Women's Fashion Book, 31 Rain Coats, Rubber Coats, etc., 32 Tombstones and Monuments, 33 Men's Clothing, 34 Women's Furs, 35 Dry Goods, 36 Health Underwear, 37 Millinery

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136

This Book is for Mothers

It's the "Baby Book." There are some of the daintiest, prettiest little dresses and caps in it you ever saw. Then there are snug, warm "nighties" and stockings—and everything else the baby needs. Beds and cribs, go-carts, high chairs, toys, rattles—well, you'll just be delighted when you see it.

And everything is so reasonable! Without even knowing it you will have bought everything for baby and have a neat sum left—maybe enough to buy a rug or a pair of shoes, or to "put away for a rainy day."

The "Baby Book" is a beautiful book. You'll like it. The number is 27.

Men's Fur Coats

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Utilization of Feed by Cattle.

It is a fact of common knowledge that marked differences exist between individual animals as regards the returns which they yield for the feed consumed. A current statement is that a good feeder has a greater digestive power than a poor one, or that the power of assimilation of the one animal is superior to that of the other, and it has been assumed that the advantage of the better type of animal lay in its ability to produce more flesh or fat from a unit of feed than could the poorer one. It has also been commonly taught, and seems to be generally accepted by animal husbandmen as an established fact, that young growing animals not only make actually larger gains than more mature ones, but likewise more economical gains.

The influence of type and age upon the utilization of feed by cattle has, therefore, been investigated by officials of the department of agriculture, and the result published in Bureau of Animal Industry Bulletin No. 128.

Two steer calves were selected as the subjects of this investigation, one a purebred typical beef animal of one of the well-known beef breeds; the other a "scrub" of mixed breeding. Exhaustive feeding trials were carried out with these animals, including twenty-four experiments with the respiration calorimeter. Finally the steers were subjected to a slaughter test, whereby the quality of the meat and the relative size of the various cuts were accurately determined. The work is therefore important alike to the practical feeder and the agricultural scientist.

The feeding stuffs used were of the same kind for both animals in all the periods, and the different grains used were mixed throughout in the same proportions for each steer. At intervals during the time the digestibility of the total ration and the nitrogen balance were determined for each animal.

During each of the three winters covered by the investigation, four experiments were made on each animal by means of the respiration calorimeter in order to determine the percentage availability of the energy of the feed consumed. During the first winter, that of 1904-'05, the feeding stuffs used differed from those employed during the ordinary feeding. In the succeeding two winters the grain feeds used were the same, only the amount differing.

While the results fail to show any material difference between the physiological processes of food utilization in the two animals, they do show clearly an economic superiority of the purebred over the scrub steer, due, first to his relatively smaller maintenance requirement, and, second, to his ability to consume a larger surplus of feed above the requirement. Both of the facts tend to make the actual production of human food in the form of meat and fat per unit of total feed consumed by the animal notably greater by the purebred animal.

In the case of the purebred animal especially, and to a less degree in that of the scrub, rations containing less available energy and notably less digestible protein that the amounts called for by the current feeding standards for growing cattle, produced entirely satisfactory gains in live weight.

A distinct influence of age upon the maintenance requirement was observed between the ages of 14 and 39 months, the requirements decreasing relatively as the animals matured. The gain in weight of the scrub as compared with that by the purebred steer consisted more largely of protein with its accompanying water and to a smaller extent of fat, and therefore represented a materially smaller storage of feed energy. This was also indicated by the results of the block test.

The animals were killed on January 4, 1908. The scrub was rated as "common," and the purebred was graded as "prime." The total dressed weight and the weights of the several wholesale cuts show the considerably higher percentage of dressed weight in the case of the purebred, which is characteristic of the beef animal, and likewise the predominance of the loin cut over the less valuable cuts of the fore quarter in the beef animal as compared with the scrub, and the marketable meat of the retail cuts show that the proportion of more valuable cuts was notably greater in the purebred.

Fence Questions.

"There seems to be a law for this part of the state to the effect that where a party owns land on both sides of a section line he can sink posts on same and put up a gate, but where the land on each side of the section line is owned by different parties, can one of the parties prevent the other from sinking posts on the half of the road nearest him when he wants it left open?

"Also, if one should move his fence back off the line and onto his own land could he keep the owner of the adjoining land from connecting his fence with your own?"—F. C., Stevens Co., Kansas.

The special provision of law referred to above is found in section 3148, chapter 40, Revised Statutes, and applies to all counties west of range 15 west of the 6th principal meridian. This provides for the fencing in of section lines and the erection of both gates and hitching posts, but does not provide for the opening of such a road except by order of the county commissioners. The question would have to be submitted to them for action. When such action has been taken, the gate cannot longer be maintained and hence no posts can be set in the highway legally.

If the second question refers to the same matter, it is answered above. If it applies to an ordinary division fence, the neighbor could not go upon your land to connect his fence to yours without committing trespass; on the other hand, you could not leave a gap between his corner and your own by moving your fence back without causing ill-feeling and possibly damage and the building of a "devil's lane."

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If a man allows his chickens to roam amid the mud and slush of the yards in the fall, he is preparing the way for some sick fowls this winter.

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A Maine dairyman recently stated to this editor that the manure from his dairy herd was worth 20 per cent of the value of the food consumed. The Kansas dairyman will laugh at the statement. When his land is worn out, as is the Maine dairyman's land, his talk will change. We must realize that the fertility of Kansas soil will sooner or later become exhausted, and when that time comes we must adopt new tactics. The sane thing is to begin now, right now, to take care of the fertility we have, and even increase its present fertility.

LIVE STOCK

Blood tells, and the young animals of any community are sure evidences of the quality of the sire used. It is frequently said that "Missourians do love a good horse," and this is only an expression of the fact that they have nothing equine to love without good blood lines in breeding.

Don't haul your corn to market. Drive it there on the hoof. When corn is scarce and high is just the time when you cannot afford to sell it. Feed it out and double your profits on the corn while you leave your farm richer for your good sense. Taken one year with another, the farmer who feeds his grain and hay makes more money and fewer failures than he who ships grain, and he doesn't wear out his farm.

The fact that Kansas farmers are well supplied with live stock feeds is shown by the great crops of Kafir, milo and sorghum, the heavy yields of alfalfa since the July rains and the plentiful pasturage which has abounded during August and September. Perhaps a better index of the abundant supply of feeds is shown by the fact that 200 more car loads of feeding cattle have been shipped into this state from Kansas City than for the same period last year.

That the shortage in farm crops in some sections will be made up by increased prices is apparent from some statistics recently compiled. These show that hay is 23.1 per cent higher, oats, 5.2 per cent; potatoes, 56 per cent, and barley 36.4 per cent higher, while horses are 4.6 per cent; beef cattle, 5.4 per cent; hogs, 15 per cent; sheep, 14.9 per cent, and wool 17.9 per cent lower than last year. These figures seem to favor the grain farmer.

The farmer who starts in the sheep business now can do so with unusual advantages. He can start with high-grade ewes and these are very reasonable in price, and then the mistakes which any new breeder is sure to make will not be so expensive. In Central Kansas sheep farming has been so profitable during the last year that many who have started are stocking up with much larger flocks.

There seems to be some conflicting opinions in regard to the anti-hog cholera serum treatment as a preventive of hog cholera. Many claim that it is a specific against this disease, while others speak from their own experience and denounce it as a failure. We should like to have the experience of our readers in regard to the serum treatment for hog cholera.

Interest in sheep breeding has advanced to such an extent in Missouri that there is now in that state a sheep breeders' association of some 300 members. Nebraska announces a National Mid-Winter Sheep Show, to be held in Omaha during the week of December 13 to 16, inclusive, and provides a list of attractive cash prizes exceeding those offered at any other sheep show. Those of our readers who may desire to make entries should correspond with the Secretary, National Sheep Show, care Commercial Club, Omaha, Neb.

Smithfield Hams.

This town of Smithfield, Va., is noted for fine hams. The farmers here claim that this is due not only to the superior method of curing this meat, but also to the method of growing the meat. The farmers here grow a great many peanuts, in fact this point is second to but one in the shipment of peanuts, and it is said that the peanut king of the world resides here. After the peanuts have been gathered, which is done by pulling the plants out by the roots, there are a great many left in the ground and the hogs are turned in and fattened on these nuts. Peanuts being very rich in protein produce a great deal of lean meat and hence the Smithfield ham has less fat in it than the meat produced in the corn belt. We were shown a lot of these hams being prepared for shipment and were told that they brought 30 cents per pound. The method of producing this meat should be a hint to farmers in other sections. I believe if we were to feed our growing pigs more protein feeds, such as bran, oil meal, clover, cowpeas, etc., the meat would contain a larger per cent of lean.

Some farmers claim that the razor back hog is better for this purpose than the well-bred hog, but to this contention our hog men would not consent. These hams averaged only from 12 to 15 pounds.—W. D. Zinn.

Wintering Farm Work Horses.

A great deal more money is usually spent in wintering farm work horses than is necessary. The writer has seen horses wintered on good oat straw and water, with no grain except what little might have been in the straw, and they came out fat in the spring. This practice would hardly be advisable when the horse is to be put to hard work as soon as spring opens, in which case an allowance of grain ought to be fed also. As showing what may be done in economizing in winter rations, some work done at the Michigan station with 12 horses weighing 1,200 to 1,300 pounds gave interesting results. Six of the horses were fed the regular daily ration of 11 to 12 pounds of oats, 18 to 20 pounds of timothy hay and a light feed of bran once a week. The other six had been fed the same feed, but were changed to a ration of shredded cornstalks, oat straw, hay, carrots, ear corn and a feed mixture of dried beet pulp, bran and oil cake in the proportion of 4 pounds of pulp, 1 pound of bran and 1 pound of cake. The entire ration was fed as follows:

Morning feed—	
Oat straw	5
Carrots	4
Ear corn	3
Noon feed—	
Timothy hay	4
Oats	2
Night feed—	
Shredded cornstalks	8
Carrots	4
Feed mixture	2

The idea of feeding a variety of substitute feeds was to tempt the horses to eat. No doubt similar results can be secured with fewer ingredients. After feeding the rations for 10 weeks it was found that the cost per head daily for the regular ration of hay and oats was 29.5 cents, based on current prices during the winter of 1908-1909, while the cheaper ration cost only 17.7 cents daily—a saving of 11.8 cents daily, or $8.18 per head during the 10 weeks. This gives a good idea of the possibility of economy in the winter feeding of farm work horses. It is interesting to note that in the experiment just described there was a loss in weight of 11 pounds per head when the regular ration was fed, while the cheaper ration resulted in a gain of 14 pounds per head.—Prof. Henry W. Vaughan.

Don't mistake a swelled head for self-respect, nor your wishbone for backbone.

Age of the Horse.

The age of the horse may be determined in any one of four ways, by the skin of the cheek, by the ribs, by the shrinking of the flesh of the tail and by the teeth.

In order to apply any one of these tests experience is necessary and, as the teeth are perhaps the best index of the age of the animal, they are most frequently consulted though even this method is not absolutely reliable because of the variations in the teeth are not uniform.

"The horse has twelve incisors, or front teeth, six above and six below. He has two sets of these, one temporary and one permanent. When a colt is 2 years old he has all his temporary teeth. These will be shorter, whiter and more worn than the permanent teeth.

"At 2½ years the central pair, both above and below, drop out and permanent teeth take their place. By the time the horse is 3 years old these permanent teeth will be fully developed and 'in wear;' that is, the upper and lower teeth will meet. At 3½ years the lateral pair of teeth (one on each side of the central pair), both above and below,

drop out, and by the age of 4 the permanent teeth are in wear. At 4½ years the corner pair, both above and below, drop out, and by the age of 5 the permanent teeth are all in wear. At this age the horse is said to have a 'full mouth.' The teeth at this age are much longer from side to side than from front to rear; also, on each one there is an elongated cup or mark. This cup is a depression in the tooth and is lined with the same kind of hard enamel that covers the outside of the tooth. It is also filled with dirt and foreign material, which gives it a black appearance. The lining of hard enamel will always distinguish the real cup from the artificial ones sometimes put in by jockeys.

"At five there is a cup in each tooth. At 6 the cups in the central pair below have been worn away; at 7 the cups in the lateral pair below are worn away; at 8 the corner pair; at 9 the central pair above; at 10 the lateral pair above; and at 11 the corner pair above. The cups are then all gone and the horse is said to have a 'smooth mouth.'

"It must be remembered that the permanent teeth above and below came in at the same time, but that the cups above do not wear away until all the cups below are gone. It must be remembered, also, that the changes begin at the center and continue at the rate of one pair a year; that a horse at maturity, which is at 5 years, has everything—that is, all his permanent teeth and all the cups. If one remembers this much he has the whole thing in a nutshell. If the signs for any particular year are forgotten one can count backward or forward from 5 and get what is wanted.

"After 11 years the signs are not definite, but at about 15 or 16 the tops of the teeth become round instead of longer from side to side, than from front to back. The tooth does not actually change, but the lower part of the tooth is a different shape from the top and when the tooth wears down the wearing surface gets to where the tooth is of a different shape than where wear first started.

"At about 20 the surface of the tooth changes from round to triangular, with the longer dimension from front to rear. Also, when the horse gets old the teeth have more slope when viewed from the side. The teeth of a 5-year-old horse come almost straight together, while those of a 20-year-old horse come together at a sharp angle.

"These signs, as given, are accurate for normal horses from about 4 months until 5 years of age. At 6 or 7 they are accurate within one year; at 11 within two or three years, and after that within about four years, although the average will come much closer than these limits."

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Draft Horses for Farmers.

During the 20 years just past the farmers of the corn belt have gone through a process of evolution in their horse breeding. Twenty years ago they had a stock of serviceable little animals weighing 1,000 to 1,300 pounds, largely of the old Norman stock. Then large numbers of men bred to running horses. Finding that the quality of endurance was about all the progeny possessed, while lacking in size and docile character, as well as meeting but small favor on the market, they again took to breeding drafters and mules. After a few years a fad for trotting blood got possession of many, and for some time speed in the progeny was all that was looked for, writes H. E. McCarthy in National Stockman.

The coach horse had his inning. The trotting bred colts were small and lacked style. It was thought that the coacher would give the desired size and action. It was hoped also that the coach bred animal would be something of a dual-purpose animal; large and strong enough for farm work and active enough for the road.

After thus being several times superseded by other classes of horses, the drafter has returned more in favor than ever before. Now draft horse breeding is believed throughout the entire region to be on a permanent basis. Furthermore, farmers and breeders everywhere believe in draft horse breeding as one of the most profitable lines of livestock production.

Through several years of strictly draft horse breeding the average size of the native stock has been considerably raised. It is now very seldom that a farm team is seen that weighs less than 1,200 pounds each on the average. It is not uncommon to see pairs in the field that will weigh 1,400 pounds or above in working condition. Probably the most highly prized animal on the farm is the big, breedy draft mare. There is nothing so popular at farm sales. Nor is there any other animal upon which bidding is so persistent as upon a good draft mare in foal.

The raising of draft horses fits nicely in with the work on the general farm. There the draft mare really is a dual-purpose animal, doing a double work. She works regularly in the field and she raises a colt that will become one of the most profitable outputs of the farm. Where care is exercised in handling the mare, giving her the lighter and slower work, apparently just as good colts are raised as where the mare is kept in idleness.

The draft colt is very easily handled and broken. He is quiet and docile about the farm. When the youngster has reached a sufficient age and size to be started to work, he requires only a lesson or two until he is ready to be put to regular use. This is another big point in the farmer's mind in favor of draft horses. With drivers it takes months of steady training to fit one of them for market or even for regular use. The farmer has neither time nor desire to fret and fuss with an animal in the way that is necessary in breaking a driver. That is a work for a man of special ability who will make a business of producing and training driving horses. The practical farmer knows that it will be best and more profitable for him to stick to the steady drafter.

Of course, men are meeting with varying degrees of success in the raising of draft horses. Some produce horses that are mere nondescripts, while others are producing big, useful ones that would be popular on any market. A study of their methods and practices to determine the reason for the difference is suggestive. In the first place, the more successful ones are in nearly all cases the men who have taken up the work as a business; men who have made a study of it in every phase from breeding to marketing. They are men who have made themselves good judges of horses. Then, having an ideal of a good horse in mind, they have bred to produce such an animal. In doing so they have ever stuck to one breed. Not only that, but more, they have always stuck to one certain type within that one breed. They have kept their best mares and sold the inferior ones. They have fed and cared for their animals to bring out the best there is in them.

A man in our home locality a few years ago bred a high-grade Percheron mare to the best pure-bred Percheron stallion in the county. The offspring of that mating sold for $500. The next year the same mare was bred to a trotter. The big, lank, ungainly, unbalanced product sold for $175. The men who are not meeting with much success are usually entirely to blame themselves. They breed one time to a Percheron, the next to a Shire, then to a trotter, and perhaps to a coacher. Then they follow the same loose, slipshod methods in rearing and marketing.

The business of raising pure breds is growing rapidly. Men operating small farms are buying pairs of pure-bred mares of some of the popular draft breeds. They are working those mares and are succeeding admirably with them. Men who own and operate large areas are going into the business on an extensive scale and there is no line of livestock that is more profitable.

The climate, soil and feeds of the corn belt are admirably suited to the production of draft horses. By far the largers number of days in the year are bright and clear. The weather is seldom so intensely hot or so cold that the horses cannot run in the open. The soil for the most part is hard and resisting, producing a hard, tough foot. The feeds are as good as can be found anywhere. Pasture grasses are as rich in nutriment as anywhere. The pasture season may be made extremely long by using a variety of grasses. Alfalfa in its luxurious abundance is a boon to horse breeders. It is an ideal feed for producing growth. As a pasture some men in the central west claim that their horses make gains at the rate of 2 cents per pound while running on it. As a hay there is nothing superior to good, bright alfalfa for mares and growing colts. Corn and oats are raised in their greatest abundance. The past and present situations seem to indicate that the raising of draft horses will be one of the leading lines of livestock production in the central west for some time yet to come.

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DAIRY

"Where there's a cow, there's a home." We do not know who said it, but it is certain a great truth is contained therein. This is also true: The more cows, the more prosperous the home.

A cold rain, fall or spring rain, will check the milk flow as much as a snow storm if the cows are exposed. It is a good plan for the dairyman to have his barn ready early in the fall so that the cows may be stabled during these rains. If the cows are good ones—such as inspire pride in the owner's soul—he will be ready.

Cruelty very rarely accomplishes anything good in the case of a balky horse, and likewise it accomplishes nothing in handling a kicking cow. An habitual kicker can't be cured. The occasional kicking cow probably kicks because of some discomfort given her by the milker. Milk carefully and keep the finger nails trimmed, and pet the cow after she kicks. Be a friend to the cow and she will reciprocate by being friendly with you.

The dairy farmer who does not build a silo usually has some reason which is satisfactory to him, but he cannot longer use the excuse that silage has a detrimental effect on milk quality. That is a long since worn out prejudice. Silage enters into the ration of nearly all certified milk that commands a special price on account of its quality, as well as in all dairies where the greatest success is achieved.

That there is much in outward indications of a dairy cow's value was demonstrated a few years ago when Professor Smith of the Michigan Experiment Station selected twenty cows from almost as many different herds and of no particular breeding, which, when tested, produced over 300 pounds of butter fat each in a year. Outward indications are a reasonably sure guide, and every buyer of a cow for milking purposes should apply the simple test.

The feed and feeding is the first important point in successful dairying. No difference how good the cow, the feed question must first be thoroughly understood and solved. In Kansas the feed question is more simple than in any other state. Two words, and three at most, say all there is to know—silage, alfalfa, corn. These, with a good cow, complete the greatest money making combination known to the western farmer.

The gasoline engine is a good thing with which to run the cream separator, but we would never have an engine for that purpose alone. A cream separator of large capacity and a thoroughly practical hand machine is within the reach of every farmer. It is foolishness to buy an engine to run it alone. Get an engine which will run the separator, saw the wood, grind the feed, pump the water, etc. For such purposes an engine is an excellent investment.

A farmer friend of this department has recently made an auto trip through Southern Michigan, Northern Illinois and Eastern Iowa, and says that he is thoroughly converted to the use of the silo. If three or four silos, he says, are a good thing on a quarter section farm in Michigan, he is sure one would be a good investment on his quarter section in Kansas. Kansas Farmer has presented the same idea, but not in the same words, and we are more than ever convinced that the silo is a necessity.

A Wichita newspaper says the dairy business is doomed in Kansas unless the mechanical milker is soon perfected. The statement is not correct. Each year more farmers are milking cows and this winter will see many farmers selling cream who have not heretofore sold. Dairying in Kansas must increase. As alnd becomes higher in price and as greater returns must be derived from the farms of Kansas, in just that proportion must dairying increase.

Large quantities of Canadian butter were this summer stored with the expectation that the reciprocity agreement with the United States would permit the shipment of that butter into this country. That Canada has rejected the reciprocity treaty its butter will now go to England, and it is now the business of the farmer of the United States to produce enough butter to supply home demand at a price which will permit the consuming public to buy at reasonable prices and eat butter instead of butter substitutes.

The Canadian government has spent a mint of money in urging its farmers to become dairymen and in demonstrating to them every phase of dairy practice. A government bulletin urging the farmers of Northern Canada to dairy says: "It is profitable from every point of view. It makes money for the industrious farmer who pursues the work with industry and knowledge. It enriches the land and increases its powers of production, where continuous cereal growing impoverishes the soil." The truth of the statement applies with as much force to Kansas as to Canada.

More Kansas farmers will milk cows and sell cream this fall and winter than for several years past. The reason is because on some farms there will not be the usual amount of grain, fat hogs and cattle to sell, and the cream check will be needed to pay for the groceries and smoking tobacco. In pressing times the old cow is leaned upon, but she is not such a good support as would be if she were depended upon continuously. Every few years the value of the dairy cow is demonstrated, and if she is worth while a year now and then, why is she not a good thing every year? A small herd of good milk cows is every year well worth while on every farm.

As a rule, the editor of a dairy paper or dairy department writes from the standpoint of a real dairyman. He recommends the best practice for a herd of good cows. There are many things practical and worth while if the cows are good ones and which would not be practical for scrub herds which are milked only as a side issue to the general farm operations. There are many things which it pays, and pays big, to do with a first-class dairy herd. After all, the best of any kind of live stock is the only kind worth having, and when one has the best his sense of good care, good feeding, etc., is materially changed as compared with the care and feed of scrubs.

A dairy farmer who has concluded to have his herd freshen in the fall writes that he has kept the bull up all summer and asks when he should begin breeding. On this editor's father's farm Thanksgiving day was the date for turning the bull loose. This resulted in cows beginning to freshen 10th or 15th of September and the whole herd fresh not later than middle of January. After the herd has been switched to fall calving it is easy to keep it so and the dairy farmer will be greatly pleased. Aside from the usual advantages of the fall fresh cow, there are decided advantages in having the calves dropped at as near the same time as possible, because they are more easy to feed and give proper care.

The editor a few days ago looked over a half dozen Ayrshire bull calves at the Kansas Agricultural College, which calves are selling slowly. These little bulls are from good mothers. Some of these mothers are producing a pound of butter a day in advanced lactation. A record of each milking has been kept, and the farmer who buys a calf can know just exactly what the calf's mother is doing. It is strange that the sale of these young bulls is dragging. This may be on account of the breed, but permit us to say that the farmer who begins grading up his herd with an Ayrshire bull can't go wrong. It's a good breed. The breed is large, the cows good milkers, and the color red and white—the color the Kansas farmer has for years contended he must have when the cattle buyer came around. Kansas dairymen should at once buy this bunch of bull calves.

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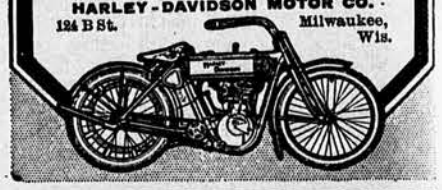

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Some Kansas farmers who have this year erected silos may possibly be disappointed when the old cow turns up her nose at the first feed of silage. But do not worry, she will within a day or two become quite fond of it and eat it more greedily than of green fodder. She will eat more of it than dry feed and have more feed in her system with which to make milk. Silage improves the general tone of the cow, which insures health, easy delivery of calves, and lastly, will give more milk and butter fat per amount of feed eaten than when fed on dry feed.

Get posted on what to look for in a dairy cow. Outward indications are not unfailing signs of a good milker, but appearances go a long ways. To illustrate: You would not expect a cow with an udder not larger than a quart cup to give a three-gallon pail full of milk. Other indications are almost equally unfailing. Look for these things. A wedge shape, both front and side view, rugged spinal column with distinct arch over the hips, thin thighs which curve outward to accommodate a capacious udder, wide springing ribs and a well developed middle section or paunch, where a large amount of food must be assimilated.

Just to show in what extremes dairying is forced upon the people of some states we quote the following from a letter by a Massachusetts dairyman who argues for the soiling system of feeding cows as against the use of pasture: "With a soiling system we are able to save practically all manure produced, and apply some where needed at the proper time. When we walk through pastures we usually find 'bunches' og grass here and there of a very green color, while next 'bunch' is feeble looking, due to the uneven distribution of the manure by the animals, while when we feed soiling crops we distribute the manure evenly and secure an even growth." It is depressing to contemplate that some day the fertile soil of Kansas will be depleted to the point that our cows must be fed in the lot in order that all the manure may be saved.

Wisconsin is a wonderfully developed dairy state. Conditions of climate make it so. There the growing season is long enough to produce feed and the long winter makes it necessary that farmers do something to make money, instead of resting, as seems the desire of farmers in grain growing states. So Wisconsin farmers wisely engaged in dairying. Of a thousand creameries in the state all but 86 are now buying hand separator cream. When the hand separator was sought by the western farmer, dairy experts of wisdom said it would not do, and predicted that farmers of Kansas would some day again haul whole milk. When a whole milk state, as was Wisconsin, uses the hand separator generally it would seem safe to predict that the hand separator in this section had come to stay. The farm separator is a necessary economy and will not be replaced until something more economical is invented.

Defective Udder.

"I have a good Jersey cow which lost three of her teats through carelessness when she had her calf about a year ago, as I suppose. She will be fresh in a few weeks. Is there any show to bring those teats into condition again?"—Philip Graback, La Junta, Colo.

No. If she lost three of her teats about a year ago you could not bring her back now, but might raise a calf on what was left.

Cow Inquiries.

"Will you please state in the columns of your valuable paper (1) the best way to cure a cow of sucking herself; (2) Is there any cure for sweenied hip? and (3) What can be done for a good milk cow which milks hard?"—G. P. C., Rushville, Neb.

Answers: (1) Put a sucking crate on her neck. (2) This will depend upon the cause, how long standing, whether from fracture or not, whether the animal is lame now or not, and whether it is on a cow or horse. If the sweeny is on a cow, write again and describe the case fully. (3) Have a teat dilator used, or you may do it yourself by using a short, self-retaining milking tube occasionally.

State Fair Butter Scores.

At Topeka on the occasion of the State Fair, September 11 to 15, was made the largest show of dairy products ever made in the state, and it is doubtful if a better or larger show was ever made of the dairy products of any western state. This show was made under the supervision of D. M. Wilson, ex-state dairy commissioner. Of the fifty creamery butter makers competing in the pro rata fund for creamery butter in tubs the following scored 90 or higher, the judging being done by Prof. G. L. McKay, of Chicago:

P. L. Reed, Topeka, Kan., 96.75; Geo. M. Fritz, Topeka, Kan., $9.00; S. B. Cooksley, St. Joseph, Mo., 93.00; George Steffenson, Atchison, Kan., 93.00; Producers' Creamery Co., Topeka, Kan., 92.75; H. G. Nelson, Topeka, Kan., 94.50; N. O. Nelson, Topeka, Kan., 96.50; A. Swein, Salina, Kan., 92.00; J. B. Alexander, Denver, Col., 91.00; Topeka Creamery Co., North Topeka, Kan., 92.00; Soren Jensen, Hutchinson, Kan., 92.50; Beatrice Creamery Co., Lincoln, Neb., 95.00; Western Creamery Co., Colorado Springs, Col., 91.00.

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and labor into a bunch of cattle, hogs or sheep and then "lose out" in the SELLING. That's the important part. An extra 5 or 10 cents [or more] per cwt. obtained through GOOD SALESMANSHIP means increased profit to you. The best service costs you no more than the poorest. Therefore

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What the Silo Did.

