

# KANSAS FARMER

NEBRASKA MISSOURI  
OKLAHOMA

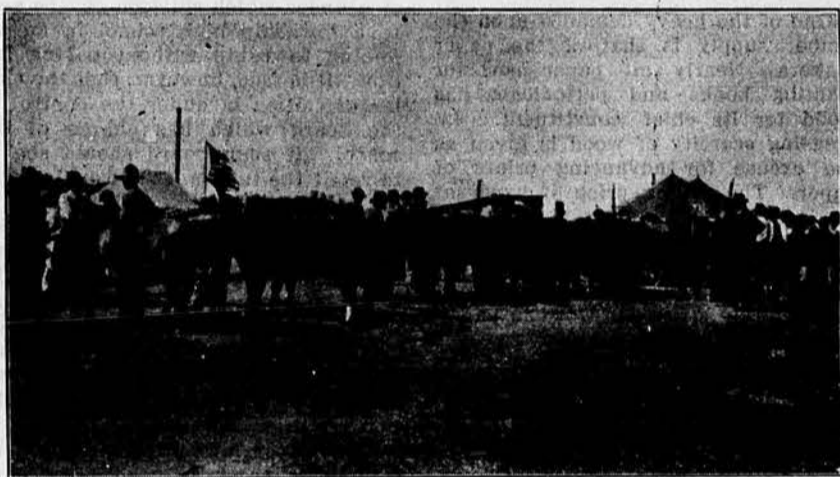
Volume XLV. Number 39

TOPEKA, KANSAS, SEPTEMBER 26, 1907

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**THE AGE OF GREAT DISCOVERIES.**  
The great discoveries have not all been made. On learning of the various epoch marking discoveries which have benefited the human race, it should not be assumed that the world has come to an end of this kind of development. For three quarters of a century thinkers, and inventors, have been busied with discoveries as to electricity, although the foundation facts on which their developments depend were worked out and plain-

modern scientist. If he has been in error, he welcomes above all things a correction. Among the tenants thought to have been well established was that of the indestructibility of matter. Changes of state of matter through the solid, liquid, and gaseous forms, and their dissolution, changes of properties through combinations, have long been recognized, but it has been a cardinal doctrine that matter is neither created nor destroyed by any agency or by any process



Cattle-judging at the Hutchinson State Fair last week—A snap shot by the Kansas Farmer man.

ly stated during the earlier years of the last century.

True, the physical sciences have made great advances in the last 100 years. Discoveries have been numerous; verifications and discoveries have been rigorous; systems have been elaborated, and theories have been put forth with great confidence in their correctness. An indirect benefit from all this has been the development of investigators and thinkers trained to exactness and to fidelity to the truth. Prejudice, tradition, doctrine, and dogma have no place in the mind of the

observable by man. That heat, light, and electricity are developed during observable changes in the combinations of matter—as in the burning of fuel, and in various other chemical reactions—and that these manifestations may be made to a considerable extent interchangeable with each other is not strange to the well informed person of the recent past. Effects of these imponderables upon matter have been common knowledge.

But, now comes radium, a newly discovered state of matter—may be an element—and behaves in such a manner that scientists seem to conclude

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of hastening the radial transmutation of matter into energy to such an extent as will render obsolete all other sources of power, heat, light, and electricity; into energy which will do the work of the world so much better than it was ever done by animal power, by water power, or by heat power converted into steam, that the generation using the energy from the new source will look with comparison upon the record of the crudity and consequent hardships endured by their ancestors during the opening years of the twentieth century.

Probably the human race is but at the beginning of the era of great discoveries and of their application to the benefit of mankind.

KANSAS GETS THE 2-CENT PASSENGER RATE.

It is now reported that the presidents and the legal advisers of the several railroads which do business in Kansas have decided to adopt in this State the two-cent passenger rate ordered by the railroad commissioners, the same to be abandoned should the courts not uphold the laws of Nebraska and Missouri establishing the two-cent rate for those States.

