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FOR THE IMPROVEMENT



OF THE FARM AND HOME

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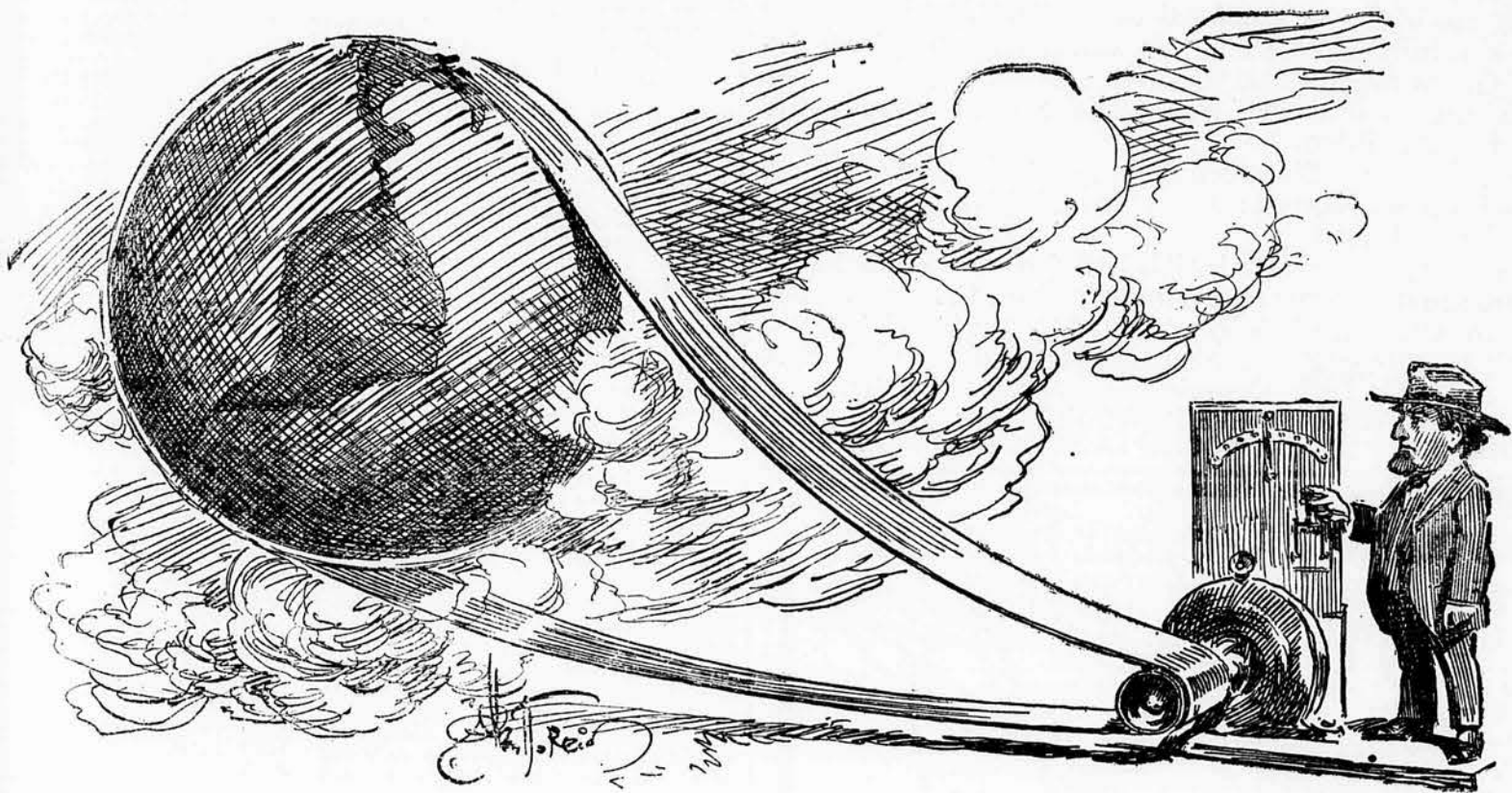
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AS a man knows himself, his life is prolonged, his capacity developed and his numbers increased. These bring new needs which compel new processes, new materials and new methods.

He harnessed the forces of nature and the waterfall worked for him, the lightning carried his thought and the steam annihilated distance. With his hands he wrought but slowly in his struggle against want. With the water's vapor he developed the world and made modern man possible. With the gases of earth the sea is his path, the air his smooth highway and he regards not time nor distance. His fields and factories multiply their products and he escapes the curse of Cain.

Without mechanical power grim famine would forever threat and the farmer become the serf of older days. With it, plenty abounds and he is a prince among his fellows.

—I. D. G.



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This is the greatest step in advance that has yet been made in Silo manufacture. The United States Government has proven by actual experiment and trial that dipping in Creosote adds seventeen years to the life of lumber.

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This Rod has been longer in use, and has had a larger sale, than any other Rod that was ever made.
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It has been the Standard for more than half a Century. Hundreds of thousands in use Sixty-two years and Never Failed.
Like other superior articles it is imitated and counterfeited. There are numerous cheap imitations on the market, but the GENUINE is fully protected by our TRADE MARK. Look for this  on all packages, and for C B F R on the Coupling of every Rod Section.
RELIABLE AGENTS EVERYWHERE, FOR NAME AND ADDRESS LOOK FOR "OUR FLAG" IN LOCAL PAPERS.

You can't get your back up with that HAWK SAFETY HARNESS



The above illustration shows the new member of the J-Hawk family—a Safety Harness that is real Safety from kicking, bucking, humping horses—especially fine for use on the "colt" and that "spirited driver." A combination of the "hip" breeching and "butt" breeching which adds great comfort to the horse. Shaft straps removable.

Only to be had on Harness bearing this Celebrated Trade Mark. Manufactured Exclusively by
ATCHISON SADDLERY CO., Atchison, Kansas

 **ATCHISON SADDLERY CO.**
Your Dealer Has it or will Get it for you

Western Kansas Farmers' Conference

The idea which brought together at Hays several thousand farmers from about one-fourth of the counties of Kansas in a conference one year ago was an excellent one. It has been found that the farmer suffers too much from isolation and even in those parts of the state where farmers' institutes, granges and other organizations seek to bring him in closer touch with his fellows, the isolation still remains, while in the western portion of the state it is somewhat intensified by the larger farms, greater distances between neighbors and lack of organization which obtains in more heavily settled regions.

For some time past the extension department of the Agricultural College has been holding a grand round-up of State Farmers' Institute at Manhattan during the Christmas holidays. This gave the farmers from all sections an opportunity to study methods and experiments at a time when the instructors were free from class duties and could give them their entire attention. The idea in the Hays conference was to afford the farmers of western Kansas an opportunity to get together once a year for the discussion of those problems which are peculiar to their location. This was such a pronounced success from the first that a permanent organization was effected, and the name Western Kansas Farmers' Conference adopted. Speakers were present from other states where conditions are similar and a great deal of interest was manifested by the officers of the International Dry Farming Congress.

Unfortunately, the meeting one year ago lost some of its value by reason of the fact that these farmers, who of necessity must talk dry farming methods, were compelled to attend all the sessions of the conference and inspect the experimental plots and feed lots in a two days' downpour of rain. This year the conditions were different, and greater benefits are sure to result.

Following a somewhat prolonged season of dry weather the first day of the conference was met by the highest thermometer reading of the year and a strong wind from the southwest which served to emphasize the need of such conferences. Everybody who attended was in a receptive frame of mind to learn of what had been done or is now being done by the Experiment Station at Hays to develop the agriculture of western Kansas.

Every arrangement for the convenience and accommodation of visitors that was possible had been provided by the Hays Commercial Club, the Experiment Station and the Branch Normal School. The attendance was very large, and the writer counted at one time on the grounds 62 touring cars, 12 buggies, 2 covered wagons and 1 saddle horse as means of locomotion. This did not mean very much, however, as the touring cars were busy plying between the town and the station, and it is possible that there were as many more machines in the city and on the road as appeared on the ground at the moment of the count.

The program embraced an inspection of the various experimental plots and feed lots on the 4,000 acre Experiment Station and was intensely interesting. Visitors were taken in parties of twenty or more under the direction of an officer of the station who could explain the experiments in progress and answer questions that might arise in the minds of the visitors. This station now has in winter wheat 450 acres; corn, 270 acres; alfalfa, 250 acres; Kafir corn, 200 acres; sorghum, 100 acres; milo, 25 acres; barley, 22 acres; oats, 180 acres; miscellaneous crops, 75 acres; fallowed land, 100 acres; leased to other parties, 110 acres. The balance of the farm is occupied by the buildings, feed lots, orchards and gardens.

A very large acreage is devoted to experimental plots. Some of these for the determination of methods, and others for the testing of varieties. After an inspection of all these plots we doubt if there is one thing that stands out more prominently in the minds of the visitors than the results which showed from summer following of the land. Generally speaking the wheat crop in the vicinity of Hays, which had been seeded in the

ordinary manner, will not much of a crop, and wheat sown in this way was placed nearby that handled in other so as to give a test by comparison of the values of the different odds. Those plots which wheat planted in the ordinary manner were thin on the ground, stems averaging perhaps six high and headed out with heads. There will be no chance of harvesting this grain except of the header set very low or city man expressed it, "it would be harvested with a pair of tweezers."

Adjacent to this were the grown under the summer fallow system. These included both wheat and barley and the grain dense on the ground with growth of stem, long heads, estimated by good judges to be a yield of from 25 to 30 bushels per acre. The only difference in treatment between these plots and which will yield practically per acre was found in the fall last summer the ground was seeded and after each rain the surface was broken up with a into a coarse mulch. The being of such a nature that very readily, a fine mulch can be adopted. All vegetation is removed and nothing allowed to grow land during the first year. The method all of the rainfall of the season is absorbed and practically it retained so that when the seeded and receives the rain the following season, it has the total rainfall of two with which to make its growth development.

Tests showed that under the conditions existing at the time of reference this land which had summer fallowed last year, and is now covered with good crop, been moistened to a depth of feet, while nearby plots which been plowed deep or shallow soiled or disked according to requirements of the experiment practically devoid of moisture.

It is probable that there are at least 2,000 farmer visitors from different counties of the state in attendance at this conference, whom came from great distances in their automobiles. They are working at a busy season of the order that they might hear lectures given by experts and the work done on the ground Experiment Station. After at the plots that were developed the summer following system doubtful if one of these wet home without feeling that had been thoroughly well paid time, trouble and inconvenience his trip.

Another great attraction to visitors was found in the cattle wherein the most complete long-time experiment of test values of the different breeds of cattle that has ever been run is now in progress. In this experiment a certain number of cows belonging to the Shorthorn, Hereford, Angus and Galloway were selected, and each enclosed in separate pasture. Initial fact weight, feeding capacity, etc. taken, and then each lot was exactly like the others with a purpose of showing at the end of a period of five years which proved the most profitable, the of animals and of maintenance been compared with development individuals, increase in the final condition and selling price the end of the experiment means that each cow with all geny for five years will be gathered under such conditions thorough test of the comparative of these four breeds as being its of these four breeds as being ing machines can be determining on the Hays Experiment grounds and a week would be short for a satisfactory visit results of experiments will be published from time to time at the readers kept in touch with the of this great institution as close possible. The papers of the read at the meetings of the ence were of a high order and the best of these will be

(Continued on page 22)

KANSAS FARMER

EDITORIAL

ECONOMY IN FARM POWER.

the era of industrial expansion which began in this country back in the 90's and with the rapidly increasing population which lowers the price of food for the consumer. One of these is keeping the farmer on the farm and the other one is the supply of necessary farm labor. of the immigrants who come to the country and their homes in the country and become consumers of the products. Those who are agricultural producers in the countries are forced by lack of other circumstances to temporary employment in the city. While the tremendous increase in the activity of the commercial farmer serves to tempt the farmer to leave the farm, the farmer's son is first calling in the hope of finding his condition on paved roads. It is stated that each farmer in America is now compelled to support three families besides his own. It is an important fact in two ways. It insures a good price for the products, as the city resident and the farmer must support the same family, and it also renders the production more difficult because of the relative decrease of the number of producers. The farmer still fails of producing the results to which he is entitled because of lack of help which is not secure.

labor now presents the greatest difficulties that confront the farmer. His location, and this is his own fault or his own misfortune. It has long been the custom to employ men on the farms during the growing season only, with no provision for carrying on the work about the year. These men are and, as it is impossible for them to earn enough during the growing season on the farm to support their families during the winter, they are forced to go to the city to find employment. These conditions are being modified, especially on the larger farms, where the use of machinery is studied for the production just as is the use of the manufacturer. The bridge over this gap has been built through farm machinery. The farmer and manufacturer have their brain power and their skill in devising and making machinery which are wonderfully effecting the work of the farm. The farmer has been diligent in his business of raising new supplies of horses for farm use, and the daily papers and magazines have indulged in the cry of "the horse," and yet in spite of this farm power is woefully inadequate. Mechanical power has liberated the use of many farm horses and the price of horses has increased 200 per cent in the last decade.

the earlier history of this country a larger percentage of the population was engaged in agriculture. The result was that this was the source of wealth and the source of power. The preparation of the soil for crops is the heavy problem in agriculture. The whole country is clamoring for more horses even at the advanced prices which now prevail, and the demand can not be supplied. It is realized that the products of one acre in five is necessary for the maintenance of a horse. When this fact is compared with the economy of the traction motor with its low cost and high efficiency, the popularity of the latter is easily explained. In addition to the fact that it does not consume feed or cost for maintenance while not working, as does the horse, this engine is available for

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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.

lands to subdue and occupy and he must study ways and means to bring results from the old. There is no business on earth that will stand the amount of waste that is now to be found on the average American farm. No manufacturer could hope to live, much less develop his business, by using the methods of the American farmer. The fairy stories about the exhaustless qualities of the soil must be condemned at once and the fact recognized that every crop that is taken from it also takes away a certain portion of the farm itself in the necessary elements of plant food. This plant food must be returned in some form or other or the farm will wear out in the first generation. Questions concerning suitable varieties are being solved constantly and must be taken advantage of, but the greatest problem of all is in the economic planting, cultivating, harvesting and marketing of the crops whether they be of live stock or grain.

The solution to this question is to be found in the use of machinery, but the machinery itself has not yet developed to its possibilities. The idea of contented and independent farmers, each residing under his own vine and fig tree with his homely virtues and family blessedness, is attractive and represents an ideal condition. If such conditions could exist there would be comparatively few social and economic evils with which to combat; but unfortunately with the increase of population this ideal condition grows more and more remote. New conditions must be met by new methods and foremost in the solution of all these problems is the question of farm power.

Horse power is too expensive, electricity has not yet been brought within reach of all at economical prices, and the farmer naturally turns to the internal combustion engine as his source of relief. It has been said that 60 per cent of the power consumed in raising grain on the farm is used in plowing. The preparation of the soil for crops is the heavy problem in agriculture. The whole country is clamoring for more horses even at the advanced prices which now prevail, and the demand can not be supplied. It is realized that the products of one acre in five is necessary for the maintenance of a horse. When this fact is compared with the economy of the traction motor with its low cost and high efficiency, the popularity of the latter is easily explained.

In addition to the fact that it does not consume feed or cost for maintenance while not working, as does the horse, this engine is available for

many other operations on the farm where abundant power is necessary. The internal combustion engine and electricity will solve the problems of farm help, farm power and farm lights as nothing else can, and the solution will be an economic one.

THE CONGRESS OF FARM WOMEN.

Next fall there will be held in Colorado Springs the first International Conference of Farm Women.

Many states, and doubtless many countries, will be represented and the movement promises to be one of the greatest and most important that has ever taken place in this country.

The great object sought will be the betterment of the home conditions on the American farms. Improvements in the physical, mental, social and spiritual lives of the farm women and through them of the farm families of the world, but more directly of this country, will be sought.

The world cannot live without the farmer of whatever sex and it has long been recognized that conditions change for the better more slowly in the farm home than they do in the fields and that improved conditions are needed in the one place no less than in the other.

The importance of the farmer in the economic life of the country being recognized it follows that the maintenance of the farm home is one of the most vitally important questions that can come before the American people today. With the renewal and expansion of industrial activity in the commercial centers a decade ago the lure of the city has fastened not only upon the farm employees who there sought and found employment the year round instead of during the cropping season only, but upon the members of the farm families who were attracted by more ready money though not larger net earnings and the excitement of the thronging streets.

This, with our rapidly increasing population which brings more mouths to feed and fewer producers, relatively, has brought about a rather serious condition which will be the subject of discussion at this great meeting.

THE BANKER A FRIEND.

The banker is your friend and he is willing to show it. His special training is in the line of handling money and his study of this problem enables him to give you very excellent advice on occasion. On the other hand, he wants to know about your crop prospects and those of your neighbors as upon such facts he bases his future business operations. Make friends with the banker.

I want to commend KANSAS FARMER for the decided advance it has made in the improvement of the paper. Especially do I desire to commend the front page feature and cartoon. We like these out in our country and hope you will continue them.—Edw. Chalk, R. 3, Lewis, Kan.

ARE YOU SQUARE WITH YOUR BOY?

A prominent business man who has attained financial success and who has been honored by his state with a high public trust, was expressing regret the other day that, even after years spent in a busy life, he had never been able to forget the feeling of resentment with which he had regarded his father's action in selling the boy's pet pig and pocketing the money.

This boy had been given the pig in recognition of some service rendered, and he had tended it and played with it until it became a large hog, and always in the belief that the animal was his very own. Indeed it was the first piece of valuable property he had ever claimed and its sale in the manner mentioned had made a deep and lasting impression upon his young mind.

As a man he became ashamed of this feeling and ashamed that he could not forget it. What had been but an incident to his father was a tragedy to the boy and, all unwittingly, that father had done his boy a life long harm.

He had taken his property, which was a most serious matter, and he had robbed him of his confidence, which was infinitely worse.

In the pioneer days when money was scarce and food was none too plentiful, the family necessities may have demanded that the hog be used for the general good, but even in such a case an arrangement should have been made with the boy whereby he would fully understand the situation and be willing to share in the general burden.

Although some centuries have elapsed since our forebears wore clothing of skins and used clubs as weapons some remnants of their methods still crop out in our own lives occasionally. In those early days the father of a family had the power of life and death over its members. Their property was his to do with as seemed best to him and none might question his judgment.

Self preservation is the first law of nature and this has been intensified by modern business methods until self interest is understood. As the individual struggles to win his way in the world he naturally takes every advantage that seems legitimate to him. He combines with others who have common objects that each may prosper through the success of all. In this way large business interests are built and great undertakings accomplished.

American supremacy in the industrial world has been brought about through the confidence of man in his fellows and by their cooperative endeavors. When one man fails of his duty or forfeits the confidence of his fellows friction in business is at once felt and possible disaster follows.

When the father sold the boy's hog and kept the money he betrayed a sacred trust. He was not observing the law of self preservation, nor even of self interest, because the boy is a part of himself and any disregard of his rights could only bring harm to both.

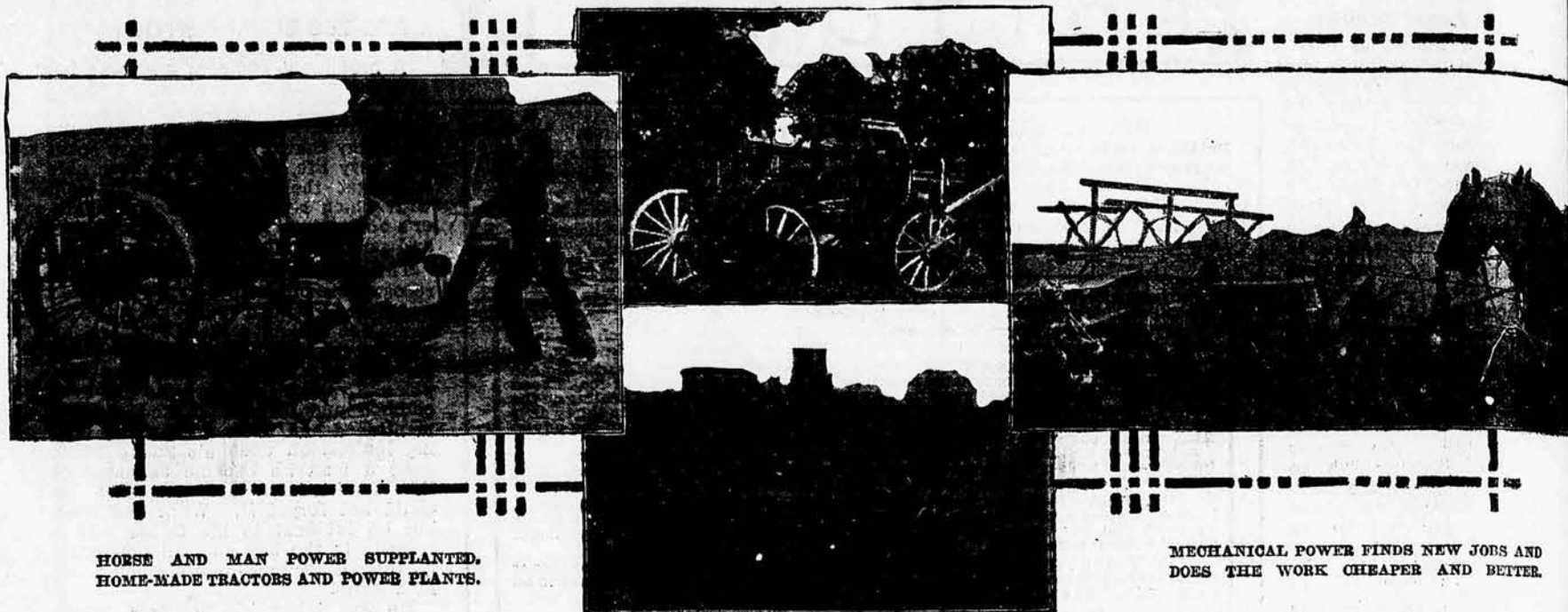
These remarks were suggested by the numerous letters received by KANSAS FARMER commending the sentiment expressed in the front page feature and cartoon in our last issue. They come from so many people and with such hearty approval that we know the sentiment struck a popular chord.

It is possible that some of them, if not all, may have grown out of the recollection of a similar youthful experience, and we are going to invite our readers to express themselves in letters to the editor upon the subject of giving the farm boy a square deal.

Your own experience, either as a farm boy or as a parent, is invited with the distinct understanding that what you may say will be treated with the strictest confidence. Your letters must be signed but your identity will be protected by the editor and your name will not be published.

Did you get a square deal when a boy on the farm? Are you giving your boy a square deal? Your letter may help others to avoid the rocks on which you have foundered and it is sure to be of benefit to all. Let us hear from you.

GAS TRACTOR FOR THRESHING



HORSE AND MAN POWER SUPPLANTED.
HOME-MADE TRACTORS AND POWER PLANTS.

MECHANICAL POWER FINDS NEW JOBS AND
DOES THE WORK CHEAPER AND BETTER.

Much has been written about the advantages of using the modern gas traction engine in plowing, breaking, drilling, dragging and harvesting, but little seems to be said about its advantages in threshing. It furnishes an ideal power and at the same time makes possible a considerable saving in expense as compared with threshing with a steam engine. One man can run both separator and engine, thus eliminating one high-priced man. There is no water to watch and no steam to keep up; the engine is automatically lubricated and will run along smoothly and steadily hour after hour without attention; therefore the engineer can give all his time and attention to the separator.

There is no fire around the engine, and no danger of any kind. For this reason engine and separator can be set so that the wind blows directly from engine to separator; this helps the separator to handle the grain and is of great help to the pitchers who feed the separator. It is very hard to pitch against a hard side wind as has to be done when threshing with steam on a windy day, because the danger from fire makes it unsafe to set the engine where the wind can blow directly from it to the separator.

With one make of gas traction engine the method of attaching it to the separator offers marked advantages. A stiff tongue, attached directly from engine to separator, is lengthened or shortened at will by means of a patented device; when it is lengthened, the drive belt from engine to separator becomes taut and the outfit is ready to thrash; when shortened, the belt hangs loose and the outfit is ready to move through the stubble field or over the road without detaching the belt.

The ideal way of threshing with a gas traction engine is to employ two good pitchers to feed the machine, and have four dump racks, with a man and a team for each, to haul the bundles to the pitchers at the separator. The engine, with separator attached, can quickly change its stand and keep near the grain to be threshed, thus making a short haul for the teams bringing the bundles and requiring fewer men and teams than a steam rig threshing the same amount of grain. The crew of seven men will easily thresh 1,000 to 1,800 bushels a day, according to the character and weight of grain, at a cost about like this:

One engineer, wages and board \$ 5.00
Two pitchers, wages and board (\$3.25 each)
Four teams and men (\$5.00 each)
Gasoline, 35 gals. at 16c
Lubricating oil

Average amount threshed, wheat running 15 bu. per acre, 1,400 bu. Cost of threshing, a little less than 2 3-4 cents per bushel.

Depreciation on the engine is not figured, because it depends almost entirely on the care which the farmer takes of his engine. Some farmers will have as much depreciation in a year as others will have in three years, but as this excessive deprecia-

Danger From Fire Eliminated And Economy Of Results Are Assured

By CHAS. McMURDY

tion is the fault of the farmer and not of the engine, it should not be considered in any general average. If the engine is given good care, a comparatively small amount for repairs each year will keep it practically as good as new.

Another advantage is that a crew of seven men can easily be made up from the farmer's own family or those of neighbors, and can be cared for in the farmer's own house, doing away with the expense of fitting up a cook car and bunk car and hiring a special cook at \$75 or \$100 a month, as is necessary with a large crew. Requiring but few men, the farmer can get them at reasonable wages instead of the high wages exacted when a large crew is needed. If rainy weather interrupts threshing, he can turn at once to plowing or find work for his small crew about the farm. He can start threshing as soon as the grain is ready and keep it up until it is all threshed and in the elevator. Then he can thresh his neighbor's grain if he wishes, and still be intimate to begin his fall plowing early.

The value of early fall plowing is so well known as scarcely to need mentioning. With early plowing the weeds are turned under while still green, thus forming an invaluable manure. At the same time, the weed seeds, which would otherwise sprout in the spring, are brought near the surface and they sprout and commence their growth, with the result that they are killed when winter comes and the field is free from weed seed for the next grain crop.

In the last five or six years the use of gas traction engines for plowing has taught the lesson of deep and thorough plowing as nothing else could do. With the engine the farmer can plow as he never could with horses. Plowing is tough work for horses at best, and the farmer has a natural disinclination to overwork them by throwing his plows in as deep as he should. The engine owner has no compunction on this score. He can "sock 'em in" good and deep, with no fear of tiring his engine or wearing it out. Furthermore, he can take the time to plow more thoroughly than he ever could with horses because with the engine, pulling a modern engine gang, he can get over the ground so much faster and can cover so much more ground.

While the ability to get his plowing done quickly and just when he wants to do it is of far more importance to the farmer than the actual cost of doing the work, the gas traction engine effects so great a saving over plowing with horses as to afford a very interesting comparison. The modern gas traction engine of thirty horse power will plow 25 to 50 acres a day at 25 to 40 cents an acre. It will pull eight to fourteen stubble plows. In breaking, 20 to 40 acres of

ordinary soil can be covered in a day, and the engine will pull six to ten breaking plows. One man can run the entire outfit, and if the engine is equipped with an automatic steering device he need pay no attention to steering the engine except in turning at the ends.

If the gas traction engine were useful only for plowing and threshing and were not perfectly adapted for those lighter forms of traction work which are necessary to the successful cultivation of the soil, it would be necessary for the farmer to keep his horses eleven months to do one month's work, but for disking, drilling and harrowing the engine furnishes an ideal power. The modern engine is equipped to draw four 10-foot drills, and two 20-foot drags behind, two men can drill and drag 100 to 150 acres a day at less than 25 cents an acre. I disking, it is customary to attach three discs to the drawbar, and three more behind these, thus double disking a strip 20 to 25 feet wide with each trip of the engine. One man with the engine will double disc 60 to 75 acres a day at less than 20 cents an acre.

Here is the testimony of a successful Kansas Farmer, J. A. Kyle, of Monument: "Replying to your inquiry as to the relative advantages of the traction engine and horses for conducting farm work, I will say unhesitatingly that the engine is a money-saver. I have found it so in my whole wheat farming experience in Kansas, being able to save the cost of the engine in six months' operation. I here-with submit a few figures:

COST OF FIRST EQUIPMENT—ENGINE.	
Thirty h. p. engine cost.....	\$3,000.00
Gang-plows	500.00
Packer	80.00
Four ten-foot drills	400.00

Total

COST OF FIRST EQUIPMENT—HORSES.	
Thirty horses, at \$150	\$4,500.00
Fifteen sets harness	525.00
Packer	80.00
Seven gang-plows, at \$65	455.00
Four eight-foot drills	320.00

Total

COST OF RUNNING ONE DAY—ENGINE.	
Wages, seven men at \$1.50	\$10.50
Wages, plow or drillman	1.50
Board with family, at 50 cents	1.00
Gasoline, 35 gal. 12 cents gal.	4.20
Machine oil and grease	1.50

Total

COST OF RUNNING ONE DAY—HORSES.	
Wages, seven men at \$1.50	\$10.50
Board, at 50 cents	3.50
Feed, 30 horses, at 50 cents	15.00

Total

COST OF RUNNING ONE DAY—HORSES.	
Wages, seven men at \$1.50	\$10.50
Board, at 50 cents	3.50
Feed, 30 horses, at 50 cents	15.00

Total

COST OF RUNNING ONE DAY—HORSES.	
Wages, seven men at \$1.50	\$10.50
Board, at 50 cents	3.50
Feed, 30 horses, at 50 cents	15.00

Total

COST OF RUNNING ONE DAY—HORSES.	
Wages, seven men at \$1.50	\$10.50
Board, at 50 cents	3.50
Feed, 30 horses, at 50 cents	15.00

Total

COST OF RUNNING ONE DAY—HORSES.	
Wages, seven men at \$1.50	\$10.50
Board, at 50 cents	3.50
Feed, 30 horses, at 50 cents	15.00

Total

(156 days,) the saving is \$2,854, and that amount, in spot cash, more than pay for a thirty-horse power engine such as I use.