A Missouri dairy farmer puts the following case to the editor of Wallace's Farmer. This is a case very much like that which thousands of farmers experienced last summer:

"I am renting a 100-acre farm, one mile from town, at $8 per acre. Am in the dairy business and milk seventeen cows, whose milk I sell at the place at sixteen and two-thirds cents per gallon, the man coming from town to get it. As the summer has been hot and very dry, I have had to feed heavy on mill feeds at the rate of $20 per week, with an addition of three tons of alfalfa hay at $18 per ton. I have had to do this up to the present time in order that my cows might not fall off in flesh and fail in the milk flow. As a result, the cows have averaged about 40 gallons per day and are in good shape now, with a good flow of milk. At present I am feeding no hay and using only $15 worth of mill feed per week. You will readily see that for a period of from four to six weeks the milk just about paid my feed bill. Do you think that I did for the best in feeding the extra amount of feed during the drouth? My landlord thinks I did not."

The editor of the Farmer very rightly tells him that he did right in keeping his cows up during the drouth; that, if it did not pay for the time being, it will pay in the future performance of those cows.

Now, says ex-Governor Hoard in Hoard's Dairyman, we wish to quote from our own experience the past summer to show how much more cheaply, and yet just as effectively, the Missouri man could have kept his cows up to their milking standard. On July 8 we opened a summer silo filled with good field corn ensilage. The cows had begun to show signs of shrinkage in their milk. They were given about 15 to 20 pounds of the silage a day, night and morning, at milking time. The result was that they went through that fearful drouth, all through July and a part of August, with scarcely any rain, pastures as dry as tinder, and they did not shrink more than a pound of milk a head. In other herds that had no ensilage, the shrinkage was from 50 to 60 per cent.

The entire cost of growing and making that ensilage was not to exceed $3 a ton, and two tons of it equalled the best ton of timothy and clover mixed hay, but more than that when a juicy succulent feed is needed. The summer silo is the thing to provide for a hard time in summer. We are feeding the ensilage yet, and there will be eight feet of it in the silo when we commence filling with new ensilage. The new will go on top of the old, for the latter will keep indefinitely.

Cream Problems Simplified.

Within recent years it has come to be a common practice for many farmers to dispose of their cream in a sweet condition during the summer months to ice cream factories, hotels or restaurants, and the rest of the season to creameries.

For these trades it is desired that the cream should test about twenty per cent, but often the test may vary upon the method of operating the hand separator. When selling cream to the creameries the price is regulated at so much per pound of butterfat, but for ice cream and hotel purposes it is customary to pay for cream by the gallon. As a consequence many dairymen are at a loss to know which is the most profitable way to dispose of their cream; hence the following general formulas by G. L. Martin, North Dakota Agricultural College, may serve to determine what relative price should be had per pound of butterfat or gallon of cream when sold for the various purposes:

* * *

1.—To find the value of a gallon of cream when butterfat is a certain price per pound:

Formula: Eight times per cent of butterfat in cream times price per pound of butterfat equals price per gallon.

Example: At what price per gallon ought 20 per cent cream to sell when butterfat is worth 30 cents per pound?

Substitute in formula: Eight (weight of a gallon of cream) times 20 per cent butterfat (per cent butterfat in cream) times 30 cents equals 48 cents per gallon.

* * *

2.—To find the relative price per pound for butterfat when the price per gallon of cream is known:

Formula: Price per gallon of cream divided by eight times per cent of butterfat in cream equals price per pound of butterfat.

Example: What price per pound ought butterfat to sell for 80 cents per gallon?

Substitute in formula: Eighty cents divided by eight pounds times 20 per cent equals fifty cents per pound.

* * *

3.—To find the relative price per gallon of cream containing different percentages of butterfat.

Formula: Per cent of butterfat in desired cream times price per gallon of known cream divided by per cent of butterfat in cream of known price equals price per gallon.

Example: If cream containing 20 per cent butterfat is worth 80 cents per gallon, what is 25 per cent cream worth per gallon?

Substitute in formula: Twenty-five per cent times 80 cents divided by 20 per cent equals $1, price per gallon.

* * *

Oftentimes it is customary to estimate the price of cream with varying amounts of butterfat by allowing as many cents per quart as the cream tests in per cent, as:

Fifteen per cent cream, 15 cents per quart, 60 cents per gallon.

Twenty per cent cream, 20 cents per quart, 80 cents per gallon.

Twenty-two per cent cream, 22 cents per quart, 88 cents per [illegible]

Twenty-five per cent [illegible], 25 cents per quart, $1 per gallon.

These general formulas will assist in determining relative values of cream and butterfat when varying in test and price per pound.

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POULTRY

Cold rains are now becoming prevalent and it behooves the poultryman to see that he has dry quarters for his fowls.

It is best not to put sawdust in the poultry house, as it gathers too much moisture and causes dampness. If the fowls eat it it will cause crop-bound chickens, as it is liable to pack in the crop. Dry leaves are much better.

Cabbage is one of the very best vegetables to feed to poultry, as it keeps green a long time and the chickens enjoy picking at it. Hang it up where they can get at it readily without scattering it about or soiling it.

A lousy hen is always a poor layer. Cold weather does not affect these pests, and they keep nice and warm next to the skin of the fowl. The large, gray louse will be found on the skin of the head and neck, while the other varieties prey on the body of the fowl or on the feathers. If you cannot get rid of these blood-suckers, better get rid of the fowls. But they can be got rid of by keeping them well powdered with insect powder.

Better and fresher eggs, and better chickens for the citizens of New York state are promised as the result of the decision of the poultry department of Cornell College to lend a hand to farmers and poultrymen in improving the breed of fowls. The college plans to conduct official tests of fowls from all parts of New York state. They will be shipped to the college at Ithaca, to be trapnested, the eggs hatched, the chicken's leg banded and returned to the owners. The number of eggs laid, their market quality, fertility and constitutional vigor of the stock will be observed. Thus the poultryman will be able to know the productive value of his best fowls, procure offsprings from them, and so mate his flock as to breed the best chickens.

Poultry at the State Fair.

All departments of the State Fair at Topeka were larger than usual this year. The poultry department was no exception. The utility breeds were well represented in quality and quantity, and the fancy varieties were shown in great profusion. There were full classes of Barred, White and Buff Rocks; Silver and White Wyandottes; Buff and White Orpingtons; Buff Cochins, Light Brahmas and Single and Rose Comb Rhode Island Reds.

John O'Gara, Topeka, kept up the reputation he earned last year in Barred Plymouth Rocks, winning again the first prize pen this year, as well as second cockerel. He has some very fine specimens of the breed.

In Silver Wyandottes, L. P. Hubbard, Topeka, took most of the honors, fourteen prizes in all, and this is but a repetition of what he has done in all the state shows and state fairs for several years.

Mrs. A. P. Wolverton, Topeka, had strong competition in Light Brahmas, but she beat her competitors handily, taking first and second pen, first, second and third pullet, second cock, and second and fourth cockerel. In Buff Cochins, as usual, J. C. Baughman, Topeka, took all the honors. No other breeder stands a show with him. He is the Buff Cochin king of the West.

In Rose Comb Rhode Island Reds, F. A. Rehkopf, Topeka, took most of the prizes, viz.: First and fourth cock, first pullet, second cockerel, fourth hen, and second and third pen. The first prize pullet was a remarkably fine bird, competing with the first prize pullet of the Nebraska State Fair and winning over her easily, by the same judge.

The Value of Various Foods for Poultry.

Ground Grain.

The ground grains from corn most frequently used are cornmeal, hominy, chop and corn chop.

Corn chop or cob meal differs little from cornmeal if the cob fiber is not excessive. It may well be used to lighten mashes, but cut clover or clover meal is preferable for this purpose, as ground cobs have no food value.

Hominy chop is a by-product of hominy manufacture and may be used to advantage to give bulk as well as a starch element. It usually sells for less than meal, contains more fats and, in large quantities, in a mash, is not relished by fowls.

The by-products of wheat most largely used as poultry foods are wheat middlings and wheat bran—sometimes called shorts. These are more valuable, pound for pound, than the whole grain; all being by-products from the manufacture of high-grade flours. All are very valuable in a mash and may be used freely. Grades of each differ, as do grades of wheat from which they come. The process of milling is quite elaborate. The center of the grain used for flour is mostly starch; bran is the husk with some of the inner coat clinging to it; while middlings, as the name suggests, is the part between husk and central portion. Middlings is of slightly higher food value, but, because of its fine ground, sticky nature, should be used with bran or shorts or meal. Bran when served in large amounts in any mash irritates the intestinal linings and is quite liable to cause indigestion.

Wheat screenings should be avoided as they are liable to be largely from damaged wheat and dirt of floor sweepings.

Gluten feed and gluten meals are by-products in the manufacture of starch and glucose from corn. Gluten feed is the whole of corn, except the starch, which has been removed, less the hull, and therefore more concentrated. All gluten products, as well as all concentrated by-products, should be fed only in limited quantities with less concentrated mixtures. Their relative low cost makes use often desirable.

Ground oats I consider very valuable in a mash. It should be used like bran, with some precaution as to quantity. There is also a danger of getting a mixture of light oats, mostly hulls, so that their composition is even more varied than whole oats. The best way is to buy a good grade of oats and have them ground.

Buckwheat middlings are usually far richer than wheat middlings and generally much cheaper. We should use largely if supply was available.

Mixed feeds of all kinds are to be used with caution because their composition is uncertain. When shipped in bulk from a distance, they may contain various combinations of oats, cornmeal, brans, middlings, etc.

Linseed meal is a product from the manufacture of oil from flax seed. While it may be freely used in most cases, even as high as 15 per cent, generally it is to be fed in very limited quantities. Being very concentrated, if used largely it will caused bowel trouble. It makes a mash somewhat sticky and fowls do not like it.

Meat Foods.

It is now commonly accepted that meat food in some form is necessary for egg production. The nitrates can be obtained from a vegetable source, but seldom in in meats are more thoroughly and easily digested. Meats can stimulate the ovaries into activity, so their feeding must be judicious.

The amount to be used for egg production depends largely upon kind and composition. The fresh product, green ground bone, is preferable, if a reliable, constant supply can be had, and one can do their own grinding. The fresh, as well as the dried product, differ in the proportion of fat and bone contained, and are economical in the same proportion.

The amount of meat to be fed will also vary as to size of fowls, age and results obtained. Of the fresh product three ounces per day per fowl is enough for the American breeds. When fed only occasionally, more may be given. One must be guided by results and effect on the fowls. Slight indigestion should be a call for a decrease in amount fed.

Many dried meats, meals, scraps, etc., are worthless. The meals, too, must be scrutinized for the same reason as fine feeds—danger of adulteration. They often contain large quantities of ground hide and hoof and hair—useless as food. Nothing but a fresh, clean lot should ever be used. During moult, to the

POWER for the Farm

Easily produced by the New Farm Cushman—the high-powered, light-weight, fuel-saving engine for general farm work. Advanced 4-cycle type. 4 H. P. rating, but will actually develop over 5 horsepower. Automatic throttle governor, with high grade Schebler carburetor, measures out just enough gasoline to do the work required, whether it be a 1 H.P. or a 5 H.P. load. Uses less than

One Pint of Gasoline Per Hour Run Per Horse Power.

Easy to change speed, do it instantly. Weight less than 200 lbs. Mounted on an iron truck, easily pulled from one job to another. Possesses valuable features no other engine has. Guaranteed for 10 years on your farm. Anyone can run it.

Write for free booklet telling all about it.
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The Original Binder Engine

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The concealed edge of the coat is REFLEX. The inside storm lap also has a REFLEX edge assuring *double* protection, making it absolutely

Impossible For Rain To Get In.

When buttoned, looks like an ordinary overcoat. *Light, Durable, Comfortable.* Ask your dealer to show you the *Fish Brand Reflex Slicker* (Pat'd)

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TOWER'S REFLEX TOWER'S REFLEX

This Great Rifle is over 30 inches in length. The barrel is bronze, 16 inches long and finely rifled. It has a built up steel jacket, giving it great strength and durability. The rear sight is open and adjustable and the front is a knife sight. The stock is made of fine walnut with pistol grip as shown. The gun has the hammer action and the shell is automatically thrown out when the barrel is "broken down" for reloading. The gun shoots 22 caliber long or short cartridges.

22 CALIBER HUNTING RIFLE FOR EVERY BOY

This is one of the finest rifles made. I want you to have one. All I ask is a little easy work. Write today and I will tell you about the gun and how to get it.

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PRODUCTION WITH PERMANENCY
Is The Agricultural Problem of Today

Permanent fertility means maintaining the three necessary elements of plant food.

Your subsoil contains inexhaustable potash, Alfalfa supplies the nitrogen,

YOU NEED PHOSPHOROUS

The only permanent and economical source of phosphorous is finely ground phosphate rock.

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Federal Chemical Co.
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We can furnish or make any parts for guns, rifles, revolvers bicycles and motorcycles. Send us your work or write for prices. Expert repairing our specialty.

Graf Gun & Cycle, Works 2205 East Ninth St. KANSAS CITY, MO

American breeds, we feed as much as 15 per cent. At other times, when used in a mash, not over 8 per cent daily, and preferably 5 per cent for stock to be used for breeders.

Green Foods.

Mangle beets, preferably sugar beets, are most satisfactory when fed raw. Beets are easily stored and keep well. Cabbage ranks next. Turnips and potatoes are best cooked before serving, the objectionable flavor of the former thus being removed.

Grit, Shell, Etc.

Grit being the teeth of fowls must, of course, be served abundantly or digestive disorders will occur, and much grain fed is not assimilated and therefore wasted.

Fowls laying only slightly will get sufficient mineral matter from grain and meats to form egg shells, but heavy laying requires an enormous supply of mineral matter. Oyster shells give the most relished form of minerals, but in practice we find it wise to use a form of grit containing lime as well as supplying fine ground green bone in the mash. Five per cent of the latter is about as much as is relished.

Charcoal is a bowel corrective and absorbent of gases. It should be served in hoppers, never in mashes, allowing the fowls to help themselves. Feeding of charcoal is a good precaution against erroneous feeding in general.

Drinks.

Fowls need a liberal supply of good water. Much of good egg food is in a concentrated form and water is needed to help assimilate. Milk is a food as well as a drink, but should never take the place of water. Sour milk is more nitrogenous than sweet milk when fed in this form, and is often all the meat-like food that fowls need for egg production. It should be used carefully.

For ground grains we use three or four articles at least; corn meal, wheat or buckwheat middlings; bran, ground oats and gluten meal in winter, and in summer omit the corn meal. To give all mashes a bulk as well as to increase palatability, we use some mealed clover or alfalfa, the amount depending on the quantity of other green foods supplied and the amount of bulky grain in the mixture.

For meats, only one kind is necessary. Whatever the source of supply, we always keep on hand a good grade of dried scraps.

From one point of view the best poultry feeding is this: Whole or cracked grain, fresh cut bone and green food in abundance. Any other method is a compromise with financial necessity. As a matter of fact, poultry men have to consider the profit side and, where all foods have to be bought, milling and waste products cost so much less than whole grains, considering their relative feeding values, that large use of such is necessary to economy.

However, when much grain can be grown on the farm profitably, the cost of ground by-products may be the greatest. Whole grains seem to be the natural form of poultry foods. Fowls are naturally organized to do all their grinding themselves, and a large per cent of ground grains may cause indigestive disorders. This matter of comparative healthfulness, however, between whole and ground grains has not been satisfactorily settled, so that probably poultry raisers will use that form of food which will give them most satisfactory results, considering economy of cost.

Methods of Feeding.

Methods of feeding matured fowls may be classified as follows:

1. Whole grains, (a) Either partly or entirely in hoppers. (b) Meats and accessories.

2. Wet mash system in which wet scalded or cooked mash is fed once each day, grain being given in litter once or twice.

Disadvantage of a Mash.

(a) Great possibility of faulty application of the mash.

(b) Too concentrated mashes, too large per cent of nitrogenous by-products and meats. In a mash fowls are allowed no choice, but must eat all or go without it altogether.

(c) Mashes served too wet, too sloppy or sour, too hot or cold, may cause indigestion and various bowel troubles.

(d) Too frequent and too much mash at one meal.

The dry mash system reduces to a minimum some of the disadvantages of a moderately wet mash, but also adds some possibilities of error of its own.

Corn.

Corn is the most relished by poultry of all grains. It possesses at least four qualities that make it attractive to fowls; bright color, shape, size and texture; is free from woody husk or fiber, and contains large amounts of oil and sugar, which add attractiveness and flavor. In winter corn can be fed largely but not as a whole ration because it is too fattening in nature for egg production or growth of lean meat. Corn is usually the cheapest grain by the 100 pounds, but not always in feeding value as compared with other grains. It gives color to yolks of eggs and oiliness to skin and plumage.

Wheat.

There is no better grain for poultry than wheat. The large consideration against it of late is its relative high cost. Size, color, shape and freedom from useless fiber are in its favor. While not so much of a fattening food as corn, because of the absence of oils, it is still too starchy and fattening for contained egg production or best growth when fed alone. Wheat fed largely gives a lighter color to yolks than corn

Oats.

Oats would have the greatest value of any common grain but for its large fibre contents and the toughness of the hull. There is often great difference in the quality of oats. No grain varies so much in weight per bushel. Poor oats, light oats, because of the large per cent of hull compared with the kernel, are almost worthless as food. The feeding value of oat hulls is about the same as oat straw, and for fowls is not only indigestible, but a great tax upon the system. As a poultry food, the great value of oats lies in the large proportion of mineral matter contained. Fowls fed oats freely should be kept active and liberally supplied with grit. Oats are not liked very well and we have found it most practical to feed it as a light meal, when the price has made it economical to feed it at all. Oats should be soaked 24 hours before feeding. However, dry oats, in small quantities, with other grains, are all right, but soaked or scalded oats are the best.—Colorado State Bulletin.

The Secret of Raising Plump Poultry

Over 18 years ago Dr. Hess set about tackling the problem of wasted nutrition—one of the drawbacks that cost poultry raisers thousands of dollars annually. After prolonged feeding and scientific experiments in his laboratory he introduced Dr. Hess Poultry Pan-a-ce-a, a preparation consisting of highly concentrated tonics, which enable fowl to extract the largest possible amount of nutriment from their ration and convert it into eggs, flesh, blood and feathers. In other words,

Dr. Hess Poultry Pan-a-ce-a

solved the digestion problem, carrying out "The Dr. Hess Idea" that the more food digested, the more went to the system-building and less to waste. At this time of year, when cholera is prevalent among poultry, Dr. Hess Pan-a-ce-a is particularly beneficial, as it strengthens and tones up the system and helps fowl ward off disease. It also cures Roup, Gapes and other poultry ailments and keeps hens in splendid condition for laying winter eggs. A penny's worth feeds thirty fowl per day. Sold under this guarantee:

Our Proposition

You buy Dr. Hess Poultry Pan-a-ce-a of your dealer. If it fails to make your hens lay more eggs and keep your poultry healthy, he is authorized by us to refund your money. 1½ lbs., 25c., mail or express, 40c.; 5 lbs., 60c.; 12 lbs., $1.25; 25-lb. pail, $2.50; except in Canada and the extreme West. If your dealer cannot supply you, we will. Send 2 cents for Dr. Hess' 48-page Poultry Book, FREE.

DR. HESS & CLARK
Ashland, Ohio

Dr. Hess Stock Tonic A digestive tonic of great value. Especially helpful to hogs, helping them to digest more food and put on flesh very rapidly. Keeps the stomach clean—wards off cholera—expels the worms. It is a sure flesh and milk producer. 100-lb sack, $5.00; 25-lb. pail, $1.60. Except in Canada and extreme West and South. Sold under a written guarantee.

FREE from the 1st to the 10th of each month—Dr. Hess (M.D.,D.V.S.) will prescribe for your ailing animals. 96-page Veterinary Book Free for the asking. Mention this paper and enclose 2c. stamp.

INSTANT LOUSE KILLER KILLS LICE

FARMERS' INSTITUTE DATES.

There are more Farmers' Institutes in Kansas than any other state, and there is a larger bona fide membership of farmers than in any other state. The Kansas State Agricultural College is authorized by law to direct these Farmers' Institutes, and for some years it has been the desire and aim of the college to so strengthen these institutes as to make them in reality avenues of instruction, practical schools for farmers. There are about 340 of these institutes now, with 680 active officers, and about 200 of these institutes will hold their meetings between now and January. The following circuits are now announced by the Agricultural College.

SOUTHEASTERN CIRCUIT NO. 1.

Cherryvale, Sept. 30; Mound Valley, Oct. 2; Edna, Oct. 3; Baxter Springs, Oct. 4; Galena, Oct. 5; Savonburg, Oct. 6-7; Moran, Oct. 9; Parker, Oct. 10. Speakers—Mr. Holsinger and Mr. Walker.

SPECIAL CIRCUIT NO. 1.

Denison, Oct. 3-4; Indian Creek, Oct. 4-5. Speakers—Mr. Gearhart and Mrs. Simmons.

SPECIAL CIRCUIT NO. 2.

Wakefield, Oct. 3-4; Wayne, Oct. 4-5; Haddam, Oct. 6-7. Speakers—Mr. Hine and Miss Nash.

SOUTHERN CIRCUIT NO. 1.

Mulvane, Oct. 9; Conway Springs, Oct. 10; Arkonia, Oct. 11-12; Attica, Oct. 13; Oxford, Oct. 14; Sedgwick, Oct. 16. _____, Oct. 17; Inman, Oct. 18; Canton, Oct. 19. Speakers—Mr. Hine and Mr. Leidigh.

SOUTHEASTERN CIRCUIT NO. 2.

Burlingame, Oct. 17; Toronto, Oct. 18; Humboldt, Oct. 19; Chanute, Oct. 20; Morehead, Oct. 21; Kincaid, Oct. 23; Colony, Oct. 24; Gridley, Oct. 25; Madison, Oct. 26; Olpe, Oct. 27. Speakers—Mr. Holsinger and Mr. Conn.

NORTHEASTERN CIRCUIT NO. 3.

Hoyt, Oct. 23; Soldier, Oct. 24; Onaga, Oct. 25; Westmoreland, Oct. 26-27; Olsburg, Oct. 28.

SOUTHEASTERN CIRCUIT NO. 3.

Olathe, Oct. 25-26; Garnett, Oct. 27-28; Erie, Oct. 30-31; Iola, Nov. 1-2; Mound City, Nov. 3-4; Paola, Nov. 6-7; Ottawa, Nov. 8-9. Speakers—Mr. Wheeler and Miss Brown.

SOUTHEASTERN CIRCUIT NO. 4.

La Cygne, Oct. 23; Pleasanton, Oct. 24-25; Arcadia, Oct. 26; Pittsburg, Oct. 27; Cherokee, Oct. 28; McCune, Oct. 30; Galesburg, Oct. 31; Walnut, Nov. 1; Hiattville, Nov. 2; Uniontown, Nov. 3; Fulton, Nov. 4. Speakers—Mr. Walker and Mr. Dickens.

NORTHWESTERN CIRCUIT NO. 1.

Minneapolis, Oct. 24-25; Beloit, Oct. 26-27; Excelsior, Oct. 28; Stockton, Oct. 30-31; Osborne, Nov. 1-2; Cawker City, Nov. 3-4. Speakers—Mr. Gearhart and Dr. McCampbell.

WESTERN CIRCUIT NO. 1.

Tescott, Oct. 30; Sylvan Grove, Oct. 31; Lucas, Nov. 1; Waldo, Nov. 2; Natoma, Nov. 3; Plainville, Nov. 4; Palco, Nov. 6; Hill City, Nov. 7-8; Moreland, Nov. 9; Hoxie, Nov. 10-1; Colby, Nov. 13-14; Grinnell, Nov. 15; Quinter, Nov. 16; WaKeeney, Nov. 17-18. Speakers—Mr. Umberger and Mrs. Simmons.

NORTHEASTERN CIRCUIT NO. 2.

Valley Falls, Nov. 6; Nortonville, Nov. 7; Potter, Nov. 8; Huron, Nov. 9; Denton, Nov. 10; Severance, Nov. 11; Robison, Nov. 13; Morrill, Nov. 14; Sabetha, Nov. 15; _____, Nov. 16; Centralia, Nov. 17. Speakers—Mr. Holsinger and Mr. Wright.

NORTHWESTERN CIRCUIT NO. 2.

Clay Center, Nov. 14-15; Clyde, Nov. 16-17; Scandia, Nov. 18; Mankato, Nov. 20-21; Smith Center, Nov. 22-23; Phillipsburg, Nov. 24-25; Lenora, Nov. 27; Logan, Nov. 28; Kirwin, Nov. 29. Speakers—Mr. Crabtree and Dr. McCampbell.

NORTH CENTRAL CIRCUIT NO. 1.

Hanover, Nov. 20; Hollenberg, Nov. 21; Washington, Nov. 22-23; Belleville, Nov. 24-25. Speakers—Mr. Conn and Miss Brown.

NORTHEASTERN CIRCUIT NO. 3.

Meriden, Nov. 22; McLouth, Nov. 23; White Church, Nov. 24; Linwood, Nov. 25; _____, Nov. 27; _____, Nov. 28; _____, Nov. 29. Speakers—Mr. Holsinger and Miss Nash.

SOUTHEASTERN CIRCUIT NO. 5.

Fort Scott, Nov. 6-7; Girard, Nov. 8-9; Altamont, Nov. 10-11; Columbus, Nov. 13-14; Independence, Nov. 15-16; Sedan, Nov. 17-18; Fredonia, Nov. 20-21. Speakers—Mr. Hine and Mr. Call.

CENTRAL CIRCUIT NO. 1.

Solomon, Dec. 4; Lindsborg, Dec. 5; Geneseo, Dec. 6; Little River, Dec. 7; Raymond, Dec. 8; Sterling, Dec. 9; Nickerson, Dec. 11; Tampa, Dec. 12; White City, Dec. 13; Alta Vista, Dec. 14. Speakers—Mr. Holsinger and Miss Nash.

CENTRAL CIRCUIT NO. 2.

Alma, Dec. 4-5; Lawrence, Dec. 6-7; Lyndon, Dec. 8-9; Admire, Dec. 11; Council Grove, Dec. 12-13; Burdick, Dec. 14; Hope, Dec. 15; Woodbine, Dec. 16; Chapman, Dec. 18; Junction City, Dec. 19-20. Speakers—Mr. Hine and Mr. Gearhart.

SOUTHERN CIRCUIT NO. 1.

Garden City, Dec. 4-5; Lakin, Dec. 6-7; Syracuse, Dec. 8-9; Johnson, Dec. 11; Richfield, Dec. 12-13; Hugoton, Dec. 14; New Ulysses, Dec. 15; Santa Fe, Dec. 16; Cimarron, Dec. 18-19; Dodge City, Dec. 20-21. Speakers—Mr. Umberger and Mrs. Simmons.

SOUTH CENTRAL CIRCUIT NO. 1.

Lyons, Dec. 4-5; McPherson, Dec. 6-7; Great Bend, Dec. 8-9; Wichita, Dec. 11-12; Wellington, Dec. 13-14; Newton, Dec. 15-16; Cottonwood Falls, Dec. 18-19; Emporia, Dec. 20-21. Speakers—Mr. Crabtree and Mr. Conn.

NORTHEASTERN CIRCUIT NO. 4.

Oskaloosa, Dec. 4-5; Tonganoxie, Dec. 6-7; Effingham, Dec. 8-9; Troy, Dec. 11-12; Hiawatha, Dec. 13-14; Seneca, Dec. 15-16; Goff, Dec. 18; Holton, Dec. 19-20. Speakers—Mr. Wheeler and Miss Brown.

NORTHCENTRAL CIRCUIT NO. 2.

Marysville, Dec. 12; Blue Rapids, Dec. 13-14; Frankfort, Dec. 15-16. Speakers—Mr. Miller and Miss Dow.

SOUTHEASTERN CIRCUIT NO. 6.

Peabody, Nov. 15-16; Yates Center, Nov. 17-18; Eureka, Nov. 20-21; Howard, Nov. 22-23; Severy, Nov. 24; Leon, Nov. 25; Augusta, Nov. 27; Whitewater, Nov. 28; Lincolnville, Nov. 29. Speakers—Mr. Wheeler and Mr. Gearhart.

Probably 25 other meetings will yet be arranged for, and these later circuits will be announced in about two weeks.

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GOOD TO LAY, GOOD TO EAT, AND GOOD TO LOOK AT.