The wisdom of this course on the part of the railroad officials is unquestionable. Had Kansas people been forced to continue paying a higher rate while their immediate neighbors enjoy the two-cent rate, there would have been created in this State a dangerous enmity to the management of the common carriers, which would in the near future have become manifest in drastic legislation or in violence to the properties of railroad corporations.

PAPER FROM STRAW.

One of the heavy demands upon the timber supply is that of the paper makers. Nearly all paper used for printing books and periodicals, has wood for its chief constituent. Increasing scarcity of wood is given as the excuse for advancing prices of paper. The selling price of paper at the mill is now about 18 per cent higher than a year ago for the grade of paper on which THE KANSAS FARMER is printed. It is now proposed to substitute straw for wood in paper-making. The use of straw for this purpose is old, but the product has been a coarse wrapping paper. But the material of which straw is composed is almost identical in composition with wood. Doubtless, with proper handling, the millions of tons of straw which are practically waste material in the wheat belt may be made into white and well-finished print paper, having, possibly, more strength than that made from wood.

One of the essentials for the production of clear, white paper is clean water and plenty of it. In the great valleys of Kansas, this is abundant in the underflow and is readily obtained. Let the paper-mills be established in Kansas.

MUST COMPETE WITH THE KANSAS FLOUR.

According to the Elevator and Grain Trade, of Minneapolis, Minnesota, the millers of the Northwest have a new source of trouble in the propensity of producers or dealers to mix Durum, or Macaroni, wheat with the ordinary wheat of the region. The Elevator and Grain Trade quotes a local paper at Wells, Minnesota as advising farmers to "cut it out until our country gets so anyone can't raise anything else."

"But," continues the Elevator and Grain Trade: "The farmer probably will not take this advice. He will raise both kinds, because the Durum yields well, and the spring wheat pays; and he will mix the Durum with the Five or bluestem to fool the elevator man, and call him a robber because under the rules, his mixture will be graded Durum and be subject to a heavy discount, which, from now on promises to become year after year a greater one. The northwest is raising now more Durum than the country can consume in making Macaroni and other pastes, or find a market for; and the English millers, our best cus-

tomers, will not take it, excepting a few who use it in 'very small doses,' as a correspondent of Milling, Liverpool, says. To the miller, Durum is objectionable, being of a hard, flinty nature and absorbing a large amount of power in grinding; the flour has a yellow tinge that is deemed 'most objectionable;' while the gluten, the strong feature of the flour, for which it gets what credit it has, is by the same authority, declared to be 'doubtful,' sometimes making a 'stringy dough of little promise for bread making.'

"So, at their best, the Durum wheats are now looked upon with more or less suspicion at home and abroad; and if the mixing the Wells miller complained of shall become general, it will certainly reduce the selling value of spring wheat everywhere and of the spring wheat flour on our eastern markets where it meets the hard Kansas wheat flour, which has not yet been contaminated with Durum."

So, the Kansas wheat flour with its excellence is what gives our Northern brethren the nightmare.

HIGH SCHOOL TUITION.

EDITOR KANSAS FARMER:—We live in Sumner County and are no doubt entitled to the benefits of the county high school, but in the adjoining township there is a township high school. Can we enter this township high school without the payment of tuition? I understood that there was some legislation last session which has a bearing on this case. Will you please inform me along this line? W. A. S. Sumner County.

So far as appears from a somewhat minute examination of the complicated mass of Kansas Statutes concerning schools, there seems to be no provision under which children can be sent to a township high school in an adjoining township without paying tuition. It is true, however, that the matter of tuition is under the control of the board which has charge of the school. If such board should see fit to remit the tuition, that would probably end the matter.

The editor is not prepared to say positively that there is not, concealed, somewhere in the intricacies of the many laws enacted concerning schools in Kansas, a provision such as this correspondent has heard of. It may be worth while to run down this understanding and ascertain the foundation for it.

The school laws of Kansas are so complicated and they overlap each other in such a way that their provisions are obscure to such a degree that the ordinary citizen can not be certain of their meaning.