"You will notice that these figures cover only the expense of purchase and operating each outfit constant. One big item to be considered in favor of the engine is that when not running the expense is only for the wages and board of two men, which is \$5.00 per day, while with the horse equipment the expense is \$29.00 a day whether operating or not. When season is over the engine is put away and there is no expense, while horses must be cared for and fed days in the year.

"I have used my engine two seasons doing almost all classes of farm work breaking prairie sod, pulling eight inch plows, or ten 14-inch plows old ground. I pull a 12-foot roller behind the plows on old land, which the land in fine condition for seed. I drilled my wheat with the engine pulling 10-foot drills, and drilled 12 acres in 12 days, using only two nine gallons of gasoline a day. The five to forty gallons will plow the acres of stubble a day. I disc sod land, pulling five 8-foot double disking, and a 20-foot harrow behind, which fits the sod or stubble land for wheat. The engine is used threshing or hauling grain to market if some distance from town.

EIGHTY ACRES AND A HOMO

Did you read KANSAS FARMER offer in last week's issue? Did it deal to you? Do you believe that could make a living and lay by a little money on an 80 acre farm of Kansas land?

If you do then let us hear from about your plans for equipment of farm and its profitable operation.

If you can make a home and a living on 80 acres and can tell how may be done then you can make more on a larger farm, provided have one. The facts and figures to be those needed for an 80 acre farm only but the same facts and figures may be applied to multiple this tract or to fractions of it, others. Turn back to the prize made on page 5 of KANSAS FARMER issue of June 17 and read it again. Think it over and see if you do want the honor of planning the 80 acre farm in Kansas and, incidentally, of pocketing the first prize.

It has been said that "education once meant the alienation from struggle and separation from the gar crowd." Education now means preparation for the struggle for mingling with the crowd.

The time is not far distant over in this country when agricultural cooperation will become necessary for in business as in nature the organized capital exacts tribute from the productive labor with the same and freedom with which the plant captures millions of dollars from the earth and air and we them into its own structure with as much as "by your leave."

THE BURNING OF CHINCH BUGS

OF T. J. HEADLEE

bugs have already passed from passing from ripened oats into corn. While migration is in south- Kansas, large numbers are throughout the wheat belt. of preventing damage of other succulent crops adjacent to fields of small ves either the destruction after they have reached new rows, or before they main crop at all.

bugs are in the first few in sufficient numbers to air destruction, the grower are a good barrier between row and the rest of the he should cut the infested destroy the bugs as they at- the barriers. The suc- measure will depend upon the bugs. If most of them it will be a failure, for can, will probably take wing- ate themselves regardless

Where most of the bugs are, such treatment would and preserve the bal- field from serious harm. he bugs have not migrated, should be constructed in- or second row and the oyed as they attempt to y effort should be made e bugs pass at once. In they may be destroyed be- come winged, for once wings, they can distribute regardless of all efforts to

THE WAY.

two types of barriers, one fitted for dry weather and t. The former is known barrier and the latter as rier.

dust or tar barrier is used, e located between the field e bugs are coming and o which they are going. e placed in a five-foot wide ean by complete removal, just inside the first or the e of the crop to be protect- that the migrating bugs tained long enough to be

THE GASOLINE TORCH.

various ways of making rier. A deep furrow may with a lister and the side bottom reduced to a fine wing a heavy log back and entire strip may be plowed rowed until reduced to a parallel dusty furrows made a double trough back and s double trough runs very and makes very satisfactory Each trough is composed of lumber and is three feet troughs are held together

iber who owns a large and in southwest Missouri, in the Kansas line, inquires value of commercial cul- bacteria. He states that red and somewhat stony ds desire is to seed it to

more accurate knowledge quality of this land it would to state just what is best from the description given ly in need of conditioning ing to alfalfa.

uggested that a crop of cow e grown and plowed un- en manure as the soil is need of humus as well as . Or it could be thorough- with an application of manure which should be der.

er states that he has been mercial fertilizers but that to act only as a tempor- ant. They certainly add the humus content.

plan is adopted it should in consideration to get the condition before sowing al- er this has been done the e inoculated by the sow- earth from an old alfalfa with the seed or the com-



Flaming the dusty ditch with the "locust" torch.



Double trough in use.



Flaming dusty ditch with modified ordinary blast torch.

by two 2x4s well "spiked" or bolted on. Chains are fastened to either end of the double trough and to a double-tree. In soil which works up readily into a dust and in the absence of wet weather, the dust barrier has proven much the more satisfactory. In our field work last year we found a good gasoline blast-torch the most efficient method of killing the bugs as they collect in the ditch or on the rows of corn. The torch is used to flame the infested stalks and the bottom and sides of the ditch as often as the bugs appear. A torch can be made from a common gasoline blast lamp by lengthening the tube, which conveys the gasoline to the burner, until the burner is far enough from the lamp to permit the operator to carry the lamp in his hands and keep the burner within an inch or such a matter of the bottom of the furrow without bending his back uncomfortably. This type of burner is rather unsatisfactory, because too easily blown out by the wind. A much better type of torch for this purpose is one consisting of a long brass tube, which serves as a gasoline reservoir, at one end of which is placed a strong burner. The reservoir should be furnished with an air pump, by means of which the gasoline may be placed under pressure. Such a torch is manufactured by the Turner Brass Works Co., Sycamore, Illinois,

and is known as the "locust" torch. Previous to the use of the gasoline torch, post holes were dug at intervals of from ten to twenty feet in the bottom of the furrow, and as soon as large numbers of the bugs collected in them a little kerosene was poured over them. This has the disadvantage rendering necessary the construction of a new furrow or the digging of new post holes, as often as the old furrow becomes ineffective from any cause. In the use of the torch the furrow can be fixed at any time by dragging it again, and this fact is of great practical importance, because in our experience the furrows need reworking at least once a day.

THE TAR BARRIER.

Where the soil is too stiff or when the ground is too wet to form a good dust barrier, the tar barrier should be resorted to. A strip of ground, located as described for the dust barrier, should be smoothed off and solidified by the use of heavily laden plank, by dragging it with an inverted convex bottomed trough. Along the small grain side of either type of tar barrier and close to the line where the tar will be run, post holes should be dug at intervals of from ten to twenty feet, and the bugs which collect there-in should be destroyed by use of torch or kerosene. By means of a sprinkling pot with the sprinkler removed

and the hole in the spout reduced to the size of a lead pencil, a continuous line of tar should be run along this hardened surface and should be maintained intact during the chinch-bug migration.

Indeed, any farmer might find it necessary to use both types of barriers. Where chinch bugs are plentiful, the dust barrier should be constructed at once. Later if wet weather demand it, such a barrier could be quickly transformed into a tar barrier. Although we have not had opportunity to try it, it seems likely that the grower could use his blast torch in connection with his tar barrier, and thus escape the necessity of digging post holes.

CONCLUSIONS.

1. The bugs have about completed their damage to wheat and other small grain and immature bugs of the new brood are crawling from the ripened grain into adjacent corn, cane, kafir, and millet.

2. In the new fields they will mature and produce a new brood several hundred times larger than this one, which in turn will utilize the sap of the plants to complete its growth.

3. The corn or other succulent crop can be protected by intelligent and persistent use of the dust and tar barriers.

4. To afford adequate protection the grower must act without delay.

CANNED BACTERIA

mercial culture may be applied according to directions.

The United States Department of Agriculture has tested the soil bacteria culture idea thoroughly and has sanctioned it. The Department even undertook to distribute a quantity of this soil culture to farmers in different sections of the country in order to get the experience of many farmers in its use. Since this was done the cultures have been prepared in suitable form and placed on the market by private parties.

It may be that the advertisements of these cultures will prove a little misleading in one respect. They are recommended for use by farmers who desire to raise legumes. Now the legume family is a very large one and includes a great range of habit from a creeping annual to a tree. They are all possessed, however, of the common peculiarity of being able to extract nitrogen from the air by means of tubercles or wart like excrescences on their roots.

These tubercles are the homes of bacteria which have gained entrance to the plant tissue through the root

hairs and are thus the result of irritation. These bacteria secrete large amounts of nitrogen which renders the plants on which they grow valuable as soil enrichers. In return for the nitrogen furnished by the bacteria they are supplied with carbohydrate food from the plant tissues.

Taking alfalfa as an example of the legume family, it is found that it will not thrive and mature either hay or seed without the presence of these bacteria. They are necessary to the proper growth of the plant and, if not already in the soil must be supplied either by the application of inoculated earth or of cultures.

It has also been found that each particular legume, alfalfa, cow peas, soy beans or red clover, has its own particular form of bacteria and that none of these will thrive upon any member of the legume family except that to which it belongs. The one exception to this rule being that the bacteria of bee clover or sweet clover will inoculate land for alfalfa and vice versa.

This being true the cultures must be prepared for the particular crop

which it is desired to grow. Bacteria from cow peas will not inoculate land for alfalfa and the farmer who buys commercial cultures should specify the crop he desires to raise and get the culture needed for that crop.

On farms where alfalfa has been grown and a rotation of crops practiced for a considerable time, there will be no need of artificial inoculation as the rotation will have served to impregnate the soil. In new lands where alfalfa or bee clover has not been previously grown such cultures may prove valuable but in this particular case there would seem to be a need for the addition of humus to the soil before successful alfalfa culture can be engaged in.

It is said that every farmer in the United States carried two men on his back. In other words every family engaged in agriculture supports two families not so engaged in order to round out and complete the service which has attached itself to society. Each member of society as a matter of course is supposed to render service to some other portion of society, but may not society be supporting an overload of self-constituted servants? Is the farmer not bearing more of this load than is necessary?

Black leaf 1-500.

POWER ON THE FARM

Good for Shop Work Too.

The 6 h. p. Webber gasoline engine that I bought in 1910 and which I am using in my carpenter shop has given good satisfaction. It is certainly all that is claimed for it. I use a magneto and no batteries.—August Ericson, Marquette, Kan.

Beats a Hired Man.

We have used a Webber engine several years, and are convinced that our investment was not a piece of extravagance but a sane and profitable investment. We shell corn, saw wood and grind feed with our engine.—Olson Bros., Morganville, Kan.

Got Two of Them.

I have been running a gasoline engine nearly four years, and would not try to get along on the farm without it. I started out with a 6 h. p. engine, but seeing it was too small I disposed of it and got an 8 h. p. This was too large to pump and separate milk, so I got a 3 h. p. engine and now have it just right. I grind and crush with the 8 h. p. and separate with the 3 h. p. I save perhaps \$50 a year by using them.—M. E. Bond, R. 8, Lawrence, Kan.

Never Talks Back.

The Cushman gasoline engine is a stunner. It is light, handy to move and very compact in design. It is easy to control, with the least noise and fuel of any engine I ever saw. You can drive it to its full capacity on the feed grinder, shut off the feed in the grinder when you think it will stop, but when the feed is thrown on again the engine pulls right back to its full power quietly and easily. I would hate to part with this economical tool and can recommend it to all who want a helper on the farm. It costs little, is always ready and willing and never talks back.—N. E. Warner, Bunker Hill, Kan.

Even the Kiddies Use It.

I have used a Fuller & Johnson pump engine for some time and think it is the best outfit for pumping water that there is on the market. I think it is far ahead of a windmill. I use mine for pumping and running a washing machine and it is so simple and easy to operate that my wife has no trouble starting or stopping it whenever she wants to. I have two boys 6 and 8 years old and either one of them can start the engine and the 8 year old one can clean and adjust it nearly as well as I can. Undoubtedly the Fuller & Johnson is the best pump engine made.—B. E. Wheeler, R. 1, Concordia, Kan.

It Is Fool Proof.

We have a gasoline engine 9 h. p., with which we run our thrashing machine, size of separator 21x40, and also a six roll corn shredder and a feed mill. It will grind sixty bushels per hour and run a 30 inch buzz saw. We can saw all the wood seven men can get to the saw. When we grind grain it keeps one man busy scooping into the hopper all the time, and when we thrash Kafir corn we thresh just as fast as the big machinery does. We have never lacked for power in running any of the machinery mentioned. We have another gasoline engine but this has the most power and takes the least gasoline according to the H. P. This has no pumps to get out of order. Our engine is hopper cooled, has no tank to leak and fool with and is very easily operated. It has a relief cam which many other engines do not have, and this makes it very easy to start. We have run other gasoline engines, but prefer the Witte.—B. F. Sellers & Son, Yates Center, Kan.

About the Best Thing Yet.

I have been operating gasoline engines for fifteen years and feel that I know considerable about them. I bought a new gasoline engine last February, which is my fourth engine in that length of time. The Witte is just a little the nicest engine to operate that I have ever tried. I have a 9 h. p. engine with which I operate a No. 39 Barnard wheat cleaner, elevate the wheat, put the wheat through Avery automatic scales, through a King car loader in any size car at the

Experiences With The Gasoline Hired Man By Our Readers

rate of 650 to 700 bushels per hour, the car loader being twenty feet from the engine on the end of the main drive shaft which, of course, requires more power than it would if loader was closer to engine. I also operate a Bowsher grinder with my engine. This is a very simple engine, easily understood and shows that it is put up by experienced men. I believe it to be the best engine on the market today for all classes of work. I made many inquiries about engines before I bought my last one, and failed to find a single complaint against the engine. As to fuel this will develop more power in pulling a heavy load and consume less fuel per hour than any engine I have ever operated.—W. F. Hinerman, Brookville, Kan.

Farmers Want Plain Cars.

Does the farmer want his car as plain as possible or does he want it to be as ornamental as a city car? Farmers are busy men who can seldom spare time to polish brasswork and keep it bright, and motor car makers will do well to consider their requirements in this direction when seeking to sell them machines. This point is well brought by a letter from C. C. Rex, of Mulberry, Ind., one of the most prominent farmers in the state, who writes as follows:

"With pleasure I take a little of my time in a busy season to write you that my Hudson hasn't cost me as much for last season as it would cost to feed a horse, and the service has been so much more satisfactory—no horse to hitch up, no horse for the flies to torment. After one has worked all week with horses that are contrary—they are 'all alike'—and driven map with flies, it is a pleasure beyond description to drive a car that isn't costing much and is giving good service and is always reliable like the Hudson.

"But I want to say that if all farmers are like myself they wouldn't want any brass on the car, not even the lamps or wind shield, because if I am busy all week I don't want any extra polishing, more than my shoes, before I am ready to start.

Lasts Well with Hard Work.

I bought a 3 h. p. gasoline engine in April, 1904, and it is still in use. We have the same blacksmith shop, running emery grinder, power hammer, disk sharpener, power drill and also use the engine to grind corn, grinding at the rate of 30 to 35 bushels an hour. If properly operated it does not use over one gallon of gasoline per horse power in ten hours, and the repair cost for the seven years was two igniter springs, amounting to 20 cents, and an igniter joint amounting to \$2.25, and the engine will do a great many years' work yet. I have very little trouble in starting the engine even in cold weather, by having good batteries. I also have a 6 h. p. gasoline engine

hopper cooled standard type of the same make which I bought about a year ago. I find the hopper cooled type is the best for all around farm purposes and especially in cold weather as it is easily drained and refilled with water. They are simple in construction and easily understood and if kept clean and bearings properly adjusted any one can be a successful operator. The small engine is a great labor saver as it pumps water, runs the cream separator, butter churn, washing machine and grindstone. I believe the gasoline engine is the coming power for stationary traction and field work.—Ernest Ratz, R. 4, Junction City, Kan.

A Home-Made Tractor.

I built a small tractor four years ago and am still using it. I use it every fall plowing for wheat. It is made of odds and ends, the most of it being taken from the scrap heap. The drive wheels are the bull wheels of two old McCormick binders. Each wheel is driven with its original chain. The front wheels are binder transportation truck wheels off an old binder. The first transmission is by belt from the engine pulley to pulley on lay shaft, then by Deering binder bull chain by small sprocket on lay shaft to large sprocket on jack shaft, then by McCormick bull chains to the wheels. Each of the old binder frames has the original raising and lowering device which permits machine to run level with wheels on one side in the furrow. It is a crude affair made on the farm, but it will pull a twelve inch Oliver gang at the rate of two and one-half miles per hour. It has no differential gear, just ratchets the same as were on the binders, which work fairly well. It has no reverse movement, but can back up by reversing the engine. A differential gear and reverse movement could be put on at small cost. The entire rig weighs 2,400 pounds with tank full of water. It will plow one acre with two gallons of gasoline or less according to condition of the ground. The engine is 6 h. p., weight 275 pounds, size of pulley 8 inches, diameter 6-inch face, speed 650 revolutions per minute or over, 2 cycle. This engine is made by the Cushman Motor Works, who also make a four cycle 3 or 4 h. p. engine of 160 pounds suitable for mounting on a binder.—G. A. Connor, R. 8, Winfield, Kan.

The Ramblers Wear Well.

I wish to give you a little information regarding my experience with the Rambler automobile.

I bought one of the first Rambler automobiles that came to Kansas, about seven years ago. It was one of those two cylinder affairs with a detachable tonneau, and a door in the back end. I soon learned to run this machine and had some of the thrilling experiences of a pioneer automobile driver. It made plenty of noise and would scare a horse a half a

mile away, but it always ran record I made with that car. Rozel and Larned, Kansas, yet been lowered. I drove about 12,000 miles and sold A. Ely, a real estate man, place, who drove it somewhere in the neighborhood of 20,000 miles. I traded it to a man named Belpre, Kansas, who has driven it at least 25,000 miles. A fence and a few posts were check Hawkins in the least, made an effort to pass a road, who has a good, up-to-date cylinder car, but you general of Hawkins going around, stand he is still running the Rambler.

My second Rambler was a cylinder car but a little more date. I paid \$1,250 for it. I had driven it about six thousand miles, a gentleman along and offered me \$1,000. I climbed out and told him I had bought something. He told me he drove it in the hood of 40,000 miles in the business.

My next Rambler was a car that was pronounced by all of the Rambler automobile, poorest car Thomas B. Jewett put out. I drove this car 10,000 miles with a repair bill than \$75. I never had a class do nicer work. I made through the Rocky Mountains that would make the present mile man, driving the best car on the market, feel that it always went through with misluck. I sold this car for as much as it cost me, after it 10,000 miles and it looks like new.

My next Rambler car was 248, four cylinder. This car excellent satisfaction at all under all conditions. I about 14,000 miles and hitched on to by a team or but one time. I would go mud where everything else I never had it fail to go wanted it to. During the owned it, my repair bill was really nothing. It was a car and a man could really he ran it. I sold this car who have been using it and it has given them excellent service. My fifth car was a I am driving it today and have for over a year, and give service, and it looks almost new car and runs like new. pair bill has been practically I have owned several other cars but have never gotten faction out of any of them out of the 54 Rambler, and buying a first class touring I would buy another Rambler. Moffett, Larned, Kan.

My gasoline engine is a Witte engine. I have used it months and have had no trouble with it. I have a small corn sheller, two hole, and Bowsher grinder which I run the same time, grinding fifty bushels of corn. It runs and takes little gasoline. It engine for all kinds of power. Rezac, St. Marys, Kan.

We could not get along with a gasoline engine on the drives our separator, wash grindstone and bone cutter on a line shaft. It runs the steadily as any one could be is so easily operated that it runs it along at her piece costs very little for gasoline all our work on one gallon line per week. Any one is to come and look our little engine.—J. D. Keasling, R. 7, Winfield, Kan.

The United States is built on three great battleships every year, which cost, fully perhaps an average of millions of dollars each, and it costs millions a year each to maintain them. What these fighting machines cost the government would establish equip two splendid expeditions of six hundred and forty in every state in the Union operated by the general



THRESHING WITH A GAS TRACTOR.

THE WHY OF A SILO

A Few Good Reasons Why A Silo Will Pay And Why It's a Necessity



HEREFORD COW, AT UNIVERSITY FARM, LINCOLN, NEBRASKA, SUCKLING HER 610-LB. 6 MONTHS OLD CALF. THE COW HAS MAINTAINED HER PRESENT CONDITION OF FLESH ON SILAGE AND ALFALFA WITHOUT ADDITIONAL GRAIN SINCE CALFHOOD. SHE IS NOW 6 YEARS OLD.

The silo is an economy, not alone in the sense that it furnishes better feed and saves more of the corn crop and of its feeding value, but because it eliminates the necessity of planting a part of the farm every year to sorghum, kafir corn or other forages. So it increases the crop acreage of the farm.

You plant a field of corn, cultivate and gather, and the stalks and leaves—representing one-half the feeding value of the crop—are practically thrown away. You have grown the roughage required to fill the silo, you have done so without any more labor than you would use in the growing of a crop of corn or grain. If the green corn stalks go in the silo you save the labor involved in planting and harvesting other roughage. You have saved the use of the land heretofore employed in growing other roughage.

The saving is not yet at an end. After you have cut the corn crop and filled the silo, your feed saving for the year is done. The three or four days used in filling the silo represent all the time required in putting up feed. How you have sweat and fumed cutting and stacking kafir corn or sorghum. How you have worked digging it out of the snow and hauling it through the storm or mud during the winter and spring, making the feeding of 25 or 30 animals the work of one man. With the silo, you fill the silo in three or four days at the longest. The feed is under roof. A half hour of feeding night and morning ends the job. You will not hitch a team to the wagon to go to the field for feed during the winter time if you have a silo.

In sections here Indian corn does not grow well, the silo can be filled with kafir corn or sorghum and the silo will preserve these feeds in their green succulent state. Indian corn is the king of ensilage crops but kafir or sorghum as compared with Indian corn are worth as much as the same feeds in the ordinary way of curing are worth compared with Indian corn.

There is not a farm in the state of Kansas which does not every year

grow the green feed required to fill the silo. The silo preserves the feed green with all the succulence and all its feeding value.

Did you ever stop to think that in the loss in the value of your crops for feeding purposes you paid for a silo and more too, every year? You have paid for a silo every year you have been on your farm but you do not yet have a silo—the structure itself does not show your expenditure. When you figure the annual loss of feed and the loss of gain on your live stock, which you might have saved with the silo, you have paid for two or three or possibly three or four silos every year.

Is it not the time in the face of the necessity for economical administration of agricultural affairs, that you now buy a silo and save the money you have been losing?

The silo is the cheapest structure you can place on your farm. It is likewise the greatest money-maker. You will build a barn to house your alfalfa hay and thereby save a 10 to 15 per cent loss. Do you realize that it costs more money by far to house a ton of alfalfa hay in a barn or in a mow than it does to house a ton of ensilage? Fifty cubic feet is required to store a ton of ensilage, while a ton of hay in the mow occupies 500 cubic feet or ten times as much.

Professor A. L. Haecker of the Nebraska Experiment Station, has worked out some interesting data on the cost of producing a ton of ensilage. Figuring the rent of land, plowing, cost of seed, planting and cultivating, he found that it cost 72 cents per ton. The cost of machinery and storage including all items such as interest on money invested, depreciation and repairs, and even taxes and insurance, was 48 cents per ton. Adding these three initial costs together, the cost of producing a ton of ensilage is \$1.94. The Iowa station has another way of figuring cost, in which it arrives at about the same figures.

What is a ton of corn ensilage worth? Since it has no market value, because it cannot be shipped or hauled

about, we will have to figure its value by comparing it with other feeds and roughage. On this basis, the best authorities estimate its value at from \$5 to \$6 per ton. Taking the lower value of \$5 per ton, and deducting \$1.94, the cost of a ton of ensilage, we still have a margin of \$3.06 per ton. On a hundred ton silo, this would mean a saving in one year of \$306 worth of feed, to say nothing of the labor saved and the general condition of the stock, resulting from the feeding of ensilage. So the farmers are right who testify that a silo erected on their farms and filled will pay for itself in one year.

The question is not whether you can afford to buy a silo—the real question is whether or not you can afford to be without it? You can better afford to go into debt if need be, for a silo than for any other one thing you could possibly buy.

If the outlook for forage is poor, this is another reason why you should buy a silo. If you have 25 acres of green feed which should make 10 tons per acre in order to furnish you the roughage required—but this year that field should make only 5 tons per acre, then you can have a sufficient quantity of feed only by saving every ton. In other words, if the crop is to be short and short one-half, the silo will save the half you are short and the feed would be very much better than that saved in the ordinary way.

The shorter the year in so far as crops are concerned, the greater the need for the silo.

Buy that silo now. You cannot afford to wait longer. Unless you buy and erect the silo within the next six weeks you will be compelled to do without a silo this year and you cannot afford to let another year pass without being the owner of a silo and the feeder of ensilage.

It is said that the State of Iowa has one silo for every 80 acres of land in that state. Not a silo on each eighty, but enough silos in the state to average one for each eighty acres. The greater part of these silos have been built in the past five or six years. This is an indication as to the value placed on the silo by the Iowa farmer. The Kansas farmer has greater need for the silo than has the Iowa farmer.

Buy now. Equip yourself to furnish your stock with the best feed obtainable and to save yourself the labor you have heretofore expended during the winter time in hauling feed.

The Wheat Train Next.

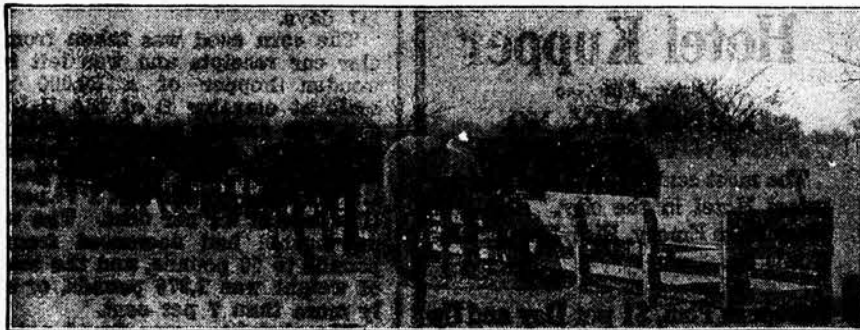
The success of the cooperative work which has heretofore been done by the railroads and the Agricultural College has been of such a nature, that it will not only be continued but its scope will be enlarged.

The Rock Island announces a special wheat train which will leave Manhattan on July 10, under the direction of Prof. H. M. Cottrell, Agricultural Commissioner, who will be accompanied by President Waters, Prof. Jardine and other experts from the Agricultural College.

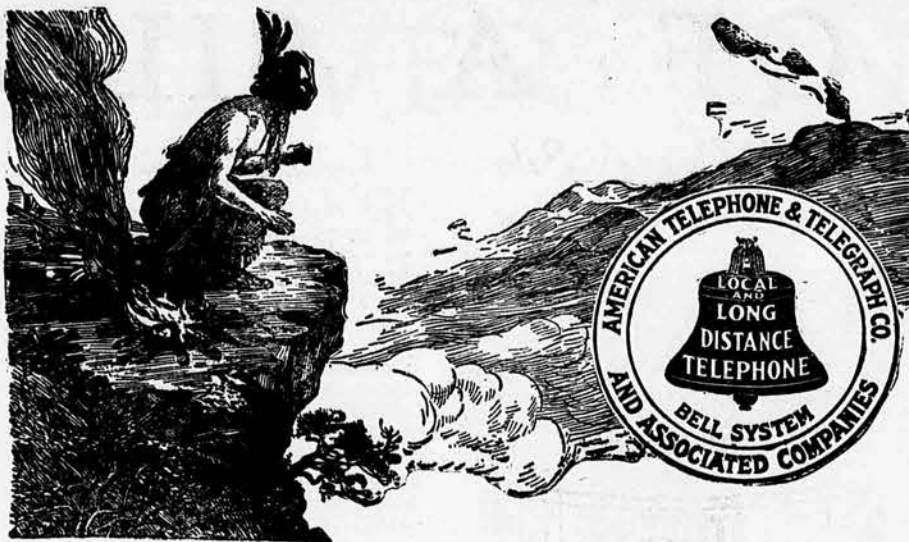
The proposed train will be the most complete demonstrating machine ever sent out in the interest of wheat. It will consist of one flat car for the latest improved farm machinery, with men to explain every attachment; a baggage car for wheat exhibits; four day coaches for lectures; a sleeping car and two dining cars.

In two of the coaches there will be lectures dealing with wheat growing, conserving moisture, selecting seed, and handling the product to produce the best flour. In another car will be talks to explain the baking qualities for the women, and in two others lectures to teach boys and girls to do all these things and, in addition, how to select good wheat, the grading, etc. The farmers will hear how to get good seed and where to get it at a cost that will not be prohibitive. There will be shocks of wheat, too, to show the yields from different methods of soil treatment, the most striking example possible.

Every business and educational interest in the state will be asked to cooperate and the entire route will cover about 1,500 miles and the trip last about 30 days.



YEARLING AND TWO-YEAR-OLDS ON THE FARM OF A. D. SHAW, MEDICINE LODGE, KANSAS, PROVING WORTH OF ENSILAGE AS A HORSE FEED.



Civilization—from Signal Fire to Telephone

THE telephone gives the widest range to personal communication. Civilization has been extended by means of communication.

The measure of the progress of mankind is the difference between the signal fire of the Indian and the telephone service of to-day.

Each telephone user has a personal interest in the growth of the whole telephone system.

He is directly benefited by every extension of his own possibilities.

He is indirectly benefited by the extension of the same possibilities to others, just as he is benefited by the extension of the use of his own language.

Any increase in the number of telephones increases the usefulness of each telephone connected with this system.

The Bell System is designed to provide Universal service.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy One System Universal Service

**Which One Will You
Test on Your Farm
for Ninety Days?
Freight Prepaid**

Which will you try, 30 Days' Free or 90 Days' Approval Test?