White P. Rocks hold the record for egg laying over all other breeds. 289 eggs each in a year for eight pullets is the record, which has never been approached by any other variety. I have bred W. P. Rocks exclusively for 20 years and have some fine specimens of the breed. I sell eggs at "live and let live" prices, $2 per 15, $5 per 45 and I pay expressage to any express office in the United States.

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YOU get practical hints for storing and handling ear corn and small grain. Our free book gives plans, lumber bills and itemized cost of building cribs and granaries—also full information about

MARSEILLES PORTABLE ELEVATORS AND WAGON DUMPS

Underneath or Overhead Wagon Dumps in all steel or wood. Elevator Outfits, Crib or Horizontal Conveyors in all steel or wood. Our steel Tubular Elevator is strongest and fastest made for all small grain and flax. Complete line of spouts, belt attachments, jacks and horse powers. We can furnish an outfit for any style of granary or crib whether large or small.

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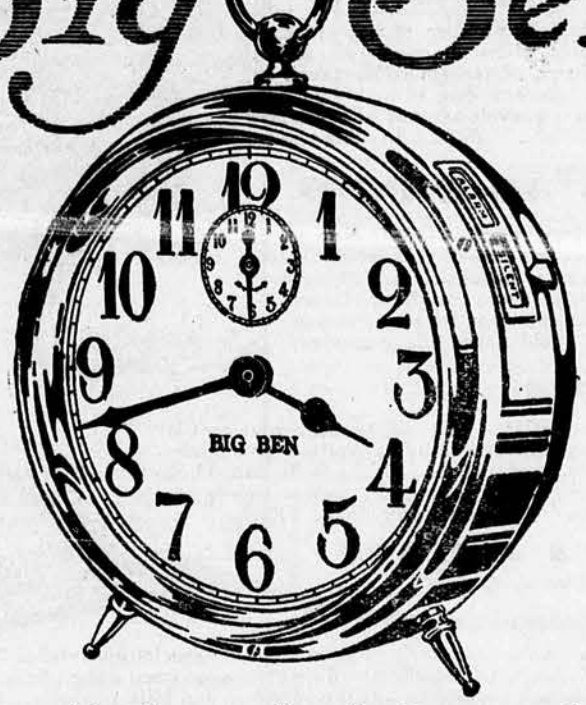

If you'd rise early—just say when
And leave your call with him—Big Ben

Put jolly old Big Ben on the job. Let him solve your early rising problem.

You have a rising problem, if you put your whole heart in your work.

For if you are a heavy worker, you require heavy sleep and plenty of it.

So leave your call with Big Ben. Go to sleep and sleep your best. Forget the rising hour.

His merry morning call will call you every day at any time you say. It will keep on calling until you're wide awake.

Big Ben stands 7 inches tall. He's massive, well poised, triple plated.—His face is frank, open, easy to read—his keys large, strong, easy to wind.

He's sold by jewelers only, the price is $2.50 anywhere.

If you cannot find him at your jeweler, a money order sent to his designers, *Westclox, La Salle, Illinois*, will bring him to you express charges prepaid.

WHO PAYS YOUR TAXES?

YOU DO—of course. Not the dealer or the jobber. Instead you pay theirs—by the profits you pay them. *Now I'm going to help you pay yours.* I've got a proposition to make to you that's as good as a gift of from $25 to $300 according to size engine you buy. It will pay all or the greater part of your taxes. THAT'S EXACTLY WHAT THIS OFFER MEANS and I say it's worth the time of every farmer in the United States to write me for full information. I'm going to place

10 Galloway Engines in Every Township

in the country and just double my factory capacity. Volume is what I want and to do so I'm making the Greatest Engine offer you ever heard of. I've reduced the prices of all the famous Galloway Gasoline Engines so low that all other manufacturers and dealers are on the run—they don't know where to turn. They can't beat me in quality—they never could beat me in low, reasonable prices—and now they're up in the air for fair since I began making this Extra Special 10-in-a-township offer. Write me today and learn all about these remarkable price reductions—send me your name and address now and get the full details of the Greatest Engine Offer ever made. I'll save you from $25 to $300—and actually pay your taxes. Write at once, you can't afford to delay.

1½ HP
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SILO

SALESMEN WANTED. Each to take charge of a block of Kansas or Oklahoma territory. Man should have acquaintance among farmers in his block. When writing, give all the reason you can why we should employ you. THE CONTINENTAL CREAMERY COMPANY, Topeka, Kansas.

Underground Silo.

A correspondent says he has seen enough of the silo to convince him that he must have one before this time next year. He asks why the underground silo is not a success.

The first silos the editor knew anything about were underground. These were more like a cellar than any other structure with which they could be compared. The depth was about 10 feet and usually built in connection with a bank barn, and the bottom of silo opening was on a level with basement floor of barn. These silos were not successful. They were not deep enough to insure ensilage setting well. The owners, when filling, tramped the ensilage with horses, yet could not get the desired packing. Too, the exposed surface was too large and loss of ensilage from exposure to air too great.

When an underground silo of proper proportions is built it is so deep as to make the removal of ensilage laborious and expensive. We have heard of a gasoline engine being used in hoisting ensilage from such silo. In underground silos there is considerable danger of carbon dioxide, a dangerously poison gas, accumulating. This gas is produced immediately upon beginning to fill the silo. It is caused by fermentation of the ensilage, but when fermentation has ceased, danger no longer exists.

The usual way of filling an underground silo is to start the cutting machinery, and let it run from 15 to 30 minutes before any one enters the pit. To be sure that there is no carbon dioxide left to endager life, it is well to lower a lighted lantern into the silo. If the flame continues to burn, there is sufficient oxygen to sustain life, and the silo may be entered.

FARM POWER

DEVOTED TO GASOLINE ENGINES, TRACTORS TRUCKS, AUTOMOBILES AND MOTORCYCLES

The interest shown in gasoline engines at the Kansas State Fair, Topeka, can mean only one thing, viz., that the gasoline engine is soon to become a part of the well regulated farm equipment. This applies not alone to the small stationary engine, but to the 30-horsepower traction engine. The interested public kept the tractors going round and round, each in its path, from early morning until late evening. To the man who, as a boy hauled coal and water for a steam thresher, it seems strange to see a gasoline or coal oil engine running a separator, with no more labor on the part of the engineer than has the driver of an automobile whisking over the road at the rate of 25 miles an hour. The gas threshing rig is certainly an innovation which has come to stay.

That electric lighting of the farm is not far in the future was demonstrated at the recent Kansas State Fair, held at Topeka. A concern showing a gasoline engine to which was attached a small generator, attracted more attention than any other one exhibit. The rig exhibited generated the electricity necessary for seventy-two 16candler-power incandescent lights. The equipment was so small, simple and compact, and its operation so easy as to be marvelous. This rig gives to the farm and village home a luxury which heretofore has been confined to the cities, and marks one more step toward making the farm and village home more attractive than that of the city dweller. Keep in mind that the gasoline engine already having a multiplicity of farm duties can as well furnish the lights, also.

The automobile and motorcycle displays at the Kansas State Fair, Topeka, and the interest shown in the same, is convincing enough that the public is interested from a utility point of view. The hundreds of automobiles and motorcycles carrying fair visitors from far out in the state demonstrates the dependence placed in and the confidence bestowed in the ability of these machines to do the work expected of them. Many people are buying for pleasure, but more are buying for the work the machines will do. The automobile trucks commanded the major portion of the attendance. The light truck—a machine which will carry a load of 1,500 to 2,000 pounds—is the truck sought for country and small town. These trucks are now constructed on a practical basis, and with these machines a lot of business will in a few years be done.

No Radiators Need Freeze.

With freezing weather approaching, many inquiries are received for an anti-freezing solution. The following mixture of denatured alcohol with water enables users of autos or gasoline engines to cease worrying lest their radiators freeze:

Proportion of Water	Proportion of Denatured Alcohol	Renders Freezing Point by Thermometer
95 per ct.	5 per ct.	25 deg. above
85 per ct.	15 per ct.	11 deg. above
80 per ct.	20 per ct.	5 deg. above
70 per ct.	30 per ct.	5 deg. above
65 per ct.	35 per ct.	16 deg. above

By the Quarter Section Farmer.

Speaking of the use of the farm tractor, L. W. Ellis, formerly traction plowing expert for the United States Department of Agriculture, says that farmers will find little time to do outside work because continually, by applying more power to every acre of ground, he will have more crops to handle. He will intensify his farming by baling his hay and straw, shelling and grinding his corn, cutting up his fodder, and carrying every crop along to as highly a manufactured state as it can be carried on the farm. That is the great trouble with our farming at present, as well as with our manufacturing. We do not create enough value out of our raw materials. We use power abundantly to dig a lot of wealth out of our soil and our mines, but we don't apply enough power in turning the raw material into highly finished product. The farm tractor affords the opportunity to do things better on the farm, and is practicable if the right man is at the steering wheel.

Use of Small Tractor.

The farm tractor is all right for the big farms in Dakota and Montana—nobody doubts that. People are more apt to disagree when the claim is made that the farm tractor is all right for the 160-acre farmer, but regarding adaptability to the small farm, the following by L. W. Ellis, formerly traction engine expert of the United States Department of Agriculture, is of interest:

"Suppose he has 40 acres of corn, 40 acres of hay and 40 acres of small grain, and plows 80 acres a year.

"Starting with the corn crop, he can disc the ground before he plows it. He can wait until the ground gets dry and warm on top before he starts. Then, when it is disked up and plowed under, it will be many degrees warmer down where the seed goes. The loose soil and chopped trash will mold nicely in with the subsurface soil, much better than if the crust and coarse trash were dumped down on top of the hard layer under the plow share. He can wait to begin operations until his ground is in fit shape to plow, because he has the power at his command to catch up with his neighbors who had to start early for lack of horse flesh.

"He will want a tractor that will develop the power of 12 to 15 horses on the drawbar, day in and day out. That will cost him about $1,600. A smaller one might do, but the smaller they are the more they cost in proportion to horse power, and he will find that the ability to rush work when he wants to rush it will pay in the end. That size will handle five or six 14-inch stubble or general purpose plows at a depth of 7 or 8 inches, and practically plow out its own width. It will net him about ¾ miles of plowing an hour, after counting out turns and stops, and if he puts in 10 hours a day in the field on the days he can work, his corn ground will be plowed in a week. The previous disking will be a matter of two days, and the first disking after plowing can be done with a disc hitched to the rear of his plows. Another two days with disc and harrows will have him an ideal seed-bed and save a lot of cultivation

"The tractor will haul his corn binder—two if he is able to borrow another one; run his ensilage cutter, shredder, sheller or grinder; and haul the surplus corn to town at a lively gait. The saving in horse feed will give him a larger surplus to market for cash and still leave him the usual amount to turn into beef and manure. When you figure that for every able-bodied work horse you feed the crops from about five acres to him and the breeding horse stock, the tractor's possibilities in the way of increasing the cattle, hogs and soil fertility begin to warrant a little figuring.

"Next the hay crop. With the new hitches that are on the market, the tractor can pull two mowers as easily as one, and there is nothing but the lack of a little ingenuity to hinder the use of the engine ahead of a big hayrack and loader. The horses that are kept for the easy jobs of planting and cultivating the corn can do the raking and tedding, and leave the heavy work for the machine that doesn't get tired. The baling press run by the tractor will either cut down the space needed to store the hay crop, and reduce the cost of marketing, or it will add to the sale value of the crop—probably all three, and the tractor will take a lot of hay on one trip to town.

"The plowing for the small grain can be done whenever the time is ripe, and done quickly. Every job connected with the crop can be done with the tractor—plowing, disking, packing, drilling, harvesting, threshing, hauling and grinding—at a saving which amounts to an enormous added percentage of profit on the cost of production.

"After the crops are disposed of, the farmer still has uses for his engine. It will probably be too big for profitable use in pumping water, but it will saw the winter's wood supply in a hurry. It will tickle the road supervisor when hitched head of a road grader. It will haul the heavy supplies to the farm. It will do any of the big jobs that are constantly being left undone for lack of power. It will balk sometimes, and sometimes a trifling part will break at the wrong time, but where is the farmer who has not had a sick horse, or even a dead one, on his hands when he needed power the most?"

The GRANGE

DIRECTORY OF THE KANSAS STATE GRANGE.

OFFICERS.

Master.....George Black, Olathe
Overseer.....Albert Radcliff, Topeka
Lecturer.....A. P. Reardon, McLouth
Secretary.....O. F. Whitney, North Topeka
Chairman of Executive Committee.....
.....W. T. Dickson, Carbondale
Chairman of Legislative Committee....
.....W. H. Coultis, Richland
Chairman of Committee on Education..
.....E. B. Cowgill, Lawrence
Chairman of Insurance Committee.....
.....I. D. Hibner, Olathe
Chairman of Woman's Work Committee

Discuss Important Grange Questions.

Valley Grange, No. 736, at a recent meeting discussed whether or not it was good policy for the Grange to employ professional lobbyists to secure congressional legislation for the Grange. Also, the effect on the Grange of taking in members who are not farmers, as the custom is in some sections of the east. Another question discussed was how to get members, then how to keep them and secure their regular attendance. It was concluded that a good program and something to eat brings out all the Grange, and many outsiders show a willingness to be invited.—E. Gascke.

To the Deputy Masters and All Other Interested Patrons.

The Kansas State Grange will meet in Topeka in annual session the second Tuesday of December, and continue for three days, 12, 13 and 14.

The delegates to the county meeting are to be elected the first regular meeting in September, and the delegates so elected shall meet at the county seat or such place as may be designated the third Saturday in October and elect from fourth degree members delegates and alternates to the annual meeting.

The state secretary will notify the deputy masters of each county the number of delegates that the county is entitled to.

Remember, that these delegates so selected will constitute the legislative body of the Kansas State Grange, and due care should be exercised in choosing your representatives.

Energetic, earnest and thoughtful patrons, who will signify their intention of going, should be elected. There is much good work to be done at the coming session, and a full delegation from each county is desired.—O. F. Whitney, Secretary Kansas State Grange.

The fourth annual Grange fair, held at Westphalia, Kan., closed Thursday, after three days of pleasure and profit for all who attended. This fair is under the direct management of the Grange, and under the masterful hand of President Peterman, ably assisted by Secretary Bierly and others. It has made a marked progress over all previous records. Considering the very unfavorable season, the grain exhibits were more than satisfactory, including corn, wheat, rye, Kafir corn, cane, milo maize, etc., which was followed by a close second in the vegetable display. The fruits also came in for their share and were exceptionally good. The domestic science department, always one of the most popular, and justly so, was also well supported and strong competition prevailed in all classes—each exhibitor testing her skill and tastes against her neighbor's. The stock exhibits were limited to horses and mules, but they more than made up in quality what was lacking in quantity. All classes were the principal speakers. The folmade competition keen. These classes covered everything from the sucking colt to the matched driving and draft teams, stallions and jacks. Out-of-town speakers addressed the crowds in the afternoon. Tom Daggart of Kansas City, Kan., and U. S. Guyer, both candidates for nomination for member of Congress, were the prinipal speakers. This followed the stock judging and was followed by a ball game. Other amusements, such as fancy driving and riding contests, carnival company, etc., were provided, which kept the time full from morning till night. A definite program was mapped out and strictly adhered to and with the best of order prevailing, the fair closed Thursday with an average attendance of 1,500 to 2,000 people, and proved a grand success in bringing the people together in friendly competition, arousing their ambition for better stock, grain, etc., which is sure to bring better homes, better educational facilities and consequently better citizens.—George B. Kirkpatrick, Manhattan, Kan.

OFFICIAL KANSAS GRADES.

Under provisions of chapter No. 222, Laws of 1907, the Grain Grading Commission appointed under said act, met pursuant to published call at the Governor's office in Topeka, Kansas, on the 31st day of July, 1911, and established the following grades of grain, to be known as Kansas Grades, to be in effect on and after the 1st day of August, 1911.—J. G. Maxwell, McPherson; Thomas Page, Topeka; A. T. Rogers, Beloit, Grain Grading Commission.

Rule 1.—Wheat which has been subjected to "scouring," or to some process equivalent thereto, or containing a n objectionable amount of rye, shall not be graded higher than No. 3.

GENERAL.

Rule 2.—All wheat, corn, oats, barley, rye and Kafir corn that is in a heated condition, souring, or too damp to be safe for warehouse, or that is badly bin-burnt, fire-burnt, fire-smoked, or badly damaged, dirty, or where different kinds of grain are badly mixed with one another, shall be classed "Sample Grade," and the inspector shall make notation as to quality and condition; and whenever it is evident that wheat screenings or other dirt has been mixed into wheat, the same shall not be graded better than Sample Grade.

LIVE WEEVIL.

Rule 3.—Wheat containing live weevil shall not be graded, but the inspector shall give the variety of wheat and test weight, and note "Live Weevil."

PLUGGED CARS.

Rule 4.—Inspectors shall in no case make the grade of grain above that of the poorest quality found in any lot of grain inspected, where it has evidently been "plugged" or otherwise improperly loaded for the purpose of deception.

REASONS FOR GRADING.

Rule 5.—All inspectors shall make their reasons for grading below No. 2 fully known by notation on their report. The weight alone shall not determine the grade.

THE WORD "NEW."

Rule 6.—The word "New" shall be inserted in each certificate of inspection of newly harvested wheat until September 1 of each year.

REINSPECTIONS.

Rule 7.—All orders for reinspection must be in the office within the first forty-eight hours following the original inspection, and in no case will grain be reinspected after a lapse of three days from the date of the original inspection.

CLAIMS.

Rule 8.—All claims for damages against the inspectors or weighmasters must be filed in the office before the grain has left jurisdiction of this department.

MIXED WHEAT.

Rule 9.—In case of an appreciable mixture of hard and soft wheat, red and white wheat, durum and spring wheat, dark hard and yellow hard wheat, with each other, it shall be graded according to quality thereof and the kind of wheat predominating, shall be classed No. 1, 2, 3 or 4 Mixed Wheat, and the inspector shall make notation describing its character.

SULPHURED GRAIN

Rule 10.—All oats or barley that has been chemically treated with sulphur shall be classed as "Sulphured Grain," and inspectors shall note same on certificate of inspection.

NOTICE.

These official Kansas Grades are given us by the Grain Grading Commission, and will be the basis of all inspections made. Misunderstandings can be avoided by interested parties making themselves familiar with these rules. D. R. GORDEN, Chief Inspector.

HARD WINTER WHEAT.

No. 1 Dark Hard.—Shall be hard winter wheat of the dark variety, sound, sweet, dry, plump and clean, and shall weigh not less than sixty-one pounds to the bushel.

No. 2 Dark Hard.—Shall be hard winter wheat of the dark variety, sound, sweet, dry, plump and clean and shall weigh not less than fifty-nine pounds to the bushel.

No. 3 Dark Hard.—Shall be hard winter wheat of the dark variety, sound, sweet, dry; may be some bleached, but not clean or plump enough for No. 2, and shall weigh not less than fifty-six pounds to the bushel.

No. 4 Dark Hard.—Shall be hard winter wheat of the dark variety, tough, sprouted, or from other causes so badly damaged as to render it unfit for No. 3.

HARD WINTER WHEAT.

No. 1 Yellow Hard.—Shall be hard winter wheat of the yellow variety, sound, sweet, dry, plump and clean, and shall weigh not less than sixty-one pounds to the bushel.

No. 2 Yellow Hard.—Shall be hard winter wheat of the yellow variety, sound, sweet, dry, plump and clean, and shall weigh not less than fifty-nine pounds to the bushel.

No. 3 Yellow Hard.—Shall be hard winter wheat of the yellow variety, sound, sweet, dry, may be some bleached, but not clean or plump enough for No. 2, and shall weigh not less than fifty-six pounds to the bushel.

No. 4 Yellow Hard.—Shall be hard winter wheat of the yellow variety, tough, sprouted, or from any cause so badly damaged as to render it unfit for No. 3 Hard.

KANSAS TURKEY WHEAT.

Hard winter wheat of the long berry, dark, amber-colored type of the Turkey varieties shall be classed as No. 1 Kansas Turkey Hard Wheat, No. 2 Kansas Turkey Hard Wheat, No. 3 Kansas Turkey Hard Wheat, No. 4 Kansas Turkey Hard Wheat, and inspection certificates issued accordingly; and the other specifications for each of these grades shall be the same as for Kansas Hard Winter Wheat of the same grade.

RED WINTER WHEAT.

No. 1 Red Winter.—Shall be red winter wheat, sound, sweet, dry, plump and clean, and shall weigh not less than sixty pounds to the bushel.

No. 2 Red Winter.—Shall be sound, sweet, dry, plump and clean, may contain not more than 5 per cent of hard winter or white winter wheat, and weigh not less than fifty-eight pounds to the bushel.

No. 3 Red Winter.—Shall be sound, sweet, dry, may be some bleached, but not clean or plump enough for No. 2, may contain not more than 8 per cent of hard winter or white winter wheat, and shall weigh not less than fifty-five pounds to the bushel.

No. 4 Red Winter.—May be tough, skinburned or dirty, may contain not more than 10 per cent of hard winter or white winter wheat; must be cool, and shall weigh not less than fifty pounds to the bushel.

WHITE WINTER WHEAT.

No. 1 White Winter Wheat.—Shall be sound, sweet, dry, plump and clean, and shall weigh not less than fifty-eight pounds to the bushel.

No. 2 White Winter Wheat.—Shall be sweet, sound, dry and clean, and not contain more than 8 per cent of red winter or hard winter wheat, and shall weigh not less than fifty-six pounds to the bushel.

No. 3 White Winter Wheat.—Shall be sound, sweet, dry, may be some bleached, but not clean or plump for No. 2, and contain not more than 10 per cent of red winter or hard winter wheat and shall weigh not less than fifty-three pounds to the bushel.

No. 4 White Winter Wheat.—Shall include tough, musty, dirty white winter wheat, not to contain more than 10 per cent of red winter or hard winter wheat, and shall weigh not less than fifty pounds to the bushel.

NORTHERN HARD SPRING WHEAT.

No. 1 Northern Hard Spring.—Must be northern-grown spring wheat, sound, sweet, dry and clean, more than 50 per cent of the hard varieties, and weigh not less than fifty-seven pounds to the bushel.

No. 2 Northern Hard Spring.—Must be northern-grown spring wheat, not clean, sweet or sound enough for No. 1, more than fifty per cent of the hard varieties, and weigh not less than fifty-six pounds to the bushel.

No. 3 Northern Hard Spring.—Must be northern-grown spring wheat of inferior quality, more than 50 per cent of the hard varieties, and weigh not less than fifty-four pounds to the bushel.

No. 4 Northern Hard Spring.—Shall include all inferior, shrunken, northern-grown spring wheat that is badly damaged, more than 50 per cent of the hard varieties, and weigh not less than forty-nine pounds to the bushel.

SPRING WHEAT.

No. 1 Dark Spring.—Shall be spring wheat of the dark variety, sound, sweet, dry, plump and clean, and shall weigh not less than fifty-nine pounds to the bushel.

No. 2 Dark Spring.—Shall be spring wheat of the dark variety, sound, sweet, dry, clean and of good milling quality, and shall weigh not less than fifty-seven pounds to the bushel.

No. 3 Dark Spring.—Shall be spring wheat of the dark variety, sweet, but may be some bleached and shrunken, and shall not weigh less than fifty-five pounds to the bushel.

No. 4 Dark Spring.—Shall include spring wheat of the dark variety, tough, musty, sprouted, or that which from any cause is rendered unfit for No. 3, and shall weigh not less than fifty pounds to the bushel.

WHITE SPRING WHEAT.

The grades of Nos. 1, 2, 3 and 4 White Spring Wheat shall correspond with the grades Nos. 1, 2, 3 and 4 dark spring wheat, except they shall be of the white variety.

DURUM (MACARONI) WHEAT.

No. 1 Durum.—Shall be bright, sound, sweet, dry and clean durum wheat, and shall weigh not less than sixty pounds to the bushel.

No. 2 Durum.—Shall be sound, sweet, dry and clean durum wheat, and shall weigh not less than fifty-eight pounds to the bushel.

No. 3 Durum.—Shall be dry, sweet, may be some bleached or from any cause unfit for No. 2, and shall weigh not less than fifty-five pounds to the bushel.

No. 4 Durum.—Shall include durum wheat that is tough, bleached, or shrunken, and shall weigh not less than fifty pounds to the bushel.

PACIFIC COAST RED AND WINTER WHEAT.

No. 2 Pacific Coast Wheat.—Shall be dry, sound, clean, may be tainted with smut and alkali, and weigh not less than fifty-eight pounds to the bushel.

No. 3 Pacific Coast Wheat.—Shall include all other Pacific coast wheat, may be smutty or for any reason unfit for flouring purposes, and weigh not less than fifty-four pounds to the bushel.

(Note.—In case of a mixture of red or white Pacific coast wheat with our home-grown wheat, such mixture shall be graded Pacific Coast Wheat.)

RYE.

No. 1 Rye.—Shall be plump, sound, dry and free from other grain and well cleaned.

No. 2 Rye.—Shall be plump, sound and clean.

No. 3 Rye.—May be shrunken, bleached, and not clean enough for No. 2.

No. 4 Rye.—To include all tough, musty or dirty rye unfit for No. 3.

OATS.

No. 1 White Oats.—Shall be pure white oats, dry, sweet, sound, clean, and free from other grain.

No. 2 White Oats.—Shall be seven-eighths white, sound, dry, and contain not more than 1 per cent each of dirt or foreign matter or 3 per cent of other grain.

No. 3 White Oats.—Shall be seven-eighths white, sound, dry, and not more than 3 per cent of dirt or foreign matter nor 5 per cent of other grain.

No. 4 White Oats.—Shall be seven-eighths white, tough, musty, or from any cause unfit for No. 3.

RED OATS.

The grades of Nos. 1, 2, 3 and 4 Red Oats shall correspond with the grades of Nos. 1, 2, 3 and 4 White oats, except that they shall be of the red variety.

MIXED OATS.

No. 1 Mixed Oats.—Shall be mixed oats of various colors, dry, sound, sweet, clean, and free from other grain.

No. 2 Mixed Oats.—Shall be mixed oats of various colors, dry, sound, sweet, and not contain more than 2 per cent of dirt, or foreign matter or 3 per cent of other grain.

No. 3 Mixed Oats.—Shall be mixed oats of various colors, sweet, and shall not contain more than 3 per cent of dirt or foreign matter or 5 per cent of other grain.

No. 4 Mixed Oats.—Shall be mixed oats, tough, dirty, or from any cause unfit for No. 3.

STANDARD WHITE OATS.

Shall be seven-eighths white, sound, sweet, and shall not contain more than 3 per cent of dirt or foreign matter or 5 per cent of other grain.

BARLEY.

No. 1 Barley.—Shall be sound, bright, sweet, clean, and free from other grain.

No. 2 Barley.—Shall be sound, dry, and of good color.

No. 3 Barley.—Shall include shrunken, stained, dry barley unfit to grade No. 2.

No. 4 Barley.—Shall include tough, musty, dirty barley.

SPELTZ.

No. 1 Speltz.—Shall be bright, sound, dry, and free from other grain.

No. 2 Speltz.—Shall be sound and dry, and not contain more than 10 per cent of other grain.

No. 3 Speltz.—Shall be dry, not sound enough for No. 2, and contain not more than 10 per cent of other grain.

No. 4 Speltz.—To include all speltz that is dirty, musty or tough.

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CORN.

The following maximum limits shall govern all inspection and grading of corn:

Grade.	Percentage of moisture	Percentage of rotten exclusive of bin-burned	Percentage of dirt and broken grains
No. 1	15	1	1
No. 2	16	5	2
No. 3	19	10	4
No. 4	22	..	..

WHITE CORN.

No. 1 White Corn.—Shall be pure white corn, and sweet.

No. 2 White Corn.—Shall be fifteen sixteenths white, and sweet.

No. 3 White Corn.—Shall be fifteen-sixteenths white and sweet.

No. 4 White Corn.—Shall be fifteen-sixteenths white, but shall include tough, musty, and damaged corn.

YELLOW CORN.

No. 1 Yellow Corn.—Shall be pure yellow corn, and sweet.

No. 2 Yellow Corn.—Shall be seven-eighths yellow, and sweet.

No. 3 Yellow Corn.—Shall be seven-eighths yellow, and sweet.

No. 4 Yellow Corn.—Shall be seven-eighths yellow, but shall include tough, damaged or musty corn.

MIXED CORN.