A great benefit would be conferred on the State, if some competent person would draft in simple form a set of school laws containing the needed provisions well classified, plainly stated without repetitions or contradictions. The legislature ought to be exceedingly willing to pass such laws and repeal all of the complicated enactments now in the books.

Congressman Wm. W. Crooks, of Long Island, N. Y., who introduced a bill in Congress directing the display of the stars and stripes on all postoffices, is pleased at the advanced ground taken by Kansas in enacting a law that the flag be displayed on all school-houses.

The increasing scarcity of timber adds interest to the announcement of the engineers of the Pennsylvania Railroad that the experiments in the use of steel ties will be discontinued for the reason that such ties have proven unsatisfactory. Nothing but wood seems adapted to the peculiar and severe demands made upon railroad ties. The efforts of the future will be directed to the production and the protection of timber suitable for ties and to prolonging the life of the tie by chemical treatment and by other means.

"Modern Training in Horticulture," is the title of a booklet issued by the Massachusetts Agricultural College. This is an announcement of a special

school in horticulture under the leadership of Prof. F. A. Waugh, a Kansas man and graduate of the Kansas Agricultural College. Prof. F. C. Sears, another Kansas man is professor of pomology. No doubt this school will do its work with a thoroughness that will mark an era in horticultural instruction in America.

THE INTER-STATE FAIR AND EXPOSITION.

As we go to press word comes that the Inter-State Fair and Exposition at Elm Ridge, Kansas City starts off in fine shape. There is a bewildering array of exhibits and attractions of various kinds, the largest number of race horses ever brought together in the West, and a fine display of live stock. This is dairy week and no beef cattle are shown until next week. There are more than 100 dairy cattle now on the grounds, about an equal number of hogs, a good exhibit of sheep and poultry, a whole tent full of shetland ponies, and a large number of carriage and saddle horses.

Next week will see more than 100 draft horses and about 300 beef cattle besides the fat stock. The crowd on the opening day was a good one though the Fair had to compete with one of the largest circuses in the United States.

Fine weather, numerous and attractive exhibits, beautiful grounds, and large crowds of people, seem to make the success of the Inter-State sure.

THE KANSAS STATE FAIR.

At Hutchinson, Kans., during the week beginning September 16, the State Fair Association held its most successful exposition. For several years this association has been holding fairs, each of which was more or less successful, but this year they attained their greatest success.

A number of new buildings, and other improvements have been added to the grounds since last year, and the grand stand almost doubled in capacity. The weather was perfect during the entire week and the people came in crowds that were larger than ever.

In the agricultural department the showing was not nearly so large as usual. Not because there was not abundance of material, but because no one seemed to be responsible for its collection and exhibition. There were no county or other large exhibits. Those on display were small and made by individuals, though the quality was excellent. It was noted that the winner of first prizes on cantaloupe, celery, and tomatoes, and second prize on corn, is a graduate of the Kansas State Agricultural College.

In horticulture the display was but scant as is true at all of the western fairs this year. A very interesting horticultural exhibit was made by the Agricultural College and this, with the very handsome display made by the local First National bank, of corn grown by boys and girls in its corn-growing contest, made the most attractive exhibits in this department.

One quarter of the agricultural hall was occupied by the apairy exhibit made by the members of the Kansas Bee-Keepers Association. This was the largest ever made in the State.

The poultry exhibit was not very strong, though the quality was generally good. About 750 birds were on exhibition, including a large and varied show of wild birds.

The State Agricultural College again showed the milking machine in operation, and this is a never ceasing wonder which attracted large crowds daily. Three hand separator exhibits completed the showing in this building.

The exhibits of agricultural machinery were both numerous and large. In fact, Hutchinson has come to be one of the great show places for this class of exhibits. It is now second only to the Nebraska State Fair in this respect; everything from the giant thrashing machine to the tiny gasoline engine seemed to be here. It was a good show and alone was worth many times the price of admission.

In live stock, Hutchinson has always been strong and never more so than this year. From the magnificent

that it is gradually and constantly, though very slowly being destroyed as matter, and is so changing into energy. And is all matter thus changing to energy, and flying away, as light flies, into the unmeasurable—the infinite—depths of space? The amount of energy into which a small particle of matter thus seems capable of resolving is great in comparison with the amount of matter destroyed.