—Any capacity from 200 to 950 pounds per hour, according to your needs, and I'll save you from \$25.00 to \$50.00 on the price.

—The only Separator whose gearing runs in a "Bath of Oil" like a \$5,000 automobile—Feature worth \$50.00 alone.

—Automatically oils itself—Pour oil at the top, once a month from your oil jug or can—No danger of running dry, or ruining it like others—No oil cups to remember to fill or turn up twice a day.

—Dust-proof—Danger-proof—All gears enclosed—simple but standard built and absolutely dependable.

GALLOWAY'S New "Bath in Oil"
HIGH GRADE STANDARD CREAM SEPARATORS

—Has the only revolving supply tank—worth \$15.00 alone.

—Easiest to clean and the few parts come out easy and can't get back out of place.

—Easiest to run—high crank—low tank. With no high lifting and no "back-breaking" cranking.

—Gets the finest quality cream and all of it—no lumps or churning, as Nature's true principle is followed without forcing either the milk or cream the wrong way up or down.

—Skims closest in any climate or season, no matter whether your milk is warm or cold.

—Is as handsome a machine, compact and substantial, as you ever saw or could find. Beautiful finish.

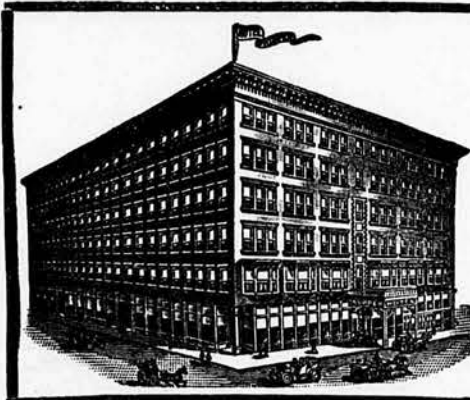
—Let me send you my Big New Separator Book—post paid—Free, so you and your wife and the boys and girls can talk it over and then try one of my separators under my easy plan for you to do it. You'll call it the best if you test it alongside any of the highest priced \$85.00 and \$110.00 separators sold by anybody today—makers—catalog houses—dealers—jobbers or anybody else. Write me today.

Wm. Galloway, Pres.
WM. GALLOWAY COMPANY
383 Galloway St., Waterloo, Ia.

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KANSAS CITY, MO.

The most centrally located popular priced Hotel in the city. One-half block from Emery, Bird, Thayer Dry Goods Co.

European Plan, \$1 per Day and Up

THE FARM



Soy Beans for Forage.

The Missouri Station states that when for some reason or other the spring crops fail of a good stand, are drowned out, or fail to be sown or planted at all, soy beans or cow peas should be planted. These crops can be used for hay, grain, or forage purposes. June or the first days of July is the best time to sow them. Soy beans should be sown shallow with the grain drill, at the rate of one bushel per acre, after the ground has been well prepared and thoroughly rid of weeds. They require shallow planting for they do not come up strong enough to break through a crust.

The best results are obtained where the soil has been limed and has also been supplied with favorable bacteria. A bushel of fresh soil, taken from a field that has grown soy beans successfully, should be sown and harrowed in immediately to furnish bacteria favorable to their growth.

Soy beans are a little harder to grow than cow peas, but when a good stand is obtained they are more valuable for hay or foraging purposes. Hogs relish the leaves of soy beans much better and will make more economical gains upon them than upon cow peas.

Sweet Clover.

A reader protests that while sweet clover is a splendid crop for the rejuvenation of soils it is of no value for pasture or hay. This conflicts with the opinion of many practical farmers and feeders who claim that sweet clover makes a very good crop for both purposes. This difference of opinion is probably due to the different varieties of this plant, both of which are more or less common here.

Sweet clover is not a true clover but belongs to a closely related family and those most common are the white flowered and the yellow flowered varieties.

The true clovers bear the Latin name Trifolium; the bur clovers, Medicago; the sweet clovers, Melilotus and the Japanese clovers, Lespedeza. Red, Alsike, white, crimson, yellow and Egyptian clovers all belong to the genus Trifolium while alfalfa is a Medicago.

KANSAS FARMER has never urged the value of the sweet clover as either a hay or pasture crop but for strengthening thin land and as a green manure crop which is sure to grow on practically any kind of soil it is a winner.

Shrinkage of Corn in Storage.

To those engaged in the handling of grain the natural shrinkage of shelled corn while in storage and in transit is a matter of prime importance, and often a source of dispute because of shortage reported at time of receipt at warehouse, and a further loss at date of final sale.

In order to determine the amount of shrinkage or loss of weight occurring in shelled corn containing various percentages of moisture while in storage in elevators or during transit in cars, the Department of Agriculture, in cooperation with the Baltimore and Ohio Railroad Co. and the Baltimore Chamber of Commerce, has conducted an experiment with 500 bushels of shelled corn, the test beginning January 5, 1910, and lasting 147 days.

The corn used was taken from regular car receipts and was left in the wooden hopper of a 30,000 pound scale at elevator B of the Baltimore and Ohio system at Locust Point, Baltimore. At the time of storage the moisture content was 18.8 per cent and at close of the test 17.4 per cent, or a loss of 4.1 per cent. The weight per bushel had decreased from 54.7 pounds to 50 pounds, and the total loss of weight was 1,970 pounds, or slightly more than 7 per cent.

The shrinkage was found not to be constant, as at certain periods there

was a retardation in the shrinkage or even a temporary increase in weight due to the action of moisture from the atmosphere. The average temperature of the air and the temperature of the corn during the 147 days, while the corn remained in good condition, was approximately four-tenths of one per cent; from April 21 to May 14, during time the corn went out of condition becoming sour and hot, with a minimum temperature on May 2 of 50° F., the shrinkage was 2.6 per cent. The shrinkage from May 14, after corn had been cooled to 55° at three elevations to June 1, the shrinkage was 2.6 per cent.

While the corn was in good condition the rate of shrinkage was influenced by the weather conditions and by the relative humidity and temperature of the atmosphere as shown by the data published in pamphlet (Cir. No. 81, Bureau of Plant Industry), just issued by the U. S. Department of Agriculture.

Power for Farm Work.

The perfecting of the modern internal combustion engine, which possible that superb piece of mechanism, the modern automobile, a younger sister, the aeroplane, gave to the world something of it has been in need for centuries which is destined to play a far more important part in the world's affairs than the first really practical improvement over the use of horses as a power on the farm.

The modern gasoline farm tractor is supplanting the draft horse on farms of the world as the automobile is supplanting the "horse and buggy" and the dray horse. What a change! Just a few years ago was an experiment in the use of the tractor, an economic improvement which none can afford to look.

And as the automobile has become one of the most important factors making the farmer's life pleasant and thereby exerting an influence toward "keeping the boys on the farm" so the modern farm tractor, which itself a sort of giant automobile, designed for work instead of play, exerting a powerful influence in the same direction. Every boy is a tractor fan. What farmer boy has not transformed his toy wagon into a tractor by setting a steam traction engine by setting a rusty oil can and a lot of other junk in it and "getting up steam" burning corn cobs in the bottom of the oil can? asks Kimball's Dairy Farm. Just at present there is quite a demand for building farm tractors. Some built around a single idea by inventors who know nothing of practical work. Others are of faulty design, are not built in a workmanlike manner. It behooves the farmer to make a careful investigation of the tractor before he buys one, for a tractor can cause a great deal of expense. The farmer knows about what is required of a tractor, his farm than any engineer or mechanic. He can usually come pretty close to telling a good machine from a bad one. He can also be guided by the experience of those who have used them. An engine with a successful past is worth a good many for the inventor predicts a brilliant future.

The indispensable feature of a successful farm tractor is all-around versatility. In order to provide a profitable investment for the farmer must supply practically all his needs and must free him from the necessity of keeping a large number of horses throughout the year in order to do a few weeks' work. An engine which can be used to advantage in only one or two kinds of work, such as breaking and thrashing, does not provide a profitable investment. The farmer must also keep a number of horses on hand throughout the year with which to do the work the engine cannot do and he

his money tied up in the two in-
ments. But an engine which can
everything that horses can do, and
better, quicker and cheaper—
in addition, can do many things
horses cannot do—is something
owner of a good sized farm can
afford to do without.

the importance of this all-around
ability is often lost sight of in
rating the value of a farm tractor.
Comparing the cost of breaking an
with a tractor and with horses,
addition to the cost of feed con-
ed while the work of breaking is
on, there should also be charged
the breaking account a fair percent-
of the expense of keeping the
es throughout the year, during a
part of which they are doing no
work.

The only expense which can
be charged to a farm tractor
it is not actually at work is the
est on the investment, and depre-
on, which, if the engine is prop-
ared for, amounts to very little.
Other necessity in a farm tractor
mplicity and ease of operation.
successful tractor must do its
faithfully in the hands of a com-
petently inexperienced operator. It
be as nearly automatic as pos-
sible.

the modern gasoline farm tractor
ides the farmer with a portable
er plant which supplies all his
needs on the farm and which
les him almost entirely to do
with horses. With it he can not
do his breaking, plowing, disking,
owing, drilling, harvesting and
ing, but also many kinds of
for which stationary power is
ed, such as sawing wood, pump-
water, drilling wells, grinding
and shelling corn.

was not until the farm tractor
been in practical use for several
that there was invented a bind-
er which makes it possible to
four or five binders, the engine
ing along at the edge of the un-
grain and the binders following
behind and at one side, each
ing its own swath, without any
draft, so that with five ten-foot
ers a strip fifty feet wide may be
at one trip across the field.

the efficiency of the tractor is also
erally increased in breaking and
ing by an automatic steering
e which automatically guides the
me in a course absolutely paral-
l with the last furrow turned, fol-
ing it with an accuracy and pre-
cision impossible with the human
and eye. With this device it is
necessary to start the engine
plows in the furrow at one end
the field and to turn it when it
reaches the other end; the steering
ence does all the rest. To guide
great engine over the fields is a
sit in comparison with which rid-
ing behind four horses on a sulky
is a drudgery.

is, of course, hard to state fig-
ures which accurately represent the
which the modern gasoline trac-
tor will do because conditions vary
greatly. For instance, in break-
ing it makes a great deal of differ-
ence whether the ground is packed
and dry or is soft and loose, and
how deeply it is plowed. It may
be stated in a broad, general way that
modern gasoline tractor of 30
horse power will do the work of 30
horses at about one-third the expense
and will reduce the number of hired
men on the farm by two-thirds. It
breaks 20 to 40 acres a day, stub-
bles 25 to 50, drill and harrow
(simultaneously) 100 to 150, double-
frowns 60 to 75, harvest 60 to 100 and
thresh 1,400 to 2,500 bushels of wheat
and approximately 15 bushels to
the acre.

Gasoline Power on the Farm.

have put a good deal of thought
into the application of gaso-
line power to all kinds of work on the
farm where power is needed at all.
I find that it may be applied in
many different ways. I also notice that the
farm man and manufacturer are by no
means the originators of many com-
mon farm work. The originators of the
various machines and combinations usually are
engineers. I find, by reading the various arti-
cles on gasoline power in different pa-
pers, that the farmer comes in for a
small share of the original devices
and suggestions on gasoline power ap-
plication. I know a farmer who has
recently mounted a small gasoline

Canning Summer Greens for Winter profits



Preserving the cheaper and more palatable
summer forage for increasing the profits
of the feeding season was the master stroke
in agriculture economy of all time.

Few feeders half realize that more than
one-third, and in many cases fully one-half
of all the appetite making and fat produc-
ing elements of food-stuff is entirely lost
in the curing process.

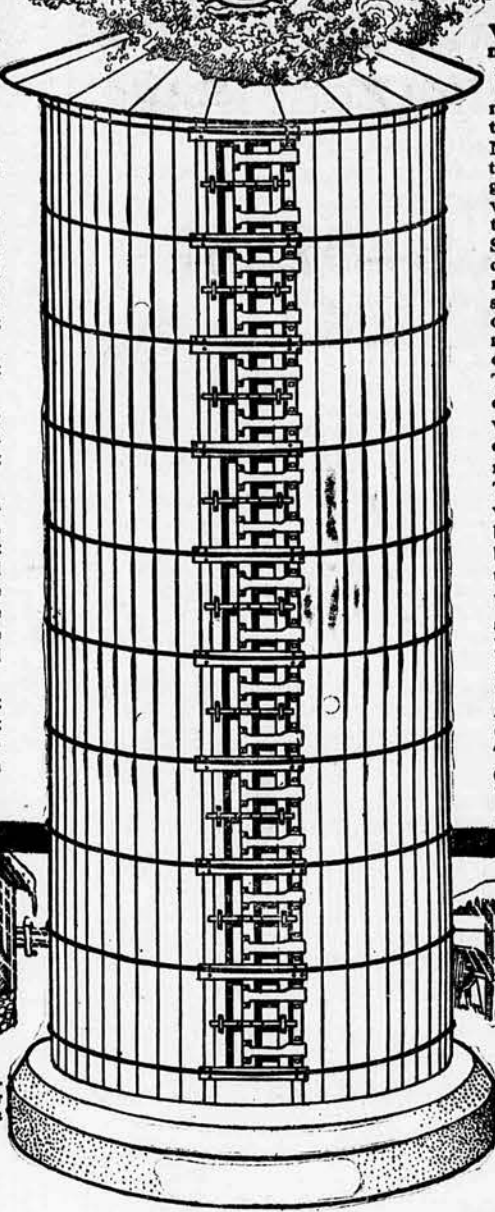
A fact that you and every other feeder
knows—how quickly and how great an
increase is made in the milk flow when the
dairy cow is turned onto the green spring
grass and how soon all live stock puts on
renewed energy—is entirely similar to what
silage does in winter feeding.

The silo makes a veritable gold mine out
of summer wastes.

There has never yet been invented or dis-
covered any other kind of feed that can
equal silage—because it is nature's richest
and most delicious gruel.

The silo is filled in the summertime with
deep green luscious shredded corn (stalk,
ear and all) or with alfalfa hay when it is at
its very best—it comes out when the ground
is frozen, perhaps white with snow, but the
well housed stock would not know the
season, when the bunks are filled with the
same rich green forage the past summer had
supplied them.

You may have made feeding money but
you have never made the big profits that
are possible until you put a silo at work—
and you have never had such a finish as
silage gives.



We have a very interesting proposition to
make every feeder—a proposition that
means an absolute feeding fortune to you.
One that you cannot afford to miss—your
name and address will bring it and without
the least obligation to invest a penny.

Naturally all good things have imitations—
the silo is no exception. There are other
good silos—but upon investigation you
will find that the HINGE-DOOR SILO is
the one you want.

Some large users of silos have said the
door is all there is to it—that is, it is the
main great factor in a first-class successful
silo. Fortunately we own and control the
only silo Hinge-Door and which is recog-
nized as the only great perfect silo in exist-
ence.

There are, however, a great many other
exclusive and important features in our silo
which make it extremely valuable over all
others. On comparison you will quickly
recognize them.

The silo is very reasonable in price, easily
within the reach of every feeder's pocket-
book—you will want several after you've
bought one. Right now is the
time to buy for this season's crop.

We want you to know all about the
silo—THE GREAT HINGE-
DOOR SILO—even if not now
interested, and we request that
you SEND US YOUR NAME
AND ADDRESS FOR
OUR LARGE ILLU-
STRATED DESCRIPTIVE
CATALOG
FREE

WRITE
NEBRASKA SILO COMPANY, BOX A, LINCOLN, NEB.
KANSAS { CONTINENTAL CREAMERY CO. MISSOURI {
Branch { TOPEKA, KAS. Branch { MARYVILLE, MO.

engine onto his binder which drives
the sickle and binder mechanism en-
tirely independent of the truck wheels
upon which the binder is mounted
which were formerly used, through
which to transmit the power from the
horses to the binder machinery. All
farmers know the heavy work thrown
onto the horses by this plan. But it
is claimed it is play for a team of two
horses to handle a binder all day
where nothing is required of them but
to draw the weight of it through the
field, compared with the work for
three horses when all the binder
mechanism was attached additional.

In this instance a light motor of
two or three horse-power capacity
was mounted on the binder and con-
nected to the driving mechanism,
which was disconnected from the
master wheels, and while the team
was busy moving the binder through
the field the gasoline motor was cut-
ting and binding the grain. The re-
sults are reported much more satis-
factory since there was plenty of
power to do the cutting and binding
at all times without clogging or chok-
ing the machinery, no matter how
heavy the grain or how wet the soil.
Engines are now made especially for
use on binders.

I notice the report of a farmer who
operated with entire success his hay
loader and hay press at the same
time. He was especially a hay farm-
er who made a business of making
and shipping hay. He mounted a gas-
oline engine and a light hay press
onto a truck, and fitted it up with a
good sized receiving platform; to this
he hitched a team of horses and
hooked the hay loader onto the press;

then as he drove through the field the
hay was taken up off the ground and
fed right into the press and baled and
each bale was dropped onto the
ground to await the gathering later.

My personal experience so far has
been with a light four horsepower en-
gine which does about everything I
can find for it to do in the way of
supplying stationary power. I have it
mounted on a pair of strong sled
runners which enables me to move it
from place to place. I have a power
house where my well pump is, also
my feed grinder, cream separator and
churn, tool dressing grinder and cir-
cular wood saw just outside. This is
the engine's home much of the time,
but when haying time comes I move
it up to the barn and hook it up to
the hoisting drum and hay fork and it
unloads the hay and hoists it into the
mow with the best of satisfaction.
When the silo cutting season comes,
also the fodder cutting and the corn
shelling and husking season, the little
engine is kept quite busy, besides its
daily shop work at pumping and
cream separating.

Farming would be an up-hill proposi-
tion at this age without a good, re-
liable gas engine. It is the only
power that has ever caused the farm-
er to open his eyes fully to the engi-
neering side of farming. It has made
it possible to have a veritable me-
chanical department dovetailed right
into the agricultural proposition, and
therefore by developing the mechan-
ical side of agriculture the farmer's
boys find much at home to hold their
attention. When the boy can start
an engine and go away to leave it
pump that large stock tank full of wa-

ter while he is sitting in the seat of
the motor steering it through the field
with plow or cultivator, doing his pre-
viously arduous labor, he, with some
degree of pride and satisfaction, can
see the railroad locomotive engineer
going by, seated in his hot cab, his
eye upon the blazing track ahead,
without that feeling of envy that for-
merly came over him while he was
compelled to yank the pump handle
and walk after the plow while the
"handles punched his ribs."—E. W.
Longnecker.

A Kansan in Oklahoma.

I have taken KANSAS FARMER a
good many years and consider it now
as one of the very best farm papers
in the United States. I moved from
Riley county, Kansas to this county 4
years ago last February. It is quite
dry here. No rain except local show-
ers but crops are looking well. Some
corn is being worked the third time
and cotton, of which there is a large
acreage, is doing fine. Cotton chop-
ping has commenced. We have some
new potatoes. Grass is short and wa-
ter is scarce in the pastures though
the cattle are doing well.

In this county of Osage we pasture
more than 250,000 head of Texas cat-
tle every year.—Theo. Carrell, Hom-
iny, Okla.

A crop of milo maize sown on
wheat or oats stubble will make an
excellent lot of feed before frost. If
the wheat prospects are poor try list-
ing in some milo, go over it once or
twice with the harrow and cut when
the seed is just forming.

LIGHTNING

Loses its Terrors

Don't Let It Strike Your Home

You may have protection—positive, assured, guaranteed. The cost is small. The investment is made just once, while the protection continues year after year. Look into

The DODD SYSTEM of Lightning Control

It is for you and everyone who places the safety of his home and family above a few paltry dollars.

Its effectiveness has been demonstrated thousands of times. The loss from lightning runs into millions of dollars every year. Three out of every four of all the fires in the country are caused by it. Yet not a single building of all the many thousands that have D.-S. Lightning Rods upon them has ever been destroyed or even damaged by lightning.

Over 2000 Fire Insurance Companies have, by special resolution, unequivocally endorsed Prof. Dodd and his System. They grant 20 per cent. or more reduction in rates on buildings protected with D.-S. Lightning Rods.

No such wonderful endorsement was ever given to any other lightning rod concern in the world.

The Dodd System includes right installation. Every detail is looked after. Every building is a separate problem. Our agents are thoroughly schooled and trained. They operate under special license and authority, which must be renewed every year.

The Dodd System of protection is guaranteed to you under a personal, binding contract. If your buildings are ever damaged it is made good or your money is refunded.

Delays are dangerous. Protect your home and family this year. Start this day by writing for our great lightning rod book, with the laws of lightning, vivid pictures of lightning, explanations, guarantee, agreement to make good damages, etc., FREE. Address

Dodd & Struthers, 423 6th Ave., Des Moines, Iowa



Benjamin Franklin
Originator of
Lightning Conductors



West Dodd
Originator of the Dodd
System

GALLOWAY SAVES YOU \$50 to \$300

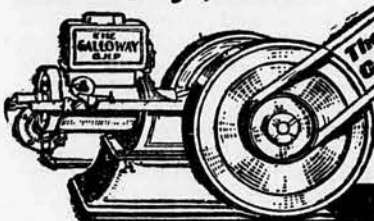
SAVE from \$50 to \$300 by buying your gasoline engine of 1 1/2 to 25 H.P. from a real engine factory. Save dealer, jobber and catalogue house profit. No such other as I make on the class of engine I sell has ever been made before in all Gasoline Engine history. Here is the secret and reason: I turn them out all alike by the thousands in my enormous modern factory, equipped with automatic machinery. I sell them direct to you for less money than some factories can make them at actual shop cost.

All you pay me for is actual raw material, labor and one small profit (and I buy my material in enormous quantities).

Anybody can afford and might just as well have a high grade engine when he can get in on a wholesale deal of this kind. I'm doing something that never was done before. Think of it! A price to you that is lower than dealers and jobbers can buy similar engines for, in carload lots, for spot cash.

An engine that is made so good in the factory that I will send it out anywhere in the U. S. without an expert to any inexperienced user, on 30 days' free trial, to test against any engine made of similar horse-power that sells for twice as much, and let him be the judge. Sell your poorest horse and buy a

5-H.-P. Only \$119.50



Get Galloway's Biggest and Best FREE GASOLINE ENGINE BOOK

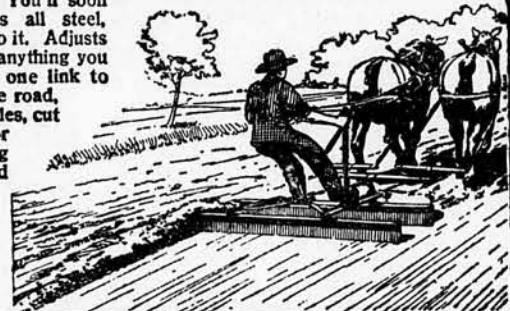
Write today for my beautiful new 50-page Engine Book in four colors, nothing like it ever printed before, full of valuable information, showing how I make them and how you can make more money with a gasoline engine on the farm. Write me—

**Wm. Galloway, Pres., Wm. Galloway Co.
385 Galloway Station, Waterloo, Iowa**

Do Your Part Toward Making GOOD ROADS

THERE ought to be a hundred thousand Globe Adjustable Farm and Road Drags at work on the dirt roads of the country after every rain. One trip up and down the road alongside your farm with a Globe is worth half a dozen the old way. Get ready. Do your part and neighbors will follow your example. You'll soon have tiptop roads. The Globe is all steel, unbreakable, practically no wear-out to it. Adjusts so as to grade or smooth and to do anything you want. Just by changing hitch from one link to another in chain, you can crown the road, lower it, level, fill ruts and chuck holes, cut down hummocks. Great machine for shaving off small brush and for breaking down corn stalks. Also fine path and road maker in snow. Weight 295 lbs. Write for free booklet and let us tell you more about it. Address

**GLOBE MACHINERY CO.
Box 111, Des Moines, Iowa**



MAPLEINE FLAVORING

Use it like lemon and vanilla. A delicious syrup is made by dissolving white sugar in water and adding Mapleine. Grocers sell Mapleine; if not, send 35c for 2oz. bottle and recipe book. Write to Dept. 6 CRESCENT MFG. CO., Seattle, Wash.

LIVE STOCK



"The hoof of the sheep is golden," according to an old saying. In Kansas it is the paw of the dog. At least the dogs seems the more profitable of the two.

Cottonseed Meal for Horses.

The Pennsylvania Agricultural College made some interesting experiments upon feeding horses cottonseed meal and silage. The object was to determine the value of silage to horses and to compare cottonseed meal to oats in the rations.

It was found that cottonseed meal is an excellent source of protein for finishing horses and is more economical than oats. It was also found that the horses fed cottonseed meal retained the bloom and finish better than when oats were used as a source of protein.

There were seven horses in the group and they were divided into three groups according to weight and age.

Group one ate an average of 9.2 pounds of shelled corn, 8 pounds oats and 17.7 pounds mixed hay; the average daily gain was 1.64 pounds at a cost of 28.8 cents per day each or 17.5 cents a pound of gain. Group two was fed 13.1 pounds corn, 1.5 pounds cottonseed meal and 18.1 pounds hay daily. The gain was 1.78 pounds, the cost of feed for each horse 24.8 cents or 13.9 cents per pound of gain. Group three was fed 12.3 pounds corn, 1.4 pounds cottonseed meal, 10.4 pounds of hay and 17 pounds of silage; the daily gain per head was 1.6 pounds; it cost 21.5 cents daily per horse and 13.4 cents a pound of gain. The estimate was based upon corn at 50 cents a bushel, oats 40 cents per bushel, cottonseed meal at \$30 a ton, hay \$12 a ton and corn silage at \$2.50 a ton.

It is of interest to note that silage, which is not usually considered good feed for horses, was used with good results and when fed in connection with cottonseed meal made the gain per pound cheaper.

It is now a matter of general information that cottonseed meal is one of the cheapest and best sources of protein for work animals and it should be more liberally used for this purpose.

About Horse Feed.

I would like to know which makes the better feed for work horses, ground corn or soaked corn? I have been feeding ground corn. If one is better than the other will you kindly state why?—J. H. A., Nashville, Kan.

Neither is better than the other and neither is the best feed for work horses. If ground corn is fed alone it is likely to induce "stomach staggers" or some other form of indigestion, and if the horse has good teeth there is no use in either grinding or soaking the corn.

The digestive organs of the horse are relatively small and he cannot take care of large quantities of feed. While at heavy work he needs a large amount of nutrients and this cannot be supplied by increasing the size of the ration so well as by giving more concentrated feeds. Corn is rich in carbohydrates and is a heat and fat producing feed and for this reason is not the best to use as a summer feed for work animals.

Corn and ordinary roughage are of low value for producing work and add an increased burden to the already hard worked animal. The more severe the labor the smaller must be the allowance of roughage and the larger the concentrates.

A good ration for hard worked horses is composed of prairie hay 6 pounds, wheat bran 2 pounds, shelled corn 4 pounds and oats 8 pounds for each 1,000 pounds of live weight. This may be modified by the addition of oil meal which may be fed up to the amount of 1 pound per ration as a substitute for the larger part of the oats. As this has a laxative effect it must be used cautiously especially in summer time.

Most horses get too much corn and hay though if alfalfa is fed it serves

in some measure to balance the effects of the corn, provided too much is not given. Work horses' feed should be small in quantity and concentrated, with such modifications the amount of work done, the season of the year and the available feeds may allow.

Live Stock Necessary in Dry Farming

Dry farming as carried on at present time is a cold business proposition. A visit to the average farm reveals a lonesome, somewhat gloomy situation; there are many things lacking that are necessary to make this home a desirable, pleasant place to live. The wife—the mistress of the home—feels this more than one else. If she were raised with fruits, vegetables and live stock grown, the lack of them to her would be keenly felt. No farm can be truly home without live stock. Milk, cream, butter, cheese, eggs and various kinds of meat are necessary. These contribute to the comfort and happiness of the family. Furthermore, the companionship of animals is a great factor in developing the spirit of country life in young people. The lamb, calf, pig, and chick all help to make the country pleasant and attractive. The writer's most pleasant recollection of his childhood days was companionship of the farm animals.

There are other reasons than one mentioned why live stock should be kept on every dry farm. Grain is the main dry crop. The farm "eggs are all in one basket." Grain is his only source of income, and storm and insects take it, the expenditures and efforts of the whole year are lost. With a few milch cows there is an income all the time; after fat is sold to the creamery every day, and a few calves can be veal and disposed of to the local butcher. A few hens will pick up a great deal of waste grain that otherwise would be entirely lost, and the revenue therefrom is usually sufficient to provide the family with groceries. A sheep will furnish meat for the table and cash at various times during year, when the farmer has no wool to sell. The same is true when there are horses, beef cattle and hogs on the farm. They provide an income when the farmer needs it, and he can cash and thereby secure many advantages that cannot be secured credit.

When the farmer keeps live stock he can give employment to the whole year, but on the grain farm there is a long period of idleness during winter season. Most desirable labor cannot be secured when there is short period of employment, and consequently the farmer has to put up with a low class of farm hands, who is demoralizing to the young people of the community. On the farm with live stock, production ceases during the winter season, while on farm containing live stock it continues the whole year, and because the community is more prosperous.

The question of maintaining the fertility of the soil is important. In humid climates, when the productive capacity of the soil will be greatly reduced, unless the plant food now being taken out is replaced. So crops remove a great deal from the soil. For instance one ton of wheat removes \$7 worth of fertility. This is greatly in contrast to the amount (50 cents' worth) removed in a pound of butter. In the raising of live stock the farmer must grow leguminous plants that add fertility to the soil, as peas, clover and alfalfa. About 10 per cent of the fertility constituted by crops is retained on the farm when live stock is fed and the manure is turned to the soil. By growing leguminous plants and feeding live stock the fertility, to a large extent, is maintained and depleted soils rapidly built up. This is impossible without live stock.