No. 1 Mixed Corn.—Shall be corn of various colors, and sweet.

No. 2 Mixed Corn.—Shall be corn of various colors, and sweet.

No. 3 Mixed Corn.—Shall be corn of various colors, and sweet.

No. 4 Mixed Corn.—Shall be corn of various colors, but shall include tough, damaged or musty corn.

KAFIR CORN.

No. 1 White Kafir Corn.—Shall be pure white, of choice quality, sound, dry, and well cleaned.

No. 2 White Kafir Corn.—Shall be seven-eighths white sound, dry, and clean.

No. 3 White Kafir Corn.—Shall be seven-eighths white, not dry or clean or sound enough for No. 2.

No. 4 White Kafir Corn.—Shall be seven-eighths white, tough, damaged, musty or dirty.

RED KAFIR CORN.

The grades of Nos. 1, 2, 3 and 4 Red Kafir corn shall correspond with grades Nos. 1, 2, 3 and 4 White Kafir corn, except that they shall be of the red variety.

MIXED KAFIR CORN.

No. 1 Mixed Kafir Corn.—Shall be mixed Kafir corn of choice quality, sound, dry, and well cleaned.

No. 2 Mixed Kafir Corn.—Shall be mixed Kafir corn, sound, dry and clean.

No. 3 Mixed Kafir Corn.—Shall be mixed Kafir corn, not clean, dry or sound enough for No. 2.

No. 4 Mixed Kafir Corn.—Shall be mixed Kafir corn, tough, musty or dirty.

MILO MAIZE.

No. 1 Milo Maize.—Shall be milo maize of choice quality, sound, dry and well cleaned.

No. 2 Milo Maize.—Shall be milo maize that is sound, dry and clean.

No. 3 Milo Maize.—Shall be milo maize that is not dry or sound enough for No. 2.

No. 4 Milo Maize.—Shall include all milo maize that is tough, musty or dirty.

The foregoing are the rules adopted by the Kansas Grain Inspection Department establishing a proper number and standard of grades for the inspection of grain. The same to take effect on and after August 1, 1911, in lieu of all rules on the same subject heretofore existing.

D. R. GORDEN, Chief Inspector,
306 Husted Building, Kansas City, Kan.

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HOME CIRCLE

To Silence.

Oh, deep and clear as is the sky,
A soul is as a bird in thee—
That travels on and on; so I,
Like a snared linnet, now break free,
Who sought thee erst with leisured grace
As hale youth seeks the sea's warm bays.

And as a floating nereid sleeps
In the deep-billowed ocean-stream;
And by some goatherd on lone rock
Is thought a corpse, though she may dream
And profit by both health and ease
Nursed on those high green rolling seas—

Long once I drifted in thy tide,
Appearing dead to those I passed
Yet lived in thee, and dreamed, and waked
Twice what I had been. Now, I cast
Me broken on thy buoyant deep
And dreamless in thy calm would sleep.

Silence, I almost now believe
Thou art the speech on lips divine,
Their greatest kindness to their child;
Yet I, who for all wisdom pine,
Seek thee but as a bather swims
To refresh and not dissolve his limbs.

Though all be thine, who asked and had,
And asked and had again, again,
Yet always found they wanted more,
Till craving grew to be a pain
And they, at last, to Silence fled,
Glad to lose all for which they pled.

Oh, pure and wide as is the sky,
Heal me, yet give me back to life;
Though thou foresee the day when I,
Sated with failure, dread to strife,
Shall seek in thee my being's end,
Indulge fond hope once more, dear friend.
—T. Sturge Moore, in the London "Saturday Review."

When sewing on braid do not use cotton thread. It will lose its color and have a faded outline running throughout the whole design. Use silk thread.

I like books, I was born and bred among them, and have the easy feeling, when I get into their presence, that a stable-boy has among horses.—O. W. Holmes.

German Sandwiches.

Use graham or rye bread. Butter plentifully and put mustard on it. Then add a layer of chopped olives over and one of cottage cheese last.

Maple Custard.

One cup of rolled maple sugar, five well beaten eggs, three cups of milk; stir until the sugar is dissolved, bake in cups until custard is firm; serve cold.

Cheese Soufflé.

Two tablespoonfuls butter, 2 tablespoonfuls flour, 1-4 teaspoonful salt, 1-4 teaspoonful soda, 1-4 teaspoonful paprika, 1-2 cup tomato juice, 1 cup grated cheese, 3 eggs. Make a sauce of flour, butter, seasoning, tomato juice and soda and let boil 5 minutes. Then add grated cheese and yolks of the eggs beaten slightly. Fold in the whites beaten dry. Bake in buttered dish until well puffed and delicately brown. Have a moderate oven.

True Politeness.

One evening as the mother of a little niece of Phillips Brooks was tucking her snugly in bed, a caller was announced. The mother told the child to say her prayers and promised to be back in a few minutes.

When she returned she asked the child if she had done as she was bidden.

"Well, you see, mamma, I was awfully sleepy, so I just asked God if he wouldn't excuse me tonight, and He said, 'Oh, certainly, don't mention it, Miss Brooks'."—Success.

Pop-overs.

Beat two eggs together until thorougly mixed; add one cupful of milk. Put one cupful of flour sifted twice into another bowl; add to it gradually the eggs and milk and a little salt; beat until smooth. Put at once into greased hot gem pans and bake in a moderate oven for forty-five minutes. If properly baked they should swell six times their original bulk and may be used for breakfast or luncheon, or served with a liquid pudding sauce as a dessert. Iron gem pans insure better results than those made of lighter metals.

Steamed Brown Bread.

1 cupful of graham flour;
1 cupful of yellow cornmeal;
1 cupful of white flour.

Sift them together; sift into the flour one teaspoonful of salt and one of soda; one-half cup of sugar, three quarters of a cupful of molasses, two cupfuls of sour milk; put all in a lard pail, cover tight, set in a kettle of boiling water. It must boil steadily for two and one-half hours.

Coloring Canvas Shoes.

A clever girl who wanted shoes to match her gown, but who could not afford to have them made to order, had a bright idea which is worth passing on. She took her old white shoes, which had been cleaned so often that they were past wearing with white dresses, and after getting them free from dirt and thoroughly dry, she painted them with crimson house paint. For this she got one of the ten-cent cans of paint of the desired color, poured off all the oil on top and thinned the color remaining at the bottom with gasoline till the mixture was not much denser than the fluid. She painted them all over with this, using a small brush, and as they seemed streaked after drying, she gave them a second coat. After airing for several days they were ready for use and gave as much satisfaction as if specially made to order.

Do Not Destroy the Birds.

Two years ago, an unfortunate Wisconsin orchardist found that all the trees in his apple-orchard—an orchard which by painstaking endeavor had been brought to such a degree of productivity as to be capable of yielding $8,000 a year—had been girdled and killed by mice working under the snow. And this is how the mice gained the numbers and audacity which enabled them to accomplish such a work of ruin:

"Nailed to his barn door was the carcass of an owl which he had shot and nailed up as a warning to others of its kind. In the stomach of that owl, which was opened in the presence of the stricken orchardman by an expert of the Federal Biological Survey, were found the remains of nine field mice. The owl, a real benefactor, had been destroyed by a man whose orchard he had been striving, with all a gourmand's energy to conserve.

Our Pony Contest.

On another page in this issue appears the announcement of our Shetland Pony Contest, in which Kansas Farmer will give away to the boys and girls of Kansas three Shetland Ponies and outfits, a bicycle, watches and numerous other prizes.

The memory of almost every grown-up who reads about our Pony Contest will turn back to happy childhood days when it was the one desire of his heart to own a Shetland pony. It seems to be human nature for children to love pets. No matter how many brothers or sisters they may have, they love to fondle and play with their animal friends. This fondness for animals should be encouraged. The child who is fond of pets grows up with a kind and tender heart and a most admirable disposition.

There is a certain companionship about a Shetland pony which wins the heart of almost every child. A better friend and a more reliable playmate cannot be found in the animal kingdom. He seems to understand children and enjoys their fun as if he were a child himself. Find a family that possesses one of these little fellows and you will find contented and happy childhood. Every child wants one and Kansas Farmer is going to give away three of them to the boys and girls who want them most. A number of boys and girls will be made happy through the prizes which are offered in our contest.

If there is a boy or girl in your home, or children in which you take an interest, tell them about our contest. If they want to try to win one of our ponies, give them all the encouragement you can. Working in the contest will not only be a business experience, but will teach them early in life the art of hustling and working for themselves. Each active contestant will be awarded a prize, even if a pony and outfit is not won. Don't tell them that they cannot win, but encourage them to do their best, for they will be sure to get something for a prize.

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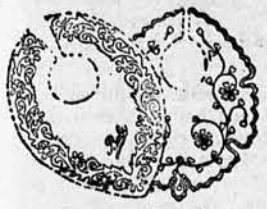

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When you hunt elephants, don't shoot mice.

Protecting the Trees from Rabbits.

In Kansas the damage done by rabbits is comparatively light and yet many young orchards, young shade trees and windbreaks, so much needed in our state, have been partially or completely destroyed. Repeated requests for advice as to how to protect trees from their ravages have led to this article, which is based partly upon work done at this station and partly upon that done elsewhere.

CLEAN CULTURE.

It is very important to remove all brush piles and thickets which may serve as breeding places and for safe hiding. ing.

TRAPPING.

Traps of various sorts may be constructed. A simple and successful method is to sink a barrel in the ground level with the surface. Fit the head slightly smaller than the top and allow it to swing freely on a rod or old broomstick. Pieces of apple or grains of corn may be placed on the outer edge of the cover and when the rabbit attempts to get these, the lid tips up and he slides into the barrel, while the lid, which is slightly heavier on one side than the other, assumes its original position. The heavier side should strike against a heavy nail or bolt so that only the lighter side of the lid will drop. The whole thing should be covered over with brush or light flat stones so as to make an enticing place for the rabbits.

Where one has only a few trees, such as fruit or shade trees, the most satisfactory method is to wrap them. An ordinary tree veneer which is made of very thin wood may be purchased from any seed store or nursery company. This fits closely about the body of the tree and will enlarge as the tree grows. However, during the summer it may offer a harbor for injurious insects, and should remain on the tree only during the winter. Trees may be wrapped with burlap, corn stalks, or ordinary lath. The only caution with any of these is to remove them when the tree resumes growth in the spring. Ordinary wire screen answers very well as a protection for the tree and does not harbor insects.

REPELLANTS.

The tree may be covered as far as the rabbit can reach with blood. The entrails and blood of the rabbit itself rubbed over the tree are quite effective, but are apt to be washed off by rain. A concoction of tallow and tobacco smeared onto the trees acts as a repellant. However, where there are a great many trees, and especially small trees, such as honey locust, elm and others used as windbreaks, it is out of the question to treat each individual tree by hand. In this case a spray applied by a hand pump will be found effective. The common lime and sulphur spray used to destroy San Jose scale has been recommended and can be applied with an ordinary spray pump. Mix together dry, fresh hydrated or ground lime, 4 pounds; powdered sulphur, 3 pounds. Add water to form a thin paste and boil from ½ to 1 hour, or until the mixture becomes a reddish amber color. Dilute to 10 gallons, spray onto the trees while the liquid is still warm. This spray is excellent for the trees as well, but must not be applied to the trees while they are in leaf.

A spray made of buttermilk and common stove soot has proven quite satisfactory here. Butter milk, one gallon; common stove soot, one-half pound. Boil for 20 minutes. Keep well stirred to prevent clogging the pump.

POISONING.

Much may be done in eradicating this pest with poison. The "Wellhouse" poison is made as follows: Sulphate of strychnine, 1 part; borax, 1-3 part; white syrup, 1 part; water, 10 parts. Put the mixture into a jug or large bottle and shake well. Cut fresh twigs—apple water sprouts are best—and with a small brush paint them, especially over the terminal bud, with the above preparation. Scatter the twigs in the runways and about the trees where the rabbits feed. Stock or fowls will not molest this poison, and it is said that dogs may eat the dead rabbits and suffer no ill effects.

The Western Australia Department of Agriculture recommends a poison somewhat similar. Dissolve 1½ ounces strychnine in 1 quart of vinegar; dilute with 5 gallons of water; add 2 pounds of flour and 1 pound of sugar; stir well and apply to twigs as recommended above.

A jam made of fruit and sugar is readily eaten by rabbits. Chop apples or melons into small cubes. Add sugar equal to one-half the weight of the fruit. Boil until mess forms a thick jam. Add strychnine, either powdered or dissolved, at the rate of one ounce to 25 pounds of the jam, and mix thoroughly.—J. C. Cunningham, K. S. A. C.

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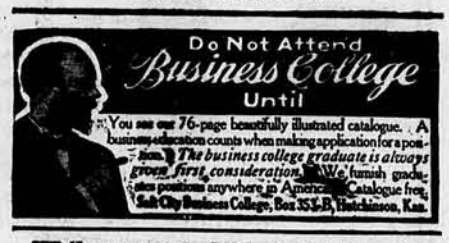

While we were fond of griddle cakes, we were not fond of the smell of the grease. Now, instead of greasing my pan, I have a bag of salt, about the size of a small egg, with which I rub the pan. The cakes do not stick, and are a nicer brown than when the grease is used.—R. C.

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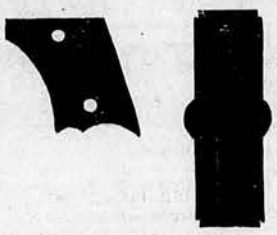

These illustrations show the **Buffalo staple puller and fence plier** less than one-fourth its exact size. **This is positively the handiest fence tool ever made.** It can be used as a wire stretcher and splicer, or staple puller, hammer, pipe wrench, monkey wrench or pincers, and is the handiest horse-shoe puller ever made. **It is a whole kit of tools in one.** It is the only fence tool made that has a detachable jaw, making it almost industructable, for if one of the jaws is broken, another can be secured for only ten cents. **We positively guarantee this tool in every respect.** It will be sent free to any one sending $1.50 for a two years' subscription to KANSAS FARMER—new or renewal, or to any one sending us one new yearly subscription to KANSAS FARMER at $1.00. Address all orders SUBSCRIPTION DEPARTMENT KANSAS FARMER, Topeka, Kan.

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KANSAS FARMER, Topeka, Kan.

Cultivation Increases Yiel

Continued From Page Four

most important fact of dry farming, that the storing of the moisture in the soil is the first and great principle of soil moisture conservation. The firming and pulverizing of the soil to prepare the seed bed, and the surface cultivation of the soil to maintain the mulch, are each without avail unless there has been stored in the deeper soil a sufficient amount of moisture to support the growing crop in time of drouth.

Now the moisture should be stored at all times during the season, but especially during the interval between harvest and planting. This requires early plowing so that the soil may be in condition to catch the rain and absorb it.

In order that there may be room to receive and store a heavy rain, deep plowing is desirable. If plowing can not be done early, the cultivation of the unplowed land with a disk harrow will keep the soil in good plowing condition longer and favors the absorption of rain.

A good rule, but it cannot always be followed, is to plow when the soil is in such condition that it will drop from the moldboard in a mellow, friable condition.

Deep plowing should be done with purpose and intelligence.

Loosening the soil by deep plowing favors the absorption of moisture, but if rains do not come in time such land will suffer from drouth more quickly than though it had been plowed shallow.

The loose soil dries out and capillarity is broken, preventing the furrow-slice from receiving moisture from the subsoil rapidly enough to sustain the growing crop. The depth and frequency of plowing should vary according to the nature of the soil. A light or sandy soil requires less depth of plowing and less frequent plowing than a heavy, or compact, clayey or "gumbo" soil.

As a general proposition, plowing should be shallow when it precedes planting only a short time.

Plow deep in the fall, and plow deep for summer fallow.

A long interval between plowing and seeding allows the soil to settle sufficiently, while freezing and thawing mellows the raw, hard subsoil which has been brought to the surface.

The relative depths of plowing may be stated as follows:

Shallow plowing. . . . . .3 to 4 inches
Medium plowing. . . . . .5 to 6 inches
Deep plowing. . . . . .7 to 8 inches

Plowing deeper than eight inches with the common plow is not usually practicable, but the soil may be stirred twelve to eighteen inches deep with a deep tillage plow or subsoil plow, and in heavy soil with hard compact subsoil such deep stirring may occasionally be desirable.

When land is allowed to lie for a considerable period after plowing before the crop is planted, the settling of the soil, together with the surface cultivation to perserve the mulch and the cementing due to rain, usually causes the soil to repack and firm up to a sufficient extent to make a good seed bed.

The use of the packer is most essential on late spring plowing, when the purpose is to plant at once after plowing. It is not so necessary to use the subsurface packer on fall plowing which is not intended to be planted until the following spring, but for sowing fall wheat, if the plowing precedes the sowing by a very short interval, the subsurface packer may be used very advantageously.

The principle involved in the use of the subsurface packer is correct, and the lighter the soil and the greater its tendency to remain loose and mellow, the more necessary becomes the use of the subsurface packer or similar implement, in order to prepare a proper seed bed.

In plowing under trash or manure, subsurface packing, by pulverizing the bottom of the furrow-slice, sifts the soil through the coarse trash and causes a better union with the subsoil below, so that the capillary water may be drawn up into the surface soil, whereas, if a heavy coat of stubble or manure plowed under in this way is left without packing or pulverizing, the furrow-slice is apt to dry out and the crop that is growing on the land may be injured by a short interval of dry weather.

By setting the disks rather straight and weighting the harrow, a disk harrow may be used as a substitute for the subsurface packer, resulting in a pulverizing and firming effect at the bottom of the furrow-slice. Very often, however, early plowing, with the proper use of the common harrow, may largely accomplish the results required in preparing proper seed bed. It is usually advisab to weight or ride the common straigh tooth harrow in order to cause it to st and pulverize the soil deeper and pr vent the "sucking" effect which is a to result from light harrowing.

The cultivation necessary, after ear plowing, to destroy weeds, in the exp rience of the writer, has usually be sufficient to settle and pulverize the se bed. For the early cultivation after good rain and after the weeds ha started, there is no implement superi to the disk harrow, the double di which gives two cultivations and leav the ground level being preferred. F late cultivation the common harrow the Acme harrow should be used wi the purpose of not loosening the grou too deeply just previous to planting seeding.

The Soil Mulch.—It is very essenti that sufficient and proper cultivation given to destroy weeds. This is mo important than to maintain a soil mul since weeds exhaust both the soil moi ture and the available plant food. If proper soil mulch is maintained, ho ever, the weeds will be kept in subje tion. In the ideal system of culture t purpose is to keep a mellow soil mul on the surface of the land all of the tim not only during the growing of the cro but also in the interval between harve and seeding time. Thus, after the co is planted the land is cultivated with t weeder or harrow in order to break t surface crust and prevent the loss moisture, and following out the sa principle the harrowing or work wi the weeder is continued after the gra or corn is up; and during the growi period frequent cultivation is requir for intertilled crops.

Again, after the crop is harvested. t cultivation is continued; the land plowed at once or listed, or the surfa of the soil is loosened with the disk ha row and thus the land is kept contin ally in a condition to not only preve the loss of water already stored in t soil, but also this same condition a mellow surface favors the absorption rain and largely prevents the loss water by surface drainage.

The smooth, finely-pulverized surfa left by continuous light harrowing real defeats the purpose of the cultivatio since soil in such condition will sh heavy rains, causing a waste of wat which should have been stored in t soil, and the surface often becomes t fine and compact, preventing the prop aeration of the soil, and producing unfavorable seed bed condition. Th during the interval between crops it often advisable to use the Acme harro or the disk, or spring-tooth harrow, order to keep the surface of the so open and mellow.

Disking and Listing Versus Plowing- A new method for preparing the see bed is now coming into general practi in western Kansas. In preparing lan for wheat the plan is to list the groun with the ordinary corn lister as soo after harvest as possible. The list furrows are run about three to thre and a half feet apart, very much th same as when the lister is used fo planting corn. Later, when the weed have started, the soil is worked bac into the lister furrows by means of harrow or disk cultivator.

Several cultivations are usually r quired by the harrow and disk harro in order to level the field and bring into good seed bed condition. Once ov with the disk cultivator is usually con sidered sufficent, the further work ne essary to prepare the seed bed bein given with the common harrow or othe cultivating implement.

In a dry climate this method of pr paring the seed bed has several advan tages, as follows:

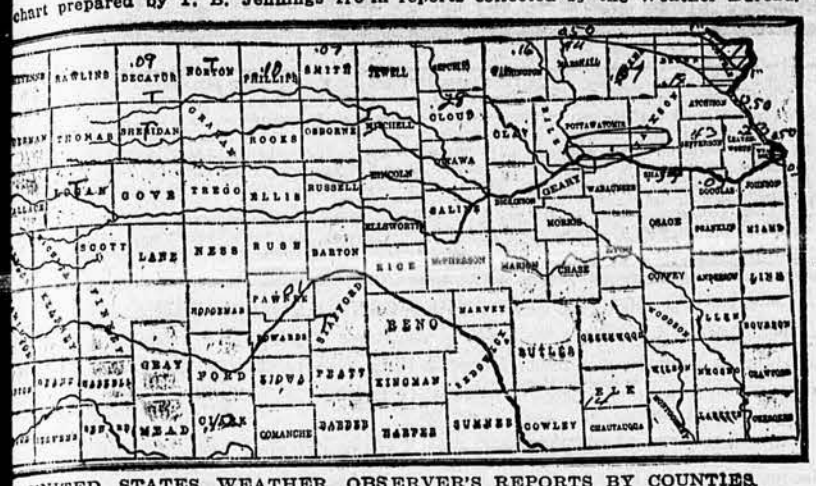
The cultivation of the land soon afte harvest tends to conserve the moistu already stored in the soil. The furrowe land is in good condition to catch an store the rain and the later cultivatio clears the land of weeds and volunte wheat and leaves a mellow soil mul to conserve the moisture which has bee stored in the subsoil. The early an continued cultivation of the soil favor the action of the bacteria and the de velopment of available plant food.

By practicing this method the farme may cultivate a larger area early in th season when the soil is in good cond tion to cultivate, when if it had bee necessary to plow the whole area, som of the land might become too dry t

(Continued on page twenty-six)

ANSAS CROP REPORT

chart prepared by T. B. Jennings fro m reports collected by the Weather Bureau.



UNITED STATES WEATHER OBSERVER'S REPORTS BY COUNTIES.

INCHES: SCALE IN

Less than .50. .50 to 1 1 to 2. 2 to 3 Over 3. T. trace

n—During the past week weather een ideal for maturing crops. Soil

ber—Rain badly needed. Wheat and not doing well.

ton—About half of wheat sown. Too come up. Hot winds end of week.

rbon—Late hay good. Corn gather- progress. Flood did a great deal mage.

ler—Crops of all kinds doing well. res good. Most of Kafir corn safe frost.

k—Farmers all sowing wheat.

aur—No rain yet. Pastures dried Some wheat being sown.

lphan—Weather conditions favorable. —Commencing to cut cane and Kafir

d—Unusually dry. Rain would be l to all crops.

enwood—Ground in fine conditon for g wheat. Fall pasture never better. and Kafir corn O. K.

ler—About half of wheat in. Week d dry.

erson—Wheat coming up splendidly. pastures fine. Vegetation yields not good.

ell—Cane and Kafir corn is being p. Some wheat sown. Potatoes al- a failure.

enworth—Potato yield good half The fall wheat sowing is above the ge.

herson — Continued dry. Wheat ground ready, but seeding delayed. Farm work at standstill.

Marshall—Sowing wheat. Cutting corn-fodder. Pastures good.

Nemeha—Corn cutting in full blast. Much alfalfa sown.

Norton—Fall work in good shape. A good, soaking rain is needed.

Pawnee—Hoppers quite numerous. Some wheat being sown, but most of farmers waiting for rain.

Phillips—Need rain bad. Farmers waiting for rain to sow wheat. Worms working bad in the alfalfa.

Rice—All vegetation dried up. Those who have put in wheat will have to sow it all over. No rain here to do any good since last of July. Wheat ground all ready to sow.

Scott—Farmers holding off sowing wheat until rain comes. All ready to sow as soon as it rains.

Sedgwick—Cane and Kafir corn being cut. Fifth alfalfa crop will be ready to cut soon. Growing well.

Smith—Crops fair. Most people putting up hay and cutting corn.

Sumner—Wheat sowing in full blast. First sowing up. Ground in fine condition.

Thomas—Wheat being sown. Last cutting of alfalfa being harvested.

Wallace—Farmers sowing wheat. Range grass very short.

Wyandotte—The soil is fairly well supplied with moisture.

FIELD NOTES.

The Royal Herefords.

retary R. J. Kinzer of the American ord Breeders' Association, has certain- itten together a great bunch of stuff he Hereford sales at the American . The names of the breeders are suf- t guaranty of the quality of the ls. Robert H. Hazlett, El Dorado, R. A. Steele, Belvoir, Kan., C. W. ur, J. P. Cudahy and J. M. Curtice nsas City, W. H. Curtice, Eminence, Estate of James A. Funkhouser, sburg, Mo., and others of similar repu- will contribute from their several

George Sells Chester Whites.

N. George, breeder of Chester White at Hopkins, Mo., states that his sale ng is in splendid condition for his f October 18. He will have 21 boars, lts and 5 tried sows in the sale, and are of the best type and breeding n to the breed. Mr. George has had derable experience in handling this ngly popular breed, and he knows the breeders and farmers want, and pared to supply them. Don't forget ate and place, and be on hand either nally or by mail order bid. You will eated right in either case. Mention as Farmer when you write for a g.

An Auctioneer With a Record.

e card of Col. Thomas E. Deem of ron, Mo., starts in this issue of Kansas er. Col. Deem is one of Missouri's essful young auctioneers, and during ast six years has made a fine record elling purebred stock and in farm in Missouri and neighboring states. He ade a thorough study of the live stock ess, and his record in the many pure- stock sales during his six years' ex- nce shows a very high average and is usive evidence that he thoroughly rstands it. During his career as an oneer he has succeeded in building reputation for fair dealing and for ty to the breeders who have employed of which he may be justly proud. g with his thorough knowledge of sales his integrity in conducting them, he live wire and a fast one on the block. n you get Deem, you can expect him to usy from the announcement of your date to the close of your sale, and his success as a purebred stock auctioneer no small extent due to his tireless gy in behalf of his customers. If you a live one for your next sale, get Thomas E. Deem, the man with a rec- for good averages.

Arkell Sells Polands October 17.

James Arkell, formerly of Dwight, of Junction City, Kan., will hold his al fall sale of big type Poland Chinas e farm near Alida on Tuesday, October Mr. Arkell has an unusual bunch and breeders and farmers of Central Kan- should be with him on sale day. He culled his bunch very closely, and he has selected for the sale present ery uniform appearance. Of the 40 to be sold, 25 are spring boars and pring gilts. The boar sale may pos- include one of the Grand Look boars, r. Arkell wishes to sell one of them. It is quite likely he will be sold be- fore the sale. The sale offering was sired by Mr. Arkell's boars, Big Tom, Uneda and First Quality by Blue Valley Quality, with a dam by Exception. The boars, Big Tom and Uneda, are litter brothers and sired by the noted prize-winner, Grand Look. Their dam was the very large sow, Uneda Pan by Old Expansion. All three of the boars mentioned are good ones, and Mr. Arkell's sow herd has been selected with a good deal of care, and contains some mighty good sows, among them daughters of Expansion, Expansion See 4th, Mc's Perfection and I. C.'s Perfection by the noted Growthy Perfection. Mr. Arkell has the reputation of being able to get lots of size without feeding heavy enough to damage the pigs for breeding purposes. Get a catalog of this sale by writing and mentioning Kansas Farmer.

Bigger and Better Poland Chinas.

The past two weeks we have been busy attending fairs and getting a line on what our breeders are offering in their fall sales. While attending the county fair at Chanute this week, the writer visited the good herd of Bigger and Better Polands owned by Roy Johnston, of South Mound, Kan. We wish to say that the herd is just what the name implied—bigger and better. We have been visiting this herd since its foundation, and we are in a position to say that Mr. Johnston seems to get them bigger and better each year He is not particularly catering to the breeding of show hogs, but is breeding the kind that are most profitable in the feed lot, on the clover pasture or wherever the farmer cares to take him, and this is just the kind he is cataloging for his sale, October 20. This sale looks to be a very opportune time for the farmer to get some of the best there is in breeding, as the catalog will show and we will vouch for the individuality. Crop conditions are going to keep the prices down and this will be in favor of the farmer who cares to improve his herd, as these very best ones usually sell a little too high for him, but if we are not guessing wrong, you will get them right this time, as Mr. Johnston is selling 65 head in this sale. We believe there will be many real bargains pass under the hammer on October 20 at South Mound, Kan. Don't fail to get the catalog, and read it carefully; then if you canont attend, write a bid or any number to O. W. Devine, who will treat you fair in making a purchase for you. Please read the advertisement on another page and arrange to attend this sale. Kindly mention Kansas Farmer when you write.