And is there ever, has there ever been, anywhere in all the realms of space and time a reassembling of this energy in the form of matter? Moses wrote: "In the beginning God created the heavens and the earth." This seems to be about as far back as man has ever been able to get. In formulating this statement, Moses had the advantage of "all the learning of the Egyptians," learning of which only fragments have come down to modern times. We may conceive that energy, antedating matter, transformed into matter, and, under the forces which we find associated with matter wherever observed throughout so much of the universe as we are able to observe, changed to forms as we know them, still works changes from age to age, from year to year, from day to day, from moment to moment, but whether matter was thus created by and from energy we can only guess. It is, however, more than a guess that matter transforms to energy and its eventual disappearance as matter is a theme that is strongly hinted by thoughtful writers.

But what has all this to do with practical affairs?

True, radium has been obtained in but minute quantities. Radial translation of substances, other than radium, into energy is so slow as to be inappreciable. It may be remembered, however, that when Michael Faraday discovered the possibility of the production of the electric current by moving a closed wire circuit in the vicinity of a magnetic pole the current produced was so inappreciable that it could be detected only by the use of the most sensitive apparatus. But now this method is used to produce currents that drive ponderous railroad trains. The day of small beginnings in knowledge are not to be despised.

Possibly it is the infant in its mother's arms, possibly the little child just starting to school, possibly the young man or woman entering college, none can tell who shall discover a method





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1st Prize. Piano, Pony Outfit or Furniture.  
2nd Prize. \$100 In Cash.  
3rd Prize. \$50 In Cash.  
Next five.....

A beautiful 45-in. Nickel-Plated Heating Stove.  
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Next twenty-five. A beautiful set of dishes as described, shown in large picture in our catalogue.

Clip coupon below and we will send you our complete catalogue.

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## Do You Want a Shetland Pony, Cart and Harness?

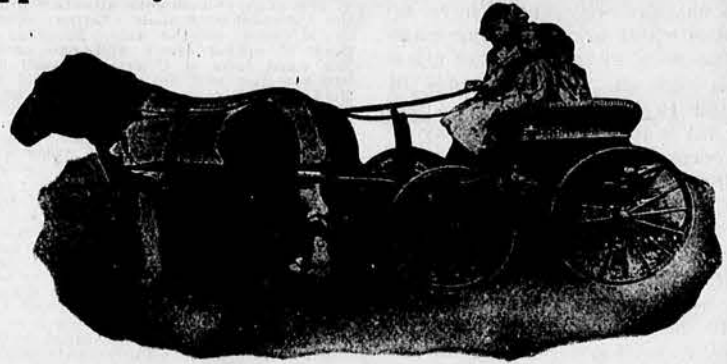
### Dining-Room and Bed-Room Outfit?

### Do You Need Cash?

Then Here is Your Opportunity!



This Elegant Piano Free to Persons Sending Biggest Club.



This Beautiful Pony, Cart and Harness Free.

We will give absolutely free to the person who secures the most subscribers for us during October their choice of the above grand premiums.

SUCCESSFUL FARMING is a handsome, beautifully illustrated, up-to-date agricultural paper. Everybody who sees it is wonderfully pleased with it. Every person you meet who is not already a subscriber will give you their subscription. Why shouldn't they when they can get this great paper a whole year for 25c.

**Here is Our Offer:** We will give the Piano, Pony Outfit or Furniture to the person sending us the most subscribers, new or renewals, during October. Every letter must be mailed on or before 12:00 o'clock midnight October 31st.

To the person sending next largest club we will give \$100.00 cash. Next largest club \$50.00. Next five a beautiful 45 inch Heating Stove. Next ten \$5.00 each. To the next twenty-five we will give a beautiful set of Dishes.