Before going into the live stock

so extensively, the farmer what kind of crops can be grown. This varies greatly within the states. Some can be grown successfully and South Dakota would fail in Montana, and some successfully grown in one state would fail in another, where it can be the best all around crop. It is pastured by hogs and is a good feed in winter for all kinds of animals, chickens. It cannot be safely by cattle or sheep, as it bloats; but it can be cut, wilt and be fed to them. Brome grass makes a pasture and withstands all. Sorghum is a drouth-resistant and yields well where grown. Corn is not so resistant as sorghum but with better.—Prof. R. W. Montana.

age in a Fattening Ration. Results of a feeding test made shows a comparison of fattening steers in which amount of feed required per gain for each ration, the average gain and the selling price per pound is given.

as fed 4.88 pounds of corn and 22.47 pounds of hay for a gain of .89 pound and a selling price of \$7.60. Lot 2 got 25.51 pounds of hay and 16.8 pounds of hay and gained 1.49 pounds per day with a selling price of \$7.60. Lot 3 was fed 2.55 pounds of hay, 10.87 pounds hay, 4.46 pounds corn and 1.22 pounds cottonseed meal and gained 1.73 pounds each day and a selling price of \$7.60. Lot 5 ate 2.1 pounds of hay, 6.02 pounds of cottonseed meal and 1.82 pounds per day with a selling price of \$7.80. Lot 7 received 5.43 pounds of corn and .92 pound of meal and showed a daily gain of .89 pounds and a selling price of \$7.60. Lot 8 was given 8.02 pounds of hay, 6.71 pounds of corn and .91 pound of cottonseed meal and topped the lot with a daily gain of .89 pounds and a selling price of \$7.60.

Feeding Experiments.

in issued by the New York Station gives the results of a feeding test which should interest at this time.

composed of twelve parts of corn meal, four parts of wheat bran, two parts of ground oats, one part each of wheat bran, middlings, pea meal and old linseed meal, was fed to one lot of steers, while another similar lot given wheat, corn, animal bone and mixed grain. The steers were fed thus from the first three days until they were fattened and some of the pullets commenced to lay. Lot one received a ration containing the animal bone while lot two received no bone but the grain mixture. Lot one reached the average weight of 100 pounds, sooner, by eight days than those having no animal bone. The pullets from lot one commenced to lay nearly a month before lot two.

the first twelve weeks the cost of grain for lot one was 4½ cents, and that for lot two was 6 cents per pound. For the next twelve months the cost of grain for lot one was much greater than for lot two, being 11½ cents per pound for grain during the first twelve months, and also made a more gain than the other. If the cost of grain laid by pen one before the cost of grain laid by pen two began to lay be considered, the cost of grain for lot one will be greater.

the same station two pens of steers were fed from the age of three months for a period of twelve months in the same manner as described above, and the lot having the animal bone gained 20 per cent more than the other at a cost of about 2 cents per pound.

All this shows that animal food of some kind can be profitably fed to produce either early laying or rapid growth.

The Rise in Farm Values.

In an editorial in an eastern paper on "Farm Values and Population," the editor quotes the opinion of a Wall Street organ to the effect that the remarkable rise in the value of farm lands during the last ten years is due to increasing population. This opinion the editor disputes partly on the ground that the inequalities shown in the different states do not correspond to the inequalities in the figures for population increase. At the same time he suggests that the true explanation is to be found in the great rise of commodity prices under a depreciated monetary standard. This explanation, however, does not get any further than the one which he calls in question toward explaining the most striking thing in the census figures, namely, that the value of farm land has increased very unequally in the different states. Why should the increase be 104 per cent in Missouri and 178 per cent in Kansas, while it is only 27 per cent in Vermont and only 20 per cent in Massachusetts? If the population theory fails to explain these inequalities, the monetary theory still more conspicuously fails. Vermont, Massachusetts, Missouri and Kansas are all under the same monetary system and have been so all the while. It is plain that this striking difference must be accounted for by some influence which has acted unequally in the different states.

While no one cause would account for the difference in the figures, probably the most important difference lies in the unequal improvement in methods of farm management. While the increase in population in Massachusetts has been much greater during the last decade than in Kansas, the increase in farm values in Kansas has been about six times what it has in Massachusetts. Now it is well known that the improvement of agriculture in the central states has gone forward by leaps and bounds in recent years. In many instances it has amounted almost to a frenzy. New crops have been brought in, old crops have been discarded, methods entirely reconstructed, business put on a new footing, and other far-reaching reforms established. The activities of the local agricultural colleges and experiment stations have been a fair measure of these improvements in most states; and though these cases can not be statistically compared with the results now shown in the census figures, any one acquainted with the agricultural conditions of the country in the various localities will be able to trace a close correspondence between the increased value of farm lands and the improved methods of agriculture.—F. A. Waugh, Amherst, Mass., and formerly of Kansas.

Building Up a Field.

Will you please inform me through KANSAS FARMER which is the best to sow for building up a field, wheat or rye? I have a 40 acre field that has been in corn for fifteen years and it is now in oats. I want to put it into wheat or rye this fall and would like to know which is the best for the ground. I have been told that rye stubble is much better for corn than wheat. I don't care which will make me the most money next year. I want to get the land in condition to raise good corn.—G. J. Moorehead, Benton, Kan.

If the situation is correctly understood we would not advise the use of either wheat or rye for enriching corn land but would sow alfalfa if the land could be devoted to this crop for two or more years. If not, then we would sow cow-peas, soy beans or some other legume.

Wheat and rye are surface feeding plants and the only way they can benefit a field is by changing the crop from the deep feeding corn to one of them and this is no real benefit.

The legumes have the faculty of taking nitrogen from the air and storing it in the roots and this is possessed by no other farm crop. Nitrogen is the most important of the plant foods and the one most readily consumed by the crops. Its place can be supplied by barnyard manure, by chemical fertilizers or by growing legumes.

If you do not want to put the land

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Saves Time, Cash and Labor! Feeds Stock RIGHT—With Properly-Cut Alfalfa! Put the WHOLE Job Up to the Wonder-Working SMALLEY Force-Feed Alfalfa Cutter!

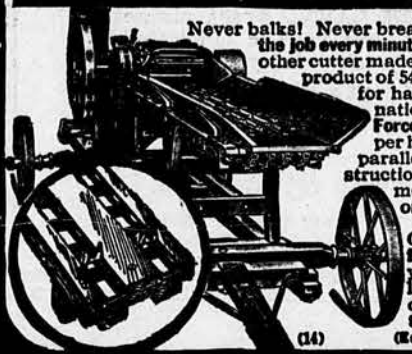
Alfalfa mills cut alfalfa ⅓ of an inch for stock feed mixtures with the amazing "Smalley" Cutter! Alfalfa cut in short lengths is a wonderful ration for feeding hogs!

Allows tremendous economy in feeding alfalfa rations!

This machine does it many times faster than human labor, cuts it into a BETTER feed and saves enormous sums doing the job!

The "SMALLEY" handles the WHOLE job alone! You just toss the alfalfa onto the powerful force-feed table. The wonderful chain feed with grip hooks shoots it along—without shoving—until it hits the roller and ZIP!—the alfalfa's ready for the stock!

SMALLEY FORCE-FEED ALFALFA CUTTER!



Never balks! Never breaks! Never gets tired! Just stays right on the job every minute! Cuts alfalfa more uniformly than any other cutter made. It's the greatest cutter in existence! The product of 54 years' experience in making a cutter that for half-a-century has been the standard of the nation's farms! It is the World's Only Positive Force-Feed Cutter! Capacity, ⅓ ton to 4 tons per hour. Made in 4 sizes. It has a hundred unparalleled features (see catalog). Our new construction feed-table—the Smalley's 1911 improvement—absolutely abolishes the possibility of chains interfering with cutter knives. VALUABLE NEW 1911 BOOK—FREE! Our new 1911 book, an encyclopedia of cutter facts, is yours for the asking. It will save you time, labor and cash! A postal or letter brings it by return mail—state name of your implement dealer—write today to SMALLEY MANUFACTURING CO. (Est. 1887) 116 Manitowish, Wis.

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Arkansas Valley

of Colorado—Kansas

Why should you be satisfied with less?

Corn farmers rarely make 5 per cent net. Alfalfa growers often make 30 per cent net in this wonderful valley.

I know one man who last year refused \$75,000 for his alfalfa hay (in stack) from 1,800 acres.

The small grower does as well, or better.

There is no element of uncertainty.

The soil is there.

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Just think—reservoirs 60 miles in circumference and 90 feet deep. Canals so located that every acre may be quickly and economically watered. Drops, head-gates, etc., solidly built of reinforced concrete.

This land is a rare bargain at \$75 to \$150 per acre, the prices now asked.

The Arkansas Valley is a desirable place for a home. Climate pleasant and healthful. Social conditions unsurpassed. Good schools, good towns, good markets, good roads, churches, clubs, etc. The Santa Fe furnishes fine transportation facilities to world markets.

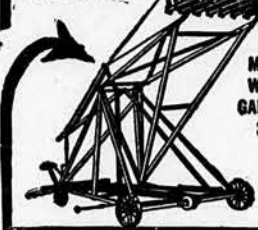
Buy an Arkansas Valley farm. Forty acres gives a splendid start.

Develop it, raise alfalfa, sugar-beets, grain and melons. You will prosper—your profits will enable you to get more land, and with every additional acre your independence becomes more secure.

I want you to read our book-folder, describing this Valley. It is full of the information you are most anxious to get. It will be sent to you free, on request.

C. L. SEAGRAVES, General Colonization Agent, A. T. & S. F. Ry., 1957 Railway Exchange, Chicago.

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THE F. WYATT MANUFACTURING CO.

529 N. 5th Street, SALINA, KAN.

in alfalfa, though that would pay a big dividend if it can be grown on this field, then sow cow peas on the oats stubble by first disking the land and then following with the drill. In the fall, plow the cow-pea crop under as a green manure and you will at once increase the humus and the nitrogen content of the soil.

Alfalfa is the best known crop for

rejuvenating the soil. It is a perennial but good practice permits of its rotation in from 2 to 5 year periods. If this is not available, try red clover, which is a biennial and the roots of which are not nearly so hard to plow up. In either case plow under the last crop. Barnyard manure and alfalfa or red clover will cure any corn sick field in Kansas.

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The hot weather season is at hand when the Centrifugal Cream Separator saves most in quantity and quality of product over gravity setting systems and when the DE LAVAL Cream Separator saves most in time, labor, quantity and quality of product over other separators.

There can scarcely be a good reason for putting off this all-wise and self-paying purchase on the part of anyone having the milk of even a single cow to separate, and a DE LAVAL machine can be bought either for cash or on such liberal terms that it will actually pay for itself.

With butter prices rather low the purchase of a DE LAVAL separator becomes even more desirable, as its use may easily mean the difference between a profit and a loss in summer dairying.

Every local DE LAVAL agent stands ready to demonstrate this, either to the man without a separator or already having an inferior one, and will deem it a favor to be permitted to do so.

If you don't know your local DE LAVAL agent please address the nearest DE LAVAL office, and bear in mind that every day's delay means just so much more dairy waste.

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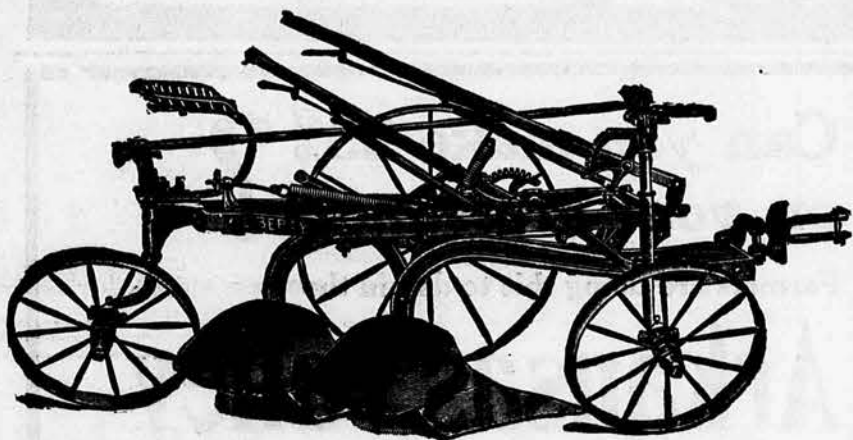
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ROCK ISLAND Universal (CTX) Bottoms

Our Sulkies and Gangs have the only Universal bottoms ever made—the CTX.

Two years of triumphant success have proved them without a rival.

We have been making high-grade Plows since 1855, and our Sulkies and Gangs have always been at the head of the class.

But until two years ago just one thing was lacking—

An All-Purpose Bottom

All plow manufacturers had dreamed of this, but given it up as impossible.

When we brought out our CTX bottom the other plow makers admitted it was a good thing, but said we claimed too much for it.

ROCK ISLAND IMPLEMENT CO.

Kansas City, Mo.

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THE "IDEAL" RANCH FOR SALE.

This fine 2,250 acre ranch in Ness County is well improved, 80 per cent farm land, nearly 700 acres bottom land, living water, near stations on Santa Fe and Missouri Pacific railroads. If interested, write to O. L. Lennen, owner, Ness City, Kansas. Mention this paper.

Alfalfa in the vicinity of Topeka was harvested earlier this season than ever before and the crop was

a fairly good one. During a recent drive of some 25 miles in this county we saw numerous fields of alfalfa, standing on many kinds of soil from the sandy river bottom to the low hilltops and all of it seemed to average from 15 to 18 inches in height with a good stand.

In all farming operations always be a double header. The single crop farmer makes money some years and some other years he doesn't.

DAIRY



Always keep the cow that the other fellow wants to buy. Otherwise you grade your herd downward.

The fifth International Dairy Congress will be held at Stockholm, Sweden, on June 28 to July 1. The American committee includes Dean Dd. H. Webster of the Kansas Agricultural College and Professors J. C. Kendall, Director New Hampshire Experiment Station, and Oscar Erf, Professor of Dairy Husbandry in Ohio University, both of whom were formerly in charge of the dairy department in the Kansas College.

Cow Testing Association.

If there is any doubt as to whether it pays to belong to a cow testing association, let me ask you how you would feel if you had these three cows in your herd as one man did in an association that has just completed its year's work? asks a correspondent in Hoard's Dairyman. Cow No. 1 gave 8,327 lbs. milk with a test of 5.14 per cent which sold for \$130. Cost of her feed was \$41.08, leaving a profit of \$88.37. Cow No. 2 gave 8,542 lbs. of milk with a test of 4.51 per cent that sold for \$115. Her cost of feed was \$36.31, leaving a profit of \$91.76. Cow No. 3 gave 2,676 lbs. of milk testing 3.42 per cent that sold for \$27. Her cost of feed was \$25.08, leaving a profit of only \$2.82. The butter-fat in the three cases sold for an average of 30½ cents per pound. You can readily see what the result would have been in case the prices had been as they are this year.

Help the Other Fellow.

Our problem is not with the few who are quick to see and understand, it is how to raise the level of the mass to the standard of the few. The best way to do this, is to select typical men and farms, not the hopeless ones nor those already doing good work. Show these men on their own farms how they can improve their own conditions, show them how to save and use all the good manure used on the place, show them how to test their cows and weed out the boarders, show them how to build up their herd by heading it with a good sire of the breed adapted to their local conditions and requirements, show them how to handle their chickens and improve them for meat or egg production as the aim may be, help them to get good seed of the varieties adapted to their conditions, show them how to test for germination and purity and how to improve it each year by careful selection of the best individuals, show them how to market their products or to utilize them so as to get the most profit out of them. In short, help them to organize their farm business on business principles. Do not do it for them, simply show them how.—Prof. A. F. Woods.

Buy Your Silo Early.

We have been telling our readers all summer of the benefits of a silo. The recent dry weather and prospects of short hay crops are beginning to impress a great many that our advice was well founded. Soon you will be in the midst of your harvest, and you will not want to spare the time to look up the question as thoroughly as you should, because there are a number of silos being offered, and to choose between them is no easy task. The main things to be considered in buying a silo are, that it is put out by a responsible company, that the doors are easy to operate, and that the hoops can be tightened without too much danger.

If crops are short, you need a silo to save every bit of it in order to have sufficient feed for your stock. If crops are good, even then you can not afford to waste practically half of your corn crop, and a silo in which to put your alfalfa, should a sudden rain come up as it is being cured, is almost indispensable to the man who can raise this crop. No man should put off this important matter any

longer, but write to some of the advertisers, get their catalogs, decide on your own judgment the best, and then buy it and so you can get it up, and not hurry and take what you can the last minute.

Kinds of Market Milk.

The dairy business has grown such large proportions in this and the methods of handling and marketing it are so systematized has come to have a nomenclature of its own.

Different classes of milk upon the market are defined by the Michigan Farmer as follows: Certified milk is milk from healthy cows kept under hygienic sanitary conditions, being properly constructed stable best varieties of feed, ideal the animals, and clean, head tendants, and a milk which is sold by a commission.

Clarified milk is so named because it has been run through the centrifugal separator to remove some of the impurities, after the skim-milk and the cream again mixed together.

Condensed or evaporated milk which has had a certain portion of the water evaporated it and sometimes a high percentage of sugar added to make the sweeter.

Electrified milk refers to which has been subjected to a current of electricity for the purpose of destroying the bacteria.

Malted milk is first pasteurized to destroy the bacteria, then a portion of the water is removed by evaporation, after which a small quantity of malt is added.

Modified milk, sometimes called sterilized milk, is where the cream contains definite proportions of casein, sugar and other elements, the purpose of which is to make it palatable for use for those who require careful feeding.

Guaranteed milk, or sanitary milk, these terms are applied to milk produced under such conditions as to give a clean, wholesome product for consumption.

Pasteurized milk is where the milk has been heated sufficient to most of the bacteria, but not to boiling point, and immediately cooled to about 50 degrees or below, usual temperatures to which it is subjected in this process between 140 degrees and 185 degrees.

Peptonized milk is milk to which pepsin has been added that the milk product may be more easily digested.

Powdered milk is the result of evaporating milk until it is reduced to powder. The process is also applied to partly skimmed milk, and to nary skim-milk.

Sterilized milk is such as is submitted to heat at a boiling temperature, or higher, for such a time as to completely destroy the bacteria present in the product.

There are other preparations of milk but these cover the terms commonly referred to, and the definitions are brief they will be sufficient fact to set the reader as to the differences existing between them.

Costs Little and Works

I am well pleased with the gasoline engine which I bought from Witte Iron Works, have always been able to depend upon it and it has given perfect satisfaction in every way. I had no trouble in learning to operate it as it was very easily. My gasoline bill and so far I have not paid for repairs. I have found it a very profitable investment. If I should buy another I would be a Witte.—W. H. V. Belvue, Kan.

If you are a pessimist it may cause you have to live with wife's husband.

Cooperation Needed By The Farmers

His Ancestors Caught More Fish When Working Together

By PROF. H. E. VAN NORMAN

Combination is but another name for co-operative effort or community of interest. It is a logical step in the natural evolution of business. It stands as the last round in the long ladder that leads back and down to the time when aboriginal man gathered the wild fruits and native game to satisfy his immediate needs. In between these extremes are the various steps including exchange or barter. A center for exchange with a common medium as a measure of value developing into our modern stores. The individual being succeeded by the partnership, then the co-operation, finally the so-called trust or combine.

This evolution is manifested in every branch of society, business, social, educational and religious. The farmer because of his less close touch with his neighbor has been slow to appreciate the power and value of this organized co-operative effort. But this attitude is changing and its value is recognized as never before. Given the willingness to co-operate the dairy business offers exceptional opportunities for successful effort. The co-operative creamery has been attempted in many communities. In some it has succeeded, in others it has failed because of conditions which must be overcome before community effort will maintain the purpose of the majority and loyal support the leader who is chosen to execute the will of the organization. Second, the selection of a leader who has shown himself competent to "make good" in any work undertaken, whether it is his own or other people's. The lack of one or the other of these two essentials has brought many co-operative enterprise to ruin and has seen individual ownership step in and succeed where community effort failed.

It is a question whether the consideration named second should not be placed first. Why should a man who cannot manage his own business be elected creamery manager because the poor fellow needs a job, if the creamery is established for the purpose of making money for its owners? On the other hand no matter if some individual is so constituted as to be unwelcome in some homes, if his record is one of honorable transactions, with the ability to do thoroughly and to make money for himself or the firm he works for, the probabilities are infinitely greater that, given loyal support he will succeed as a leader of a co-operative enterprise. No enterprise can succeed commercially without a leader who is willing to take the leadership and exercise its privileges and meet its perplexities.

Co-operative marketing of fruits with impartial grading, and a large volume conforming to fixed standards, has been the salvation of the apple business, the lemon, the grape, in fact all the fruit business of the Pacific Coast and the same fundamental principle is back of the fact that creamery butter as a class commands a higher price in the market than dairy butter. Ad-

ditional dairy lines which are adapted to co-operative efforts are the Cow Testing Association and the Co-operative Breeding Association. The first is essentially the employment of a man who gives his whole time to the doing of a class of work that most farmers, by habit and often by lack of training find it irksome or impossible to do and yet do not have enough work to employ all the time of a man.

To organize a cow testing association, a group of not to exceed twenty-six farmers living within easy driving distance, hire a man to make a monthly record of the milk and butter fat produced and the feed consumed by each cow in the herd.

It would seem that there is no reason why this same plan might not be extended to include systematic bookkeeping for a group of farm owners who want the records but find it impracticable to do the work themselves. The Co-operative Breeding Association offers another line of co-operative effort which is not confined to the dairy side of the farm but may be applied to any class of live stock. In its essentials it consists of a co-operative group preferably a legalized organized corporation, which shall buy and own as many sires of the same breed as may be needed in the herds of its membership.

Its advantages are a reduced cost in the number of sires and a marked improvement in the quality of the sires used and the development of a much larger number of animals of the same breed thus making a center to which buyers look and because of the large number of animals marketed an increased selling value is given to each and the cost of selling is actually reduced.

The fact that these things have not been done is no reason why they may not be done to a very great advantage in some communities. Often all that is needed is some unselfish work and aggressive leadership. Here is the young college man's opportunity. His success will depend on his tact, his judgment of people and conditions. No great fortune has been amassed merely because of large or even unreasonably large profit; it has been accomplished by a large volume of business. This, however, raises the question for those who are wrestling with the problem of increased profits. Why should the man on the farm who has demonstrated his ability to feed cows skillfully, grow hogs skillfully, select animals wisely, confine his efforts to a paltry dozen or two? Why should he not as in other lines of business seek to develop to a maximum that kind of farm effort for which he shows a marked fitness? Why should not the community and the individual profit by this ability by combining their efforts and those who are successful breeders produce more while he who is the successful salesman shall have more to sell and get more for that which is for sale, and which can be marketed from a common center?

Forestry In Our Country Schools

Educators at the present time are beginning to make a more practical application of the subjects taught in our schools and colleges. So in considering the question of how much forestry is it practical to teach in our country schools, we must first answer the question of, how much use do the pupils in our country schools make of trees? The extent to which trees are used varies of course with local conditions, but we can find a number of general uses quite common to our country communities.

The boy does not have to be very old before he wants a bow and arrow, and right then we may begin to teach him the best kind of wood for bows and arrows, how to cut the limbs from the trees with the least amount of damage, and some of the most prominent characteristics of trees. His acquaintance with the birch may begin still younger, mine did, and I can tell that tree anywhere today, because of the close acquaintance I had with it in my youth. Nut and acorn trees, the boy knows in a general way be-

cause of the fruit which they bear, but by building upon his knowledge of and interest in the trees because of their fruits he may be taught their other characteristics, their commercial value and habits of growth. The sugar maple is distinguished because of the quality of its sap and here again is a basis upon which I built a knowledge of all the maples.

Much of the damage done to nut and other trees by the boy is done through ignorance and carelessness. If he were taught more about trees, their seeding and growing habits, the injury caused by making wounds in the bark; if he could set out and raise some trees that he would feel were his own, the trees would become such close friends of his that he would come to be their natural protector.

Again, a few visits with proper instruction to where a house is being built, a fence being put up, a wagon in the course of construction, also a trip to the neighboring sawmill would give him very valuable lessons in the uses of wood.

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GAS traction sense is simply knowing how effectively you can use THE BIG FOUR "30" for every form of traction or stationary farm work. If you farm 320 acres or more, you want to know all about this wonderful, gasoline driven, steel "Giant Horse." You want to know how it practically does away with horses and hired help—how it makes possible the yearly sale of your entire crop instead of only 80 per cent of it. It pays to have this knowledge. Get it at once.

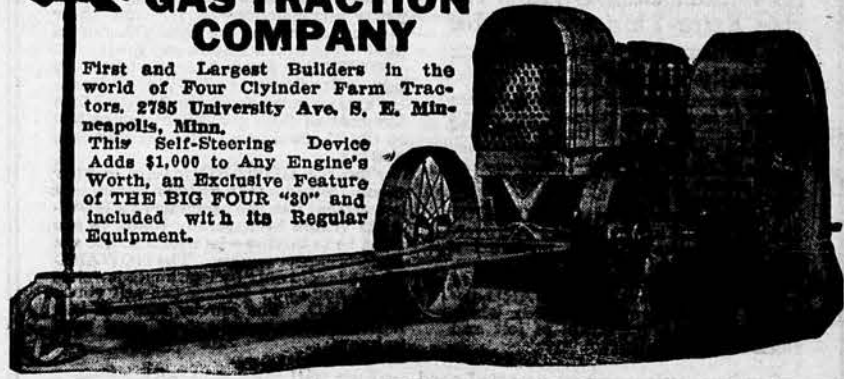
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WE'LL be mighty glad to send you a free copy of our beautifully illustrated 112 page booklet, "The Book of Gas Traction Engines" which is crammed with straight-from-the-shoulder facts and figures on gas traction operation—tells how THE BIG FOUR "30" comes to you subject to your approval, backed by a genuine "Golden Rule" guarantee.

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The problem at once arises as to who will teach the boys these various things since the average country school teacher is not prepared for this work. There are several ways out of the difficulty. The teacher may become informed by study with the aid of the State and National Forestry Bureau. Excellent bulletins, dealing with the teaching of forestry in country schools may be obtained from the Department of Forestry at Washington, D. C. The teacher may receive some practical help from carpenters, carriage manufacturers and mill foremen. Undoubtedly the demand for such subjects will force the normal school to offer instruction along this line in the near future. The normal school is the place where teachers should be prepared for this work. Meanwhile we have our summer schools where teachers may receive excellent training in the teaching of forestry.

This article is not intended as a finished discussion of the teaching of forestry in our country schools, but only as a suggestive of a way in which the country boy may get a little more out of his school experience by becoming better acquainted with his surroundings. Thus will be found life in the country more valuable and more attractive.—O. E. Huse, Pennsylvania College.

It Goes Anywhere.

I bought a 6 H. P. Webber gasoline engine two years ago and I think it is the best engine made, as it gives lots of power and burns less gasoline than some others. It has not cost me five cents for repairs. I have sawed wood for my neighbors, shelled corn and did not lose a half hour's time in the two years. I made a tractor from it and can hitch it to a load of hay and pull it with ease. This year I sawed wood for my brother-in-law. He lives two miles from my place over several steep hills. I carried three extra gallons of gasoline and after I had sawed five hours and returned home I still had the three gallons of gasoline left. If I buy another engine it will be a Webber.—Anton Malir, Wilson, Kan.

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Conservation and the Future.

The population of Europe and America at the beginning of the nineteenth century was about 180 million; it is now over 450 million. The population of the United States in 1800 was 7 million; it is now almost 100 million. The opening up of this new country with its rich soil, so cheapened food production, that the population increased by leaps and bounds, and despite the Civil war with its incalculable destruction of life and property and its paralyzing effect upon progress, our population has grown from 30 million in 1860 to 92 million in 1910—300 per cent in 50 years. At the same rate of increase we will have 286 million people to feed in 1960. In this connection it is well to remember that despite the fact that within the past 40 years we have put into cultivation the major part of the great prairie plains, the richest body of land of like fertility on the face of the earth, comprising what is known as the Mississippi Valley and including the black belt in Illinois and west through Iowa and the Dakotas and southwest through Kansas, Nebraska, Oklahoma and Texas, and notwithstanding the fact that great improvements have been made in agricultural implements of all kinds for cultivating and harvesting crops and great advance has been made in seed selection, and some improvement in cultural methods—so little has been done to conserve the fertility of the earth, so constantly have we mined rather than farmed it, subtracting from it without adding to it, that the average crop of corn and wheat combined per acre in the United States is less than it was 40 years ago. The population is increasing at a terrific rate and production is constantly decreasing. The grain acreage increase for the past 10 years has been about 23 per cent; the production has increased about 35 per cent, but the consumption has increased 60 per cent.

Ten years ago we produced about 500 million bushels of wheat and exported 37½ per cent of it; now we produce 700 million bushels of wheat and export 17 per cent. In the same time our corn crop has grown from 2¼ billion bushels to 2¾ billion bushels, but the home demand has so increased that our exports have fallen

from 9 to 3 per cent. For all these years we have been in the proud position of having corn and wheat for sale, and cheap food for all our people, but unless we immediately and radically change our agricultural methods we will within the next few years be buyers of food. The pertinent question is: "Who will have it for sale at anything like reasonable prices?"

It behooves us therefore to save and to use every particle of fertilizing matter that is within our reach. The nitrogen, phosphorus and potash in the stalks from 100 bushels of corn are worth in carload lots today, if we had to buy it, \$10.55. The same mineral elements in the stalks from a bale of cotton are worth \$9.69; as a rule we burn both and temporarily destroy the usefulness of the land upon which the fires are lighted. We are not only clipping the coupons, but we are cutting into the body of the bonds.