Do Not Salt Ensilage.

To Cheney, Kan., subscriber, we would advise that he not salt the ensilage when filling the silo. To keep in the best condition ensilage should heat 120 degrees, and we fear that the use of salt would have a tendency to retard heat development. At any rate, we can see no good in salting it. Neither would we salt it when fed. Give stock a chance to get salt as they desire it out of troughs. Do not compel animals to eat it.

A Transition Period in American Agriculture.

The United States is a young nation. We have been with tremendous energy subduing a new land, been felling forests, breaking prairies, constructing the arteries through which flows the streams of our national commerce, in digging mines, building dams, bridges, irrigation systems, and doing all the work preliminary to the making of homes and the up-building of communities and social institutions. It has been a marvelous work. Those of us who live in the west are privileged, even now, to see first-hand this work of creation. As a people we have been engaged in making a living, in laying the material foundation upon which our national greatness shall rest.

The past generation has seen the conquering of the trans-Mississippi country. This work has, in general, been very profitable to the people who had the hardihood of undertaking it, to endure the hardships, to solve the many problems as they came up, and who have "stayed with it." An examination into the basis of the profits in agriculture in this trans-Mississippi region shows that we are approaching conditions which will force a change in methods and conditons of living throughout this region.

Agricultural profits for the past generations, and even today, are primarily the promoter's profits rather than the farmer's profits. They rest upon a speculative basis. They have come, in large measure, from the rise in value of the land rather than from the production of the land itself. Indeed, so largely is this true, that few farmers today have any very clear knowledge of the cost of production of a crop or product which they sell. Whether consciously or unconsciously, they have reasoned that it didn't matter much what the margin between cost of production and the value of the crop might be, so long as they made a living and their farm was constantly increasing in selling price. In many cases no very great effort has been made to make the production from the acre increase in the same ratio as the selling price of that acre.

The speculative basis of farm profits has brought about interesting and important social conditions and systems of farm management. Naturally when a farmer expects to make his profits from the increase in value of an acre he will obtain as many acres as possible. This has brought about an extensive system of agriculture, each farmer handling all the land that he can, and frequently much more than he can handle properly. The disposition to take profits has resulted in temporary holdings. Many men, indeed, have never expected to remain long on one farm. This accounts, I believe, for the very general low level of home improvements too often characteristic of the most prosperous sections of the trans-Mississippi region. The lack of permanence has also prevented the development of community of interest, and in its best sense, of neighborliness.

"The old order changeth, yielding place to the new." In agriculture, conditions throughout this region are showing signs of a change which is fundamental. Because we are on the western, younger edge of this region, and have not proceeded so far in our industrial evolution, the evidences of this inevitable change are not so apparent to us. Indeed, most of us assume that "the thing that is, is the thing that shall be."

The reasons for this change in the industrial and social conditions in trans-Mississippi agriculture lies in the changing basis of farm profits. We have said that these have been, and as far as the west is concerned, now are, chiefly speculative profits, coming from the rise in value of land. This rapid rise in land values must be a temporary phase. We do not mean that lands will cease to rise in value but rather that this increase will be relatively small as compared with the past 30 years, and that it will no longer be a primary source of the farmer's profits. We must look, then, in the comparative near future, to the actual production from the acre of farm land for our chief source of profit.

The speculator's era is passing. It has been an important era. Only the lure of large profits could have led people to undertake the difficulties and hardships in the taming of the future, but I think we shall gain advantages in rural society, which will far more than off-set the loss in the passage of the era of large speculative profits. There will no longer be the same incentive to hold a large acreage when that acreage becomes so valuable that present methods do not yield interest on the investment, and when the prospects of further enhancement of value is not great. We shall find more men owning their land instead of being owned by it. The time is rapidly passing in this country when there is a large area of valuable cheap land to which the farmer can move after realizing on the enhancement in value of his old holdings. Indeed, it is probable that we shall see a sweeping back of the tide of immigration upon the long-settled Eastern states before the end of the present decade.

With the passing of the lure of cheap land there must come a permanence of settlement which is now unknown. The farmer will look upon his farm not as a place where he is to get a temporary living until he can sell it, but rather as a home for himself and a heritage for his children. And there will be built up permanent homes, with home-like surroundings and permanent improvements which will show due regard for beauty and healthfulness. We shall see also a development of community, life and rural society beyond anything now realized in this great West. The country church, will, I believe, again take its proper place as a community center and a leader and moulder of neighborhood opinion. We shall see the development of the neighborly spirit in which individualism shall give place to co-operation. The feeling of stability and the realization that one must stand or fall by his own community will bring about a development of the home spirit which is now but faintly realized. We shall learn the fine art of living together and the joy of true social comradeship with our kind. We shall probably become somewhat provincial, and may be a bit narrow, but the provincialism based upon great love of one's home, and home people, is easily forgiven. We need more of this than we have now. The small interests and small triumphs of one's own community are just as real and just as satisfying as those of a larger field, and are usually obtained with more of honor and less of bitterness. In the development of American agriculture it has been wonderfully true that "Those things are not first which are spiritual, but those which are natural; and afterward those things which are spiritual."—Prof. Keyser.

The Better Farming Train.

On Tuesday, October 10, the Kansas State Agricultural College will start a special educational train out of Hutchinson on a four days' tour of the western portion of the state. As the object sought is the discussion and demonstration of better farming methods, this train will be more elaborately equipped than its predecessors, both in lecturers and audience room. The best talent procurable has been secured and those farmers who live along the route will be very fortunate in being able to attend this school on wheels, without cost to themselves.

The question of getting larger returns from our farms was never so important as now. Land will never be any cheaper and crops that were formerly profitable on cheap land will no longer pay the interest on the investment in good land at present prices. The accumulated knowledge and experience gained at the Kansas Agricultural College and Experiment Station will be at the service of the farmers who attend the meetings held on this train, which will be conducted by the extension department of the college, and which will supply information as to route and stopping places.

Will the Chinch Bugs Damage New Wheat this Fall?

Many farmers are now asking this question, and there is reason that they should, for with corn and the grassy plowed land infested with bugs, where may wheat be sown to be safe?

Wheat sown in corn or on grassy and weedy plowed land, where bugs are now present in large numbers, is very likely to be damaged and may be destroyed. Especially is this true if the wheat is sown early. The corn, grass and weeds may furnish the bugs with food until the wheat is large enough. Under such conditions crops have been absolutely destroyed.

Wheat sown in fields free from all growth and, therefore, completely free from bugs is very likely to experience no fall injury whatever. It would be well to avoid the buggy field unless all vegetation can be destroyed and the bugs killed or driven out before wheat is sown.—T. J. Headlee, Kansas State Agricultural College.

Not Egyptian Wheat.

L. E. H., Santa Fe, Kan.—The sample you send is not wheat, but is a non-saccharin sorghum, sometimes called Egyptian corn, and is probably white durra.

BARGAINS IN LANDS

200-ACRE WHEAT FARM at a bargain if sold at once. Write for our farm list. **WHIPP & CO., Concordia, Kan.**

GET MY list of a few choice bargains in Hamilton county, Kansas, land. **Walter & Walter, Syracuse, Kan.**

IMPROVED wheat farms in Ford Co. at $25.00 per acre up, near R. F. D. and telephones and schools. **BROWN & VERNON, Dodge City, Kansas.**

238 **ACRES**, a special bargain for short time. Will take residence or auto as part. **Morrow Land Co., Morrowville, Kansas.**

FOR SALE OR TRADE—Properties of all kinds. Lands $15 to $75 per acre. 40 years' residence. **W. H. Kaltenbach, Toronto, Woodson Co., Kansas.**

CHOICE ALFALFA LAND, for sale or exchange. Exchange propositions are made a specialty. **UNITED LAND COMPANY, 902 Schwuter Bldg., Wichita Kansas.**

BARGAIN—Best 406-acre improved tiled alfalfa farm in Eastern Kansas, $65 per acre. Write for description. **J. E. CALVERT, GARNETT, KAN.**

FOR EXCHANGE—560 a. in Lane Co., 260 a. in cult., 5-room good house, spring water, barn. Price $15 per a. **CAVE REALTY CO., Salina, Kans.**

Irrigated Farms in Bent Co., Colo., to trade for general mdse. Write me relative to Government lands coming under new ditch. **HARRY C. JOHNSTON, Las Animas, Colo.**

WRITE FOR MY BIG LIST OF CHEAP cattle, horse and sheep ranches. I have improved farms worth the money on terms to suit in the sure wheat belt. Agents wanted to co-operate. **J. C. WHARTON, McCracken, Kansas.**

FOR SALE OR EXCHANGE—Farms and ranches at prices ranging from $10 to $40 per acre; send for our dry-weather cut-price list. **SPEERY & OLSON, Hill City, Kan.**

A SNAP—$22.50 per acre. Improved 320 acres, new house, new barn, good pasture, lots of good water, fenced and cross fenced, 70 acres ready for wheat, all tillable. Terms on part. **Taylor & Bratcher, Coldwater, Kansas.**

FARMS, RANCHES AND CITY property for sale and exchange; merchandise stocks a specialty; some small tracts near Wichita, good location for retired people; prices reasonable. **A. N. BONTZ, Wichita, Kan.**

STAFFORD COUNTY, KANSAS. One of the best farming sections in the state; write me for descriptions and full particulars about some of the fine farms I have for sale in this section; good crops all the time. **A. L. McMILLAN, Stafford, Kansas.**

A FINE NESS COUNTY FARM.
640 acres, 1½ miles from town; ½ mile to school; 500 acres smooth, bal. good pasture; never failing spring, also good well; 4 miles of fence; 300 acres in cult.; land all clear; will trade for good, clean stock of mdse.; price $20 per acre. **RUTHERFORD & OLIVER, Utica, Kan.**

WANTED — WESTERN KANSAS LAND, for $8,000 or $9,000, equity, or both, in North Mo. blue grass land, fenced, well watered, good timber, close to R. R. Give signed description in first letter. **E. L. HULL, Abilene, Kan.**

FOR SALE OR TRADE.
A large list of excellent farms in Shawnee and adoining counties. Small payments and long time. Write or call **JOE RADCLIFF, with Rodgers, Davis & Co., 110 W. Sixth St., Topeka.**

FALL BARGAINS.
Send for my new fall land list. I have some special bargains in eighties, quarters and half sections in the best part of Kansas—Butler, Harvey and Sedgwick counties. Kansas map and list free. **JAMES A. THOMPSON, Whitewater, Kan.**

STOP RENTING

Here are **160** acres 8 miles **Fall River,** Kansas, 85 acres cultivation, balance native grass; 3-room house, common stables, orchard, good water, close school; this farm lies in nice valley; cash price $4,000; will take $1,000 in good work and driving teams as part pay. W. A. Nelson, Fall River, Greenwood County, Kansas.

FOR SALE.
A1 feed mill, doing a good cash business of $150 to $200 net each month; only one in west part of the county; splendid trade; coal bins on railroad right of way; owner selling on account of losing his wife and failing health; this will bear investigation; in good, live town. For further particulars call on or address **THOS. DARCEY, Real Estate Agent, Offerle, Kan.**

A FINE VERDIGRIS BOTTOM FARM

150 acres splendid bottom land. No better land anywhere. Wheat and alfalfa land. All in cultivation, except 8 acres good timber. House and good barn, 8 miles of Fredonia. Priced to sell soon at $50 per acre. A bargain. Come and see this tract. Write for new land list. **M. T. SPONG, Fredonia, Kansas.**

FOR EXCHANGE

For Western Kansas or Eastern Colorado land, $2500 stock, $3,000 hardware and a $4,000 real estate business. The land must be clear and of about equal value. 100-acre Anderson county alfalfa farm for stock of about $6,000 general merchandise. **NEAL - BOWMAN LAND CO.**

WRITE for descriptive list of S. E. Kansas farms, $35 to $60 per acre. **FOSTER BROS., Independence, Kas.**

GET OUR BOOK OF 500 FARMS and properties everywhere to trade. **Graham Bros., Eldorado, Kan.**

CORN, WHEAT AND ALFALFA LANDS. Stock ranches and city property for sale or exchange. **J. N. THOUVENELL, WINONA, KANSAS.**

KIOWA.—3,160 acre up-to-date Ranch, no drawbacks to location, quality, water and improvements. Without flaw. Price $15 per acre. Write **Griffin Bros., Kiowa, Kans.**

BUTLER, HARVEY AND SEDGWICK CO. LANDS.
Plenty of rain and everything looking fine. Come and pick out your farm on next March settlement. All kinds of exchanges. Send for new list. **EBERHART & MELLOR, Whitewater, Kan.**

100—CHOICE DICKINSON AND CLAY CO. FARMS—100
80 acres 3 miles from town, 70 a. under plow, alfalfa land, 20 pasture and meadow, 5 room house, good well, barn and other buildings. $2000 cash; rest to suit; 25 a wheat included. Write for list. **J. J. Bishop, Wakefield, Kan.**

GREENWOOD COUNTY FARMS
and well-grassed stock ranches, in the corn, clover and bluegrass county, for sale at low prices on liberal terms. Write for full information. **J. G. SMITH, Hamilton, Kansas.**

LIVE AGENT WANTED
in your locality to assist in selling corn, wheat and alfalfa land. We own thousands of acres in Pawnee and adjoining counties. Write for proposition on our own ranches. **FRIZELL & ELY, Larned, Kansas.**

FOR TRADE—314 acres, eastern Kansas; well improved; fine home; black prairie land; price $75 per a.; want income city; we had a big wheat and a big corn crop to gather; write today. **G. T. KINSEY, Le Roy, Coffey County, Kan.**

BUTLER, HARVEY AND SEDGWICK BARGAINS—Come and buy this fine fruit farm, 80 a., 3 mi. from town, all tillable, 14 a. pasture, alfalfa, fair improvement, 3 a. small fruit, 1,500 fruit trees, only $5,500; terms. Special inducement for cash. Exchanges of all kinds. Write for particulars. **Eberhard & Mellor, Whitewater, Kan.**

If you want to buy land or make some exchanges. Write G. K. JACKSON, Eureka Kans

IF YOU MEAN BUSINESS and have real estate and merchandise of any kind for sale and exchange, and are willing to pay a commission should I make you a deal, write me at once of what you have and desire I have several very attractive propositions to offer you for a home or investment; am doing a general exchange business. **Carl G. Anderson, Athol, Smith Co., Kansas.**

FOR TRADE

800 a. in Taney Co., Mo., 2½ mi. to town, 100 a. creek bottom in cult., 400 a. fenced; large 2-story house, large barn and other outbuildings; wants mdse.; price $13,000, mortgage $3,000. **SPOHN BROS., Garnett, Kan.**

Great Farm Bargain

Only two miles from the City of Topeka, 2 miles from street cars, on proposed extension of car line, macadam road; the greatest farm bargain in the county; a fine grain, stock or dairy farm; all alfalfa land; located right to sell all or part in five and ten acre tracts; 185 acres; 145 acres in cultivation, 12 acres alfalfa, balance pasture; practically all tillable; house, barn and other outbuildings are old; good well; this farm is right at the door of one of the largest and best markets in the state for all products; largest creamery in the world here; large packing house; wholesale and retail markets; owner old and wants to sell; only $100 per acre, small payment down and very easy terms; a snap for the first man with the money. **THE HEATH COMPANY, 109 West Seventh St., Topeka, Kansas.**

THE BEST TOWN TO LIVE IN.
If you would like to live in the most beautiful city in the West, with unsurpassed education, business and religious advantages, in a city clean, progressive, where real estate values are low, but steadily advancing, where living expenses are reasonable, a city with natural gas at lowest price, address the **SECRETARY of the COMMERCIAL CLUB, Topeka, Kansas.**

YOU CAN'T BEAT THIS.
640 acres, 2 miles of R. R. siding, 6 miles of good town, one-half fine farming land, balance grazing, all well fenced, 150 acres finest kind of alfalfa land, shallow to water, best general farming section in the state. Would be a snap at $12 per acre. You can buy it for $6 cash. No trade. **CARL M. COOK, Limon, Colo.**

A BIG MONEY MAKER.
If this place suits you, to see it, will convince you that this place is priced $2,500 less than it is worth on the market price now of land selling. 160, acres of which 90 acres are in a high state of cultivation, 25 acres in meadow and alfalfa, balance pasture, with running water, all fenced and cross fenced, 3-room cottage, barn, hay mow, granary and corn crib, etc., good well and pump, small orchard. This farm is only 5 miles from the court house in Wichita, and 3 miles from street car line, paved streets, colleges and Carnegie library. Priced $9,000. Terms to suit purchaser. **EDWIN TAYLOR, REALTY CO., 107 S. Main St., Wichita, Kan.**

NEXT EXCURSION TUESDAY, OCTOBER 17
Visit Houston, Galveston, San Antonio and the Iowa Colony in our private car. **Greatly reduced rates** on above date. **Come on down with us** and let us show you what our people are doing. Now picking oranges on land adjoining ours. Average crop over $1,000 to an acre. Only three orange sections in the United States that now have got beyond your reach. This will be your last chance to buy **Orange and Fig** Land for less than several hundred dollars per acre. Get in now and make the big advance that is on the way.
For literature, rates and reservations in Private Car, address, **HAZARD & CHESLEY LAND CO., C. L. Sharpe, Manager, 116 East Seventh Street.**

A COMPLETE WATERWORKS ON EACH FARM.
$65.00 per acre buys you 80 acres Pecos Valley Irrigated land, one-third cash, balance on long time. Never failing water, sure crops, best of climate, soil unsurpassed. Write us for literature giving full description and proposition. Upstairs.
WOOD & SHUMWAY, 534 Kansas Avenue, Topeka, Kan.

NESS COUNTY "SNAPS"

Write for our list of Special Bargains. We have some prices that will surprise you. Remember that Ness County adjoins the banner wheat county of Kansas for 1910. County map and literature mailed on request. **FLOYD & FLOYD, Ness City, Kansas.**

DICKINSON COUNTY BARGAINS

Best alfalfa farm in state for sale. Write for folder giving a description of some improved farms located close to Abilene, the great alfalfa, corn and wheat district of Kansas. **R. G. TONKIN, Abilene, Kansas.**

I CAN'T FARM AND WANT TO SELL.
80 acres in Osage Co., dandy good land; 7-room house, small barn, extra good orchard, good well, best of water, 50 acres in cultivation, balance in pasture and meadow. I am tired of renting this land and will sell cheap. Price only $3,500, $1,000 cash, balance to suit purchaser. Call or write—
R. H. BURNS, 106½ West St., Topeka, Kansas.

IMP. and unimp. land in western Kansas. **W. G. Ruth, Scott City, Kansas.**

WHAT have you to trade for lands or city property? **Hale, Coffeyville, Kan.**

BUY OR TRADE with us. Exchange book free. **Bersie Agency, El Dorado, Kan.**

ESTABLISHED 1885—Write for free list. **Park H. Thornton, Real Estate Dealer, Coldwater, Comanche Co., Kansas.**

160 A.,90 IN CULT.; 20 alfalfa, rest pasture; 4½ mi. from town; exchange for general mdse. **J. A. KASPAREK, Belleville, Kan.**

WE TRADE OR SELL ANYTHING ANYwhere. The Realty Exchange Co., 18-22 Randall Bldg., Newton, Kan.

JEWELL CO., KANSAS—160 a. 4 miles from town, 120 cult., 40 a. pasture. Price $8,000. **J. A. Cole, Esbon, Kansas.**

WRITE G. L. PAINTER & CO. About Ford Co. Land. $15 per acre up. **DODGE CITY, KANSAS.**

FINE HOME, 48 a., one mile of this city, about 38 a. now in cultivation, bal. pasture, 6 room house, new barn 34x60 and hay loft: two wells and mill and other outbuildings; good orchard and all seconod bottom land. Priced to sell at $5,500 cash. **E. F. Dewey, Blue Rapids, Kan.**

BOURBON COUNTY 160 acres, 5 miles from town, 80 acres in prairie grass, 80 acre sin cultivation. Good improvements, smooth land, good soil. $50 an acre. Write for list. **BAINUM & COOK, Fort Scott, Kan.**

GREENWOOD COUNTY NURSERY.
We have for fall and spring delivery a general line of nursery stock. Apple, crab apple, pear, cherry, plum, peach, apricot, quince, grapes, berry plants, catalpa and black locust. A certificate of nursery inspection with each shipment. **J. W. HINSHAW, Eureka, Kansas.**

IDEAL BARGAINS

Arkansas river bottom; 80 acres, dark, sandy loam, 15 ft. to water, 4-room house, barn, mill, young orchard; 4½mi. of Wichita. Price, $100 per acre. City property, small tracts, farms and ranches for sale or trade. **IDEAL REALTY CO., 311 East Douglas, Wichita, Kans.**

CHEAP ALFALFA FARMS

160 a., 4 m. good town, fair improvements, 20 a. alfalfa, 25 pasture, balance crops. Price, $11,500. Terms. Write for bargains.

Howard The Land Man

105 North Main, Wichita, Kan.

ONE OF THE BEST PAYING RANCHES in Greenwood county, Kansas, one mile from town and shipping point; 200 acres in cult., 100 acres of which are first bottom land; 200 acres in prairie meadow, 240 acres blue-stem pasture; 2 good sets of improvements; fine protected feed lots with living water; black limestone soil; cheap at $36 per acre; corn on this ranch this year will make 50 bu. to the acre. J. C. Talbot, Eureka, Kan.

FOR SALE—AN IDEAL FARM—160 A.
On nearly level rock road, 2 miles out, Humboldt, Kans. Sightly. Good 8-room residence, in edge of 2-acre grove of fine forest trees, on slight elevation, overlooking farm of rich divided fields. All tillable, 90 acres in cultivation, 70 in natural grass. A splendid farm with country and city advantages. Price $12,000 cash. Can arrange a good loan if required. This will suit you on inspection. **F. D. CULVER, Humboldt, Kan.**

CHASE CO. RANC

1,696 acres, 250 acres under cult., e bottom alfalfa land, fair improvements, pasture, good water, 1½ miles Strong C Price $27 per acre. Free list.
A. J. KLOTZ & CO., COTTONWOOD FALLS, KA

480 ACRES, well improved, all good l no rock or gravel, 5-room house, large b well, cistern, close to school and town, R. F. D.; telephone in house. Price, per acre. Will take small cash payme will give long time on balance at 6 per c Write for full description. **MANSFEILD LAND CO., Ottawa, Kan.**

OSAGE COUNTY FARM BARGAIN
80 acres, 4½ miles from Osage City, K 40 acres in cultivation, 5 acres good chard, balance native grass land, farm nice and smooth, 8 room house, good c dition, good cellar, barn 26x36 ft. with granary, hen house, hog and cattle sh plenty of good water, close to school, R D. and phone. Price, $4,500. **J. C. RAPP & CO., Osage City, Kan**

BIG BARGAIN.
Direct from owner; excellent stock f 560 a., one-half tillable; fine blue meadow and pasture; good soil; extra l stock and hay barn, built of stone; go room house; abundance of fine water; orchard; 3 mi. to railroad; 6 mi. to co seat; 1 mi. to school and church; R. F. good roads; fine settlement; must sacr at $30 per acre; will carry part. Addre **LOCK BOX 807, Fredonia, Kansas.**

FIELD NOTES.

Beery's Big Type Polands.
Ernest W. Beery, breeder of big Poland Chinas at Shambaugh, Ia., wri "I took my great herd boar, Jumbo I pect, to the Page county (Iowa) fair won first and sweepstakes on boar of age or breed. He showed in just form, but carried a weight of 950 pou He runs in the orchard at home and not fat. All the breeders and farmers saw him pronounced him one of the boars living. They also united in sa that he is the largest hog they ever with the quality of the small type. sas Farmer readers can have his pi by asking for it on a postal."

Fulton's Annual Sale October 24.
Every Kansas Farmer reader who bel in size and quality in Poland Chinas sh be interested in W. F. Fulton's annual sale, to be held at Waterville, Kan., T day, October 24. Mr. Fulton always has a offering, and this year is no exceptio the rule. Of the 45 head to be sold t will be 20 boars, two of which are Fu Chief fall boars and the rest spring bo There will be five Fulton Chief fall just like the ones Mr. Fulton sold fall. Two of them will have litters by day. The spring pigs are mostly by Fulton's great young boar, Bell Boy, Bell Expand, he by Bell Metal. Bell is one of the big, massive fellows power to transmit his size to his get. offering is one of good size, ages sidered. It will afford the last chanc buy stuff sired by the great sire, Full Chief, as this boar became crippled shipping from Hutchinson fair last y He was a thousand pound boar, with q ity to spare. He was one of the sow sires ever owned in this part of K sas, and the fall gilts in this sale sh find homes in the best herds. Mr. Fu owns a fine sow herd, rich in the b of the Hutch boars. Old Hutch, Big H and Capt. Hutch are sires of many of th There are also daughters of Nebr Jumbo, Banner Boy and other sires of n Mr. Fulton will appreciate your pres at this sale and will treat you fairly do everything possible for your com Write now for catalog, and mention notice. Bids may be sent to Jesse John in Mr. Fulton's care at Waterville, Kan

(Continued on page twenty-three)

eaders Market Place

CLASSIFIED ADVERTISING 3 CENTS A WORD

Advertising "bargain counter." Thousands of people have surplus items or stock sale—limited in amount or numbers hardly enough to justify extensive display ad- tising. Thousands of other people want to buy these same things. These intending yers read the classified "ads"—looking for bargains. The "ads" are easy to find and sy to read. Your advertisement here reaches a quarter of a million readers for 3 nts per word for one, two or three insertions. Four or more insertions, the rate is cents per word. No "ad" taken for less than 30 cents. All "ads" set in uniform e, no display. Initials and numbers count as words. Address counted. Terms al- ys cash with order. Use these classified columns for paying results.

MALE HELP WANTED.

ANTED—LOCAL MEN TO TAKE OR- for nursery stock in Kans., Mo., Ill., outfit free; cash weekly. National eries, Lawrence, Kan.

ALESMEN WANTED TO CANVASS farming and threshing trade, soliciting rs for lubricating oils, greases and pre- d paints. Excellent opportunity for t party. Previous experience unneces- Address at once the Victor Oil Com- , Cleveland, O.

OU ARE WANTED FOR GOVERN- t positions. $80.00 month to commence. ual vacations. Short hours. No "lay- " Common education sufficient. Over 0 appointments coming. Influence un- ssary. Send postal immediately for list and description of positions open. nklin Institute, Dept. O-88, Rochester, .

OCAL REPRESENTATIVE WANTED— ndid income assured right man to act er representative after learning our busi- thoroughly by mail. Former experience cessary. All we require is honesty, ity, ambition and willingness to learn a ative business. No soliciting or travel- This is an exceptional opportunity for an in your section to get into a big- ing business without capital and become pendent for life. Write at once for full iculars. Address E. R. Marden, Pres. National Co-Operative Real Estate pany, L473 Marden Bldg., Washington, C.

REAL ESTATE.

OD SALE—80 A. ALFALFA LAND. IF rested write for list of ten 80 acre tracts r Salina. V. E. Niquette, Salina, Kansas

XCHANGES—ALL KINDS, EVERY- re. What have you? Overlin & Son, fornia, Mo.

RE YOU LOOKING FOR A HOME? for to make an investment in land. I show you just what you want. Give a trial. H. W. Hinrichs, New Albin, Ia.

ARMS FOR SALE OR EXCHANGE where in Kansas, Okla., Mo., Texas and o.; write me or call. C. L. Sayler, To- a, Kan.

OMESTEADS, CHEAP LANDS, RANCHES, roved farms, orchard tracts; Calif. and gon; new country; free booklet. L. F. tis, Com'r, N. C. O. Ry., Reno, Nev.

RKANSAS CHEAP HOMES—OZARK t belt; oak and hickory timber; mild mate; pure water; free range; $3.50 to per acre. Address Dept. A, Jones & Pettigrew, Ark.