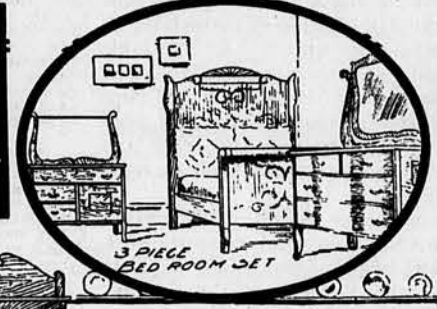
Clip the coupon below and we will send full description with large picture of the Piano, Furniture, Stoves, Dishes, etc.

These are all in addition to the GRAND REWARD PREMIUMS below. Remember you get any premium below, and a large number of others offered in our complete catalogue, for the number of subscribers stated, and in addition we give the big list of special prizes above for biggest clubs. Clip coupon on bottom of page, fill in your name and address. we will send you sample copies of our paper and our complete offer. Send 25c for a year's subscription for yourself if you wish and it will count as one in your club, but you don't have to send your subscription unless you wish. Don't fail to get complete description of our big prizes and a copy of our big premium book showing cuts and descriptions of hundreds of free presents. Write today. Address SUCCESSFUL FARMING, Des Moines, Ia.

**Grand Extra Reward Presents!** To any person sending us a club of subscribers we will give presents as described below for the number of subscriptions stated, and in addition to this your clubs are entered in competition for the grand prizes described above. Surely this is a liberal offer, but we want all your neighbors to know about SUCCESSFUL FARMING and will pay well for your help



100 PIECE DINNER SET



3 PIECE BED ROOM SET



COMPLETE DINING ROOM FURNITURE

Dishes, Bed Room, Dining Room Furniture, All as One Premium Free.

#### SCHILLER PIANO, FREE!

This beautiful upright, mahogany-finish, Schiller Piano absolutely free! If you get us the biggest club of 25c subscribers during October you can have it. Clip coupon below and we will send you complete description and tell you all about our offer. The Schiller is standard everywhere. The Musical Department of Drake University has twenty-eight of them. Simpson College over a dozen of them, and they are in practically every musical college in Iowa. This is a beautiful instrument and one any home may well be proud of.

#### PONY, CART AND HARNESS, FREE!

This beautiful Pony, Cart and Harness will be given absolutely free to the person sending the biggest club during October if they would rather have it than the Piano. Write us for complete description and actual photograph taken from life. This is a beautiful outfit, all complete. It can be yours by a little work. Clip the coupon below and we will send you full description and our complete offer. Guaranteed to be absolutely safe. A really beautiful outfit.

#### DISHES, BED ROOM, DINING ROOM FURNITURE AS ONE PREMIUM FREE!

This beautiful Furniture absolutely free! You can have this instead of either the Piano or Pony Outfit if you wish. It is a complete Dining Room and Bed Room Outfit. A China Closet, complete 100-piece set of beautiful China, Dining Room Table, six beautiful Chairs, a Bed, Dresser and Wash Stand all to match. All this for the biggest club sent during October. Clip coupon below and we will send you a beautiful picture of this Furniture and copy of our complete offer. Do it to-day.

## Get a Copy of Our Big Free Catalogue.

In addition to giving the above big prizes for biggest clubs sent during the month of October WE GIVE YOU A PRESENT FOR EACH AND EVERY SUBSCRIBER YOU SEND. Our catalogue contains hundreds of presents, and gives Guns, Watches, Telescopes, Dishes, Books, Games, Rings, Fancy Work, Etc., Etc., a present for everybody. The following are but a few. Send for complete catalogue.

In case of a tie, as many prizes as there are persons tied will be taken, their value added together, and the money divided equally.

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**Big Magic LANTERN FREE**



**MAGIC LANTERN FREE.**—We give this Magic Lantern and thirty Colored Pictures with each Lantern for eight subscribers. This is a beautiful Lantern and one every boy and girl can have a world of fun with. Free for a club of eight subscribers. Send for our complete catalogue showing hundreds of presents.



**A SELF-FILLING FOUNTAIN PEN.**—We use this pen in our own office and it gives perfect satisfaction. We can give a pen for a smaller club, but not so good a pen as this one. You will be highly delighted with this pen. For a club of 8 subscribers at 25c each.