The people must be taught the absolute necessity of returning everything possible in the line of fertilizers to the soil, protecting it from washing by terracing, and plowing around instead of up and down the slopes. They must be taught to thoroughly prepare the lands, before planting the carefully selected seed, and by constant shallow mulch cultivation to keep down the weeds. They must not lay by and leave their crops, but must be taught to know that as the stalk grows larger it has more live weight to sustain and it needs more nourishment. Cultivation should continue until the crop is positively made. The rule has been to lay by the crop and leave it to fight the suckers, weeds, dry parched earth and hot winds alone, when its life work is yet to be accomplished.

The corn and cotton rows should be 4½ or 5 feet apart instead of 3 feet apart, so that it will be possible to continue the cultivation up to the ripening period. If this one last item mentioned, namely, not to lay by and leave the crop, but to keep a soft mulch on top of the ground, and the crop entirely free of weeds and suckers until the grains are hard upon the stalk, were literally put into effect, it would add millions of dollars to the value of the crops of the state this year.—Colonel Henry Exall, Texas.

The Twenty-First Annual Report of the Patron's Fire and Tornado Ass'n.

Total risk December 31, 1910.....	\$11,851,055.00
Total risk December 31, 1909.....	9,544,375.00
Net gain for 1910.....	2,306,680.00
Number of policies written during 1910.....	1,700
Number of policies written during 1909.....	1,563
Excess written over 1909.....	137
Total number of policies now in force.....	5,785
Total membership.....	4,174
Total membership Dec. 31, 1909.....	3,604
Net gain in membership.....	570
Average amount of each policy.....	2,048.58

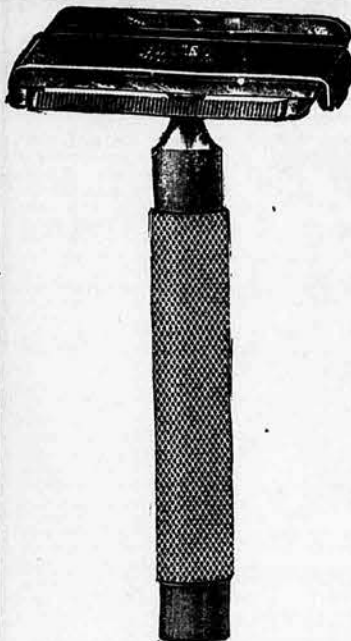
Balance in treasury Dec. 31, 1909.....	11,056.72
Total receipts from all sources.....	27,226.15

Total.....	\$38,282.87
Paid on losses.....	\$15,672.83
Paid secretary.....	1,200.00
Paid assistant secretary.....	720.00
Paid clerical help.....	34.50
Paid back in unearned premiums.....	1,784.58
Paid in solicitor fees.....	2,177.80
Paid, for printing, blanks, stationery, etc.....	159.20
Paid for rents, rooms, phone, etc.....	169.28
Paid for board fees.....	53.90
Paid president's salary.....	25.00
Paid treasurer.....	50.00
Paid for transportation.....	7.58
Paid postoffice expenses.....	97.72
Paid for furniture and fixtures.....	92.10
Paid miscellaneous.....	5.20

Total expenses.....	\$22,249.69
Balance in treasury Dec. 31, 1910.....	16,033.18

Total.....	\$38,282.87
Cost on each \$1,000 for 1910.....	144
Total number losses for 1910.....	829
Total number losses since organization.....	744
Total number losses since last assessment.....	744
Total cost of fire losses.....	10,796.16
Total cost of tornado losses 1910.....	595.73
Total loss on stock by lightning 1910.....	3,867.53
Total loss on buildings damaged by lightning 1910.....	157.66
1909 loss paid in 1910.....	255.70

Total paid on losses.....\$15,672.83



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Greatest Bargain Ever Offered

This Razor is not silver or gold plated. It IS heavily nickel 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.

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KANSAS FARMER, Topeka, Kansas

It has been well said that no nation can permanently survive the neglect or subordination of its agriculture. Thus, though agriculture was once declared to be the most grateful amusements of princes and kings and was considered a wise and happy state which inclines a man to justice, temperance, sobriety, sincerity, and in a word "every virtue," it was destined to pass through an ordeal or social ostracism extending through twenty centuries, and naturally mean-

while it rendered a more important service to humanity than all other arts and vocations combined, and though branded with contempt it has survived while the nations that humbled it are but fading memories.

In our later civilization we wear more clothes and of better fit and texture. We no longer carry war clubs and we are supposed to respect the rights of property in others, but do we?

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Write for our new and attractive catalogue describing the best, strongest and most durable windmill on earth, at an honest price, that will save you money on the original and will never need repairs. Guaranteed to do more and better work than any other mill made. You get an additional saving in price, as WE PAY THE FREIGHT. Send a postal today for our special introductory price and catalogue of Mills, Towers, Tanks, Pumps, Pipe, fittings, etc. Its Free. Dealers should write for territory not represented. Agents wanted everywhere.

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We sell direct to the consumer only. You can pay more, but you can't get a better paint. What you pay more for goes into the pockets of dealers, traveling men and others who don't put any more, if as much, into the quality of the paint in the can. Our Red Barn Paint should interest every farmer. This is paint season. Send order now to

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Has been tested
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HORTICULTURE



An Attack from the Rear.

For years the farmers and orchardists of Kansas have fought an unequal battle with the insect pests which affect their fruits and with the climatic conditions which have kept them guessing as to the best methods and varieties. These years of battle experiences have helped to solve most of the problems but have not removed the necessity for war upon the enemy.

It is still necessary to spray and use other methods of warfare and one of the latest of these is to destroy the wild plums and other trees and shrubs which are the breeding places of the insects which work such havoc with the tame varieties.

Prof. Albert Dickens of the Agricultural College calls attention to the fact that "the eastern sections of Kansas should have outgrown the wild plum long ago. Wild plums are breeders of tent caterpillars, curcullo, shot hole fungus, and black knot. The insects attack nearly all varieties of common fruit and the diseases are particularly harmful to cultivated varieties of plums; hence the efforts of the orchardists to eliminate it from the fruit sections of the state.

"Seedlings of these wild varieties, planted in the garden in rows, have been fairly successful in a number of instances, and it is only where planted in rows so they may be pruned, cultivated and sprayed that they would be likely to give profitable returns. The ordinary plum thicket would require a good deal of work in thinning out the plants before spraying machinery could be used effectively. This effort might better be expended in setting out some of the varieties that have proved fairly successful in an orchard where they may be cared for properly.

"As a matter of fact the curcullo is hard to control by spraying. Adult insects seem to care more for posterity than for food, and it seems that the insect frequently fasts until the eggs are deposited. Jarring the trees in early morning and collecting the insects on a sheet or in a curcullo catcher, which consists of an umbrella shaped device inverted and mounted on a wheel barrow, and destroying the insects is the best method of controlling this pest. This can not be done unless the trees are sufficiently far apart to allow free movements about them.

"The varieties that have been developed from native American species, such as Wayland, Wild Goose, Miner, Weaver, Wolf, Quaker and the European varieties, Damson and Lombard, are so much superior to the wild plums that they should be found in every fruit orchard, and the care necessary to grow these is much more productive of results than any amount of trouble taken with native thickets."

Pruning Shade Trees.

This is the season of the year when the owner of shade trees begins to think about trimming them. He may know just what he wants in this line and act accordingly. Some of his trees may be crowding one another to such an extent that here and there one is taken entirely out to avoid deforming the others. The shade may be too dense for the good of the lawn, the shrubs and the annuals. Perhaps a fine view is being obstructed by the spreading of tree branches or some tree may be pushing out certain ungainly branches which are making the tree awkward and unpleasing. The cutting back here and there of the branches, the heading in of the tops, or the entire removal of certain limbs, will produce the desired result, often without the work of the saw and the ax being especially noticeable, writes Prof. B. A. Longyear of Colorado.

On the other hand, many persons get the notion of making a change in the looks of their trees without any definite idea as to what is best to do. They may suddenly decide that their trees have grown too tall. The evi-

dent thing to do is to cut the tops off, sometimes as if a huge mowing machine had been used. Or perhaps they are entirely denuded of even the larger branches, in which pitiable condition they remind one of a rustic coat or hat rack on a large scale. Such trees in a few years possess tops of dead stubs and bunches of whip like branches, graceless in summer and unsightly in winter.

In pruning each tree presents a special problem, depending upon the species of tree, its location, and the ideals of its owner. It is possible, therefore, to give only the principles that should govern the process. Certain things should be kept in mind in trimming any tree: First, removal of a large part of the top tends to give rise to many slender branches, usually in bunches, while the stubs of large branches often die back some distance and make an unsightly top. A tree should be pruned, if possible, so as to appear pleasing when the leaves are off as well as in summer. If it is necessary to cut back large branches, this should be done just above a smaller side branch, or they should be entirely removed. The severe heading back of large trees is usually disastrous unless plenty of small branches are left to bear foliage and enable the trees to recover quickly. Tall growing kinds should be cut back when young, if the top is wanted low, and some attention given each year to pruning. Second, the formation of crotches or forks is to be avoided, as the tree is apt to split at such places, when loaded with wet snow, and in strong wind. Cutting off one branch of the fork while small will prevent this. Third—Remember that a small branch may become a large one if the part above it is removed. Furthermore, such shortening of a branch will cause the thickening of the part left on and consequent strengthening of the branch. Fourth—if a branch is shaded too much, it is killed, while the opposite is true where sunlight is abundant. For this reason weak branches, if in desirable places, can be encouraged by cutting out those that shade them. Thinning the top of a tree by taking out some of the larger branches will tend to thicken it in time without making an unsightly top. Fifth—Study each tree carefully before cutting it and try to retain its characteristic natural grace and beauty.

Spray for Codling Moth.

The New Mexico Station reports some interesting results from spraying with arsenate of lead for codling moth. The trees were Arkansas Black and Mammoth Black in equal numbers and the spray was mixed with three pounds of arsenate to 50 gallons of water. The trees were sprayed six times, on the following dates: April 21, May 14, June 7, July 6, July 30, and August 26. The amount of spraying mixture used in the six sprayings was approximately 1,450 gallons, which cost \$13.50 for the arsenate of lead. A gasoline power sprayer and three men were used in the spraying of these trees. The total time for the six sprayings, including the filling of the tank—which, as a rule, took longer than to empty it—was 22.3 hours; or at the rate of 3.38 hours per spraying. On October 15, 1910, 7,780 apples were gathered from eight Arkansas Black and eight Mammoth Black Twig trees. Out of this number there were 6,405 sound apples, or 81 per cent, and 1,375 wormy, or 19 per cent. From two Arkansas Black and two Mammoth Black Twig trees which were not sprayed, 418 apples were gathered: 136, 33 per cent, were sound, and 282, or 67 per cent were wormy. Compare the results from the sprayed and unsprayed trees and see whether or not spraying did any good. Eighty-one per cent of the crop gathered from the sprayed trees were good, while on the unsprayed trees 67 per cent of the crop gathered was wormy. Even in the windfalls the percentage of sound apples was in

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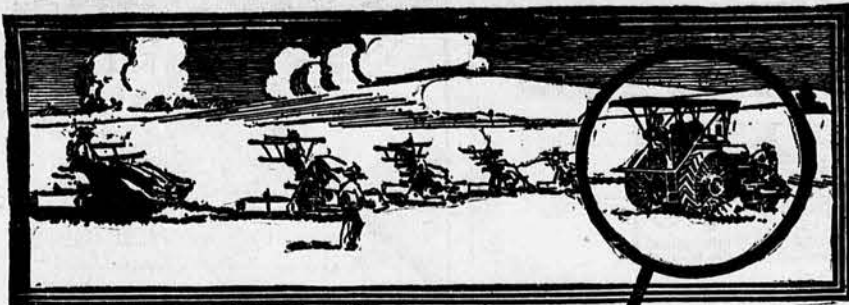
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favor of the sprayed trees. The same number of sprayed trees had 34 per cent of the windfalls sound and 65 per cent wormy; while the trees not sprayed had 2.8 per cent sound and 97.2 per cent wormy. It is believed that if everybody in the locality would spray at the same time, even larger percentages of sound fruit than what are here reported could be secured. Arsenate of lead at the rate of 3 pounds to 50 gallons of water was the insecticide used in these experiments. In many other sections 2 pounds instead of 3 are used. In these experiments the plan has been to spray once every twenty-five days. The first spraying should be done just as the blossoms fall. Special pains must be taken at this time to get the poison into the calyx cup of all the little apples. A high pressure—from 100 to 200 pounds—is necessary for the best work, though 80 pounds will do. Spraying will pay, but to get the best results every apple grower should be alive to this important question. If the trees are not sprayed they make excellent propagating places for the moths.

It is good business, good sense and good health to swat the fly but it is better to swat his breeding place.



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FROM all parts of the country enthusiastic owners of Buffalo Pitts Triplex Gasoline Tractors are pouring reports into our office that would make you sit up in amazement could we show them to you. They tell of bigger profits, of enormous savings in time and labor and money, of enlarged bank accounts. Just read the extract from Mr. Sherman's letter for instance. Imagine a big powerful engine that will do the work of thirty horses, haul and operate five binders at one time, drill 60 acres of land per day and plow and harrow 252 acres of land in 160 hours with a fuel consumption of only 3 gallons to the acre. Figure out right now how much it costs you to plow and harrow each acre of your land and then compare notes. We haven't any space for figures here, but our big free Tractor book will give you facts and figures that will open your eyes.

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Best All Purpose Fowls
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EVERETT HAYES, R. 4, Hiawatha, Kansas.

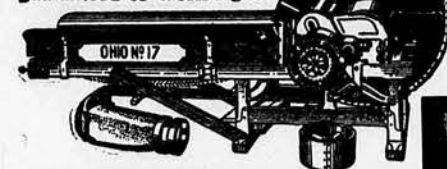
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POULTRY



See that the old hens do not get away with the feed meant for the chicks. The chicks should be fed in a place by themselves where the older hens cannot bother them.

Lice is the bane of the poultryman's life in the summer time and they must be eradicated from the chicks, the adult fowls and from the poultry house to insure any degree of success in the business.

A drop of sweet oil on the head and under the wings of the chicks will generally be sufficient to keep them free from lice, though you can overdo the matter and kill the chicks by using too much grease or oil.

The old fowls should be dusted quite frequently during the summer with insect powder, though if you provide them with a suitable dusting place they will try mighty hard to keep themselves free from lice.

The poultry house should be sprayed with whitewash several times during the summer to keep the house in good condition for the fowls. The roosts and nest boxes should be taken outdoors and given a thorough spraying of kerosene oil in which has been mixed some crude carbolic acid.

Some people have good luck with June hatched chicks and also with some hatched as late as July, but we never advise it, for our success with such has always been poor. If you hatch late chicks, they require extra care and attention in order to do well, and especially must they be provided with plenty of shade and be kept free from lice.

When the hens quit laying for the season it should be obvious to everybody that it is unprofitable to longer keep them. But the general run of poultrymen and farmers fail to recognize this point and keep several dozen unprofitable hens around the place. Chicken feed is very high in price and it is a waste of money to feed non-producing stock, for you cannot get any more for them two or three months hence than you can now. The best thing to do is to sell all poultry that is not actually wanted as breeders for next year.

The growing stock need not be disposed of for they increase in value with age and weight. If these old hens are thoroughbred stock they may be sold to other breeders for next season's use at a higher price than could be secured at the butchers, but if the hens are common stock sell them at once to the dealer at whatever price you can get for them, for every day you keep them after the laying season is over, you are losing money by them and the old saying is true that "a penny saved is a penny earned."

Thoroughbred Plymouth Rocks.

I wish to ask the characteristics of a thoroughbred Barred Plymouth Rock. Just how are they marked and do the lighter or darker ones show the best blood? What should be their weight at maturity? Is there a difference in the color of the rooster and the hen?

Ans.—The plumage of Barred Plymouth Rocks should be the same in male and female, though the male is generally lighter in color. Some breed dark males to light females and dark females to light males, so as to get the uniform color so desirable. The Standard says the plumage should be grayish-white, each feather crossed by regular, narrow dark bars that stop short of positive black, which gives the plumage a bluish appearance. The breeding of Barred Rocks to Standard color is a very difficult undertaking and requires much thought and experience. As far as purity is concerned there is no difference between the dark and light colored specimens. Weight of cock should be 9½ pounds, cockerel 8 pounds, hen 7½ pounds, and pullet 6 pounds.

Digestion Experiments with Poultry.
Bulletin 184 of the Maine Agricultural Experiment Station, by J. M. Bartlett, contains the detailed account of digestion experiments made with poultry. The present publication contains a practical summary of the results obtained and a summary of experiments made by other investigators.

The digestibility of American feeding stuffs has been quite extensively studied in this country with ruminants, horses and hogs but as yet only a few experiments have been made with poultry. It is obvious that such studies are desirable on account of their practical importance and the growing demand for information in regard to the care and management of fowls which has come with the great increase in the poultry industry in recent years.

A few years ago the great bulk of the eggs and poultry which supplied our markets was produced by farmers, who let their hens run at large for the greater part of the year, picking up their living in the fields and pastures, supplemented perhaps by a feed of corn at night. But today when great plants are established, carrying thousands of birds, only the most careful and scientific methods of handling and feeding will make the business profitable. Several of the experiment stations have considered questions of poultry nutrition and much valuable information has been gained through feeding experiments for growth, egg production, etc., but the absence of definite standards and coefficients of digestibility of different foods for this class of animal has been a serious drawback to the best work. The abundant data available for other classes of farm animals might possibly be used to good advantage with poultry but the structure of the alimentary canal of birds is quite different from that of herbivorous animals, consequently the digestive capacity may be different.

The fact that the digested and undigested portion of the food are excreted together makes a serious obstacle in performing experiments with birds and greatly increases the amount of analytical work to be done. This probably in part accounts for the small amount of work that has been undertaken in this line. Another difficulty encountered is that fowls are less adaptable to general conditions of digestion experiments than other farm animals, owing to their activity and liability to depression of the normal metabolic processes that might result from being confined in cages without exercise. With all these obstacles in the way it is not surprising that but little digestion work with poultry has been undertaken. According to Dr. Brown's review foreign investigators have given much more attention to this class of work than Americans. Two of these investigators, Lehmann and Parasschuk, employed an ingenious method of collecting the urine and feces separately by means of an artificial anus established in the body walls. This was brought about by means of an operation, cutting the intestine at a point just back of where the urine emptied into it, and bringing the end out to the body wall. The feces and urine were then collected separately in rubber bags. This method was considered in our work, and Dr. Raymond Pearl of the biological department of this station operated on birds, for the purpose. After a few trials a capon, No. 908, was very successfully operated on and made a good recovery but soon after being put on the experimental ration which was at that time 7 parts corn meal to one part of beef scrap, his bowels became inactive and the feces had to be washed out at each collection. An experiment of several days duration was obtained, however. The results compare quite favorably with the others obtained by the chemical separatory method, but the bird could not have been considered in normal condition. After a time the walls of

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The intestine became weakened and nature followed. As it did not seem possible that a bird under such abnormal physiological conditions could normally digest food, further work by this method was abandoned, and a method for collecting the feces under natural conditions taken up. It was fully realized that a chance of considerable error might be introduced in any method that involved a chemical separation of the feces from the urine, but it was not thought practicable to prepare the number of birds necessary for artificial anus necessary to make all the experiments that were desirable even if it could be considered a more accurate procedure. Such feeds were selected as are most commonly used for poultry in this country. Probably no other one grain is so universally fed as of the Rocky Mountains as corn in some form or other, and there seems to be no other grain so well relished by the birds. In some sections, particularly on the Pacific Coast, wheat replaces corn. In other sections oats and buckwheat or India wheat form an important part of the ration. In the washes, particularly the dry washes so-called, wheat bran forms an important part, often as much as 50 per cent, consequently this material was included in the test and several dry mash mixtures such as are usually fed. Beef scraps. Best quality found in the market. Bran, wheat. The coarsest variety from spring wheat. Corn, whole. No. 2 yellow, picked over and cleaned. Corn, cracked. From No. 2 yellow, screened. Corn meal. From No. 2 yellow corn. Clover, cut. From second crop, just beginning to blossom. India wheat. Fair quality, picked over and cleaned. Oats. Best western clipped oats, carefully picked over. Oats, rolled. One of the best table varieties. Wheat, hard. A variety of hard wheat sold as "hen wheat." Wheat, soft. A seed wheat, rather soft, large, plump grain. Dry mash mixtures:— No. 1—3,000 grams bran, 1,125 grams corn meal, 1,125 grams gluten feed, 600 grams beef scrap. No. 2—200 grams bran, 100 grams corn meal, 50 grams linseed meal, 40 grams beef scrap.

No. 3—200 grams bran, 50 grams corn meal, 50 grams linseed meal, 100 grams gluten feed. Mixture No. 3 was fed alone in one experiment and in another with about 7 per cent of bone ash to test the effect on digestibility of adding bone ash to a ration consisting of wholly vegetable matter.

CONCLUSIONS.

The results obtained in the experiments here presented indicate that the digestion coefficient of most nutrients for poultry are not materially different from other farm animals. Unlike ruminants, however, they digest very little crude fiber, hence a coarse fodder carrying much of this material is of but little value to them. The nutrients of wheat do not seem to be as well handled as most other concentrated grains, the ether extract showing a particularly low coefficient. Likewise bran, one of the wheat of-fals, shows low digestibility in organic matter, ether extract and nitrogen free extract. Its bulky and coarse condition has brought it much into favor to feed with more concentrated materials and it often makes as much as 50 per cent of the mixtures used for mashers.

The mixture of equal parts corn meal and fine cut early clover used in the experiments was sufficiently bulky to feed with concentrates, was more digestible and at present prices more economical providing, of course, the poultry man produces his own clover, which he should do. An exclusive diet of wheat had a deranging effect upon the digestive system of the birds.

Our results, like those of Brown and others, show that corn is a most valuable grain for poultry. Its palatability and high digestibility has brought it into much favor with all poultrymen. It cannot, of course, be fed alone, as it is too concentrated a feed and also deficient in protein, but when combined with feeds rich in protein and some bulky material as cut clover it makes up a most desirable ration.

Oats and India wheat are desirable grains and may be used to some extent to give variety to the ration, but are much more expensive feeds than corn unless one is in a section of the country where they can be bought or produced much more cheaply than at the commercial centers.

The dry mash mixtures Nos. 1 and 2 have about the same digestibility and feeding value. Mixture No. 3 made up wholly of vegetable matter was not so well relished by the birds and gave slightly lower coefficients of digestibility, but the addition of about 7 per cent of bone ash to the mixture increased the average digestion coefficient obtained with it but the differences were not greater than often occur between different birds on the same ration, so no definite conclusions can be drawn from the results.

SUMMARY.

1. Corn shows a higher digestibility than any other grain tested.
2. Wheat bran shows a low digestibility and at present prices is not an economical feed.
3. A mixture of equal parts early, fine cut clover and corn meal is more digestible and a more economical feed than bran.
4. India wheat compares favorably with oats as a grain for fowls.
5. The ether extract of wheat has a low digestible coefficient.
6. Crude fiber was but very slightly digested and evidently is of but little use in a ration for poultry except to give bulkiness.
7. The mixing of about 7 per cent of bone ash with a ration consisting wholly of vegetable matter gave slightly higher average digestion coefficients than when the mixture was fed without it.

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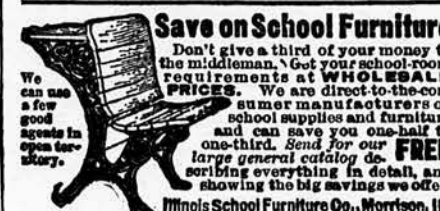
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Patter, and tinkle, and drip, and drip
Ah! but the chords were rainy sweet!
And I closed my eyes and I bit my lip
As he played there in the street.

Patter, and drip, and tinkle!
And there was a little bed
In the corner of the garret,
And the rafters overhead!

And there was the little window—
Tinkle, and drip, and drip—
The rain above, and a mother's love,
And God's companionship.
—James Whitcomb Riley.

When citron has become hard, heat it in the oven for a few minutes and it can then be easily cut.

When cakes are taken from the oven set them immediately on a wet cloth and in a few minutes they can be removed from the pans easily.

It is said that rubbing the inside of the spout of the cream pitcher with a little butter will prevent the cream from dripping.

The cream jar should have its contents stirred every day at least and every time any cream is added. This insures an even ripening and a better quality of butter.

Grape Sherbet.

One-third cup water, 2 tablespoonfuls sugar, 1/4 cup grape juice, 1 tablespoonful orange juice, 1 tablespoonful lemon juice.

"The 'Knock Down' Furniture Idea." The method of some up-to-date furniture manufacturers in supplying fine furniture "knocked-down" direct from factory to consumer, is finding much favor with the public.

The term "knock-down" means shipped in parts. The furniture is especially designed so that it can be easily put together, and has rigid fastenings. Each piece of furniture is first set up complete at the factory, and is finely finished. Then it is taken apart, and the pieces are carefully packed for shipment.

Of course, shipping furniture in the "knock-down" state means a cheaper rate for the purchaser, which is a considerable item.

Beautiful designs in all sorts of articles are now made in this manner, and are very easily put together without the aid of special tools, or any refinishing.

It is a very popular and satisfactory plan.

Consumptive Children.

Tuberculosis is the most widely spread and deadly disease that affects humanity. It causes one death in every ten and one death in every four between the ages of twenty and thirty. Thus, it finds its victims at the active working age, and carries off young men and women just entering upon the serious work of life. No age, however, is exempt.

Tuberculosis is seldom, if ever, inherited. It is infectious, which means that it is communicated from the sick to the well by life germs—"tubercle bacilli"—and is fostered by bad living, impure air, darkness, dirt and dust.

When you have a cough lasting a month or longer, loss of weight, afternoon temperature, night sweats or a run down feeling, don't delay, for delays are dangerous. Get the best advice obtainable—the best you can get is not any too good.

It can be prevented. It can be cured. Think! 160,000 dying every year in the United States from a preventable and curable disease! It is given by one person to another. No new case can arise except from a previous one.

The germs are contained mostly in the sputum. This gets dry, is ground to dust, gets into the air, is inhaled and a new case is thus produced. It may also be caused by drinking the milk of tuberculous cows.

Since it is caused by a germ found in the sputum, the surest way of preventing infection is to kill the germs

in all sputum or spit of every consumptive. You may have consumption, and do not know it. If you have consumption don't give it to others spitting. If you have not, don't let others give it to you. Don't spit, don't let others do so. The habit as dangerous as it is disgusting. Prevention prevents, why not prevent?

If you have reason to suspect you have consumption, consult a physician at once. Early diagnosis means cure. Late diagnosis means too often a life cut off in the midst of its greatest usefulness.

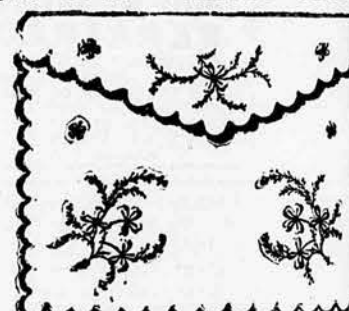
Better be told one hundred times that there is no danger than once that it is too late.

Live in fresh air day and night. Eat plenty of good wholesome food. Avoid overwork and worry. Have constant medical attention. The dividing line between those things that help and those things that do not is so close that a sick person is not able to decide which is best.

Shun quacks and quack medicine. Get the best possible help. Every consumptive wants to get well and per cent of them can if shown how.

1795. Night Dress Case.

Size 18 by 30 inches. This would make a very pretty and useful gift. To be executed in solid or



1795

line embroidery with buttonhole edge. Stamped on linen, 45 cents; perforated pattern, 25 cents.

8943. Girl's Dress with Tucker.

The front closing of this model is not its only commendable feature. The gored skirt has graceful plaiting forming a panel at the back; waist has a shaped front and plait over the shoulder, that may be stitched as illustrated, or to depth only. The tucker may be



ted, Gingham, galatea, percale, lin chamber, cashmere or foulard are appropriate for this design. The pattern is cut in 4 sizes: 8, 10, 12 and 14 years. It requires 3 1/4 yards of such material for the 14 year size. Pattern of this illustration mailed any address on receipt of 10 cents silver or stamps.

HORSES AND MULES

REGISTERED HORSES

O. K. BARNES, 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.

Percherons
Belgians
and Shires

My new barn is now ready and filled with a large assortment of Imported and Home Bred Percheron, Belgian and Coach Stallions; also mares and colts. I will sell you a registered stallion for \$300. Come to Paola and buy a stallion or mare at their actual value.

JOSEPH M. NOLAN, Paola, Kansas.

THE BEST IMPORTED HORSES, \$1,000 each. Home-bred, registered draft stallions, \$500 to \$600 at my stable doors. Address A. LATIMER WILSON, Creston, Iowa.

PERCHERON HORSES, HOLSTEIN-FRIESIAN CATTLE.

Up-to-date Poland China hogs. Write your wants.
H. N. HOLDEMAN, Meade, Kans.

HOME-BRED DRAFT STALLIONS \$250 to \$500; imported stallions, your choice \$1,000.
F. L. STREAM, Creston, Iowa.

ANGUS CATTLE

BIG SPRING ANGUS CATTLE.

Jasper Auldridge & Son, Pattonburg, Mo.,
Proprietors.
Breeder of pure bred Angus cattle and Duroc Jersey hogs.
Breeding Stock for Sale.

JERSEY CATTLE

Jerseydale Stock Farm

Carthage, Mo.

I am offering some very choice bull calves sired by "Tulips Mon Plaisir" #1923, out of richly bred imported cows. Calves range in age from three months to seven months. If you are looking for "Golden Lad" blood you will find these calves close up. Price \$75 delivered to any part of Kansas.

PHIL HANNUM, JR., Owner.

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 5 1/2 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 5 1/2 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 985 pounds and 10 ounces in one year. This young bull is sure, gentle and a fine individual. W. N. BANKS, Independence, Kansas.

LINSCOTT JERSEYS

Offers a few choice cows in milk and some bred heifers. Milk and butter records accurately kept.
R. J. LINSCOTT, Holton, Kansas.