0-ACRE FARM FOR SALE OR e; 90 acres rich valley land; 80 acres fruit and grass land; close to school railroad. James Blevens, owner, Bata- Boone County, Ark.

ILL YOU TRADE? SOMEBODY ts just what you have got. We can him for you. Write today and better r condition. R. G. McCoy, Formoso, n.

E HAVE FIFTY IMPROVED FARMS, miles south of Kansas City, $40 to $100 acre; fine corn, wheat, oats, timothy, ver, bluegrass land. Send for lists. J. Wilson, Drexel, Mo.

OR SALE OR EXCHANGE—40 ACRES irrigated fruit land in Delta county, orado. Price, $2,800, favorable terms. uld exchange for Oregon property. Ad- ss owner, H. N. Bouley, Albany, Ore.

PECIAL BARGAIN—MY 240-ACRE er bottom farm. Will sacrifice for quick e. Write today for description. Ad- ss, Owner, K., Lock Box 25, Lenora, n.

OR SALE—FOUR ACRES AJOINING n. Street car service at door. Fine ools. Good barn and shed. Plentiful ter. Price $6,500. Mrs. B. E. Pease, poria, Kan.

UST SELL IMPROVED IRRIGATED acre farm; near Greeley, Col. Address, x 242, Alvin, Texas.

60 ACRES OF WHEAT LAND IN HAM- n Co., Kan., 12 miles south of Kendall; acres broke, balance pasture, smooth as floor, all fenced and cross fenced; good ll, no other improvements. Price $1,000, d a bargain. McNamee Real Estate and y. Co., 225 New England Bldg., Topeka, n.

HOMESEEKERS — THE CHEAPEST rms in the United States today are in Ozarks of Missouri; lovely climate; se to good markets, St. Louis and Kan- s City; for health, wealth, clover, tim- r, bluegrass, timber, fine fruits, beauti- streams, fine fishing and hunting. If want to see the cheapest and best rms you ever saw priced in your life for e money, write for our list and be shown. D. Roberts & Son, Richland, Mo.

60-ACRE FARM, 4 MILES FROM AR- sia, 100 acres in alfalfa, balance being pared for alfalfa, three-fourths interest artesian well, good house, and other buildings; will exchange for Kansas or ssouri land. Price $125 per acre. 80- re farm, close to Artesia, 60 in alfalfa, lance being prepared for alfalfa. Inter- t in artesian well; can exchange this land in lower altitude. Requa, Higgins Rohrbough, Artesia, New Mexico.

FOR SALE OR EXCHANGE—FARMS, automobiles and stocks mdse. anywhere. Write or call. C. L. Saylor, Topeka, Kas.

WHITE REALTY COMPANY, SELLERS of cheap corn and alfalfa farms, Americus, Kan.

TO SELL YOUR PROPERTY, WRITE Northwestern Business Agency, Minneapolis.

TO SETTLE ESTATE—FOR SALE: 160-acres farm, near Pittsburg, Kan., best town in S. E. Kansas; rich land, improved, some timber. L. Belknap, Exr., Pittsburg, Kan.

OWNER BEING IN HIS 71TH YEAR, poor health, will sell at a bargain, corn mill in Weir, Kan., growing town, 3,000 inhabitants. L. Belknap, Pittsburg, Kan.

FOR SALE OR TRADE — FARMS, ranches, automobiles, stocks and city property, anywhere. E. J. Olander & Co., 431 Kansas Ave., Topeka, Kan.

REAL WATER, REAL DITCHES, COMpleted project. 34,000 acres cultuvated. CAREY Act and Deeded. 60,000 acres with water right awaits settlers. Wheatland Industrial Co., Wheatland, Wyo.

ARE YOU INTERESTED IN THE best fruit district of the Ozarks? If so, write us. Spring water. Excellent climate. No malaria. Literature and prices free. Howard & France, Springdale, Ark.

CENTRAL WISCONSIN, 160-ACRE clay loam dairy farm; town 3 miles, school ¾ miles, 100 acres improved, buildings worth $3,000. Price $6,600; easy terms. Also, 160-acre, partly improved, for only $1,850. J. Linderman, Grand Rapids, Wis.

FORTIES, 80'S, 160'S AROUND TOPEKA and Eastern Kansas. Some for trade for larger or smaller farms. What have you to sell, What do you want to buy? List with me. Buy of me. Write G. M. Cottrell, Topeka, Kan.

NORTH ALABAMA—BUY A HOME where there are no crop failures, no hot winds; everything grows according to cultivation, fine climate; $5,500 will buy a fine poultry and fruit farm, orchard enclosed, new 2-story modern house, all poultry houses new, good pasture with running water, on main line of R. R., 50 miles of Birmingham. Deal with owner who is a widow and can't manage the farm. Write B. & O., Ahatchie, Alabama.

PROPOSED PURCHASERS OF GULF Coast land should insist on getting in the Rain Belt. I am offering an excellent tract, in large or small portions, adjoining the ever-flowing Lavaca River, where irrigation is unnecessary. Land is 3 miles from Edna, county seat of Jackson county, Tex. For full information call or write H. W. Mohrhoff, Edna, Tex.

CATTLE.

HOLSTEINS FOR SALE—HIGH-GRADE fresh heifers and cows, springers and young bulls. Ira Romig, Sta. B, Topeka.

FOR SALE — TWO REGISTERED shorthorn bull calves. Will make low price for quick sale. Write for price. R. L. Skubal, Jennings, Kan., R. F. D. 1, Box 11.

60 JERSEY COWS COMING FRESH for winter milkers: must sell 30 head. Come quick and get first choice. O. M. Himelberger, 306 Polk St., Topeka, Kan.

RED POLLED BULLS FOR SALE—6 to 10 months old. Also, Duroc Jersey gilts. All stock registered. Come and see them. I. W. Poulton, Medora, Kan.

FOR QUICK SALE—60 GRADE SHROPshire ewes, 2 registered Shropshire bucks, 28 ewe lambs, $3.50 per head. A. L. Bushnell, Mound Valley, Kan.

JERSEY CATTLE, COLLIES, POLAND Chinas and White Wyandottes; one Scotch Collie pup, female, 6 months old, partly trained, nicely marked, natural heeler, $15. U. A. Gore, Seward, Kan.

REGISTERED HOLSTEIN BULL CALF, born April 26. Sire, Deutchland Cornucopia Sir Detry. Dam, Bernice Ormsby Mercedes DeKol. Color about even. Price $55 crated f. o. b. W. A. Schreier & Son, Argonia, Kan.

DOGS.

FOR SALE—COLLIES AND GREYhounds. J. Koelsch, St. John, Kan.

COLLIES; 100; PUPPIES, BROOD bitches and broke male dogs. W. R. Watson, Oakland, Iowa.

FOX, WOLF, COON, RABBIT HOUNDS; squirrel dogs trained and reliable; guaranteed. E. Hopkins, Mammoth Springs, Ark.

PUPS FOR SALE—FROM FIGHTING, fast running dogs; also, half fox-hound and half wolf-hound pups. Chas. Walker, Gibbon, Neb.

SCOTCH COLLIES—PUPS AND YOUNG dogs from the best blood in Scotland and America now for sale. All of my brood bitches and stud dogs are registered; well trained and natural workers. Emporia Kennels, Emporia, Kan. W. H. Richard.

HOUNDS FOR SALE—TRAINED BEAgle hounds; rabbit dogs, trained; fox hounds; young stock and pups, also setters, pet dogs. All varieties. Brown's Kennels, York, Pa.

POULTRY.

FINE S. C. WHITE ORPINGTONS $1.00 up. Elm Ridge Poultry Farm, Severy, Kan.

BARRED ROCK BABIES AND BREEDers. Eggs, 15, $1.00; 60, $3.25; 100, $5.00; Mrs. D. M. Gillespie, Clay Center, Kan.

S. C. BROWN LEGHORN COCKERELS $1 each, $10 per dozen. Mrs. L. H. Hastings, Thayer, Kan.

SILVER WYANDOTTES—WON 14 prizes at Kansas State Fair, 1911. Stock for sale at all times. L. P. Hubbard, Topeka.

SINGLE COMB WHITE LEGHORNS; hens and cockerels, 50c each. Miss Skelley, Delia, Kan.

SINGLE COMB BROWN AND WHITE Leghorn cockerels. Prices right for quick sales. John Noble, Riley, Kan.

FINE BUFF WYANDOTTE COCKERels and pullets. Catherine Fraser, Haven, Kans.

BUFF COCHINS—A FEW GOOD HENS for sale from my prize-winning Buffs. Eggs in season. J. C. Baughman, 2215 Lincoln St., Topeka, Kan.

BUY NOW, SAVE MONEY. "QUALITY" Rose Comb Reds. Hens and cockerels, 75c; cocks, $1 to $3. Brown Leghorn babies, 10c. Clyde Rees, Emporia, Kan.

LOWEST PRICES ON CHICKENS AND ducks; write us your wants; we have a stamp. J. M. Rahn & Son, Clarinda, Ia., Route 15.

SUPERIOR MIXED CHICKEN FEED—Price (subject to change), $1.80 per cwt., sacked, f.o.b. Write for sample or send order. D. O. Coe, Topeka.

BUFF WYANDOTTES—BARGAIN PRIces for balance of season. Eggs $1.50 per 15; day-old chicks 15c each. High scoring birds only in breeding pens. A rare chance to get a start from high class stock. G. C. Wheeler, Manhattan, Kan.

LIGHT BRAHMAS—YOUNG AND OLD stock for sale from prize-winning birds. Prices reasonable. Also, Spitz puppies for sale. Mrs. A. P. Woolverton, R. R. 2, Topeka, Kan.

HORSES AND MULES.

FOR SHETLAND PONIES, POULTRY, pigeons, pheasants, ferrets, rabbits, guinea pigs, goats, cats, dogs; 2c stamp for circular. Colonel Joseph Leffel, Springfield, Ohio.

HOGS.

FOR SALE—BERKSHIRE BOAR, cheap. L. M. Shives, Iuka, Kan.

GET A YOUNG BOAR—I HAVE FOR sale a few choice spring Duroc boars. Get one early. Write for prices. Paul B. Johnson, Leavenworth, Kan.

HAY.

E. R. BOYNTON HAY CO. KANSAS City, Mo. Hay receivers and shippers. Try us.

WANTED—A NUMBER OF CARS OF No. 1 alfalfa, No. 1 timothy and No. 1 upland prairie hay. Write us what you have to sell, and best price per ton, delivered on cars at your station. Stuart & O'Brien, Paris, Ky.

MISCELLANEOUS.

WANTED—500 FAMILIES TO BUY $50 candy course $2.00; learn how to make fine candy. Everything explained. Satisfaction guaranteed or money back. J. W. Embree, Manhattan, Kan.

FOR TRADE—A NEW CREAMERY doing a good business in a large town, for farm or city property. Also a hotel at Pierceville, Kan., to trade for Western Kansas land. W. J. Trousdale, Newton, Kan.

ELECTRICITY, PLUMBING, BRICKlaying, painting and decorating taught by practical instruction. Positions secured for graduates. Write for illustrated catalogue. Coyne Trades School, Chicago.

ATTENTION: TWO GENTLEMEN'S Fur Lined Overcoats, lined with finest Australian mink, broadcloth outside, beautiful Persian lamb collars, sizes 38-40 and 42-44. Coat $90 each. Never worn; will sell for $25 each. Also two elegant cinnamon bear robes; value $75; sacrifice, pair, $30. Call or write E. Roberts, Room 3, 160 W. 119th St., New York.

SEEDS AND PLANTS.

SOW ALFALFA THIS FALL. BUY your seed from The Deming Ranch where it grew. The Deming Ranch, Oswego, Kan.

$1.00, IF SENT AT ONCE, WILL BUY 25 Norway poplars, the fastest growing tree on earth. Parker Nurseries, Fayetteville, Ark.

POP CORN IS ONE OF OUR SPEcialties. Do you wish to buy or sell? Write D. O. Coe, Feed and Seed Dealer, Topeka.

WANTED—CHOICE AND FANCY NEW crop alfalfa seed. Quote lowest price f.o.b. your track, with samples. Bindery Stevens Seed Co., Tulsa, Okla.

HEDGE POSTS.

FOR SALE—25,000 hedge posts. H. W. Porth, Winfield, Kan.

VIOLINS.

VIOLIN FOR SALE. WRITE MISS Cowan, 1018 Lydia Ave., Kansas City, Mo.

STRADIVARIUS VIOLIN FOR SALE—Excellent sweet tone. Miss Bertha G. Mardis, Route 5, Rosedale, Kan.

MULBERRY POSTS.

RANGE FROM 4 INCHES TO 10 inches. Inquire for price. D. Chiles, Oakland, Kan.

OILS.

WRITE US TODAY FOR OUR PRICE list of our complete line of oils; best oils on the market for the price and quality. The Rollin Oil Refinery, Chanute, Kan. (Oldest independent refinery in Kansas.)

RICE.

100 LBS. RICE, FREIGHT PREPAID to your station for $3.50, $4.00 and $5.00. Samples of different grades on request. Beaumont Rice Exchange, Box 765 J, Beaumont, Texas.

FIELD NOTES.

Jacks and Jennets.

In this issue, Mr. Phil Walker, of Moline, Kan., is offering a choice lot of jacks and jennets for sale at prices that will be very tempting to a prospective buyer. Phil Walker is now serving his second term as county commissioner of Elk county and is a man who is perfectly reliable in every way. Write or go and see his herd.

Deitrich & Spaulding Sale.

The name Deitrich & Spaulding, of Richmond, Kan., has long been famous among Poland China breeders, state fair visitors and farmers. Adopting a type of Poland Chinas that had wonderful capabilities, this firm has stayed by it until its merits have won for it a recognition and value which extends far beyond state lines. The Deitrich & Spaulding Polands stand for quality, and their winnings in the many great fairs in which they have exhibited for years, is the best possible proof of the esteem in which this style of Polands is held. When a sale is announced from this herd something unusual in quality is expected, and the crowd attending has never been disappointed. Remember the date, and be at Ottawa on sale day. Ask for a catalog, and mention Kansas Farmer.

Bishop Brothers' Percherons.

The writer recently visited the barns of Bishop Brothers of Towanda, Kan., breeders and importers of Percheron horses. We found their barns full of good young stallions and mares, and we were very much impressed with the enthusiasm these gentlemen have in the future of the horse business. They share the opinion of many that our good draft horses are an absolutely necessity, both to the farmer and to the users of teams in our cities, as our modern implements now used on the farms are patterned on the theory of doing a greater amount of work in a given time than ever before. In our cities our wagons and trucks are larger and heavier that a greater tonnage might be moved, all of which demand greater horse power. We learn, in talking with Bishop Brothers that they began the horse business about 12 years ago. They began in rather a light way, as six or eight head was as many as they kept on hand at one time, but by reason of their careful methods of business, they yearly increased their business until they now keep about 50 head on hand. They cordially invite buyers to visit their barns in town and inspect their horses.

Poland Chinas With Size and Qualtiy.

On October 17, J. D. Spangler, of Sharon, Kan., will offer the best lot of spring pigs he has ever sold in public sale, both as individuals and in blood lines, from a big type standpoint. Mr. Spangler has gained a reputation among breeders for growing spring pigs larger and better than any breeder in Southwestern Kansas. The writer has been calling at the Spangler farm for several years, and each year we can notice an improvement over the previous year. The herd boars are Spangler's Hadley and Sharon Wonder, probably two as good large type sires as are doing service at the head of large herds any place in the corn belt. The herd sows are Lady Mastodon 2d, Mastodon Maid 8th, Lady Columbia 1st, Lady Wonder 6th, Gold Dust Queen and Sister Hutch. All of very popular large type breeding. Many of the spring boars and gilts are out of these good sows and the above mentioned herd boars. Don't fail to read the sale advertisement in this issue, and come to the sale. If you cannot attend, mark the number in the catalog you wish to bid on and send it to O. W. Devine, representing Kansas Farmer, who will handle your bid with confidence and care. The catalogs are out and you should have one. If it has not reached you, write today. Kindly mention Kansas Farmer when writing.

Lee Stanford Sale Good.

On September 30, Lee Stanford, of Lyons, Kan., sold 46 head of mostly spring pigs at fair average. Several breeders were present, but the threatening rain storm kept many farmers away. The offering was first-class in every way, and many bargains passed under the hammer at very reasonable prices. One herd boar, the grand champion of the Kansas State Fair, at Hutchinson, was sold, going to Furnas & Prater, of Oxford, Kan., for $180. The following is a report in full of all selling for $20 or more: Herd boar, Smuggler, Furnas & Prater, Oxford, Kan., $180; No. 1, J. F. Ware, Garfield, Kan., $56; No. 2, W. Bell, Lyons, Kan., $60; No. 3, Furman Smith, Lyons, Kan., $51; No. 4, C. W. Zile, Lyons, Kan., $37; No. 6, C. W. Zile, Lyons, Kan., $71; No. 7, J. F. Ware, Garfield, Kan., $75; No. 8, John Pollerson, Lyons, Kan., $29; No. 9, Lee Lantz, Lyons, Kan., $21; No. 10, F. Nuderson, Lyons, Kan., $41; No. 11, Dick Bros., Whitewater, Kan., $30; No. 12, George Roberts, Larned, Kan., $24; No. 13, Dick Bros., Whitewater, Kan., $30; No. 14, F. H. Schrepel, Ellinwood, Kan., $21; No. 15, F. H. Schrepel, Ellinwood, Kan., $22; No. 16, W. Bell, Lyons, Kan., $21; No. 17, Dick Bros., Whitewater, Kan., $20; No. 18, E. Smithers, Lyons, Kan., $24; No. 19, George McGuire, Wichita, Kan., $26; No. 22, W. Bell, Larned, Kan., $26; No. 26, W. Bell, Lyons, Kan., $20; No. 31, R. Schoonover, Lyons, Kan., $22; No. 35, F. Sylvester, Lyons, Kan., $20; No. 37, E. D. Bright, Lyons, Kan., $21; No. 38, F. H. Schrepel, Ellinwood, Kan., $20; No. 40, Dick Bros., Whitewater, Kan., $26; No. 41, F. Lennen, Lyons, Kan., $41; No. 45, F. H. Schrepel, Ellinwood, Kan., $21; 46 head sold for $1,390.

(Continued on page thirty)

HORSES AND MULES

REGISTERED HORSES
O. K. BARNS, SAVANNAH, MO.,
W. E. Price, Proprietor.
Dealer in registered horses. Three very fine stallions to SELL AT ONCE. Also the best stud colt in the state. Write for description of stock. I can suit you.

THE BEST IMPORTED HORSES, $1,000 each. Home-bred, registered draft stallions, $200 to $600 at my stable doors. Address A. LATIMER WILSON, Creston, Iowa.

HOME-BRED DRAFT STALLIONS $250 to $600; imported stallions, your choice $1,000. F. L. STREAM, Creston, Iowa.

PERCHERON HORSES, HOLSTEIN-FRIESIAN CATTLE.
Up-to-date Poland China hogs. Write your wants.
H. N. HOLDEMAN, Meade, Kans.

ANGUS CATTLE

BIG SPRING ANGUS CATTLE.
Jasper Auldridge & Son, Pattonsburg, Mo., Proprietors.
Breeders of pure bred Angus cattle and Duroc Jersey hogs.
Breeding Stock for Sale.

ANGUS CATTE
Allendale Farm, Savannah, Mo.
W. A. Holt, Prop.
Breeder of pure bred Angus cattle—a few choice young bills for sale. Prompt answer to inquiries.

JERSEY CATTLE

LINSCOTT JERSEYS

Offers a few choice cows in milk and some bred heifers. Milk and butter records accurately kept.
R. J. LINSCOTT, Holton, Kansas.

CHOICE JERSEY BULL CALVES.
In age from 3 to 12 months; the best of breeding, colors and individuality.
HENRY E. WYATT.
Falls City, Neb.

THREE BULLS, 2, 4 and 18 months, by Beatrice Stockwell, Doudoneflar Jewell and Ooneris Eminent; several cows and heifers, all ages, solid colors and bred in fashion; test from 5 to 10 per cent butterfat.
S. S. SMITH, Clay Center, Kan.

GOLDEN RULE JERSEY CATTLE HERD.
Headed by Oomeri's Eminent 85865; few bred cows and heifers for sale; reasonable prices.
JOHNSON & NORDSTROM,
Clay Center, Kan.

FOR SALE—Ruby's Financial Count, son of Financial Count No. 61316; the dam is Ruby's Fontaine No. 212934, a 45-pound cow recently sold for $350; gave 45 pounds of milk per day with second calf, milk testing 5½ per cent, and with last calf at the age of 6 years gave 44 pounds of milk for a long period of time, milk testing 5½ per cent. The dam and grand dam of this cow are both 40-pound cows. Ruby's Financial Count is 3 years old and fit to head any herd. Financial Count is a half brother of Financial Countess, a cow with a butter record of 935 pounds and 10 ounces in one year. This young bull is sure, gentle and a fine individual. W. N. BANKS, Independence, Kansas.

SHORTHORN CATTLE

Houx's Polands and Shorthorns
50 big type Poland Chinas. March and April pigs, sired by two extra heavy boned boars. Priced at farmers' prices. Ready to ship, order now, and get choice. Description guaranteed. Also a few choice Roan Shorthorn bulls to offer. Sired by King Challenger 312040, a son of White Hall King, 222724. Prices reasonable. Come or write.
W. F. HOUX, JR., Hale, Mo.

SHORTHORNS
EVERGREEN HOME FARM.
Lathrop, Missouri.
Milking Shorthorn cattle, bred hornless. Berkshire hogs. Oxforddown sheep. Bourbon Red turkeys. Young breeding stock for sale. A herd of 35 bred Oxforddown ewes to go at a bargain if taken at once. Address
J. H. WALKER, Lathrop, Missouri.

Pearl Shorthorns
40 BULLS, 6 to 20 months old; straight Scotch and Scotch topped—mostly red. Can spare a few females, same breeding.
C. W. Taylor, Enterprise, Kan.
R. R. Station, Pearl, on Rock Island.

ALFALFA LEAF SHORTHORNS
Young stock for sale. Also Silver Laced Wyandotte eggs for sale.
JOHN REGIER, R. 1, Whitewater, Kansas.

ELM GROVE FARM.
Shorthorn cattle and Percheron horses. Write for description and prices.
ISAAC NOVINGER & SONS
Kirksville, Missouri.

GLEN HALL SHORT HORN HERD
Headed by Choice Prince, by Prince of Tebo Lawn and out of Good Lassie by Choice Goods. 5 choice red bulls in age from 10 to 14 months. Herd header, Prospects.
JOHN O'KANE, Blue Rapids, Kan.

TENNEHOLM SHORTHORN CATTLE—Bred for beef and milk; breeding as good as the best; of Scotch and Bates lines. We use them as dairy cows and find them very profitable. A few young bulls and some females for sale. Write E. S Myers, Chanute, Kansas.

SHORTHORN CATTLE

HERD BULL For Sale
Victor Orange 312830, a Scotch Orange Blossom, sired by Victorious 121469.
H. R. COFFER, Savannah, Mo.

HEREFORD CATTLE

MODERN HEREFORDS
HERD BULLS
BEAU BRUMMEL 10th 167719.
BEAU BEAUTY 192235.
CALDO 2d 260444.
Hazford Place Eldorado, Kan.
ROBT. H. HAZLETT.

SPRING CREEK HEREFORDS.
Headed by Christy 234417, Prairie Donald by Beau Donald 7th, and Sir Morgan by Onward 18th. Cows of Anxiety 4th, Hesoid, etc., breeding, including imp. animals. Over 100 head in herd. Few choice young bulls and some good females for sale.
TOM WALLACE, Barnes, Kansas.

Brookside Farm, Savannah, Mo., breeders of Hereford cattle. Herd headed by Hesoid 101st No. 162585 and Horace No. 300428, he by Beaumont. Young bulls for sale. Mail orders given prompt attention.
WARREN LANDERS, Savannah, Mo.

RED POLLED CATTLE

RED POLLED CATTLE
The only dual purpose cattle and the most profitable for the farmer. Choice bulls for sale.
U. E. HUBBLE, Stockton, Kan.

Roan Hero the International Champion and BELVEDERE X2712-195058
Son of the $1,500 Grand Victor X163: 150365 heads my herd of Double Standard Polled Durhams. A few extra good, blocky, thick-fleshed young bulls for sale. Inspection invited. Farm adjoins town.
D. C. VAN NICE, Richland, Kansas.

RED POLLED CATTLE.
The champion beef and milk producer of the age; bred and for sale by the undersigned. Write for prices or come and see the red beauties.
J. B. RESER, BIGELOW, KAN.

AULD BROS. RED POLL CATTLE.
Herd numbers 50, headed by Prince, a ton bull in condition; 10 choice young bulls and a few cows and heifers for sale; farm one mile from town.
AULD BROS.,
Frankfort, Kan.

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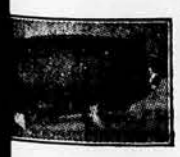

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This Razor is not silver or gold plated. It IS heavily nickle plated and will not rust. It will not clog up, as many safety razors do. It is made for every day use. No delicate parts to get out of order.

Guaranteed unconditionally to shave as good as any razor made, none excepted at any price.

Packed in a neat box. An embossed plush lined leather case does not improve the cutting edge of a razor.

This Razor complete to any subscriber of KANSAS FARMER for **Only 65 Cents.**

Sent free to any subscriber, new or old, sending one dollar for a year's subscription and 15 cents extra for shipping. Extra blades three for 10 cents or 35 cents a dozen. Can be purchased at any time.

Throw away your old razor and enjoy a clean, easy shave and no chance of cutting your face. Address

KANSAS FARMER, Topeka, Kansas

JACKS AND JENNETS

20 large Jacks from 2 to 7 years old.
25 head extra good Jennets priced right.
Come and see me.
PHIL WALKER,
Moline, Elk Co., Kansas

C. M. Winslow, secretary of the Ayrshire Breeders' Association at Brandon, Vt., has published a complete list of names of cows that have been admitted to advanced registry during the past six years. This is a very handy and prolific breed of dairy cattle.

Cultivation Increases Yiel

Continued From Page Twenty

plow well. Likewise the later plowing leaves the soil too loose and not in good seed bed condition.

In preparing land for corn, the listing may be done late in the fall or during the winter, or early spring, the usual plan being to split the ridges with the lister later in the spring when the corn is planted. It is advisable to harrow the listed field once or twice before planting, to destroy weeds or prevent soil drifting and to preserve a mellow soil mulch to conserve the water which has been stored in the subsoil. In preparing land for corn the early listing has proved equal to early plowing and superior to early disking, as shown by the experiments at the Kansas station.

The Summer Fallow.—In the drier portions of the Great Plains area and throughout the mountain states, where dry farming is practiced, the annual rainfall is not sufficient to produce a crop every year, and it becomes necessary to practice a system of summer fallowing every third or fourth season, or in alternate years, in localities of least rainfall, in order to store moisture and develop plant food and thus insure the production of a profitable crop each year.

Deep plowing either in the fall or spring, and frequent surface cultivation as described above, is the method of summer fallowing which has given the best results at the Montana, Western Nebraska and Western Kansas experiment stations.

The weeder is better adapted for harrowing wheat and other small grains than the common harrow, but the harrow may be used when the ground is firm. The writer questions whether it is necessary or advisable, as a rule, to harrow wheat if due precautions have been taken in preparing the seed-bed.

Under certain conditions, where heavy rains firm and puddle the soil, it may be advisable to harrow, but very young grain may be injured by harrowing, and after the wheat covers the ground, harrowing is unnecessary. The harrowing of wheat at regular intervals at the Kansas, Nebraska and Montana experiment stations has not resulted favorably. Without question the proper preparation of seed bed is a much more important factor in the growing of small grains than the cultivation after seeding.

While it is a disputed point among authorities whether it pays to harrow wheat and other sowed crops, there is no difference of opinion regarding the necessity or value of frequent cultivation of corn and of all other crops usually planted in rows, the main purpose being, as described above, to keep down the weeds and maintain a mellow soil mulch as far as practicable during the growing season of the crop. There is some disagreement regarding the depth and frequency of cultivation desirable. The writer favors rather deep cultivation in our drier, hotter climate, and after every hard rain if possible, or at least sufficient to keep the weeds in check.

It is not necessary or practicable to attempt to cultivate after every rain, and there is no virtue in the admonition, "Keep the cultivator going in a dry time." If the soil has been well stirred and the mulch is of sufficient depth, to cultivate again would be loss of time and might do actual harm by drying out the deeper portions of the soil mulch and also causing a too fine and dusty condition of the surface soil, unfavorable to the absorption of moisture when the rain comes.