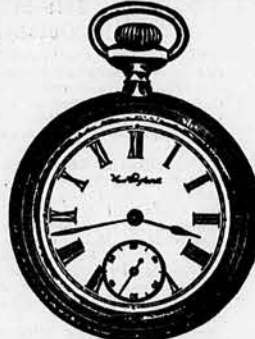
**A GENUINE STEVENS' RIFLE**  
This rifle is made by the well known Stevens Company and is one of the best and strongest small Rifles made by this or any other company; shoots 22 long or shorts, is take down and in every way a first-class rifle. This must not be confused with the cheap guns. Sent free for fifteen subscribers.

**SINGLE BARREL BREACH-LOADING SHOT GUN.**—We have used over 2500 of these guns and never had a kick. A genuine Stevens take-down, breach-loading, 12 gauge, choke bore, shell extracting, 30-inch single barrel shot gun. We cannot show a picture of it here, but it is shown in our complete catalogue. Free for a club of thirty-five subscribers.



**SPECIAL RAZOR STEEL TOOTH-PICK KNIFE.**—This splendid Razor Steel Tooth-pick Knife is two bladed, one small one and one large clip blade. Each blade is hand forged from best quality crucible steel, brass lined, German Silver bolster, cap and shield; lasts a lifetime. Will be given free for a club of six subscriptions at 25c each, \$1.50 in all.

**SILVERWARE.**—We can furnish spoons, knives and forks, creamers, butter dishes, or anything you want in the silverware line. See our complete catalogue. The above spoon is a beautiful, fine quality, genuine Rogers' A No. 1 plate. We will send six spoons for a club of seven subscribers. Remember these are warranted. We can give you a set of cheap metal spoons for only one subscriber, but they are not Rogers'. We will send you a set of six of above spoons for seven subscribers and guarantee you will be pleased. Send for complete premium list. Clip coupon below.



**BEAUTIFUL WATCHES** We show a number of different watches in our complete catalogue. You ought to see it. Clip coupon below. The watch shown here is an Ingersoll. It is guaranteed and a reliable watch. We have not been able to find its equal at anything like the price. Gentleman's size will be sent postpaid on receipt of seven subscribers. Lady's Midget Watch—We have a beautiful lady's size watch we will send postpaid on receipt of twelve subscribers.

**HAT PINS.**—Nothing adds more to a hat than a neat, tasty, up-to-date Hat Pin. We have a great variety and will select what we think is the very nicest pin according to the size club you send. We can send a beautiful, gold filled, signet, extra long stem for only two subscribers. We can send a still better pin for three subscribers, and a perfectly beautiful, extra heavy, gold plated, warranted pin for five subscribers.

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Some of the articles are—Skates, knives, bracelets, rings, glassware, clocks, electric engine, scroll saws, pillow tops, lace curtains, mail box, music rolls, post cards, stereoscopes, rugs, sewing box, stamping out fit, stationery, etc., etc  
These are only a few. Send for our complete catalogue.



**LADIES' COMBS.**—We can supply some really handsome combs. We have a very large variety of patterns and prices to select from. We can give small mountings for two subscribers, large mountings for four subscribers, and still larger and more expensive combs for any size club you send up to twelve subscribers. Send in the club and tell us the style comb you want and we can supply it from a large stock. More cuts and designs shown in our catalogue. Clip coupon below and we will send it.

**BOOKS.**—We give a number of very valuable books as premiums. Our complete catalogue gives full descriptions of a large number of books. Write for it.

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Gentlemen—  
Send a copy of your complete Premium List and tell me how I can earn my choice of a large Pony Outfit or Furniture.

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Post Office..... State.....

I am going to work for the..... Premium.