SHORTHORN CATTLE

SHORTHORN CATTLE.

Sam K. Landfather, Barnard, Mo., Breeder of Shorthorn cattle and Duroc Jersey Hogs, young bulls of serviceable age for sale—also choice heifers, high class Duroc boars and gilts for sale at all times.

Pearl Shorthorns

Carload good, big, strong bulls, 8 to 20 months old. Priced right.
C. W. Taylor, Enterprise, Kan.
R. R. station, Pearl, on Rock Island.

Houx's Polands and Shorthorns

20 big type Poland Chinas. March and April pigs, sired by two extra heavy boned sows. 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 #12940, a son of White Hall King 222724. Prices reasonable. Come or write.
W. F. HOUS JR., Hale Mo.

HERD BULL For Sale

Victor Orange 312830, a Scotch Orange Blossom, sired by Victorious 121469.
H. R. COFFER, Savannah, Mo.

TENNESSEAN 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.

ALFALFA SHORTHORNS

Young stock for sale. Also Silver Laced Wyandotte eggs for sale.
JOHN REGIER, R. 1, Whitewater, Kansas.

SHORTHORN BULLS

20 head strong, vigorous young bulls, 12 to 16 months old, will be priced single or in car load lots. Also a few highly bred Scotch bulls, well suited for herd headers, priced to sell.

W. A. FORSYTHE & SON,
Greenwood, Jackson County, Missouri.

KLM GROVE FARM.

Shorthorn cattle and Percheron horses. Write for description and prices.
ISAAC NOVINGER & SONS
Kirksville, Missouri.

SCOTCH SHORTHORNS

Imported Ardethan Mystery 306632 (65177) should go to head a first class herd. Cannot use him longer as I have so many of his daughters. He is a show bull and sure. Also have 5 of his yearling sons, all good. Prices right. Come and see them.

COL. ED GREEN, Florence, Kansas.

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.

HEREFORD CATTLE

Brookside Farm, Savannah, Mo., breeders of Hereford cattle. Herd headed by Hesold 101st No. 162685 and Horace No. 300428, he by Beaumont. Young bulls for sale. Mail orders given prompt attention.
WARREN LANDESS, Savannah, Mo.

SPRING CREEK HEREFORDS.

Headed by Christy 234417, Prairie Donald by Beau Donald 7th, and Sir Morgan by Onward 18th. Cows of Anxiety 4th, Hesold, etc., breeding, including imp. animals. Over 100 head in herd. Few choice young bulls and some good females for sale.

TOM WALLACE, Barnes, Kansas.

RED POLLED CATTLE

RED POLLED CATTLE.
A few choice young bulls for sale; also a few cows and heifers.
O. E. FOSTER, Eldorado, Kansas.

COBURN HERD of Red Polled cattle and Percheron Horses. Young stallions, bulls and heifers for sale.
Geo. Greenmiller & Son, Pomeroy, Kan.

POLLED DURHAM CATTLE

BELVEDERE X2712-195058
Son of the \$1,500 Grand Victor X1635 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.

GUERNSEY CATTLE.

GUERNSEY CATTLE FOR SALE—Young bulls by Eminence of Birchwood, 668 to 714 pound fat records. Stock guaranteed against tuberculosis for 6 months after sale. Largest herd in Kansas. Farm near Roxbury, Kan., and visitors welcome except Sundays. FREDERICK HOUGHTON, Galva, Kansas.

HOLSTEIN CATTLE

SUNFLOWER HERD HOLSTEINS
Offers cows, heavy milkers and sound, none above 7 years old, some heifers 2 and 3 years old, two extra fine young service bulls, a car load of bull calves. Prices and quality always right and satisfaction assured. Send for bull calf catalog.
E. J. SEARLE, Oskaloosa, Kansas.

HOLSTEIN CATTLE

25 high grade Holstein cows and heifers for sale; 3 to 7 years old; a fine lot; well marked; nearly all pure bred but not recorded. Also one registered 2-year-old Holstein bull.
B. L. BEAN, Cameron, Missouri.

HOLSTEIN CATTLE.

The Most Profitable Dairy Breed. Illustrated descriptive booklets free. Holstein-Friesian Ass'n of America.
F. L. HOUGHTON, Sec., 114 Brattleboro, Vt.

Rock Brook Holsteins

Special offer: Twenty bulls ready for service at \$75 to \$100. Bul calves \$40 to \$75. Good individuals, best of breeding, all tuberculin tested. Write at once.
ROCK BROOK FARMS,
Station B, Omaha, Neb.

WOODCREST HOLSTEIN-FRIESIANS.
Twenty registered bulls from 1 month to 2 years for sale: dams A. R. O. or A. R. O. broodings. On Rock Island, 30 miles east of St. Joseph, Mo., half mile from station.
S. W. COOKE & SON, Maysville, Mo.

HOLSTEIN CATTLE—Young bulls of the famous Shadybrook family and some bull calves. This herd is headed by the celebrated Sir Johanna Colantha Payne No. 42146. No females at present. Address M. E. MOORE & CO., Cameron, Mo.

Some very choice young bulls for sale, mostly sired by Prince Ormsby, now owned by Nebraska Agricultural College. His dams on both sides for four generations average 20 lbs.; he has 30-lb. sisters.
J. P. MAST, Scranton, Kansas.
HOLSTEINS FOR SALE.

GALLOWAY CATTLE

Capital View Galloways

Bulls of serviceable age all sold, a few last fall and a splendid lot of spring calves coming on. Get your order in early.
G. E. OLARK,
3101 Van Buren Street, Topeka, Kansas.

FORT LARNED RANCH

REGISTERED GALLOWAYS
for sale. Fifteen choice registered bulls 10 to 20 months old.
E. E. FRIZELL, Larned, Kansas.

AUCTIONEERS

Learn Auctioneering by
Mail and should you ever
wish to attend

our school in person, amount paid on mail course will apply upon tuition here. Will hold next term Aug. 7th, at Trenton, Mo. The largest school of the kind in the world. Missouri Auction School, Trenton, Missouri

LEARN AUCTIONEERING at the world's greatest school and BECOME INDEPENDENT. Catalogue and complete information FREE. Write for it today. JONES NAT'L SCHOOL OF AUCTIONEERING, 2856 Washington Blvd., Chicago, Ill. Summer term opens July 31.

COL. N. S. HOYT

MANKATO, KANSAS.
Pure Bred Stock and Large Farm Sales a Specialty.

FRANK J. ZAUN Fine Stock Auctioneer, Independence, Mo.
Am selling for the best cattle and hog breeders in the West. Terms very reasonable. Write or wire for dates. Bell phone 675. "Get Zaun; He Knows How."

F. E. KINNEY

Oketo, Kan., will make pure bred stock or farm sales anywhere in Kansas or adjoining states; 15 years' experience; best of references furnished. Write or phone for dates.

LAFE BURGER, Live Stock Auctioneer, Wellington, Kansas—15 years of success in selling pure bred live stock.

W. C. CURPHEY Salina, Kansas
LIVE STOCK AUCTIONEER
Write, phone or wire me for dates.

FIELD NOTES.

O. W. Lovan, Colorado Springs, Colo., is advertising in this issue, 61 farms in the Fountain Creek Valley, Colorado. This land has previously been held as a large ranch and is now divided into farms for settlement by actual farmers. This tract is all under irrigation ditches with abundant water supply. The price is low, and those wanting homes, on productive land of fine quality should write at once to the owner at address given above. Kindly mention Kansas Farmer when writing.

Reader Please Notice.

This catalogue is not a picture book. It is a clear account of a definite and sane plan for the training of young women. The appeal is to common sense rather than to vanity. The plans and ideals must be studied to be appreciated. A picture book, illustrating the buildings, grounds, equipment and many phases of student life will be issued within a few weeks. Write us if you do not receive a copy promptly. The above is from the title page of the Year Book of Oswego College, Oswego, Kansas, for 1911. Write the college for full information on the scope of its work, rates, terms, etc.

O. A. Tiller Enjoys Good Trade.

O. A. Tiller writes as follows, I have just sold a very choice fall boar for a good price to Mr. J. H. Corel, Lawrence, Kansas. He was sired by Tom Davis and out of my show sow Ellere. I have for sale another fall boar that is a dandy, he is a half brother to my yearling herd boar Prince Wonder Col, sired by Golden Rule Jr. and out of a sow by Prince Wonder, one of the greatest boars of the breed. You will notice that Golden Rule Jr. is a full brother to the boar Good Enough owned by Watt & Foust of Dayton, Ohio. This fall boar is good enough to head any herd and will be priced worth the money. Mr. Tiller reports 75 choice spring pigs sired by Tom Davis, Chiefs Valley and Prince Wonder Col, Chiefs Valley has developed into a great boar. Mr. Tiller says he will weigh between five and six hundred pounds at this time.

The Big Fair at Hutchinson.

Word comes that the management is getting every thing in shape for another record breaking fair at Hutchinson this fall. County exhibits will be a new and drawing attraction and a series of 10 premiums ranging from \$100 for first down to smaller ones will be offered. Another special feature will be the exhibits of cement concrete construction which will be made unusually attractive and valuable. The cattle and swine departments will be enlarged to accommodate the increased numbers of show animals. There will be 8 days of racing, with purses and prizes amounting to \$21,000. Secretary A. L. Sponser writes that the Kansas Semi-centennial celebration will be great and will culminate on Sept. 26, when President Taft will spend the day on the grounds and address the people. Governors day will be Sept. 25, when the chief executives of a number of states will be present, among them, Gov. Harmon of Ohio, who will make the principal address.

Big Clay Jumbo.

A Kansas Farmer representative recently visited Mr. J. W. Anderson of Leonardville, Kansas. Mr. Anderson has a very choice herd of Poland China swine headed by the outstanding good boar Clay Jumbo by Nebraska Jumbo and out of sow by Gold Metal. Clay Jumbo is one of the good boars of Kansas and has already proven his worth as a breeder. He formerly headed the good herd of W. H. Griffiths of Clay Center, siring a magnificent lot of pigs last year. Mr. Anderson did a great thing when he secured

such a boar. Mr. Anderson's herd, although rather young, contains some very choice sows, among them one by Gold Metal, one by Free Tecumseh one by Looks Choice, one by Expansion B, etc. Mr. Anderson lives on the ideal hog farm. Water, shade and pasture in abundance. The spring pigs are very promising and will be offered later. Mr. Anderson arranged for space and his card will appear soon. Visitors are welcome at the farm and will be met and taken out in the automobile if they will let Mr. Anderson know when they are coming. When writing mention Kansas Farmer.

Madison Creek Poland Chinas.
One of the good Poland China herds of Kansas is the Madison Creek herd located near Riley, Kansas. J. L. Griffiths, the owner of this herd has been a breeder for some years but to use his own language he wanted to be sure he had the stuff before he began advertising. Mr. Griffiths owns and farms one of the best farms for the stock raising business that can be found anywhere. Mr. Griffiths's spring crop of pigs number about 70 raised from 10 sows. All of them except one litter were sired by the herd boar Big Boned Pete, bred by Peter Ellimbrook, an Iowa breeder noted for breeding the big kind. In this herd are a few of the best sows the writer ever saw. They are outstanding individuals such as are seldom seen in older herds. Among them are Lady 3d and two of her sisters. They were sired by Mastadons Best, a boar of great size, their dam was Lady Wonder by Prince Wonder. A little brother to these sows weighed over 1,800 pounds when ready for market. Four more out of Lady Wonder, the dam of the three and sired by Colossus, are almost as good. The seven make a fine showing and are a fortune to Mr. Griffiths. The spring pigs are good ones and are for sale. The advertisement will appear in Kansas Farmer in a short time.

Swingle's Good Polands.
A. J. Swingle of Leonardville, Kansas is one of the successful Poland China breeders of this part of the state. Mr. Swingle is one of the old time breeders and has with in the past few years paid special attention to size, buying from some of the best known big type herds of Iowa. His spring crop of pigs number about 60 head, sired by four different boars. One very promising litter being by the noted boar Long King's Equal. Two fall boars are sons of A. Wonder, one of them is being retained for a herd boar, the other one will go into Mr. Swingle's Oct. 3rd sale. Others of the spring pigs are by Perfect Price by One Price and Commander by Expander. One litter is by Gold Medal another Iowa boar of considerable note. The sow herd is composed of an unusually choice lot of individuals, daughters and granddaughters of A. Wonder, Giantess and other noted breeding hogs. The spring pigs are by far the best ever seen on the farm and will by fall certainly contain some herd boar prospects. Mr. Swingle has recently secured an outstanding good son of Long King's Equal for a herd boar to use next year. He is of March farrow and a mighty good individual.

Sam Stone's Poland Chinas.
A young breeder that is destined to take his place among the good Poland China breeders of General Kansas is Mr. Sam Stone of Leonardville, Kansas. Mr. Stone began his first pure bred hogs about seven years ago and has met with good success in his breeding operations. His present herd boar is Smith Hadley by Mammoth Hadley, he by Big Hadley. He is assisted by a good son of Moguls Monarch. The 50 spring pigs are mostly by Smith Hadley, one good litter by Capt. Hutch and one out of a Moguls Monarch dam. Mr. Stone has been a good buyer, securing seed stock from the good herds of Geo. Smith, Burchard, Neb. The Dawsons and others. The sows in the herd are good individually and carry the blood of such sires as Expansion, Grand Look, Moguls Monarch, etc. Mr. Stone is chuck full of enthusiasm and is sure to forge to the front. If wanting anything in his line watch for his advertisement which will appear in Kansas Farmer within a short time. If writing before that time kindly mention this notice.

Although the 1911 automobiling season has no more than fully opened it has already been demonstrated that the new non-skid tire tread which was put on the market this year for the first time by the Goodyear Tire & Rubber company, will prove a distinct success. The new tread is just a little bit different from anything of its kind that has ever been offered to the public before and it was perfected only after long tests and experiments. The rubber of which the tire proper is made is of a dark color but the powdered compounds mixed into the tread to give it its peculiar wear resisting power turn it almost white so that the finished tire with the dark body and white tread is suggestive of a chocolate cake with white icing. The surface of this tread is covered with small diamond shaped projections running lengthwise of the tire. These projections are slightly wider at the base where they join the tire, which makes them wear longer and prevents them from breaking off. In making this tread seven layers of thin strips of rubber of varying width are laid one on another and the whole strip is then wrapped around a mould. It is then put into an hydraulic press and squeezed so tightly that the rubber is forced into the diamond shaped holes of the mould and the tread is formed. The tread is then laid over a cement coated tire and wrapped tightly with several thicknesses of tape, after which the tire and its wrapping is placed in a big vulcanizer where the process of attaching the tread is completed and from which it comes forth a finished tire.

Amcoats Herds Visited.

The S. B. Amcoats farm located about four miles east of Clay Center, Kansas is headquarters for as good Shorthorn cattle and Poland China hogs as can be found within the borders of the state. At this season of the year there is unusual activity on this farm. The hay is being made and the hundred acre corn field is being hurried over for wheat harvest begins next week. The hay crop was rather light and the oats very short, the wheat looks good from the road but will doubtless be cut short on account of the protracted dry spell. But Mr. Amcoats has lived in Kansas too long to feel discouraged. He learned long ago not to put the eggs all in one basket. With two or three crops of hay yet to harvest there is no doubt but what the big barn will be full to the sills and the Shorthorns well provided for. The big corn fields are as clean as a garden and being so well cultivated that the corn is making a nice growth in spite of dry weather. The rain will come in due time and Mr. Amcoats predicts one of the biggest corn crops ever raised in this part where the stand is good. The selections have been made and a nice bunch of the Shorthorns will be shown at leading county fairs. The spring pigs, of which there are about 50, are doing well and are the best ever seen on the farm at this season of the year. In the card which appears in Swine dept. Mr. Amcoats offers to sell early so buyers can save express rates. Mention Kansas Farmer when writing.

POLAND CHINAS

POLAND CHINAS

POLAND CHINA HOGS - STEDEM'S STOCK FARM

A number of Poland China fall gilts for sale. A fine lot of high class individuals. Many topnotchers in the lot, bred or open. Also a number of extra fine topnotch boars. Will sell worth the money to make room for spring litters. All breeding stock sold on a positive guarantee.

N. STEDEM, Prop., MARSHALL, MO.

LONE ELM POLAND CHINA HERD

J. M. PEMBERTON,

FALETTE, MISSOURI.

Breeder of Big Boned, High Class, Poland China Hogs. A number of high class fall gilts bred for September farrow for sale. Will also book orders for spring pigs. All stock guaranteed as represented; also safe delivery at your station. If you want big boned, high class Polands, write me at Fayette, Mo.

GILDOW'S BIG TYPE POLAND CHINAS

herd headed by Big Bill Taft and Pawnee Chief Hadley. Choice lot of spring pigs for sale; pairs or trios no kin, also a few extra good sows and gilts either bred or open. Our prices are right. Write DR. JNO. GILDOW & SONS, Jamesport, Mo.

SOME fine fall gilts at a bargain, either open or bred to my mammoth young boar. Spring pigs by five great boars. Orders taken and pigs shipped after weaning. Priced low to move. Write your wants. W. C. MILLIGAN, Clay Center, Kansas. Phone Idana 68-22.

HILDWEIN'S BIG TYPE POLANDS. Headed by Kansas Leader by Union Leader, assisted by a grandson of Bell Metal; sows of Expansion, Hadley, Tecumseh and other big type breeding; choice lot of spring pigs. WALTER HILDWEIN, Fairview, Kansas.

BIG POLANDS. John B. Lawson's Herd, Clarinda, Iowa. The big, smooth kind. Pigs for sale sired by Long King's Equal. Book you order early. Pigs farrowed in February and early in March.

Big Type Poland China Gilts. A few very choice ones sired by the great Wilkes Again and safe in pig to a grandson of Grand Look. \$30 each if sold soon. J. B. WHIPPLE, Fall City, Neb.

ROSE LAWN POLAND CHINAS. King Darkness by Meddler 2d, assisted by Shortgrass Meddler by Meddler 2d head my herd of richly bred Poland China sows. A few spring gilts by On the Spot for sale. E. J. MANDERSCHIED, R. 3, St. John, Kan.

CORRECT TYPE POLAND CHINAS. Headed by M's Giant Wonder by Price Wonder, dam by Orange Chief. Sows in herd of Expansion, Hadley, etc. Breeding pigs both sexes for sale. JOHN T. CURRY, Winchester, Kans.

GEO. SMITH'S BIG POLANDS—Headed by Mammoth Hadley, the best son of Big Hadley. Sows, daughters of King Do Do, Johnson's Chief, Gold Metal, First Quality, Chief Gold Dust, 5 litters by Grand Model by Grand Chief. 100 choice pigs doing well. George W. Smith, Burchard, Neb.

RYESTAD'S BIG KIND POLAND CHINAS. Contains the breeding of about all leading big type sires. Herd boars O. K. Hutch by Hutch Jr. and Commander B. by Big Commander. 75 choice pigs to date. Visitors welcome. A. R. RYESTAD, Mankato, Kansas.

Meisner's Big Smooth Poland Chinas. Headed by Metal's Choice by Mo. Metal, he by Bell Metal. Eighty early spring pigs sired by this boar. Expansive, Big Price, Col. Thomas and other good sires. Dams in herd are big and motherly and have the best kind of big type pedigrees. Visitors welcome. T. J. MEISNER, Sabetha, Kansas.

Highview Breeding Farm. THE KIND OF OUR FOREFATHERS. Home of the big-boned spotted Polands. The only registered herd of original spotted Poland China son earth. I am now booking orders for spring pigs to be shipped when weaned; pairs or trios; no kin. H. L. FAULKNER, Box K, Jamesport, Mo.

Short Grass Herd Polands. A few choice fall boars sired by King Darkness, Toastmaster, 2d Impudence, Looking Forward and Short Grass Lad, out of high class sows. Price \$25, all first class and guaranteed. J. F. WARE, Garfield, Kansas.

STRYKER BROS.' HERD POLAND CHINAS. The greatest show and breeding herd in the West. Write your wants and they will please you. Buy the best and make the most. They breed the kind that win; the kind that you want. Address STRYKER BROS., Fredonia, Kan.

DEER PARK STOCK FARM. Richly bred Poland Chinas headed by the great Impudence E. L. and Noble Chief by Nobleman. Choice lot of spring pigs for sale by Impudence E. L. and Dawley's S. P. Perfection. D. A. WOLFERSPERGER, Council Grove, Kansas.

FAIRVIEW POLAND CHINAS. FOR SALE—E0 extra fall pigs, both sexes, with size and quality; priced to sell; descriptions guaranteed. Write us. F. L. WARE & SON, Paola, Kansas.

POLAND CHINA HOGS. Mastodon Poland China hogs, the big-boned type that will weigh when mature 800 to 1,000 pounds. Mastodon Price leads this herd. Mastodon Price sired by A Wonder 107356, a hog weighing in full flesh 1,200 pounds. If you want the right kind, they are at Quality Ridge Farm. A number of bred gilts for sale; all choice individuals. Phone me at Dearborn, Mo. Railroad station Newmarket, Mo. CLARENCE DEAN, R. 1, Weston, Missouri.

GREEN LAWN HERD BIG BONE POLAND CHINAS. Herd headed by Big Spot, Major B. Hadley, a 600-lb. hog at 18 months old with a 10-inch bone, and Giant Wonder by A Wonder. Fall and spring pigs sired by above hogs; also some sired by A Wonder, Long King and Longfellow, Jr., out of large sows sired by Blain's Wonder, Expansion John, Grand Tecumseh, King Blain, Long King and Blain's Last Hadley. Correspondence solicited, descriptions guaranteed. A. J. ERHART & SONS, Adrian, Mo.

Choice Fall Boars For Sale

Good ones sired by Captain Hutch 39088. Barred Plymouth Rock eggs from farm range birds. Visitors welcome. J. H. HARTER, Westmoreland, Kansas.

FALL BOARS BY HADLEY BOY 48009

Out of strictly big type sows. Prices right. GEO. M. HULL, Route 1, Garnett, Kansas.

FALL BOARS ALL SOLD

A few choice sows bred to EXPANSIVE 34723 for summer litters for sale now. H. B. WALTER, Effingham, Kansas.

Albright's Big Polands. Headed by A. L. Hadley. Sows of Expansion, Skybo, L. & W. and S. P.'s Perfection breeding. Visitors welcome. A. L. ALBRIGHT, Waterville, Kansas.

LAREDO HERD. Poland Chinas, headed by Impudence Style 133278 and F. R.'s Meddler by Meddler for sale. 15 fall gilts bred for fall farrow and 9 other gilts. G. W. McKAY, Laredo, Mo.

Graner Has Fall Boars For Sale. sired by Guy's Monarch and out of great, big sows. The tops saved from a big crop. Out of sows noted for their size and breeding. Mention this paper when writing. H. C. GRANER, Lancaster, Kansas.

HICKORY GROVE FARM, the home of the big boned black and spotted Poland China hogs, the farmers' hog, and the kind that makes the most pork. Choice males for sale. Address GEORGE & OLLIE TAYLOR, Cameron, Mo.

BIG POLAND CHINA HOGS. Limestone Farm Herd, Clarksville, Mo. M. Gottswiller, Prop., breeder of big Poland Hogs, Shropshire sheep, Buff Orpingtons and Single Comb Brown Leghorn chickens, Pekin and Indian Runner ducks and Chinese geese. Breeding stock for sale.

POLAND CHINAS. Fuller Bros.' herd. 300 Poland Chinas; will book orders for spring pigs sired by our great herd boars, Big Tecumseh, Storm Center, Fanny's Model, Missouri Jumbo, Expansion's Son and Correct Meddler, Scotch Collie pups for sale. FULLER BROS., Humphrey, Missouri.

12 Strictly Big Type Boars

Sired by King Elmo, one of the biggest and smoothest Poland China boars living. Want to make room and will price these fall boars reasonable. Fall sale October 19. J. J. HARTMAN, Elmo, Kansas.

Big Boned Poland Chinas

Forty big, stretchy boars and gilts for sale sired by the most noted boars, Big Hadley, John Ex., King Hadley and John Long 2d, and out of strictly big type sows. Write at once: 200 head in herd. CHAS. Z. BAKER, Butler, Mo.

Middle Creek Poland Chinas

For Sale—Few large type fall boars sired by Monarch Mogul out of my best sows. They are herd headers and priced to sell. Write at once. W. H. EMENS, Elmdale, Kansas.

BIG HADLEY, BIG HUTCH AND EXPANSION BLOOD

Predominate in my herd. Herd boars: Hutch Jr. by Big Hutch and King Hadley 2d by Big Hadley. Among sows are Granretta, litter sister to Bell Metal; Pan Princess, weight 725 lbs.; Mollie S., 750 lbs., and Bess Corwin, the dam of Expansion S., the biggest boar ever owned in the West. 90 choice pigs farrowed to date. Visitors always welcome. C. W. JONES, Solomon, Kansas.

OHIO IMPROVED CHESTERS

MOSSE OF KANSAS

Kansas Herd of Improved Chester Whites. Grand Champion Sow Kansas State Fair. ARTHUR MOSSE, R. D. 5, Leavenworth, Kansas.

MAPLE LEAF HERD

IMPROVED CHESTER WHITES. Herd headed by White Frost, an excellent individual, assisted by Garnett Model, a grandson of the great Kerr Garnett; spring pigs from 5 other noted boars; have a few good fall pigs left to offer. Correspondence cheerfully answered. White Wyandotte chickens; eggs for sale. R. W. GAGE, R. 5, Garnett, Kansas.

DUROC JERSEYS

DUROC JERSEYS

ROSE HILL DUROC JERSEY HERD

December pigs weighing 175 lbs. Some good show prospects. A splendid lot of Feb. and March pigs. Also choice gilts, bred for Aug. and Sept. farrow, and several big boned boars ready for service. We will also sell a few extra good tried sows bred for second litters. All stock guaranteed as represented. S. Y. THORNTON & SONS, Blackwater, Mo.

E. W. DAVIS & COMPANY'S MODEL QUEEN DUROC JERSEY HERD.

The High Class Herd of Missouri. The home of Model Queen, grand champion sow at Nebraska State Fair in 1910; also the famous herd boars, McNeill's Model 69370, King of Cols. 2d 22351 and Blue Ribbon Chief 66533. A high class lot of spring pigs now ready to ship. Our bred sow sale July 26. The offering will be a strictly high class lot of tried sows and gilts. E. W. DAVIS & CO., Glenwood, Missouri.

12 Extra Choice Duroc Boars For Sale

Tops of 30 head, sired by King of Chapin & Nordstrom, Green, Kan. Col. 2d and G. C.'s Kansas Col.

RIVER BEND HERD DUROCS.

Headed by Fitch's Kant by Kant Be Beat and out of a son by Ohio Chief, one of the best individuals and breeders in the state. Let me know your wants. W. T. FITCH, Minneapolis, Kansas.

HOTEL GREENWOOD HERD

Bred sows and gilts for sale; a few fall boars; prices reasonable. CHAS. STITH, Eureka, Kansas.

DUROC HERD BOAR FOR SALE

Chiefs Valley, a great son of Valley Chief and out of a Kant Be Beat bred dam. Can't use him longer to advantage and will sell reasonable; will guarantee him fully. O. A. TILLER, Pawnee City, Neb.

HAMPSHIRE HOGS. All ages, both sexes, best strains, prize blood. Prices right. C. W. WEISENBAUM, Altamont, Kansas.

BERKSHIRES

LARGE ENGLISH BERKSHIRES. Breeding Stock for Sale. H. U. McCURDY & CO., Hutchinson, Kansas.

BERKSHIRE HOGS. Baron Premier 84th, Premier Duke 70054 and Artful Premier 73307 at head of herd. A few choice yearling boars and gilts for sale out of high class sows. Write me. I can please you. JUNE K. KING & SON, Marshall, Missouri.

RENO BERKSHIRES. For sale, 4 boars and 4 gilts. Sept yearlings. Weigh 250 to 275 pounds. Gilts sold bred or open. Price \$30 to \$40. All sired by the Grand champion at Kansas State fair, 1910. Write at once. T. E. Clarke, Medora, Kansas.

POLAND CHINAS. 6-BIG TYPE POLAND BOARS—6 August and September farrow; \$25 each if sold soon. L. E. KLEIN, Zeandale, Kansas.

BRED GILTS \$25 to \$30 EACH. 20 fall gilts, big and smooth. Big type. Good time to start herd. Write quick. F. D. YOUNG, Winchester, Kans.

MOONEY CREEK POLAND CHINA HERD. The biggest of the big. Wonder and Mastadon strains. Herd headed by Big Oge borne. Pigs raised under natural conditions and no overfed. I have bought seed stock from the best herds in Iowa and have new breeding for Kansas. Write for information about the kind I breed. Visitors always welcome. JOHN W. NOLL, Winchester, Kans.

AMCOATS BIG POLAND CHINAS. Herd headed by the line bred Expansion boar Bell Expand by Bell Metal. 50 of the best Pigs we have ever raised now ready to select from. All but one litter by boar just mentioned and out of mature sows bred along popular lines and strictly big type. Buy early and save heavy express rate. Will also sell Bell Expand. S. B. AMCOATS, Clay Center, Kansas.

First Cost of the Silo. In building a silo the first thing to be considered is the cost of building materials. For, though a silo will pay on almost any farm where corn and clover can be grown to advantage, regardless of building cost, one should always build as economically as possible. By building economically we do not mean that cheap structures should be put up, but we should bear in mind that once we have money invested in a building, its annual cost to us, in addition to repairs, taxes and insurance, amounts to interest on the money invested and an annual depreciation charge.