Dry Farming—Scientific Farming.—It is not necessary to have extra machinery in order to successfully practice the system of culture outlined above. The only implements required or recommended which are not in general use on every well equipped farm are the subsurface packer and the weeder.

Such a system of culture is intended to favor the conservation of soil moisture, and is thus especially adapted to regions where a limited or irregular rainfall markets the most careful methods of soil culture necessary in order to store and conserve the water in the soil and get the most use from it in the production of crops.

The principles stated above have been known and practiced more or less for a long time and are mostly included in the "Campbell" system of culture. H. W. Campbell was among the early apostles of dry farming in the west, and has perhaps done more to call the attention of western farmers to the necessity and advantages of thorough cultivation of the soil than any other investiga The method of culture advocated by Campbell is, in fact, simply good till and thorough cultivation of the soil the right time, in the right way, and a systematic manner.

Scientific farming pays, everywh The writer believes in the practicabil of thorough tillage and good cultivat on every farm, and the increase in cr by such farming will more than pay the extra labor. But the great prob in western agriculture today is not to get larger crops out of the soil fo few years, but rather how to prod paying crops every year and at same time maintain the fertility productiveness of the land.

Simple tillage will not maintain fertility. It becomes necessary fin to replace the plant food, exhausted the continuous growing of crops, w the application of manure, or chem fertilizers, and by green manuring the rotation of crops, in which the ume crops, such as alfalfa and clo are introduced in order to restore ag the nitrogena and organic matter, supply of which has only become m rapidly reduced because of intensive tivation.

Objections to the Bare Summer F low.—There is little question regard the value and even the necessity of summer fallow in the drier areas of west. The tests at a number of west stations and the general experience farmers prove this; yet there are s ous objections to the continued prac of bare summer fallowing.

First, there is the tendency for soil to waste by drifting in strong wi and by washing away in heavy rains

Second, summer fallowing with quent cultivation hastens nitrificat and decay, thus more rapidly exhau ing the organic matter in the soil.

It is possible for the soil to beco rapidly exhausted in fertility by alt nate bare summer fallowing and cr ping than by continuous cropping. least the bare summer fallow does add any fertility to the soil. In or to maintain the productivity of western lands it will become necess to add fertility to the soil, prefera during the year of fallowing.

Green Manuring with Summer Fall

The plan is to plant some fall c or early spring crop and plow it un late in May or early in June, practic a summer fallow with surface culti tion for the rest of the season u seeding time.

Certain crops adapted to the west being tested for this purpose, with so degree of success. The more promis are sweet clover and sand vetch for seeding and field peas for early spr seeding. These crops are hardy, ra growers, and somewhat drouth resista and may be used also in part for past thus giving some return other than th fertilizing value. Some experiments h already been made at the Hays stat in Western Kansas and the yields wheat secured from the green-manur summer fallow compare favorably w the yields from the bare summer fall And, in the writer's judgment, t method of fallowing will soon be g erally adopted and will solve the pr lem for a long time at least, of incre ing the organic matter and maintain the productiveness of our western lan

To Prevent Soil Drifting.—This me od of green manuring and rotation crops will largely prevent soil drifti the control of which is a very seri problem in western agriculture. experience at the Western Kansas periment station at Hays has dem strated also that large areas in wh may be protected and largely preven from being injured by the drifting soil within the field itself. The spre ing of straw or coarse manure and pa ing the straw into the soil with the s surface packer was the most effect means employed for protecting the fie from injury by winds last spring (191 The subsurface packing alone helped prevent the starting of the drifting s within the field, but was not very fective in preventing the soil from a jacent fields from sweeping over t wheat field, but the straw-covered a actually stopped the drifting soil, ca ing it to lodge, and thus protected t field beyond the straw barrier.

In other localities in Western Kans where the rain was greater and the co ditions less severe, the summer fall made a better showing.

Reystead's Big Type Poland China Sale

Saturday, Oct. 21, 1911

IN MANKATO, KANSAS

42 head of strictly big type individuals, 27 spring boars, 15 spring gilts. Big and growthy and fed correctly.

Sired by Such Boars as	Out of Dams Sired by Such Boars as
Kansas Ex.,	Choice Goods,
Mogul's Monarch,	Nebraska Boy,
Smith's Big Hadley,	Hadley,
Choice Goods,	Kansas Ex.,
Big Sam	Jumbo J.,
L.'s Mastiff,	Gold Metal,
Hadley Leader,	Smith's Big Hadley,
Growthy King,	Looks Grand,
Bonny Boy,	Colossus,
Faultless Chick.	Eureka.

A great variety of breeding, selected from the best herds of two states.

Sale under cover. Catalogs on request.

A. R. Reystead,
MANKATO, KANSAS

Auctioneer—John Brenner.

Send bids to Jesse R. Johnson representing **Kansas Farmer.**

FULTON'S ANNUAL BIG TYPE

POLAND CHINA

FALL SALE

Waterville, Kansas

Tuesday Oct. 24th, 1911

The last chance to buy the blood of FULTON'S Chief. 45 head, the smoothest of the big type; 2 fall boars, 18 spring boars, 5 fall gilts, 2 tried sows, 16 spring gilts.

The fall boars and gilts were all sired by Fulton's Chief. Remember the kind sold in my last fall sale? These are just like them. Two of them will have litters at foot on sale day. One of the tried sows is a daughter of Old Hutch and is sister to Capt. Hutch. She will be bred or have a litter at foot. One tried sow by Banner Boy. Nearly all of the spring pigs are by Bell Boy, a grandson of Bell Metal. Others are by Big Hadley's Likeness and Capt. Hutch. Dams of offering are mature sows by such boars as Big Hutch, Capt. Hutch, Nebraska Jumbo, Banner Boy, etc. Catalogs ready October 10.

Auctioneers—James T. McCulloch, T. E. Gordan.

W. F. FULTON,
Waterville, :: :: :: Kansas

Jesse Johnson will represent **Kansas Farmer.** Send sealed bids to him in my care.

C. A. WRIGHT'S Annual Duroc Sale

October 18th, 1911

At farm, 3 miles S. E. of **ROSENDALE, MO.**

60 head of the famous Harlem Heights Duroc Jerseys.

25 boars, 35 sows and gilts, 10 tried sows, proved producers, 5 fall yearling sows.

20 head of high class spring gilts and the best lot of spring boars ever offered at Harlem Heights Farm. The tried sows are Tip Top Notcher, Red Express, Buddy K 4th and Orion breeding. Spring gilts and boars are out of the best sows in this sale. This will be one of our greatest offerings. Our railroad facilities are first class. Only 40 minutes run from St. Joseph. Write us for catalogue. W. J. Cody will represent **Kansas Farmer.**

C. A. Wright
ROSENDALE, MISSOURI

Auctioneers: K. C. Deaton and others.

Bids sent to Fieldmen or Auctioneer in our care will be honorably handled.

ROY JOHNSTON'S

Bigger and Better Polands at Auction

AT SOUTH MOUND, KAN., OCT. 20th

I will sell a draft of good, useful Poland China spring boars, gilts and a few bred sows. There will be 65 head in all—28 boars and 3 bred sows. There will be a few sired by the great Blain's Wonder, about 15 by Orphan Chief, 26 by John Long, and the balance by good, big type boars that stand at the head of some of the best herds in the corn-belt. While I do not claim to have the best there is, yet I am steadily working to improve my herd, and do claim that I have about what looks to me to be the farmer's kind of a hog—prolific, good feeders. **IN FACT, THE KIND THAT FILL THE PORK BARREL QUICKEST AND CHEAPEST.** As crop prospects are a little off it seems to me this will afford a splendid opportunity to buy the real good ones at very moderate prices. My catalog is ready and I will gladly send it to any address for the asking. Write for one today in order to have time to look it over, and send your bids early if it is impossible for you to attend. **Remember, the place is South Mound, Kan. DATE, October 20.** Come to Parsons evening before sale and stop at the Mathewson as my guest.

Auctioneers—Col. F. J. Zaun, C. F. Bears and Harve Lowe.

O. W. Devine represents **Kansas Farmer.** Mail bids sent to him in my care will be handled with care.

Roy Johnston
South Mound Kansas

THE MEISNER KIND

Poland Chinas

AT

AUCTION

Wed. Oct. 25th, 1911

At the farm, 5 miles west of Sabetha and 14 miles northeast of Seneca, Kan.

40 Head of Carefully Selected Spring Boars and Gilts.

Thirty-three spring boars, 7 spring gilts, 32 head sired by the great boar, Metal Choice by Missouri Metal by Bell Metal; 3 boars by Expansive and out of the $160 sow, Lady Look; 1 boar by Big Price and out of dam by Surprise Wonder, 1 boar by Growthy King and out of Looks Grand sow.

DAMS OF OFFERING

are sows of great size and quality, among them being daughters of noted sires. Three of them were sired by Big Orange, one of them out of a Pawnee Chief dam and two of them out of Black Maid, a sow that weighed 810 pounds; one by a son of Grand Chief and others by other great sires. This offering will be well grown out and sold absolutely upon the merit of the different individuals. My guarantee is back of every one of them. Write at once for catalog. Free transportation to and from farm. Breeders stop at either hotel.

T. J. MEISNER,

Sabetha, :: :: :: :: Kansas

Auctioneers—J. W. Sparks, Frank Zaun, Roy Kistner, Henry Trosper.

Jesse Johnson will represent **Kansas Farmer.** Send sealed bids to him in my care.

The Last Chance

TO BUY

MAMMOTH HADLEY BOARS AND GILTS

FRIDAY, OCT. 20th, 1911

MY FOURTH PUBLIC SALE OF BIG TYPE POLAND CHINAS

At farm, 9 miles southeast of Burchard, 11 miles southwest of Pawnee City, Neb., and 7 miles northeast of Summerfield, Kan., 50 head, divided as follows: Two fall boars, 23 spring boars, 25 spring gilts.

Two-thirds sired by Mammoth Hadley, the remainder by Grand Model. Every pig in the sale is either by Mammoth Hadley or out of a Mammoth Hadley sow. I refused $250 for this great sire, and lost him during the hot weather, so this is positively the last chance to buy his get. The dams of the offering are mature sows that any good breeder might well be proud to own. Among them are daughters of Johnson's Chief, Prince Youtell, Looks Grand, Price We Know, and other sires of recognized merit. Catalog upon request. Free transportation from Summerfield and Pawnee City.

GEO. W. SMITH,

Burchard, Nebr.

Auctioneer—James T. McCulloch.

Jesse Johnson will represent **Kansas Farmer.** Send sealed bids to him in my care.

Walnut Grove Farm

Poland China AUCTION

Tuesday, Oct. 17th, 1911

At farm, 1 mile from Alida, 4 miles southwest of Milford and 9 miles northwest of Junction City, Kan.

ANNUAL FALL SALE OF STRICTLY BIG TYPE POLAND CHINAS.

Forty head in all, 25 big, strong, husky spring boars and 15 selected spring gilts. All culls sent to market. This offering is a good one individually and sired by the boars, First Quality by Blue Valley Quality, and Big Tom and Uneda. The last two named are sons of Grand Look and out of a dam by Old Expansion. The sale offerings are out of good producing dams, all of them possessing plenty of size and quality. Among them are daughters of Expansion See 4th, Mc's Perfection, Old Expansion, C's Perfection by Growthy Perfection, etc. I have raised these pigs on alfalfa with a light grain ration, and they will be plenty growthy but not very fat. Every one will be sold to the highest bidder, and I will be satisfied with whatever they bring. But I am very anxious to have as many as possible see them, for I am in the business to stay. Alida, where trains will be met, is on the Junction City and Belleville branch of Union Pacific. Write for catalog.

Sealed bids may be sent to Jesse Johnson in my care at Junction City. Free lunch at noon. Sale right after.

JAS. ARKELL,

Junction City, Kansas

Auctioneer—James T. McCulloch.

FOREST VIEW POLAND CHINAS

AT AUCTION

Monday, Oct. 23rd, 1911

at farm, 13 miles northeast of Manhattan, 15 miles northwest of Wamego, 8 miles southwest of Westmoreland and 3 miles northwest of Flush, Kan.

40—CAREFULLY SELECTED AND CAREFULLY FED BIG, SMOOTH POLAND CHINAS—40

divided as follows: 19 spring and 1 yearling boar, 18 spring gilts and 2 tried sows, with litters at foot sale day. The spring pigs were sired by the boars, Western Expansion, Long's Mogul, Strike Ten and a son of Grand Court, and out of sows that I have bought at top prices at some of the best sales held in Kansas, among them daughters of Grand Look, with Expansion crosses, Big Chief by Wonder 2d, Clay Jumbo by Nebraska Jumbo, etc. The tried sows to be sold are good useful sows and sold as attractions. One is a daughter of Voter with a dam by Grand Look. The other was sired by Clay Jumbo and her dam was by Billy K. I have bred registered Poland Chinas for 10 years and have enjoyed a very satisfactory private sale trade, and invite all my old customers and everyone else that likes good hogs to this sale, either as buyers or visitors. Free dinner and fair treatment. For catalog, write

Edward Welter, Flush, Kansas

Auctioneer—James T. McCulloch.

Send sealed bids in my care to Jesse Johnson, representing **Kansas Farmer.**

CHESTER WHITE, O. I. C. SALES

Unity Chester White

HERD OF PEDIGREED HOGS.
J. N. GEORGE, Proprietor.

Young Stock For Sale

o My Friends and Fellow Breeders:
I will offer for sale, at a sales barn in

Hopkins, Mo., October 18, 1911

rty head of the best pigs that you will be able to find this year. The lood lines are of the best. My herd boars, Iowa Mikado 1035, and Harvey's Best 1041, have proven themselves to be breeders of the best ype. You will miss something if you do not attend this sale.

J. N. GEORGE, Hopkins, Mo.

Catalog free. Be sure to write for one.
Arrange to attend this sale, and J. H. Harvey sale at Maryville the ext day.
Auctioneers—Col. F. J. Zaun and Col. Glen Bradley.
W. J. Cody will represent Kansas Farmer.

PUBLIC SALE

O. I. C. Chester White Hogs

of merit, quality and style, with best of breeding known. Fifty head of boars and gilts, running in age from December to April farrow, to be sold at

Maryville, Mo., Oct. 19, 1911

Herd headed by Jumbo 2d, one of the greatest sons of the noted 1210-pound Jumbo. Boars and gilts not related. Plan to attend sale and buy them at your own price. The best breeding that I could secure is represented in this sale.

Auctioneers—Col. T. E. Deem, Cameron, Mo.; R. P. Hosmer, Maryville, Mo.

Breeders attending the J. N. George sale can reach Maryville in time for my sale.

Apply for catalog to

J. H. HARVEY, Maryville, Mo.

W. J. Cody will represent Kansas Farmer.

HOBSON'S ANNUAL SALE OF STRICTLY

BIG TYPE POLAND CHINA PIGS

AT CLOVERDALE FARM NEAR

KING CITY, MO., WEDNESDAY, OCT. 11th, 1911

Fifty head, 25 boars and 25 gilts, February and March farrow. The carefully selected tops of our big herd of early spring pigs. Remember, we never sell a single pig until our annual fall sale, and never hold bred sow sales. One offering a year of strictly high-class tops is our plan. No culls or seconds offered in our sales. Our offering this year are all big, husky fellows, big boned, with length, depth and class, and with feet and legs that are right. Our breeding of the Big Type Polands is as good as there is in America, and they are raised and developed for breeding animals, and not just for pork. Every pig offered in this sale was sired by our great herd boar, Missouri Metal, a boar that has proven one of the best breeders of the big type, and are out of sows of the best big type breeding. Can you afford to miss this opportunity to buy at your own price one or more of our splendid offering? Write for catalog.

Auctioneers—Col. Jas. W. Sparks, J. A. Klaas, W. D. Gibson. W. J. Cody will represent Kansas Farmer at this sale.
All bids sent to auctioneers and fieldmen in our care will be honorably used.

S. A. Hobson & Son, King City, Mo.

Long's Mastodon Sale of Big Poland Chinas

Wednesday, Oct. 18, 1911.

At farm, 4 miles southeast of Meriden, and 14 miles northeast of Topeka, Kan.

50 - Head of the Big Mastodon Kind Bred and Fed Properly - 50

Comprising 20 spring boars, including one yearling and the herd boar, Long's Mogul; 8 spring and fall yearling gilts and 22 spring gilts.

SIRES OF OFFERING.

The spring offering was sired by Mastodon 2nd, Long's Mogul, L.'s Mastiff, Gold Metal and Expansion Chief. The yearlings are by Long's Mogul.

DAMS OF OFFERING.

The dams of the offering are mature sows, daughters of such noted boars as Big Chief, First Look, Winning Graniteer, Big Bone Mouw, Long's Mogul, Ross' Hadley, Expansive, Guy's Monarch, etc. I have selected them from the best herds of the country, always buying size with coarseness.

Catalog, giving full information, sent upon request. Free transportation to and from sale from Meriden.
Auctioneers—Sparks, Daum, Triggs, Ward Bros.

W. E. LONG, MERIDEN, KANSAS

Jesse Johnson will attend this sale. Send sealed bids to him, in my care.

POLAND CHINA PIG SALE

J. D. SPANGLER'S LARGE TYPE, AT

Sharon, Kansas, Tuesday, October 17th, 1911.

60 Head — 30 HIGH CLASS SPRING BOARS — 30 GROWTHY SPRING GILTS — 60 Head

These are the big, smooth, easy feeding kind, good bone, good back, good ham, good feet and heads. They are as good a lot as I ever sold in a sale, and I have raised a lot. There is not a poor one in the lot. This offering is sired by large type boars—Spangler's Hadley, Sharon Wonder by A. Wonder, and out of Lady Columbia 2nd. Also a few sired by a good son of Bell Metal, out of the best sows I ever owned. In my herd are Lady Mastodon 2nd, Mastodon Maid 8th, Lady Columbia 1st, Lady Wonder 6th, Gold Dust Queen, Sister Hutch. Visitors from a distance met at all trains at Attica or Sharon. Write today for catalogue to

J. D. SPANGLER, Sharon, Kansas

Send bids to O. W. Devine, representing the KANSAS FARMER, who will treat you fair.

Maple Leaf Herd Annual Sale of

Improved Chester White Swine

Garnett, Kansas, Wed., Oct. 25, 1911

50 Head 25 CHOICE SPRING BOARS 20 CHOICE SPRING GILTS 3 FALL GILTS 2 TRIED BROOD SOWS **50 Head**

This is positively the best offering I have ever sold, and I guarantee every one to be right. I am selling five different blood lines and can mate young herds for farmers and small breeders. This will be an excellent opportunity to buy first-class breeding stock at very reasonable prices. My catalogs are ready to mail out, and can be had for the asking. They contain much valuable information. Write today. Mention Kansas Farmer.

I will also sell a few choice Registered Holstein Fresian Cows, 1 Yearling Heifer, 1 Spring Bull Calf.

Sale will be held right in town. If you cannot attend, send bids to O. W. Devine, representing Kansas Farmer, or I. M. Fisher, Secretary National O. I. C. Records, in my care.

Auctioneers—Thomas E. Deem, Cameron, Mo.; J. F. Given, Waverly, Kan.

R. W. GAGE, GARNETT, KANSAS. R. F. D. No. 5

Big Type Poland China Sale

Ottawa, Kansas

Tuesday, October 17th, 1911

44 HEAD 3 FALL BOARS 4 FALL YEARLING GILTS 1 YEARLING SOW 20 SPRING BOARS 15 SPRING GILTS 1 SOW WITH LITTER **44 HEAD**

The major portion of this offering are strictly Big Type of the leading strains, and you will find boars in this offering good enough to head any herd. The gilts are equally good. We will also sell a few of the choicest medium type ever put through a sale ring. We include in this sale Second Prize under 6 months' boar.

First and Second Prize under 6 months' Gilts. First and Second Prize under 1 year boars. Second Prize under 1 year sow.

This offering is sired by Gold Mine, Master Stroke, Wide Awake, Big Snake, Hadley Boy, Blue Valley Quality, Mogul's Monarch, Bell Metal 3rd and Expansion. Col. Lafe Berger, Auctioneer. B. C. McQuesten, Clerk.

Write at once for Catalogue. DIETRICH AND SPAULDING, **Richmond, Kansas**

HERMAN CRONNIGER & SONS WILL SELL

POLAND CHINAS

MONDAY, OCTOBER 23, 1911

Bone and Prolificacy. **80 HEAD** 4 Fall Boars 36 Spring Boars 20 Spring Gilts 20 Yearling Sows **80 HEAD** Size and Quality

Our offering is sired by Big Hadley's Likeness, Banner Boy, Exalter, Defensive, Expansion's Son, Chief Designer, Sunflower King, Faultless Chief, Kansas Ex, Expansion Over and others, and out of an unequaled herd of Big Type sows.

Our stock is not loaded down with fat, but is in the best possible condition to become profitable breeders. Thirty-three years' experience breeding Poland Chinas has taught us the proper method of feeding breeding animals to insure their future usefulness. You will have a chance October 23 at some of the best there is in breeding and individuality. Come and spend the day with us—we want to show you our brood sows. Come to Denton, on the Rock Island, or to Severance, on the Grand Island. Good train connections both ways morning and evening. We are located 25 miles west of St. Joseph, Mo. Let us send you our catalogue. Address—HERMAN GRONNIGER & SONS, **Bendena, Kansas**

Bids will be handled by Col. J. W. Sparks and Col. C. J. Foster, Auctioneers, and Jesse R. Johnson, for Kansas Farmer.

FIELD NOTES.

T. T. Langford's Big Polands.

T. T. Langford, the well known big type Poland China breeder of Jamesport, Mo., is offering a lot of outstanding good ones sired by Pastime, King Clipton, C. Wonder, Big Bill Taft, Pawnee Chief Hadley and the celebrated Brandywine. If you want breeding stock sired by prize winners, it can be found in Mr. Langford's herd. He records everything before it is shipped and guarantees the description of every hog.

Reystead's October 21st Sale.

One of the best appearing of strictly big type herds of Poland Chinas to be sold this fall will be that of A. R. Reystead of Mankato, Kan. This sale will be held in town and under cover. There will be forty head sold, twenty-seven of which will be spring boars and the remainder spring gilts. By reading the advertisement which appears in this issue of Kansas Farmer a good idea can be had of the great variety of strictly big type breeding to be offered in this sale. Mr. Reystead was a very heavy buyer at the best bred sow sales held in Kansas and Nebraska last winter, buying seventeen head of sows in all at an average of over $60 per head. All of these sows were bred to great boars and the produce from them comprises this sale. The offering as a whole is a very growthy one and contains many herd boar prospects. These hogs will go into the sale in nice breeding condition, but not fat. Get a catalog early and arrange to attend this sale. Please mention Kansas Farmer when you write.

Gildow & Sons' Big Polands.

Dr. John Gildow & Sons of Jamesport, Mo., are offering a number of very high-class big type spring boars and gilts. Also a number of extra good fall yearling sows. Gildow & Sons have one of the best big type herds in the country, and breeding stock selected from their herd is making good with the best breeders. Their show boar, Pawnee Chief Hadley 144311, was a feature of the Poland China show at St. Joseph last week. Pawnee Chief Hadley was sired by Big Hadley 13305, dam Pawnee Sally 353700. He was one of the biggest hogs on exhibition and was awarded first on aged boar, champion 1-year-old and over, and grand champion, any age. The stock they are offering at this time is strictly high class and the big kind.

Hog Cholera Preventative.

Should the farmers and hog raisers of this country be called upon to sustain enormous losses from hog cholera? Assuredly they should not. But is there any way by means of which such losses can be prevented? Just as assuredly there is. Thousands of farmers throughout the country have learned that a small quantity of Merry War Lye mixed with swill or drinking water cures hog cholera, promptly checks its spreading where once it has broken out and is a positive preventive of that disease. It is also recognized as the best hog conditioner and destroyer of lung and intestine worms on earth. It keeps hogs on their feed, in prime condition and constantly adding to their weight. Therefore every farmer, regardless of whether or not his own hogs have cholera or whether or not it is prevalent in his neighborhood, should at once use this one sure precaution which, in numberless instances, has been proved so perience of Mr. P. O. Perkins of Wellsville, successful. As a single instance, the ex-Kan., strikingly proves the efficiency of Merry War Lye when used according to directions. He writes: "My hogs were thin and would not eat and acted as though they had no life, so I tried one can of Merry War Lye and I noticed a great improvement in the herd in a few days." Merry War Lye is for sale at all dealers. It is the only lye which is guaranteed to be absolutely safe to feed to hogs—the only lye, in fact, which is prepared especially as a hog remedy and conditioner. For this reason great care should be exercised against the acceptance of any other brand of lye for hog feeding purposes. Disappointment in results and possible injury to the hogs would more than likely attend the administering of any other brand than Merry War Lye. E. Myers Lye Company, Dept. 12, St. Louis, Mo. Write for free book on Profitable Hog Raising.

Mammoth Hadley Sale.

The last chance to buy the get of the great boar, Mammoth Hadley, will be at the George W. Smith sale, to be held at his farm near Burchard, Neb., Friday, October 20. Few boars of the West have gr favor and retained their popularity ly upon their merit as has this sir was never shown, even at a county and neither he nor his get have be tensively advertised. But he was a sire and a producer of great individ and this is the only reason why his has come to be looked upon with so favor. Mr. Smith had a right to fee plimented last summer when two di breeders made him an offer of $ this boar. Mammoth Hadley was sale, but some ailment, caused, dou by extreme heat, did what money co do, and so Mr. Smith found himse prived of his great boar. He is ha the thought that he has a number of moth Hadley sows that will stay herd. Now Mr. Smith is making h sale composed of sons and daught old Mammoth. Everything in the sa be either by him or out of sows si him, so it is strictly a Mammoth sale. The Smith sow herd has for attracted buyers to Mr. Smith's sale has an unusually choice lot of big, mo daughters of Johnson's Chief, Prince tell, Price We Know, G. W.'s Model, Grand and other boars that have tributed their share toward making t type noted in this section of Neb This is Mr. Smith's fourth public sa his methods of doing business are known, also the kind of hogs he Write at once for catalog and co send bids to Jesse Johnson, in Mr. S care, at Burchard, Neb.

ELD NOTES

FIELD MEN.

ne Devine.....Topeka, Kan.
R. Johnson.....Clay Center, Kan.
. Cody.....Topeka, Kan.

PURE BRED STOCK SALES.

Percherons.

8—W. S. Corsa, White Hall, Ill.
14-15.—H. G. McMillan & Sons, Rock lds, Ia.
15-16.—E. R. Morgan, Blue Rapids,

5—Isaac Novinger & Sons, Kirksville,

8—Whitewater Falls Percherons, J. C. ison, Towanda, Kan.
6-7.—H. G. McMill n & Sons, Rock lds, Ia.

Holstein-Freisians.

7-8.—H. C. Glissman, Station B., ha, Neb.

Herefords.

10.—Thos. Crawford, Butler, Mo.
7-18—G. W. Newman, Emporia, Kan.
15-16.—E. R. Morgan, Blue Rapids,

Shorthorns.

1.—Dr. R. A. Stewart, Hutchinson,
11—J. F. Stodder, Burden, Kan.

Guernseys.

—Wilcox & Stubbs, Des Moines, Ia.

Poland Chinas.