There is much discussion as to the comparative value of hollow brick, cement and stave silos. Some say that they would rather pay twice the amount for a hollow brick or a cement silo than for one made of wood staves, just because the former will stand a lifetime, while the latter will be worn out in twenty years or such a matter. To people who feel that way about it, and who can afford to build to please a notion of this kind, we have nothing to suggest, but to

those who wish to invest their money judiciously we would say, let us stop to figure for a moment. Money has an interest value and it is surprising how fast it grows when put out at 6 per cent and each year's interest is added to the original sum and allowed to draw interest. One dollar put out at 6 per cent in the manner mentioned, in twenty years grows to \$3.20. At first thought one wouldn't think it would grow that fast, but it will. Applying this to silo building, it at once becomes apparent that of two silos having the same capacity, one that costs \$300 and lasts only twenty years is decidedly cheaper than one that costs \$600 and lasts forever. The difference in cost, put at interest when the cheaper silo is built will have amounted to \$960 in twenty years, so we could well afford to build another \$300 silo at the end of twenty years, as we should still be \$600 ahead of the game, while in forty years, starting again with a new silo, we should be \$2,272 ahead. These things are sometimes lost sight of in our calculations.

In localities where sand and gravel can be had right on the farm or by hauling a short distance it will undoubtedly pay to fully investigate building with cement. In other localities, hollow brick may be cheaper than cement or wood, and in still other places would may be the most economical building material available. There seems to be no question but that all these materials are satisfactory for silo construction and for the preservation of the silage. The only thing the farmer needs to consider in deciding which to use is first cost—that is the cost through a series of years, including in that as mentioned, interest on the investment, deterioration, etc.

Suppose it costs \$350 to build a 200 ton stave silo, and suppose that its life is twenty years. How much more can a man afford to pay for a cement silo of the same capacity, estimated to last for a hundred years? Can he afford to pay one-half more or one-third more? Let us see. One-third more would make it \$466. This would be \$116 more for the permanent building. If instead of putting this \$116 into a permanent silo, we build the \$350 stave silo and put the \$116 at interest at 6 per cent, by the time the stave silo has to be torn down and a new one put up to take its place, this money will have grown to \$381. This sum is more than sufficient to erect a new silo. Consequently, unless the repairs on the wood silo would be higher than the one built of cement, it is evident that one would not be justified in paying a larger difference than mentioned for the permanent structure. If a cement silo would cost half again as much as one of staves, the former would be decidedly the more costly, for \$175 would in twenty years amount to \$560.

There are, of course, other considerations besides cost and efficiency for preserving the ensilage that may be worthy of consideration. One building may be nicer looking than another, so that it may have a greater esthetic value. This is a value that we can scarcely measure in dollars and cents. Each man must determine this according to his own inclinations.—F. and B., Oregon.

Better not have any colt at all than one from a \$3 sire.

BARGAINS IN LANDS

FARMS FOR 61 FARMERS IN COLORADO

Out of that level strip of alfalfa, between Colorado Springs and Pueblo, along that beautiful stream which flows from the mountains, called the Fountain and skirted by heavy growth of timber and paralleled by the Rio Grande, Santa Fe and Southern Railroads, also that beautiful auto boulevard from Kansas to Denver.

Write me today for a map of this land and full particulars which will cost nothing. Do it now. O. W. LOVAN, Room 26, Independence Bldg. Colorado Springs, Colorado.

COME TO PLAINS, KANSAS

Where choice wheat land can be had at from \$12.50 to \$30.00 per acre. I have several 160 acre tracts to sell on terms of 1/4 cash, balance at 6 per cent. Write for land list.

EDWARD T. EDWARDS, PLAINS, KANSAS

NESS COUNTY "SNAPS"

A square section of smooth land; 200 acres bottom land in cultivation; good shallow well; in good neighborhood; 8 miles to R. R. town. Price \$17.50 per acre. Can be divided at same price. Write for price list and county map.

FLOYD & FLOYD, Ness City, Kansas.

BUY OR TRADE with us. Exchange book. Bessie Agency, El Dorado, Kan.

Large and unimproved land in western Kansas. G. Ruth, Scott City, Kansas.

MAKE a specialty of Ford county land and Dodge City property. P. H. SUGHRUE, Dodge City, Kansas.

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

HAVE over 100,000 acres in different sections; country is good. Write for my list. Douglas Harp, Mullinville, Kiowa Co., Kan.

ESTABLISHED 1885—Write for free list. H. H. Thornton, Real Estate Dealer, El Dorado, Comanche Co., Kansas.

32 YEARS IN NESS COUNTY. Write me about cheap farms here. P. ANDERSON CO., Brownell, Kansas.

NESS AND LANE COUNTY. Book of Facts about beautiful Walnut Valley free. \$8 to \$20 per acre. BUNTON BROS., Ulica, Kansas.

IMPROVED WHEAT FARMS. Ford county at \$25 per acre up; near R. R. and telephones and schools. BROWN & VERNON, Dodge City, Kansas.

500 ACRES, 14 miles south of McPherson, Kan.; good farm, price \$90; exchange for land; mostly alfalfa land; imp. good. M. Chubine, Durham, Kan.

FOR SALE—Ranch of 1120 acres 5 miles from my town, at \$22.50 per a.; improved. Good Ford Co. lands at \$25 per a. J. R. BECKTELL, Macksville, Kansas.

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

OLDEST LAND AGENTS IN MONTGOMERY county. Write today or choose list of bargains. Foster Bros., Independence, Kansas.

FOR TRADE—A \$20,000 stock of general goods. Wants Kansas land at actual value. Good town with fine country around. Taylor & Brucher, Coldwater, Kansas.

0 DOLLARS PER ACRE UP TO \$25 buys best improved farms in Wichita county, Kansas. LEOTI, Kan.

160 ACRES, 3 miles of Towanda, A snap at \$7500. Other good farms in western Butte county. Write for particulars. G. W. MOORE, Towanda, Kansas.

BROOM CORN. Maize, Kafir Corn, Wheat and Alfalfa land, imp. and unimp., for sale at prices and terms to suit. I sell my own land. GEORGE J. DOWNER, Syracuse, Kansas.

ONE-HALF SECTION improved Stafford wheat farm, \$60 per a. Must be sold before July 1; close to church and school. See this and make me an offer. Write for full particulars. J. B. KAY, St. John, Kansas.

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.

FINE HOME, 48 a., one mile of this city, about 28 a. now in cultivation, bal. pasture, room house, new barn 34x60 and hay loft, 20 wells and mill and other outbuildings; good orchard and all second bottom land. Priced to sell at \$5,500 cash. E. F. Dewey, Rapid, Kan.

A BARGAIN—Fine improved section five miles from county seat, \$70 per acre, 1-3 a.; new modern house, fine barn; 160 a. fenced with woven wire; 500 a. under cultivation. Correspondence invited. G. W. RANNEY, St. John, Kansas.

YOU'LL LIKE LINN COUNTY, KAN. We have abundant coal, wood, natural gas and good water. The land raises magnificent crops of alfalfa, timothy, clover, bluegrass, etc. corn and wheat. R. F. D. and phone at our door. Price \$20 to \$30 per acre. List free. A. E. ROOT, Pleasanton, Kan.

LIVE AGENT WANTED. 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. FRIZEL & ELY, Larned, Kansas.

ANDERSON COUNTY—268 acres, 64 acres in cultivation, 25 acres mowland, balance pasture, 10 acres fenced hog tight. Twenty other improvements. New barn 48x60 and 100 a. to Bush City, 1/2 mile to school. Price \$25. This is a bargain. Geo. W. Her & Sons, Garnett, Kansas.

GOOD WHEAT LAND in Meade and Sedgewick counties at reasonable prices; easy terms at 6 per cent; Gray and Finney county lands on easy payments at 7 per cent; also Stafford county farms. J. B. C. Cook, Stafford, Kansas.

15,000 ACRES CHEAP LAND, Kit Carson County, Colorado for sale or exchange. Good relinquishments cheap. This is the rain belt of Colorado. Good soil, good water, good crops, everything prosperous. Write for particulars. GIBSON & NELSON, Flagler, Colo.

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.

FOR EXCHANGE. A fine 80 acre farm in Sumner county, Kansas, 2 1/2 miles from town, 65 acres in cultivation; extra good soil; \$50 per acre; mtg. \$1500 to run 5 years. Want hardware for equity. A. B. ESTEP, Yates Center, Kansas.

GREENWOOD CO.—320 acres 5 ml. S. W. Hamilton, 1/2 ml. to school, R. F. D. and telephone line; 9 room house; barn for 16 horses; 50 a. tame grass; 140 a. bottom land, 180 a. in cult., bal. pasture. A fine farm; priced right; \$15,000. A. F. Dove, Hamilton, Kansas.

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.

THREE 80's in Reno Co., best of wheat and alfalfa land, 1-3 of crop goes if sold soon at \$135; terms to suit; a bargain. Also one quarter sec., 1 ml. to school and church (Catholic); 4 miles of railroad station; good improvements and good land. For a short time at \$75 per acre. Terms to suit. M. J. Huger, Garden Plain, Kansas.

160 ACRES, 3 miles from town, one 4-room and one 2-room house, barn with mow 14x24, cattle shed 14x50, 35 acres cult., 4 acres alfalfa, 15 a. alfalfa land, all tillable, school 1/2 ml., telephone, young orchard and grove of forest trees. Price \$4,500. Trade for good clean stock general merchandise or hardware. F. T. McIninch, Kansan, Kansas. Land list free.

A BUTLER COUNTY BARGAIN. Crops Never Looked Better. 160 a. 5 ml. town, all good soil, 125 cultivated, balance pasture and meadow. Two sets improvements. A snap for a short time at \$55 an acre. Send for full description. Kansas Map and new land list free. JAS. A. THOMPSON, Kansas.

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.

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 IT. 160 acres, level, sub-irrigated land, fenced, 100 a. in wheat, 1/2 goes; best in county; 60 mow land; all can be farmed; half mile to school; 3 miles to trading point; on R. F. D. and phone line; first class for investment or a home. Price \$6,000; terms. All new land. Write BROWN, GRANT & WALTER, Kingman, Kansas.

FOR TRADE. 235 acres 4 miles of Garnett, Kan.; 70 acres in cult.; 25 pasture, balance meadow; 5 room house, barn, etc. Price \$15,000; mortgage \$5,000; wants mds. 80 acres 3 miles of Greeley; good farm, well improved. Price \$5,200. Wants western Kansas land. SPOHN BROS., Garnett, Kansas.

240 ACRES, 9 rm. dwelling, close to town; bargain. Buckeye Agency, Agrícola, Kan.

EXCHANGES—Lands, city properties and mds. Hannum Land Co., Cherryvale, Kan.

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

GOOD bottom and upland farms, Montgomery Co. Write for bargain farm list. Hannum Land Co., Cherryvale, Kan.

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

BAGGINS in Southern Kansas farms, unimproved lands and stock ranches. Prices \$25 to \$70 per acre. E. K. Longley, Howard, Kansas.

FORD COUNTY—Good, smooth wheat and corn land; rich, deep loam; all tillable; all sizes; \$12.50 per acre up; terms. WILSON & WRIGHT, Dodge City, Kansas.

FARMS FOR SALE IN CLOUD AND surrounding counties in Kansas. All prices, from \$30 to \$100 per acre. Glad to send you the list. Concordia Land Co., Concordia, Kansas.

210 IMPROVED, Woodson Co.—timothy, clover, alfalfa on farm. Wants mds. or income property. Write for description. YATES CENTER LAND CO., Yates Center, Kan.

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

A FINE NESS COUNTY FARM—240 acres 1 1/2 miles from town, 1/2 mile to school, 160 acres perfectly smooth, 30 acres pasture land not rough, good well, NEVER DRY, all fenced and cross fenced. Price \$25 per acre. Will trade for good clean stock of mds., groceries preferred. If interested write for list. Rutherford & Oliver, Ulica, Kan.

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

Hamilton County Lands

One quarter section, \$900. 480 acres, Bear Creek Valley, \$3,300. 100 acres Arkansas River bottom alfalfa land, \$6,000.

J. B. PRATT, Syracuse, Kansas.

LIFE is worth living in Kearney county. Hunting and fishing on Lake McKinney; 7 ml. long; rich soil; one crop pays for land; we have R. F. D. and telephones. Write for information about Kearney county. LAKIN LAND & IMMIGRATION CO., Lakin, Kan.

WESTERN KANSAS

Wheat and alfalfa lands cheap; no sand or rock; good soil and productive; write for list; state in first letter what you wish; save delay.

V. C. CUTLER CO., Scott City, Kansas.

Just What You Want:

160 acres, Rush county, Kansas, 2 1/2 miles from good town and railroad station, 100 acres under cultivation, 60 acre grass, all tillable, a bargain at \$4,500.

JAMES H. LITTLE, The Rush County Land Man, LaCrosse, Kan.

400 ACRE STOCK FARM for sale; has 2 sets of good improvements; land lays fine; is good soil; is well watered and has a fine grove or park and joins a good town. A rare opportunity. Don't miss it. Write for particular and list of farms. Spears Realty Co., Ottawa, Kansas.

DO IT TODAY. Write C. W. Hinnen of Holton, Kan., for some information regarding 5, 10, 20 and 40 acre tracts joining Holton, Kan. He has some of the best improved and unimproved tracts in the state. These tracts lay within a mile of town. Write today. C. W. HINNEN, Holton, Kansas.

Box 143, Holton, Kansas.

MONEY MAKING BARGAIN.

350 a. between two railroads two miles from each, 90 a. creek bottom, some good timber, new 8 room house, closets and cellar. Bell phone, good barn and numerous outbuildings. This is a money maker. Price \$45 per a., \$3,600 cash, bal. at 6 per cent. CHANUTE R. E. CO., 19 S. Highland, Chautau, Kan.

SOLD THE LAND ADV'T—Week of Feb. 4 and the one of Feb. 11, and here's one for this week: 160 acres all in good grass, rich soil, good water, in wheat belt, 1/2 mile of good school, well located, make a nice home, 6 miles of Spearville, \$3,000; \$1,500 cash and good terms on balance. Send for big list. Address STINSON & SHELDON, Spearville, Kan.

FINE STOCK FARM.

560 a., 100 a. in cultivation, 150 a. in meadow, remainder in good pasture; 5 room house; nice barn 106 ft. long, 80 ft. wide; other buildings; good well; orchard; on rural route 3 miles to shipping point and 5 1/2 miles of Fredonia, the county seat, a flourishing city of 3 railroads and abundance of natural gas; very healthy and nicely located. Will take \$32.50 per a. if sold by August 1. Good terms. Address: OWNER, Lock Box 926, Fredonia, Kansas.

LOOK READ ACT.

160 acres, 11 ml. town, smooth, level and beautiful. Good rich soil, adapted to the raising of all kinds of small grains. Land in same vicinity sells at \$15 per acre. up. BUT LISTEN! \$12.50 will buy this, \$500.00 cash, make your own terms on the rest.

A beautiful residence lot in Plains will be given the purchaser FREE. Who wants it?

COONS & JACOBS, Plains, Meade County, Kansas.

FARMS, RANCHES and City property for sale and exchange. Merchandise stocks a specialty. A. N. BONTZ, Wichita, Kansas.

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

270 A. good land, well improved in Cowley Co. \$27.50 per a. It sold soon. E. M. Williams, Winfield, Kans.

CAIHAN, COLO. We have thousands of acres of land for sale cheap and on easy terms in the great rain belt country of eastern Colo., for full information write—The Eastern Slope Securities Co., Caihnan, Colo.

RELINQUISHMENTS—220 a. improved, 13 ml. out, 100 a. broke, \$1,000. 160 a. small house, 40 a. broke, all fenced, 12 miles out, \$500. 160 a. close in, small house, shallow water, \$250. Address C. C. MILES, Caihnan, Colo.

320 A. Gov't Homesteads

Exceptionally fine land, in well settled community, where good crops are raised every year. Easily worth \$5,000 to \$8,000 by proving up time. Quick action necessary to get one of these. I charge reasonable location fee—write or come at once—you can't lose if you want a good productive home. CARL M. COOK, Limon, Colo.

FOR SALE OR TRADE

\$15,000.00 FRUIT RANCH FOR \$10,000.00! A BARGAIN!

Located in the Grand Valley of Palisades, Colorado. Apple and peach orchard of over 1,000 young bearing trees, 8 years old. Excellent climate, fine community, good schools and churches. \$3,000 cash. Write for terms. Addressing Owner, 4501 Osceola St. Denver, Colo.

GET A HOME.

160 acre farm 2 1/2 miles of R. R. town and 5 miles of county seat, 10 a. in cultivation, 40 a. pasture, 10 a. mow land, 6 a. orchard, 5 a. alfalfa, good 6 room house, small barn and granaries, all fenced, 2 fine wells of water, fine grape vineyard, 1/2 mile to school, farm drains well. Price \$7,000 immediate possession. One-half cash will handle this. Write for our land list. BATTEN REALTY CO., Medford, Oklahoma.

INDIAN LANDS!

50,000 Acres of rich black corn land in EASTERN OKLAHOMA for sale, trade or rent. Write ALLEN & HART, Owners 308 Commerce Bldg., Kansas City, Mo. And Claremore, Okla. Agents Wanted.

TEXAS LAND

LOWER PECOS VALLEY IRRIGATED LANDS

In West Texas is absolutely the best location for safe and profitable investment in America. 40 acres will provide an ideal home and a yearly income of \$3000 to \$5000. Development has only fairly started and present values will double and treble in price within two years. We own or control the sale of the best dependable irrigated lands which we can sell in tracts to suit at from \$50 to \$100 per acre, water rights fully paid, on easy terms, or we can supply sections of artesian or shallow pumping wells lands at \$5 to \$10 per acre. For productive-ness and all the year climate the Pecos Valley is unsurpassed. Let us know your wants and we will supply detailed information. Address THE HEATH COMPANY, 100 West Seventh St., Topeka, Kan.

It Does Not Cost Much.

Being a user of the Rambler automobile I am sending herewith a true account taken from my expense book of the outlay for the past six months. We have a 1910 Model No. 53 and use it for any and all things just as we did the buggy. During this six months we have paid out just \$59.35 and this covers all kinds of expenses including gasoline, oil, repair work, and several washings and shinnings. Since looking over the statement I find that some \$12 went for washing, so if one did his own cleaning it would cut the expense down materially. The speedometer shows 2,006 miles. The car has been used as a business proposition and also for pleasure, and I should judge about half the use was for pleasure. We think a car an absolute necessity on the farm where time is worth anything, and especially in the summer. A Rambler is about the best machine for staying in working order that I have seen, as we have had no trouble at all, not even a puncture. The fan belt broke loose once and broke the wind shield, and this with a few nuts and one bolt is the amount of our grief so far. Ours is a good roomy car, a very easy rider and the best all around machine for power, of its size, that is made.—Roy Johnston, South Mound, Kan.

COLORADO FRUIT FARM

FOR SALE OR TRADE

My elegant Fruit Ranch in Grand Valley, at Palsade, Colorado, is for sale at a figure much lower than tracts in same vicinity. I am so situated that I cannot care for it. I have over 1,000 full bearing apple and peach trees, eight years old. 7 room house, packing shed barn and cistern. 2 1/2 miles from Palsade 1/2 mile from a ten grade school, delightful climate, lovely home and a profitable investment. Price \$10,000. \$3,000 cash, and \$2500 in correct values; or \$5500 cash will handle this deal. You deal direct with me and save commission. Address

W. W. Bingham, 4501 Osceola St. Denver, Colo.

COMMERCIAL APPLE ORCHARDS

PAY 20% to 100% YEARLY

SAFEST, BEST, MOST PROFITABLE INVESTMENT EVER OFFERED

YOU CAN BE MY PARTNER

In the biggest, full bearing commercial Apple orchard in the world—ninety-six thousand and full bearing trees.

I OFFER \$1000 To be given to any charitable institution if any investment company will present as equally good proposition to the public. MY LITERATURE has new ideas; something for you to consider; something different from anything you ever read. IT'S FREE.

Send today for copy of "A MODERN GARDEN OF EDEN." A big money-maker if you have a few dollars to invest. JOHN H. DAVIS, 1270 First National Bank Building, Denver, Colo.

FOR SALE—COLORADO LANDS

Improved, Irrigated Farms, Cheap Lands, Fruit Tracts and City Property at prices that are right. Terms to suit.

C. C. COLE, Boulder Colorado.

Fine Stafford County Ranch

at \$25.00 per acre. Write for particulars.

A. L. McMillan, Stafford, Kansas.

FOR SALE—Three good houses; one five, one six, one eight rooms; one vacant business lot, easy terms; one store room 20x60.

Stock gen. mdse. inv. \$2,500. Reasons for selling, want to go where there is a high school. Address Box 27, Waldron, Kansas.

Do You Want To Sell Your Farm?

It is my business to help find buyers for farms. I charge nothing for telling you how I work. If you hire my help the cost is very little. Write me for my plan.

E. L. GARVER, Box 142, Topeka, Kan.

\$35 PER ACRE for 440 a. ranch; 3 mi. from town; well improved; best limestone soil. Other bargains. Write for list. T. B. GODSEY, Emporia, Kansas.

Mr. Small Investor Let me tell you how to make hand-

some profit on a few dollars invested each month in Plains, Kans., town lots. Price \$12.50 to \$50. Write me. Right now.

JOHN W. BAUGHMAN, Desk F, Plains, Kansas.

ANGUS CATTE

Allendale Farm, Savannah, Mo.

W. A. Holt, Prop.

Breeder of pure bred Angus cattle—a few choice young bulls for sale. Prompt answer to inquiries.

The Western Kansas Farmers' Conference.

(Continued from page 2.)

in KANSAS FARMER. For the first time one entire session of the meeting was devoted to women's work and in this addresses were given by Dean Mary Pierce VanZile of the Agricultural College; Mrs. John T. Burn secretary of the International Congress of Farm Women; Miss Elizabeth Agnew, Professor of Domestic Science in the Western Normal School; Mrs. Lilla Day Monroe of Topeka; and Miss Lillian Picken of Hays.

Resolutions were passed by the Western Kansas Farmers' Conference thanking the officers of the Experiment Station for their energy and efficiency in bring about the success of this meeting; suggesting to the Governor that western Kansas should be represented on the Board of Regents of the Agricultural College; recommending the subdivision of the 4,000 acres of the Hays Experiment Station into a number of smaller model farms; changing the name of the Western Kansas Farmers' Conference to the Kansas Dry Farming Association and making of it a coordinate branch of the International Dry Farming Congress; endorsing the work of the State Forester Chas. A. Scott, in the planting of windbreaks and the reforestation of the plains region of Kansas; authorizing the appointment of fifteen delegates to the International Dry Farming Congress and endorsing the First International Congress of Farm Women to be held at Colorado Springs on October 17 to 19 at the time of the International Dry Farming Congress.

Officers of the Kansas Dry Farming Association were elected as follows: Pres. E. D. Wheeler, Wakeeney; first vice president, E. C.



GALVANIZED ROOFING

Corrugated and standing seam, nothing as good for farm building, will last twice as long as shingles. Anyone can put it on. We can furnish sheets 4, 5, 6, 7, 8, 9, 10 and 12 feet in length. We cut hips and gables, with no extra charge. We also make barn ventilators and water tanks. Send for free catalogue prices and samples.

Walker Sheet Metal Co.

Council Bluffs, Ia.

Prather, Oakley; second vice president, F. S. Iddings, Monument; third vice president, J. C. Hooper, Ness City; fourth vice president, John Travis, Plainville; secretary, Prof. A. M. TenEyck, Hays; assistant secretary, Prof. C. C. Cunningham, Hays; treasurer, J. R. Chittenden, Hays. Executive committee: E. D. Wheeler, Wakeeney; A. M. TenEyck, Hays; R. C. Fisher, Plainville; J. S. Henderson, Collier; H. T. Laing, Russell; J. L. Cook, Gove; H. W. Chittenden, Hays.

Raise Calves Without Milk.

Thousands of farmers and dairymen have been raising calves without milk, for many years. Don't feed butter-fat to the calves. It is worth more to sell it as cream or butter. It is cheaper to raise the calves on the excellent milk substitute, "Big B" calf meal, manufactured and sold by the Brooks Wholesale Co., Fort Scott, Kan.

This calf meal contains no cheap mill-feeds, but is made of ten of the finest ingredients obtainable for the necessary quick and healthy growth of young calves. It has been proven thoroughly satisfactory for raising calves; also for young pigs. It can be had by ordering from the company above named. Prices: 100-lb. sack, \$3; 500 lbs., \$13.75. Prices are freight prepaid. Full directions are sent with each sack. Order a trial shipment.

A Handy Pump and Power Plant.

The need felt on every farm and country place for a regular supply of water, without recourse to the time-wasting device of pumping by hand, has led to a demand for pumping outfits driven by something more reliable than the wind. To offset the uncertainty of the wind a fairly large tank is required with a windmill, or else the windmill itself must be large. If, however, the tank may be filled once or twice a day, it need only be large enough, say, for two days' supply.

Such a tank can be filled by a small gasoline engine, costing two cents an hour or less to run, in not more than a couple of hours.

Besides running the pump, an engine has the advantage that it can supply power at any moment for a dozen other jobs about the farm. For example, the fodder cutter, corn sheller and feed grinder, the cream separator, churn and bottle washer, the laundry machinery and vacuum cleaner, the drill press, lathe and grindstone can all be run by one small engine, simply by planning the laundry, dairy, shop and feed house so that line shafts and belts may run to all of them. By utilizing mechanical power at the cost of a few cents an hour for this service, the time and energy of the hands are saved for more useful work.

My engine develops 1 h. p. and is the smallest of several sizes built by the same concern for small pumping and power outfits. Despite its small size, this engine is of very substantial build and capable of prolonged service. It consumes about 1 1/4 points of ordinary stove gasoline per hour when working under full load, but can be adapted to use natural gas if desired. The piston is 3 inches in diameter

with a 4 inch stroke, and the engine runs about 450 r. p. m. It has a centrifugal governor, a make and break igniter of standard type, and a mixing device operating on the float feed principle. The connecting rod is forged steel, the wrist and crank pins are bushed, and the workmanship generally is in keeping with that of the large engines of the same make. The engine is mounted with its cooling tank on portable skids, which occupy a floor space of 45 by 18 inches. The tank itself is 42 inches high. The engine is furnished complete with gasoline and water tank, muffler, battery, spark coil, wires and switch, sight feed oiler, set of wrenches, and an 8 inch driving pulley having a 6 inch face.

The pump jack is of the lifting type, with a separate brass lined cylinder shown lying between the skids and the pump. An air reservoir is built into the top of the stand to give a continuous flow.

The pump stroke is adjustable to suit the lift required, a 5 inch stroke being used for high lifts up to 200 feet, and a 7 1/2 inch or 10 inch stroke for lower lifts. On the shortest stroke, at 50 strokes a minute, the capacity is about 475 gallons an hour, and twice that on the 10 inch stroke.

The jack has tight and loose pulleys 12 inches in diameter, and is geared 6 to 1 to the pump. Fittings are provided by which a 1 1/4, 1 1/2 or 2 inch pipe may be used for the discharge. The piston rod is welded to the flat guide bar at the top, the pump cylinder is accurately bored, and the pump has a cage valve which permits a free flow of water. The pinion shaft and wrist pins are turned steel.

The complete outfit, boxed for shipment weighs from 800 to 1,000 lbs. The engine may be located anywhere within reasonable distance of the pump, and a belt run from engine to pump, or the engine may be belted to the lineshaft which runs the other farm machinery and a belt run from lineshaft to pump. If desired, a second pulley may be put on the fly-wheel nearest the observer, and a second belt to the lineshaft, leaving the pump directly belted.

The small engine carries the same guarantee as the large horizontal engine for factory use. It is sold in one unit with the pump at a price low enough to make it an important item in up-to-date farm equipment.—H. L. Towne.

Gasolene Pumping.

I would say this in connection that after several years consideration of what power I would introduce for the pumping and distribution of water to our feed lots and to our dwelling house and gardens I decided to introduce a gasolene engine to take the water from the great spring and put it about where I wanted it.

I would say that I introduced a 6 horsepower engine for the purpose of having sufficient power to saw wood and shell corn and to grind corn and cob in quantities sufficient to feed one car load of steers at a time.

We have also rigged the fanning mill or seed cleaner by extra counter shafts and are now cleaning our seeds, oats, wheat, clover, timothy or any other seed by gasoline engine power.

The pumping of water from our great deep spring and distributing it to our live stock would take the entire time of a strong man if he had to do it by hand.

As it is now a handy farm hand can soon start the gasolene engine and have water flowing through our quarter of a mile water pipes and pouring out in the various feed lots and in the water storage tank in the house.

We have placed our storage tank for irrigating the garden on top of our great outside concrete cellar 12 feet above the ground and 625 feet from the pump. This storage tank is 7 feet high and the supply pipe enters the top of the tank making it 19 ft. above the surface of the ground where the water enters the tank.

During the excessive hot spell with the thermometer at 100 degrees our pump operated by this gasolene engine delivers water in each one of the several feed lots keeping a dozen water tanks nicely filled with clean gold spring water, and this matter of filling these tanks is only a very light chore that any handy farm hand can quickly attend to.

Please do not understand that I am

advertising any gasolene engine, as the market is literally crowded with gasolene engines at very low prices each one claiming to be the best.

So there is no excuse why any farmer should be without something economical and handy in the way of a gasolene engine to pump water, grind feed, run the separator, run the fanning mill, run the circular saw and saw wood as fast as any good man can throw it away from the saw.

The day of the windmill as a matter of power for hoisting water or doing anything else has passed.

There are small pumping engines on the market for as small a price as \$35.00 or \$40.00.—Thos. D. Hubbard.

COMMENCEMENT AT K. S. A. C.

The history of the Kansas State Agricultural College is almost coexistent with the history of the state. Both were born during the stress of civil war and it is remarkable that the founders of this commonwealth should have devoted their first energies to the establishment of its great educational system at such a time when the horrors of the rebellion might be supposed to prevent that long look ahead so necessary for the future growth of the state.

Last week this college held the exercises of its 48th annual commencement and recorded the close of another year of successful accomplishment. Each of these years has passed into history with its record of growth not always in numbers perhaps, but in work done and the nearer approach to the objects for which the institution was founded.

Although the student body numbered nearly 2,500 and the graduating class approximately one-tenth this number and although its numbers and its possessions in land, buildings and equipment give to it the reputation of being the greatest school of its kind in the world, this greatness does not lie wholly, or even largely, in these things.

The real greatness of this college lies in the quality of the men and women it has trained; the advancement in human knowledge which it has made and given to the world, and the fact that it has always thrown its doors open to the farm boy and girl with the least possible restrictions.

Its greatness is an established fact and a matter of state pride, but this has been made possible only because it has kept "close to the grass roots" and remained the great college of the great people. Attempts have been made to change its course of study and increase the requirements for admission so that its students would be admitted only upon graduating from local high schools, but the wisdom which has characterized its management has prevented this and kept its privileges accessible to the farm boy or girl who would otherwise have been deprived of them.

The Kansas Agricultural College has supplied to the United States Department of Agriculture a larger number of experts than has that of any other state. Its alumni are numerous and represented in other colleges and experiment stations; in scientific pursuits in business and in agriculture, and, practically every instance, with successful careers behind them or in the making and most of these eminent useful citizens became such because of the greatness of this college in welcoming all who came to its halls with little restrictions as to previous training.

The exercises of the week were of the highest order and were conducted with a perfection of detail which reflected immense credit upon the present faculty. The inspiration to be derived from attendance upon these exercises, an inspection of the buildings and grounds, the work of the experiment station and the acquaintance with the personnel of the college and a loyal alumni are worth any farmer's time. They furnish an object lesson of what the state is doing for its greatest industry as well as for its most important class of citizens.

The dignitaries of our government from President down, should find it as easy, as natural and as dignified to return to their farms as they now do to continue in public office. The great Washington set the example and profited by it as have done all who have done the same.

FIELD NOTES

FIELD MEN.

Wayne Devine.....Topeka, Kan.
Jesse R. Johnson.....Clay Center, Kan.
W. J. Cody.....Topeka, Kan.

PURE BRED STOCK SALES.

Herefords.
Nov. 17-18—G. W. Newman, Emporia, Kan.

Poland Chinas.

Nov. 26—Ben. M. Bell, Beattie, Kansas.
Nov. 28—J. D. Willifong, Zeandale, Kan.
Nov. 28—B. M. Bell, Beattie, Kansas.
Nov. 28—J. B. Dillingham, Platte City, Mo.
Nov. 28—A. J. Swingle, Leonardville, Kan.
Nov. 28—L. R. McClarnon, Bradyville, Iowa.
Nov. 28—J. C. Salter, Jasper, Mo.
Nov. 28—S. A. Hobson & Son, King City, Mo.
Nov. 28—T. J. Dawe, Troy, Kan.
Nov. 28—A. R. Enos, Romona, Kan.
Nov. 28—W. H. Henss, Eldorado, Kan.
Nov. 28—Oak Hill Stock Farm, Esbon, Kan.
Nov. 28—S. N. Hodgson & Son, Parker, Kan.
Nov. 28—Geo. M. Hull, Garnett, Kan.
Nov. 28—W. E. Long, Meriden, Kan.
Nov. 28—J. E. Hartman, Elm, Kan.
Nov. 28—J. B. Bundy, Goodrich, Kan.
Nov. 28—Dietrich & Spalding, Ottawa, Kan.
Nov. 28—Loy Johnston, South Mound, Kan.
Nov. 28—Geo. W. Smith, Burchard, Neb.
Nov. 28—A. R. Rystead, Mankato, Kan.
Nov. 28—Herman Groninger & Sons, Bendena, Kan.

Nov. 28—W. F. Fulton, Waterville, Kan.
Nov. 28—A. P. Young, Lexington, Mo.
Nov. 28—T. J. Melsner, Sabetha, Kan.
Nov. 28—W. B. Van Horn, Overbrook, Kan.
Nov. 28—W. R. Webb, Bendena, Kan.
Nov. 28—Baker Bros., Butler, Mo.
Nov. 28—C. Halderman, Burchard, Neb.
Nov. 28—J. O. James, Bradyville, Iowa.
Nov. 28—H. Harter, Westmoreland, Kan.
Nov. 28—M. T. Williams, Valley Falls, Kan.
Nov. 28—H. B. Walter, Effingham, Kan.
Nov. 28—C. Graner, Lancaster, Kan.
Nov. 28—T. M. Willson, Lebanon, Kan.
Nov. 28—J. B. Bowser, Abilene, Kan.
Nov. 28—H. J. Griffiths, Clay Center, Kan.
Nov. 28—Verny Daniels, Gower, Mo.
Nov. 28—E. Klein, Zeandale, Kan.
Nov. 28—C. P. Palmer, Peabody, Kan.
Nov. 28—W. A. Prewett, Asherville, Kan.
Nov. 28—Young & Kimberling, Glasco, Kan.
Nov. 28—P. L. Ware & Son, Paola, Kan.
Nov. 28—Walter Hildwein, Fairview, Kan.
Nov. 28—F. W. Barber & Son, Franklin, Neb.

Nov. 28—A. P. Wright, Valley Center, Kan.
Nov. 28—W. J. Jones, Solomon, Kan.
Nov. 28—Miller & Manderschied, St. John, Kan.
Nov. 28—J. F. Ware, Garfield, Kan.
Nov. 28—George W. Roberts, Larned, Kan.
Nov. 28—T. J. Melsner, Sabetha, Kan.
Nov. 28—A. L. Albright, Waterville, Kan.
Nov. 28—J. H. Hamilton & Son, Guide Rock, Neb.
Nov. 28—A. C. Lobaugh, Washington, Kan.
Nov. 28—T. J. Charles, Republic, Kan.
Nov. 28—C. Graner, Lancaster, Kan.
Nov. 28—George M. Hull and Col. C. E. Bean, Garnett, Kan.
Nov. 28—W. E. Willey, Steele City, Neb.
Nov. 28—Oak Hill Stock Farm, Esbon, Kan.
Nov. 28—J. H. Harter, Westmoreland, Kan.
Nov. 28—A. R. Rystead, Mankato, Kan.
Nov. 28—R. M. Bunnell, Atchison, Kan.
Nov. 28—E. E. Logan, Beloit, Kan.
Nov. 28—W. A. Prewett, Asherville, Kan.
Nov. 28—C. W. Jones, Solomon, Kan.
Nov. 28—J. Hartman, Elm, Kan.
Nov. 28—L. R. McClarnon, Bradyville, Iowa.

March 6—T. M. Willson, Lebanon, Kan.
Duroc Jerseys.
Nov. 28—E. W. Davis & Co., Glenwood, Mo.
Nov. 28—E. W. Davis & Co., Glenwood, Mo.
Nov. 28—Pearl H. Pagett, Beloit, Kan.
Nov. 28—M. T. McBride, Parker, Kan.
Nov. 28—W. E. Monnesmith, Formosa, Kan.
Nov. 28—Grant Chapin, Green, Kan.
Nov. 28—Frank Elder, Green, Kan.
Nov. 28—Ward Bros., Republic, Kan.
Nov. 28—W. E. Monnesmith, Formosa, Kan.
Nov. 28—Geo. Phillips, Lebanon, Kan.
Nov. 28—Frank Elder, Green, Kan.
Nov. 28—Rhinehart & Son, Smith Center, Kan.
Nov. 28—W. C. Whitney, Agr, Kan.
Nov. 28—J. O. Hunt, Marysville, Kan.
Nov. 28—Thompson Bros., Garrison, Kan.
Nov. 28—Grant Chapin, Green, Kan.
Nov. 28—W. T. Fitch, Minneapolis, Kan.
Nov. 28—E. P. Flanagan, Chapman, Kan.

O. I. C. Swine.
Nov. 28—R. W. Gare, Garnett, Kan.
Nov. 28—Arthur Mosse, Route 5, Leavenworth, Kan.
Nov. 28—George O. Clark, Wilcox, Neb., and O. W. & E. Holtquist, Sacramento, Neb.
Sale at Holdredge, Neb.

Berkshires.
Nov. 17—Chas. E. Sutton, Lawrence, Kan.

Woodward, Okla., April 24, 1905.
CURRIE WIND MILL CO., Topeka, Kan.
Gentlemen—Find enclosed check for \$— to pay for 3-foot mill shipped me. Accept my thanks for fair treatment. Hoping I may be able to be of service to you in the future, I remain,
Yours Truly,
PETER ANDERSON.
P. S.—No better Wind-Mill made than the Currie Double-Geared.

Metal Roofing.
The Walker Sheet Metal Co., Council Bluffs, Ia., start an ad in this issue. of their Galvanized Iron Roofing. This company is doing a large business. In this line, having many customers in many parts of the country. They are turning out good goods for right prices and will be glad to send our readers full particulars and prices of all their products. Kindly mention this paper when writing.

Largest in Its History.
The 1911 class of 158 was the largest ever graduated from the Kansas City Veterinary College during the twenty years that have elapsed since it was chartered by the State of Missouri. Those twenty years have seen a wonderfully successful institution built up, for today there is no veterinary college in the world which is in any way so large in point of buildings or equipment, or that is quoted so universally as the Kansas City Veterinary College. This great college draws its students from all over the United States and is authorized by the government to grant degrees and send its graduates out equipped to practice intelligently every branch of Veterinary Science. The demand for men in this field of science, the U. S. army requires two veterinarians for each regiment of cavalry starting at \$1,100. A number of veterinarians are em-

ployed in the U. S. Bureau of Animal Industry as executive officers, investigators, veterinary inspectors, live stock agents and quarantine officers at \$1,400 to \$3,000 a year. These and many other positions are open to competent veterinarians. If interested write for the catalog.

OFFICIAL statement of the financial condition of the Bank of Richland, private bank, Albert Neese, Owner, at Richland, State of Kansas, at the close of business on the 7th day of June, 1911. Resources: Loans and discounts \$100,388.68; overdrafts \$532.76; expense account \$873.69; cash and sight exchange, legal reserve \$32,688.91. Total \$134,484.02. Liabilities: Capital stock paid in \$10,000.00; surplus fund \$10,000.00; interest \$3,315.75; exchange \$56.10; individual deposits \$57,684.01; certificates of deposit \$53,428.16. Total \$134,484.02. State of Kansas, County of Shawnee, ss. I Albert Neese Owner of said bank, do solemnly swear that the above statement is true; that said bank has no liabilities, and is not indorser on any note or obligation, other than shown on the above statement, to the best of my knowledge and belief. So help me God. Albert Neese, owner, Subscribed and sworn to before me this 12 day of June, 1911. Carl Thurber, Notary Public. (Commission expires on the 24 day of April, 1915.) To J. N. Dolley, Bank Commissioner, Topeka, Kans.

Kansas Wesleyan Business College.
We feel any notice we might write for this great Kansas institution and Prof. T. W. Roach, its president, and founder, is inadequate. Here at Salina is one of the greatest business colleges in America, with a yearly enrollment of more than a thousand students and graduates in most every country around the world. We have just finished turning through the 1911 catalog and influenced by its straight talk and facts about the institution, we urge every prospective student to send for this catalog. It will be worth your while. This catalog is the advance agent of one of the most reliable and progressive institutions within our state. Besides all the various business branches regularly taught here, we note a new departure this year to include a course in "farm accounting," surely a very important subject to readers of this journal. Prof. Roach is eminently capable of teaching this new branch. For 15 years he has furnished the office help for the Sherman Ranch. It contains 36,000 acres and usually require two bookkeepers and two stenographers to keep up the work. Mr. Sherman was recently appointed one of the regents of the Agricultural College. Lectures will be given at the Kansas Wesleyan Business College by professors furnished by the State Agricultural College in connection with the farm accounting course. Mr. Roach deems this branch so important that he has employed a special teacher for it.

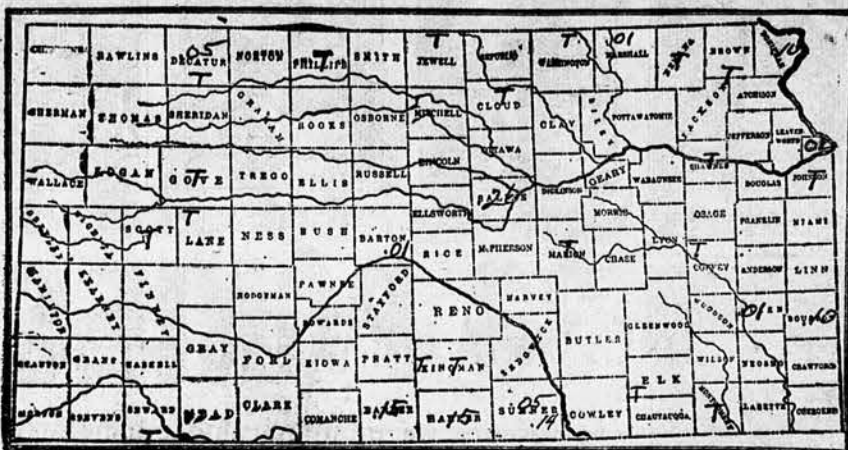
Leavenworth Business College.
This week the ad of the Leavenworth Business College begins on our school page. Inasmuch as this school was established back in 1887 and has continued the one big and only school of its kind in the city, words of praise for the instruction given here may be left out. It is an evident fact that this college could not hold the position of the only one in Leavenworth if it did not fill the requirements of modern business education. Some of the distinctive features of Leavenworth Business College are its location and railway facilities. Leavenworth is one of the scenic cities of Kansas and the west. It is one of the old Missouri River towns. Founded in 1827, by Col. Leavenworth. South of the city is the beautiful National Soldiers and Sailors Home. On the north is Fort Leavenworth, one of the largest and most important military centers in the U. S. Among the many objects of interest are the glistening cannon, military maneuvers, flying flags, scenic views, fine drives, and open air military band concerts. All free to the public. Students may enter the school and enjoy the beautiful, interesting and instructive sights which the state and nation has placed here. Leavenworth is the fourth largest city in Kansas, has street cars, factories, jobbing houses, etc., and is connected with Kansas City by trolley. All railroads in the state run to Leavenworth except the Frisco. The class and study rooms of Leavenworth Business College are large, light and airy and command a wide view of the city. Pleasantry rooms could not be provided anywhere. Send for the catalog.

Spaulding's Commercial College, Kansas City, Mo.
One of the oldest, largest and most successful institutions of learning in the West is Spaulding's Commercial College, Kansas City, Mo., which through its forty-five years' establishment has acquired for itself an unquestioned reputation as a progressive and reliable institution. The College is now occupying its own \$100,000 building which, in all its appointments and conveniences, is considered to be one of the finest and most complete in the United States. The College is offering for free distribution, its eighty page illustrated catalogue which contains a photograph of its founder and president and nineteen views of the College rooms, gymnasium and auditorium, also cuts of some of the silver and bronze medals awarded for its beautiful penmanship for over twenty years at the county and interstate fairs. It also contains full and complete descriptions of the book-keeping, shorthand, typewriting, telegraph and English courses of study and of the beautiful diplomas awarded its graduates. In addition to this it also contains a large number of highly commendatory letters from recent graduates. It also contains information regarding its free employment bureau.

Kansas Fairs in 1911.
Following is a list of fairs to be held in Kansas in 1911, their dates, locations and secretaries, as reported to the State Board of Agriculture and compiled by Secretary F. D. Coburn:
Allen County Agricultural Society: Frank E. Smith, Secretary, Iola; Sept. 5-8.
Allen County—Moran Agricultural Fair Association: E. N. McCormack, Secretary, Moran; Sept. 14 and 15.
Barton County Fair Association: Arthur E. Taylor, Secretary, Great Bend.
Brown County—The Hiawatha Fair Association: C. A. Monney, Secretary, Hiawatha; Sept. 5-8.
Butler County Fair Association: T. P. Manning, Secretary, El Dorado; Aug. 22-25.
Butler County—Douglass Agricultural Society: J. A. Clay, Secretary, Douglass; Oct. 4-7.
Clay County Fair Association: W. F. Miller, Secretary, Clay Center; Sept. 5-8.
Clay County—Wakefield Agricultural Society: Eugene Elkins, Secretary, Wakefield; Oct. 4 and 5.
Cloud County Fair Association: Fred W. Sturges, Jr., Secretary, Concordia; Sept. 19-22.
Coffey County Agricultural Fair Association: J. H. Rudrauff, Secretary, Burlington; Sept. 25-29.
Cowley County Agricultural and Live Stock

KANSAS CROP REPORT

Rain chart prepared by T. B. Jennings from reports collected by the Weather Bureau.

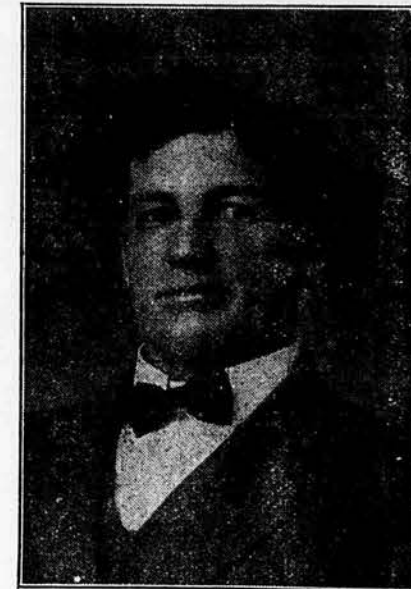


UNITED STATES WEATHER OBSERVER'S REPORTS BY COUNTIES.

SCALE IN INCHES: [Diagrams showing rainfall patterns: Less than .50, .50 to 1, 1 to 2, 2 to 3, Over 3, T. trace]

Allen—Soil very dry. Crops damaged some on uplands but not injured on low lands.
Barber—Oats hurt some on account of heat and dry weather. Corn growing nicely. Barton—Weather hot and dry. Some local thunderstorms without rain. Wheat harvest begun.
Bourbon—Dry and hot. Potatoes about ruined by dry weather. Must have rain soon or corn will suffer. Wheat harvest in progress. Grapes, apples, peaches and cherries look fine, but need rain.
Brown—Wheat harvest beginning. Corn plowing in progress. Needing rain.
Butler—Very dry and needing rain badly. Alfalfa doing nicely.
Chautauqua—No rain, everything drying up.
Cloud—Wheat harvest begun. Hot winds. Coffey—Wheat harvest in progress. Oats not forming any grain. Corn and flax need rain. Potatoes burned up.
Decatur—Corn growing slowly. Small grain gone. Potatoes drying up. First crop alfalfa being cut.
Dickinson—Wheat harvest in progress. Corn doing well. Other crops burning up.
Doniphan—Rain is needed.
Douglas—Wheat being harvested, good but thin stand. Fifty per cent of oats too short to cut with binder. Hay crop short. Corn well.
Elk—Hot, dry and warm. Wheat ready to harvest; poor crop. Oats not thrifty though standing drouth well.
Ford—Rain needed for all crops.
Franklin—Light shower on 15. Crops suffering for rain. Wheat harvest in with fine yield. Oats will be mowed and raked.
Gove—Hot, dry and windy. Rain badly needed for corn and all forage crops.
Harper—Very hot. Oats crop fair. Corn clean and in good condition, good rain badly needed.
Jewell—Dry weather continues. Corn standing well. Hard on potatoes. Wheat out but short stems.
Johnson—Hot and dry with no rain. Pasture, gardens, small fruit and potatoes gone. Wheat three-fourths crop. Oats too short to cut. Corn doing fairly well.
Kingman—Hot and dry, needing rain.

Saline County Agricultural, Horticultural and Mechanical Association: E. R. Tuttle, Secretary, Salina; Aug. 29-Sept. 1.
Shawnee County—Kansas State Fair Association: H. L. Cook, Secretary, Topeka; Sept. 11-15.
Smith County Fair Association: H. C. Smith, Secretary, Smith Center; Sept. 5-8.
Stafford County Fair Association: Wm. Cadman, Secretary, St. John; Oct. 3-6.



Col. Frank Regan whose cut is herewith presented is one of the wide awake young auctioneers of Kansas. Col. Regan has every qualification for a successful auctioneer. He is a man of powerful physique and has a strong and very pleasing voice. He owns and farms a good Jewell county farm. Raised in this part of Kansas he knows its resources and advantages. In his work on the block good nature is combined with sledge hammer arguments and Col. Regan never quits until he has succeeded in getting the last dollar. When arranging for sales and an auctioneer consider Col. Regan. When writing him kindly mention Kansas Farmer.

Peckhams Poland Chinas.
R. J. Peckham of Pawnee City is one of Nebraska's most successful big type Poland China breeders and has a fine lot of spring pigs sired by his good herd boars and out of outstanding brood sows. Mr. Peckham knows how to make the proper cross and is a genius at growing them out properly.



"Queenie" Stan J. Mallick, North Redwood, Minn.



"Evangeline," Gladys Houx, Marshall, Mo.



"Ned," George & Ruby Kobelin, Huntley, Mont.



"Sparkle," Eloise Savage, Watertown, S. D.



"Bonnie," Amye Kafer, Giddens, Ia.



"Fritzie," Marie & Margie Parker, Williamsfield, Ill.



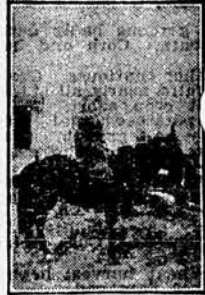
"Sonny," Elmer Hoth, Waukon, Ia.



"Tony," Maurice Monteideo, Minn.



"Billie," Hazel McMartin, Desmet, S. D.



"Don," Oliver E. Olson, International Falls, Minn.



"St. Nick," Marcella Conroy, Iowa, Iowa.



"Beauty," Bertram Eldridge, Bradford, Ill.



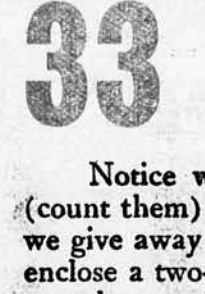
"Fairy," Lawrence Ulrich, Rosemount, Minn.



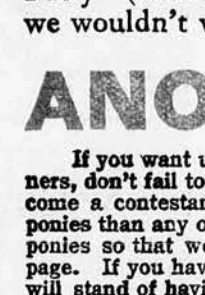
"Derby," A. Fitzsimmons, Prairie du Chien, Wk.



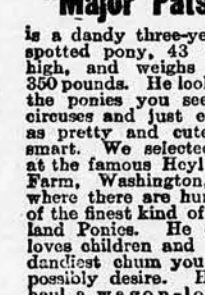
"Bob," John B. Corn, Jr., Little Rock, Ark.



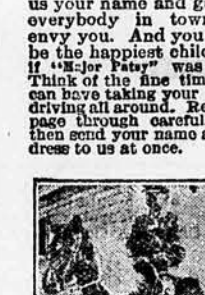
"Dandy," Grace Burrows, Delano, Minn.



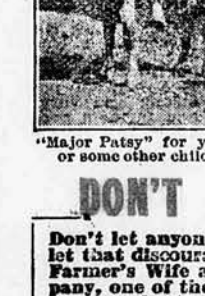
"Boss," Wilford Dearchs, R. 1, Burt, Ia.



"Jhn," Joey Edwards, Holington, Kas.



"Prince," Norris Nupson, Preston, Minn.



"Jerry,"



"Tom,"



"Captain,"

33 PONIES AND THE BOYS AND GIRLS WHO GOT THEM FREE

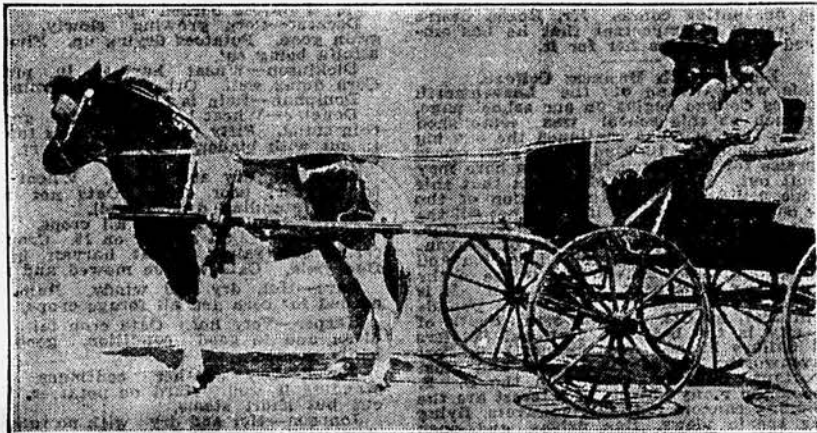
Notice we print the photographs, names and complete addresses of the whole 33 Ponies (count them) and the boys and girls who won them, which we wouldn't dare do if it wasn't true we give away real live Shetland Ponies and outfits. If you write these boys and girls (be sure to enclose a two-cent stamp for reply) they will tell you how lovely their ponies are, how easily they won them and how fairly we treated them. None of these boys or girls can compete for "Major Patsy" (which we are going to give to you or some other boy or girl as explained below) because we wouldn't want any one child to win two ponies and it gives you a much better chance to get him.

ANOTHER PONY FREE With Complete Outfit Shown Below

If you want us to give you a pony and have your picture printed here next time riding him with these 33 other pony winners, don't fail to send us your name and address today and we will tell you more about "MAJOR PATSY" and how to become a contestant for him. We can't send you a pony unless you send us your name and address. We have given away more ponies than any other publisher in the United States and we are going to give away a lot more. We want to give away enough ponies so that we can just completely cover a page this size with little pictures like these that you see around the edges of this page. If you haven't a Shetland Pony yet and want one, the sooner you send us your name and address, the better chance you will stand of having us give you "MAJOR PATSY" the very next pony we are going to give away to you or some other boy or girl.

"Major Patsy"

is a dandy three-year-old spotted pony, 43 inches high, and weighs about 350 pounds. He looks like the ponies you see with circuses and just exactly as pretty and cute and smart. We selected him at the famous Hoyl Pony Farm, Washington, Ill., where there are hundreds of the finest kind of Shetland Ponies. He dearly loves children and is the dandiest chum you could possibly desire. He can haul a wagon-load of youngsters along at a merry clip. If you send us your name and get him everybody in town will envy you. And you would be the happiest child alive if "Major Patsy" was yours. Think of the fine times you can have taking your friends driving all around. Read this page through carefully and then send your name and address to us at once.



WOULDN'T YOU LIKE TO DRIVE TO SCHOOL IN THIS OUTFIT?

The Outfit

And best of all we send free with "Major Patsy" the complete Pony Outfit as you see it in the picture. The pony-wagon is just the best we could buy for our purpose. We have given away so many that we know exactly what kind most boys and girls like. The handsome black harness with nickel trimmings looks just fine on "Major Patsy." No child, no matter how rich his parents may be, owns a more desirable pony outfit than this one which we are going to send free and pay all freight and express charges. This is surely the best chance you ever had to get a Shetland Pony, so if you haven't one and would like to have us give you one, send us your name and address right now.



"Major Patsy" for you or some other child.



"Brownie," Twyla Hart, R. 1, Sidney, O.



"Mac," Ruth Mead, Slater, Mo.



"Teddy," George Cooper, St. Cloud, Minn.



"Jack," Bernice Harvey, Creston, Ia.



"Trixie," Frank Harris, Billings, Mont.

DON'T LET ANYONE PERSUADE YOU THAT YOU CANNOT GET IT

Don't let anyone persuade you that you cannot get "MAJOR PATSY." If you have been unsuccessful in other contests don't let that discourage you because our plan of conducting pony contests is different from others. We are publishers of The Farmer, Farmer's Wife and Poultry Herald. The Banker or Postmaster in your town undoubtedly knows of Webb Publishing Company, one of the largest publishing houses in the United States, so we can well afford to give away so many ponies. Our contests are very short and you or some other boy or girl will get "MAJOR PATSY" and have him to drive to school and everywhere. We never heard of one of these boys or girls to whom we gave ponies until they wrote us they wanted one, which shows you how fair and square our pony contests are and that no matter where the winner lives, "MAJOR PATSY" will be sent without one cent of cost.

SEND YOUR NAME TODAY

Our ponies are given away so quickly that you will stand a better chance to get this one if you sit right down and write us a letter or a postal card or send the coupon opposite filled out with your name and address (either way will be all right). The work we require you to do to become a contestant for "Major Patsy" is something that any boy or girl who could drive a pony can do, and any child who becomes a contestant will win a fine prize, even if they fail to win "Major Patsy" which is the best prize of all.

BE SURE TO ADDRESS YOUR POSTAL CARD OR ENVELOPE

THE FARMER'S WIFE

309 WEBB BUILDING SAINT PAUL, MINNESOTA

Cut Out and Sign this Coupon or Copy on a Postal Card and Mail Today.

THE FARMER'S WIFE, 309 Webb Bldg., St. Paul, Minn.

Please send me Certificate of Entry, and pictures of "Major Patsy" and tell me how to take care of Shetland Ponies and feed them. I haven't any Shetland Pony and want to own "Major Patsy."

Name..... R. F. D.

P. O. State

Every Contestant a Prize Winner

All contestants will surely get a prize of their own choosing from a list which we will send you. Besides the Pony Outfit and Twenty-five Grand Prizes we shall offer Gold Watches, Base Ball Outfits, Gold Bracelets, Fountain Pens, Hand Bags, Flash Lights, Rifles, Shot Guns and dozens of other desirable prizes. If you become an enrolled contestant in this Pony Contest you can't lose. But don't let anyone persuade you that you can't win "Major Patsy" because you have the same chance as any other child.



"Duke," Dorothy Le Eagle, Kansas City, Mo.



"King," Vic J. Brubaker, Waupeton, Ia.



"Spotty," Mildred E. Madella, Minn.



"Daisy," Leta Hale, Orient, Ia.



"Laddie," Robbie E. ton, Madison, Ia.



"Mischief," Orville Monteideo, Minn.



"Captain,"

These three ponies were given away June 26. Winners announced July 5.