7.—Jas. Arkell, Junction City, Kan.
17—Dietrich & Spalding, Ottawa.
7.—J. D. Spangler, Sharon, Kan.
8—Geo. M. Hull, Garnett, Kan.
0—Roy Johnston, South Mound, Kan.
20—Geo. W. Smith, Burchard, Neb.
1.—Stedem Stock Farm, Marshall, Mo.
1—A. R. Ryestead, Mankato, Kan.
3—Herman Gronniger & Sons, Ben- a, Kan.
3—Edward Welter, Flush, Kan.
4—W. F. Fulton, Waterville, Kan.
4—A. P. Young, Lexington, Mo.
4.—F. C. Swiercinsky, Belleville, Kan.
5—Albert Smith & Sons, Superior,

5.—R. M. Finch, Sheriden, Mo.
5—T. J. Meisner, Sabetha, Kan.
7—Baker Bros., Butler, Mo.
7—J. C. Halderman, Burchard, Neb.
7—J. O. James, Bradyville, Iowa.
8.—W. V. Hoppe, Stella, Neb.; sale at City, Neb.
0—J. H. Harter, Westmoreland, Kan.
1—M. T. Williams, Valley Falls, Kan.
1 S. A. Bugg, Hamilton, Mo.
1—H. G. Walker & Co., New Madi- Ohio.
1—H. B. Walter, Effingham, Kan.
2.—W. L. Wright, Rosendale, Mo.
2.—W. H. Emens, Elmdale, Kan.
2—H. C. Graner, Lancaster, Kan.
3.—T. E. Durbin, King City, Mo.
6—J. E. Bowser, Abilene, Kan.
7—H. J. Griffiths, Clay Center, Kan.
8—L. E. Klein, Zeandale, Kan.
8—W. A. Prewett, Asherville, Kan.
9.—Joe Schneider, Nortonville, Kan.
11—P. L. Ware & Son, Paola, Kan.
13—Walter Hildwein, Fairview, Kan.
14—F. W. Barber & Son, Franklin,

15—A. P. Wright, Valley Center, Kan.
15—C. W. Jones, Solomon, Kan.
16—Miller & Manderschied, St. John,

17—J. F. Ware, Garfield, Kan.
18—George W. Roberts, Larned, Kan
20.—O. M. Furnas, Oxford, Kan.
4.—Ben. Bell, Beattie, Kan.
5.—H. B. Walter, Effingham, Kan.

7.—A. R. Enos, Ramona, Kan.
21.—A. L. Allbright, N. E. Copeland, lerville, Kan.
—T. J. Meisner, Sabetha, Kan.
24—A. L. Albright, Waterville, Kan.
25—J. H. Hamilton & Son, Guide Rock,

27—A. C. Lobaugh, Washington, Kan.
5—J. L. Griffiths, Riley, Kan.
6.—Thompson Bros., Marysville, Kan.
6—H. C. Graner, Lancaster, Kan.
7—Albert Smith & Sons, Superior,

8—T. J. Charles, Republic, Kan.
8, 1912—George M. Hull and Col. C. E. ean, Garnett, Kan.
9.—S. N. Hodgson, Parker, Kan.
14.—H. L. Faulkner, Jamesport, Mo.
12—Oak Hill Stock Farm, Esbon, Kan.
16—J. H. Harter, Westmoreland, Kan.
17.—Ernest W. Beery, Shambaugh, Ia.
17—A. R. Ryestead, Mankato, Kan.
20—R. M. Bunnell, Atchison, Kan.
20—E. E. Logan, Beloit, Kan.
21—W. A. Prewett, Asherville, Kan.
22—C. W. Jones, Solomon, Kan.
23—J. J. Hartman, Elmo, Kan.
24.—C. H. Pilcher, Glasco, Kan.; sale Concordia, Kan.
27, 1912—L. R. McClarnon, Bradyville
2.—Robert I. Young, St. Joseph, Mo.
6.—Lee Gross, Nodoway, Mo.
15—Dr. John Gildow & Sons, James- ort, Mo.
ch 2—F. W. Barber, Franklin, Neb.
ch 6—T. M. Willson, Lebanon, Kan.

Duroc Jerseys.

14—H. B. Miner, Guide Rock, Neb.
17—Pearl H. Pagett, Beloit, Kan.
18.—C. A. Wright, Rosendale, Mo.
20.—J. B. Davis, Fairview, Kansas.
25.—C. E. Conover, Stanberry, Mo.
27—Dana D. Shuck, Burr Oak, Kan.
ov. 3.—T. I. Woodall, Fall River, Kan.
v. 1—W. E. Monasmith, Formosa, Kan.
v. 2—Frank Elder, Green, Kan.
v. 15—J. F. Stodder, Burden, Kan. ....
v. 15-16.—E. R. Morgan, Blue Rapids, Kan.
20.—Horton & Hale, DeKalb, Mo.
30—Ward Bros., Republic, Kan.
31—W. E. Monasmith, Formosa, Kan.
1—Geo. Phillippi, Lebanon, Kan. Sale t Esbon, Kan.
7, 1912—Frank Elder, Green, Kan.
2—Rinehart & Son, Smith Center, Kan.
3—W. C. Whitney, Agra, Kan.
8.—J. B. Davis, Fairview, Kansas.
8—Geo. M. Hull, Garnett, Kan.
8.—Sanderson Bros., Cleburn, Kan.
9.—Sanderson Bros., Blaine, Kan.
13.—Grant Chapin, Green, Kan.
13—J. O. Hunt, Marysville, Kan.
Feb. 14.—Edward Fuhrman & Sons, Oregon, Mo.
Feb. 15.—Horton & Hale, DeKalb, Mo.
Feb. 14—Thompson Bros., Garrison, Kan.
Feb. 15—Grant Chapin, Green, Kan.
Feb. 27—W. T. Fitch, Minneapolis, Kan.
Feb. 28.—Leon Carter, Asherville, Kan.

O. I. C. Swine.

Oct. 25—R. W. Gage, Garnett, Kan. worth, Kan.
Oct. 30.—C. R. Champion & Son, Raymore, Mo.
Nov. 4—George O. Clark, Wilcox, Neb., and O. W. & E. Holtquist, Sacramento, Neb Sale at Holdredge, Neb.

Land.

Nov. 15-16.—E. R. Morgan, Blue Rapids, Kan. (Capital Bluff Stock Farm.)

Angus Herd Book.

Volume 20 of the Aberdeen Angus herd book is just off the press. It contains pedigree records numbered 136501 to 148500, inclusive, and covers the year from April to May, 1911. A fund of useful information has been included by Secretary Charles Gray in addition to the pedigrees. Standard of excellence, list of numbers, list of breeders, table of gestation, reports of officers and lists of special premium awards are some of the things of value. The work may be had by addressing Secretary Gray, at Live Stock Board Building, Chicago.

A Good Memory.

Every time a man is seen working to good advantage, there is a man with a good memory. Some persons complain of their "poor memories," and use the complaint as a sort of apology for lack of ability. This is especially true with many when it comes to speaking in a lodge, grange meeting, town meeting or in a farmers' institute. Now, anyone can develop memory the same as an arm muscle is developed. It only requires a little systematic effort every day, which effort calls for no special time apart from regular duties. Just how best to make this effort is explained by Prof. Henry Dickson in his correspondence course on memory training. Mr. Dickson has two instructive books which he sends out, free, to explain his system, and everyone, young and old, can't help but profit from knowing about it. Full particulars by return mail can be had by writing Henry Dickson, 520 Auditorium Bldg., Chicago, Ill.

Williams' Shorthorns.

The Mitchell County Breeders' Association show and fair, held at Beloit last week, was characterized by quality in most departments, but especially in Shorthorns, where the showing was remarkable and the contests for the prizes keen. Among the exhibitors who had very high qualtiy Shorthorns on the grounds were C. H. Williams & Son, of Hunter, Kan., whose senior yearling bull, Harry, was a remarkably fine animal, which stood first in class. This herd also won first on junior bull calf, first on junior heifer and second and third on aged cows. Harry, the young bull who stood first in class, is a grandson of Choice Goods and shows many of the characteristics of his ancestry. His dam was Russilla, the dam of the great Ruberta. It is along these lines that Messrs. Williams are breeding and those who wish to secure animals with these blood lines and plenty of quality and finish, should read their advertising card and write them, mentioning Kansas Farmer.

W. L. Wright's Big Polands.

W. L. Wright, owner of the well-known Laneydale herd of big Poland Chinas, has announced a public sale, to be held at Laneydale Farm, near Rosendale, Mo., November 2. The offering will consist of 40 head of outstanding good boars and gilts sired by Pan I See 55737 and Good Surprise 58371 Pan I See was sired by Pan Famous 50384, dam Alvin's Lassie 108179. Good Surprise was sired by Model Surprise 56173, and his dam was Savannah Giantess 125532, and both are big, mellow, high-class boars. The dams of the breeding stock in this offering are Wright's Model, sired by Pan Famo 43031, dam Plum Spot 112719; Bradford's Perfection 120320, sired by John I Ex 41065, dam Black Giantess 103289; Queen 2d, sired by John L Ex, dam Queen 111342, and other equally good ones. Representatives of this herd were shown at St. Joseph this year and a yearling son of Pan I See out of Giantess 3 was awarded first in his class. He was from a litter of 10. The entire offering has been selected with care. They are a very high-class lot, and back of them are fine records for prolific qualities.

C. A. Wrigth's Duroc Sale.

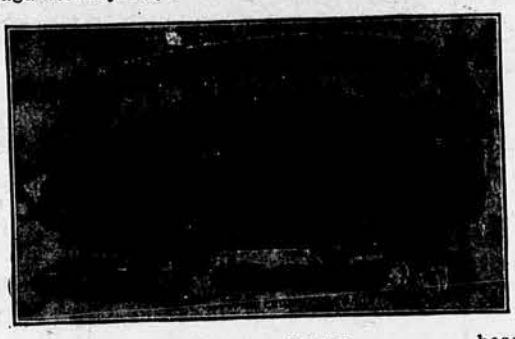
On October 19, C. A. Wright, of Rosendale, Mo., and proprietor of the famous Harlem Heights' Duroc Jersey herd, will offer at public sale 60 head of tops selected from his large herd. This offering will consist of 10 head of tried sows, every one of them a high-class individual and every one with a fine record as a producer. They are an extra fine lot of Tip-Top Notcher, Red Express, Buddy K 4th and Orion sows. Five high-class fall yearling sows will be among the lot offered; 20 head of gilts and 25 head of spring boars, making 60 head of the best hogs ever offered at public auction at Harlem Heights' Farm, and it has been noted for its high-class Durocs for many years. The spring pigs offered were sired by Model Critic and Oregon Lad. Model Critic was awarded first prize at St. Joseph in 1910. Oregon Lad is a Col. bred boar, and both are high-class individuals. Teh stock offered has not been fitted for show and are in first-class condition for breeding stock. They are all of fancy cherry red color. At St. Joseph last week, Mr. Wright won first on boar under 6 months, champion boar under 6 months, second on sow under 6 months, second on produce of sow and third on sow 18 months and under 24. Write for catalog. Please mention Kansas Farmer when writing.

Eat More Cocoanut.

Not until recently has the true food value of cocoanut been realized. All previous theories regarding the indigestibility of cocoanut have been knocked sky-high by Farmer's Bulletin, No. 142, issued by the United States Department, which gives the following analysis: Water, 3.5; ash, 1.3; proteids, 6.3; fats, 57.4; carbohydrates, 31.5. This shows that cocoanut is one of the leading foods in amount of nutrition per pound. In buying cocoanut it is more economical and convenient to buy it in shredded form. Ask your grocer for Baker's Shredded Cocoanut and you will be sure of getting that which is free from chemicals and preservatives. Baker's is prepared from the finest nuts that grow—all carefully selected. It is simply the dried meat of the nut in concentrated form. Packed under the best hygenic conditions, in inner and outer sealed dust-proof and germ-proof packages. As an aid to the housewife, this company has issued a very interesting and instructive book, showing how cocoanut can be used to advantage in the making of many delicious desserts. A copy will be sent free to anyone addressing The Franklin Baker Company, 1 Fairmount Avenue, Philadelphia, Pa.

Causes Much Talk.

Does it pay or not to buy stoves by mail order? This question is being discussed in thousands of homes throughout the country as a result of The Michigan Stove Company's great anti-mail order stove campaign. Each side has its following. Some say it pays to buy by mail order; others who hav tried buying by mail and through dealers say it is not only easier and safer to buy at home, but that, in the end, they save money. What is your opinion of the comparative advantages and disadvantages of buying goods by mail order? Are you reading The Michigan Stove Company's interesting discussions on this subject, which are appearing in this publication from time to time? The Michigan Stove Company, manufacturers of the famous "Garland" line of stoves and ranges, have taken the lead in the discussion of the question, because they are the world's largest stove manufactureers. It is perfectly right and proper that they should do this and they are entitled to credit for the broad way in which they discuss mail order buying. They say nothing abusive and make no malicious charges against anybody.



Meisner's October 25 Sale.

One of the Poland China breeders of Northeastern Kansas that has made good in every way is T. J. Meisner of Sabetha. Mr. Meisner buys the good ones at long prices and is a real success as a developer. A representative of this paper recently looked over the offering which he has selected for his October 25 sale. Mr. Meisner is giving them his personal attention and turning down buyers every day to save them for his sale. He is going to sell 40 head in all, comprising 33 selected spring boars and 7 of his best spring gilts. The offering is of January, February and March farrow. They are very growthy and have lots of quality. Nearly all of them were sired by Mr. Meisner's big boar, Metal Choice by Missouri Metal, he by Bell Metal by Old Expansion. Metal Choice is a boar of great size and width. He is one of the most mellow boars that can be found and the pigs possess the same good points. There will be three boars sired by Expansive; they are out of the sow, Lady Look by Look Grand. This sow topped H. B. Walter's last fall sale at $160. One boar is by the noted boar, Big Price and out of Long Girl by Surprise Wonder. Another boar included was sired by Growthy King, litter brother to Long King's Equal. His dam was by Look Grand. The dams of the offering are big, smooth sows that Mr. Meisner has bought at long prices, for it has been his practice to top the best sales. The blood lines are of the best and all sows not being good producers have been culled out of the herd. Included among the dams of pigs are several that are daughters of Big Orange 47982, by Orange Chief. These sows are very large and are producers of big utility stock. There will not be a poor pig in this sale and not a pedigree that won't stand inspection. Everything will be done for the comfort and pleasure of those attending the sale, including an automobile ride to and from the farm. Catalogs are being issued that give all necessary information. Write now for it and plan to attend this sale. Those unable to attend may send bids to Jesse Johnson in Mr. Meisner's care.

Edward Welter's Poland China Sale.

This week's Kansas Farmer contains advertising for the Edward Welter sale of Poland Chinas, to be held at the Forest View Farm in Pottawatomie county, near the little town of Flush, Kan., and some distance from Manhattan and Wamego, Kan. Mr. Welter is a young man with exceptional ability as a breeder. He owns one of the best farms on Pleasant Run creek and has bred purebred Poland Chinas for 10 years, selling them at private treaty, mostly to the progressive farmers living near him, but always buying the very best seed stock for his herd. The writer has often met him at good sales, and it is a matter of record that Mr. Welter has bought more sale toppers than almost any other young breeder in this part of Kansas. He has one of the best sow herds the writer knows of. They have lots of size, and there is not an over coarse one in the herd. The sale offering, consisting of 20 boars and 20 gilts, including two sows with pigs, is an exceptional one in many respects. They have a wonderful lot of quality and are very growthy. The advertising gives an idea of the offering as far as blood lines go, but it will be a surprise to many that a beginner can put up such an offering of individuals. There will be an outstanding boar included, sired by Long's Mogul and out of a daughter of the noted sow, Minnie K. K. Mr. Welter is anxious for a good attendance at this, his first sale, and extends a cordial invitation to everyone to attend. Write now for a catalog

Harvey's O. I. C. Sale.

J. H. Harvey of Maryville, Mo., breeds both O. I. C. and Chester White swine. On October 19 he will hold a sale of these splendid hogs and will give visitors an opportunity to study his herds and note the fine herd boars and sows from which the sale offering was bred. Jumbo 2d by the great 1210-pound Jumbo, prize winner at the Iowa State Fair, has been the herd header here, and this certainly speaks for size and quality in Mr. Harvey's herd. Remember the date and be there. Maryville is but a short distance from St. Joseph, and visitors can attend the J. N. George sale at Hopkins, Mo., on the preceding day. Two good sales of white hogs so close together make an occasion not to be missed.

Maple Leaf Herd O. I. C. Swine.

On October 25, R. W. Gage, of Garnett, Kan., will offer at public auction 50 head of the best O. I. C. hogs ever sold in Southeastern Kansas. All of the most fashionable blood lines are represented in this offering. There are 25 choice spring boars that are large and growthy They are just right for any farmer or breeder to buy. They will improve almost any herd, and many of them are herd headers. The 20 spring gilts are extra good; they are of the choicest blood lines, and are sure to make valuable brood sows. The three fall yearling gilts and two tried brood sows are the pick from the herd and should not be overlooked by prospective purchasers. Mr. Gage is prepared to fit out young herd for new breeders, and mate the blood lines that will give good results. The catalog is ready to mail out; don't fail to send for one, as it contains much valuable information. Please read the advertisement, and note that Mr. Gage will sell a few registered Holstein cows and heifers. The Holsteins and O. I. C. hogs make a great combination for a farmer or breeder, and we urge all our readers to arrange to attend this sale if interested in this class of stock. Kindly mention Kansas Farmer when you write.

Jumbo Prospect, 53806.

Poland China boar at head of the Ernest W. Beery herd, at Shambaugh, Iowa. Prize winner at numerous fairs. Weight, 950 pounds in good condition.

Gronniger & Sons Sale

On October 23, Herman Gronniger & Sons will offer a select draft of 80 head of Poland China hogs on their farm near Denton and Severance, Kansas, on the Rock Island and Grand Island railroads, about twenty-five miles west of St. Joseph, Mo. The offering consists of four fall boars, thirty-six spring boars, twenty spring gilts and twenty yearlings and yearlings past, two of which will be bred. The sires of these good hogs will interest you. Of these the main herd header is Banner Boy 50206, by Orphan Boy, the 900-pound champion of the Nebraska State Fair, 1907, and out of Miss Hadley 2d, a daughter of Big Tecumseh. He is a hog of massive build, stands up very straight on on eleven-inch bone, has a length and symmetrical depth of body seldom seen in a hog of his size. Now in his four-year-old form he is as smooth as a pig, not a wrinkle in him from end to end. Ably assisting this hog is Big Hadley's Likeness, one of the best sons of old Big Hadley. He is a large hog, well quartered, has neat head and ear and lots of style and conformation. His get show a uniformity of wide backs, length and depth of body that is surprising. A year ago they went to the leading fairs and picked out Defensive, by Defender and out of Mouw's Spot, as a promising prospect. This hog won first at the St. Joseph fair, and now shows that their confidence in him was not misplaced. He has an excellent string of pigs in this sale. They will show you thirty-five of the best type brood sows you ever saw. If impossible for you to attend, Jesse R. Johnson will be glad to handle your bids.

Ben Bell's Poland Sale.

That the people like the Ben Bell big Polands is shown by the way they buy them. At his sale, held at Beattie, Kan., on September 26, the following purchases were made: Boars—No. 31, F. M. James, Beattie, Kan., $40; No. 4, E. C. Delair, Oketo, Kan., $35; No. 42, T. J. Orr, Beattie, Kan., $45; No. 1, John Coleman, Denison, Kan., $47; No. 8, E. C. Fritz, Beattie, Kan., $67.50; No. 33, W. T. Riley, Bonner, Kan., $25; No. 12, J. W. Fralin, Summerfield, Kan., $33; No. 41, J. C. Comings, Harding, Kan., $60; No. 15, C. A. Harry, Beattie, Kan., $25; No. 5, J. Ed Lally, Beattie, Kan., $29; No. 23, L. H. Gaston, Seneca, Kan., $30; No. 3, Sam Clemmens, Havensville, Kan., $37; No. 9, Rudolph Oehm, Oketo, Kan., $27.50; No. 21, S. W. Steadman, Beattie, Kan., $20; No. 43, M. F. Flanagan, Beattie, Kan., $20; No. 39, Antone Feldhausen, Frankfort, Kan., $24; No. 24, W. F. Warthen, Beattie, Kan., $21; No. 40, S. W. Steadman, Beattie, Kan., $20; No. 26, H. L. Herring, Marietta, Kan., $20; No. 10, W. T. Horrigan, Frankfort, Kan., $20; No. 45, William Wuester, Beattie, Kan., $18; No. 16, A. H. Seaman, Axtell, Kan., $23; No. 28, Asa Van Nortwick, Beattie, Kan., $20; No. 32, William R. Cassidy, Beattie, Kan., $17.50; No. 36, Louis Pape, Home City, Kan., $18. Gilts—No. 7, T. J. Meissner, Sabetha, Kan., $44; No. 27, Thompson Bros., Marysville, Kan., $28; No. 2, H. B. Francesca, Hastings, Neb., $46; No. 33, Charles Quinn, Diagonal, Ia., $32.50; No. 44, S. Hicks, Unionville, Ia., $35; No. 11, C. Quinn, Diagonal, Ia., $29; No. 25, W. H. Bell, Beattie, Kan., $25; No. 37, W. H. Bell, Beattie, Kan., $28; No. 50, Charles Quinn, Diagonal, Ia., $28; No. 17, W. H. Bell, Beattie, Kan., $22; No. 14, A. W. Hammes, Baileyville, Kan., $21; No. 49, A. H. Seaman, Axtell, Kan., $27; No. 51, Thompson Bros., Marysville, Kan., $37; three gilts not numbered to J. C. Comings, Harding, Kan., $30 each, $90; Peter Bruxtram, Baileyville, Kan., one gilt, $26; George Shires, Baileyville, Kan., one gilt, $25; P. H. Mackey, Frankfort, Kan., one, 20. Summary—26 boars brought $785; average $30.30; 19 gilts brought $563.50; average, $29.60; 45 hogs brought $1,351.50; average, $30.03.

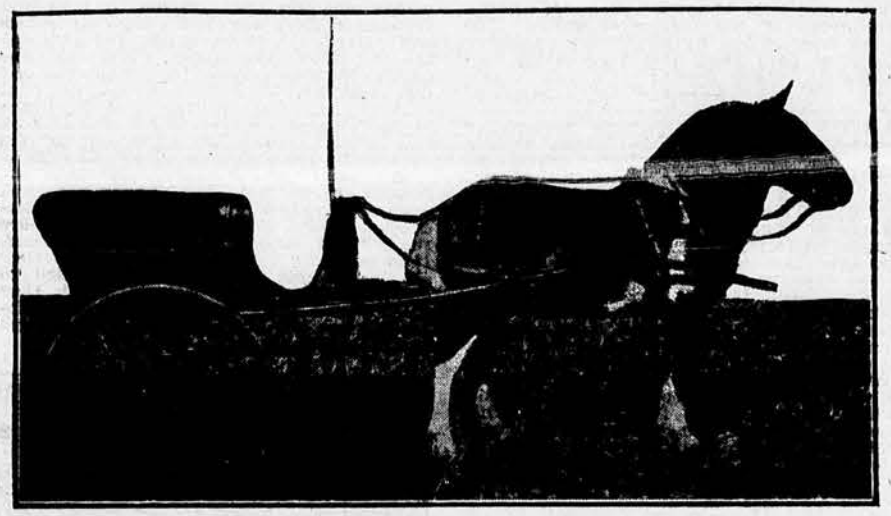
FREE THREE SHETLAND PONIES

How would you like to have a beautiful Shetland pony and outfit all for your own, and to get it without costing you a cent? If you would, be sure to read every word on this page. Any boy or girl can get one, and you have just as good an opportunity as anyone else. The KANSAS FARMER is one of the leading farm and home papers in the United States, and if you will write any bank in Topeka, Kans., they will tell you that we will do exactly what we promise to do. We want you to know that we mean what we say when we tell you that we are going to give away, absolutely free, three beautiful Shetland ponies, but they are to go only

TO THE BOYS AND GIRLS LIVING IN KANSAS

THE PRIZE PONIES

Are little beauties. They are gentle and you can drive, ride or lead them anywhere you please. One of our ponies would sure make you a fine playmate, and they are so cute that, after you have had one a few days, you would not want to part with it for anything. Just the trick to ride or drive to school. Every boy and girl wants a Shetland pony because they are so useful, pretty and good. You can certainly have a happy time if you get one of these ponies and outfit. A Shetland pony always makes a fine pet, and they are so loving that they will follow you everywhere you go. But the ponies which we are going to give away are good to mind, and we are sure that the little master or mistress of one of them will think they have the best pony in the world. Be sure to send in your name at once, so you will have a good start to win one of these ponies.



GRAND PRIZE.
Shetland Pony, Cart and Harness.

THEIR OUTFITS.

With the pony, which we will give as grand prize in this contest, goes one of the nicest outfits that you ever saw, consisting of a cart and pretty black harness that are just dandy. All are made from the best material, and we have spared no time or money in getting this outfit so that it will be bound to please the boy or girl who gets it.

The second prize pony has a saddle and bridle so nice that you will never get tired of using them. They will last a long time, and the boy or girl who wins this outfit will spend many happy hours in riding one of the finest ponies any child ever owned.

The third prize pony has a saddle and bridle just as good as the second prize pony, only they are just a little smaller, because this pony is not so big as the other ponies, but just as good and gentle. Some boys and girls might like a smaller pony better. All of the outfits are new, and we will send each with the pony to the winner without one cent of cost.

SECOND PRIZE.
Shetland Pony, Saddle and Bridle.

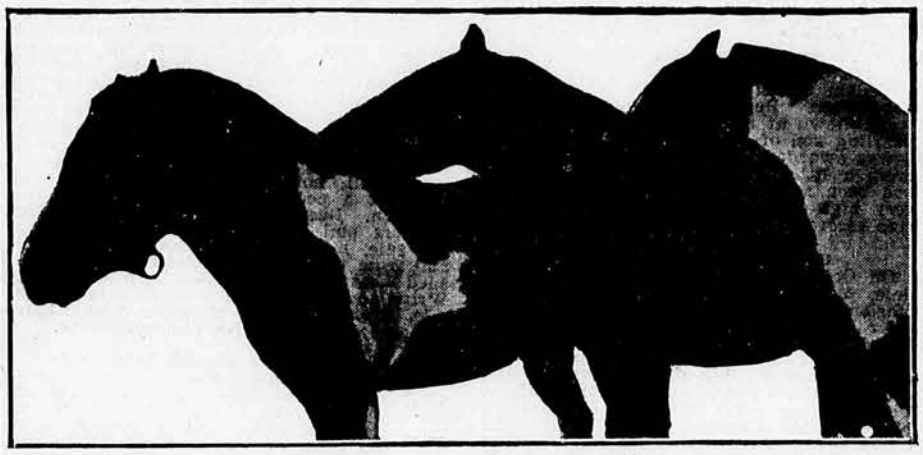
TO BOOST KANSAS FARMER

We are going to give away these ponies, outfits and numerous other prizes in this contest. KANSAS FARMER is one of the best weekly farm and home papers in the United States. Each week it is full of good reading of especial interest to those living in the country and on the farm. Every farm home should have this paper, and we want a number of hustling boys and girls to help us boost KANSAS FARMER. We are going to give all who are hustlers a prize. The work will not be hard and all of your friends will help you, for everyone likes to help boys and girls who are ambitious to do something for themselves. The contest is limited to the boys and girls of Kansas only, and you have three chances of winning a Shetland pony, instead of one. You live in Kansas. So do we. We believe in Kansas boys and girls and want them to have these ponies and other prizes we are offering.

THIRD PRIZE.
Shetland Pony, Saddle and Bridle.

GET AN EARLY START

By sending in the coupon today. Our contest will be short, and it will not be long until the three beautiful Shetland ponies and outfits will be sent to their winners, with all express charges paid. You have just as good an opportunity as any other boy or girl. It does not make any difference in what part of Kansas you live, or how busy you are in school or with your work at home. We want busy boys and girls to help us boost KANSAS FARMER, and the busier you are the better it will be for you. Be sure to send in the coupon right away, so you can get an early start.



DON'T YOU WANT A PONY LIKE ONE OF THESE

No Efforts Will Be Lost.

Every contestant will be given a prize which will not only please, but be useful. Besides the three ponies and their outfits, we will offer a bicycle, gold watches, rifles, cameras, bracelets, fountain pens, knives, post cards, and numerous other articles which every boy and girl would be delighted to get. We will do this so that all of the contestants will receive something nice for their time and efforts. You can't lose. Try your best to win the grand prize and have a beautiful pony, cart and harness all for your own. You can do it. Send in your name at once. You never can tell what you can do until you try.

COUPON

THE PONY BOY, Care Kansas Farmer, Topeka, Kan., 625 Jackson Ave.
I would like to become a contestant for one of the three ponies and outfits which you are offering to boys and girls living in Kansas. Please tell me how I can help you boost for Kansas Farmer.

Name..... Age.....

Postoffice....., Kan. R. F. D. No.....

START NOW

By clipping out the coupon at the left of this, fill in the blanks plainly, and mail it today to the address below. We will then send you full particulars and help you get started. Be sure to mail us the coupon right away, so you will have an early start. You can send it in a letter or write on a post card.

Address all Letters And Cards to

THE PONY BOY

Care KANSAS FARMER TOPEKA, KAN.