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**Address all letters to SUCCESSFUL FARMING 216 Tenth St., Des Moines, Iowa.**









than is secured by splitting the ridges at planting time. Perhaps, also, there is a tendency to accumulate moisture in the bottom of the listed furrows which, together with the warmer soil, favor a rapid germination and strong, early growth of the corn. This was observed to be the fact in 1905 and 1906 when these comparative tests were made, that the corn planted in the early listed furrows started as quickly as surface-planted corn and was several inches higher on June 1 than the listed corn planted in new furrows. If the ground has become packed with heavy rains, or if the corn is planted late and the land requires cultivation, better split the ridges when the corn is planted.

yields, especially if the season is wet. Corn planted in cold, wet soil in the bottom of listed furrows is placed at a disadvantage and often makes a slow, backward growth during the early part of the season, but it has the advantage of surface-planted corn in the latter part of the season, especially if dry, hot weather prevails, since the roots of listed corn lie deeper in the soil, and are protected with a thicker soil mulch than the roots of surface-planted corn, which are often exposed above the surface of the ground and can only be covered by hilling the corn, which removes the soil from between the rows, leaving the deeper roots exposed and the ground furrowed and open, favoring

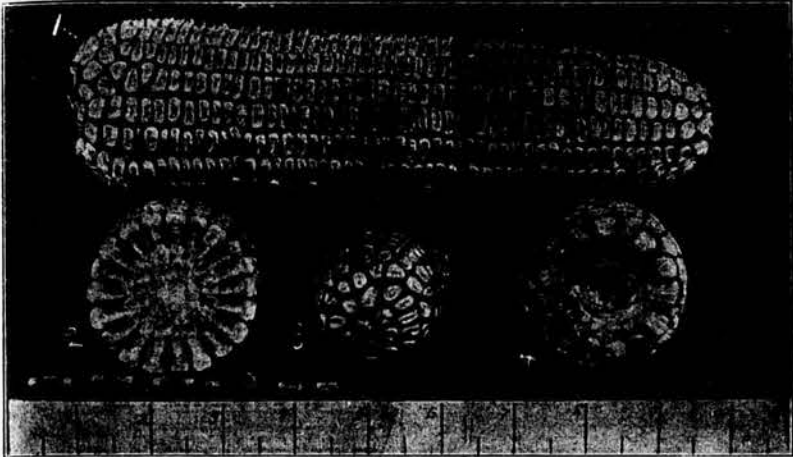


Fig. 1—Mauley.



Fig. 2—Silvermine.

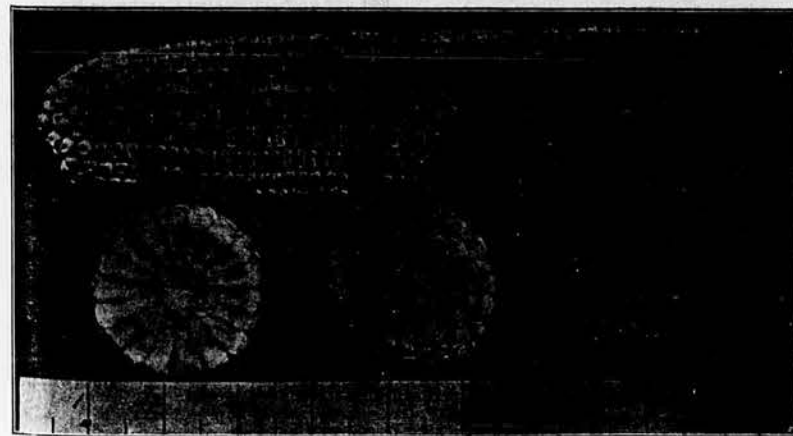


Fig. 3—Boone County White.  
PLATE II—TYPICAL EARS.

The early listing certainly puts the ground in excellent condition to catch and store the rain and to conserve the moisture already in the soil, and the listing may be done any time during the fall, winter, or early spring. The practice has been to plant the corn in listed furrows, crossing the rows of the previous planting.

**LISTING VERSUS SURFACE PLANTING.**  
Comparing the methods of planting, as an average for the four seasons the surface-planted corn has yielded 6.65 bushels more corn and 469 pounds more stover per acre than the listed corn. This result is largely due to the greater yields from the surface planting in 1903 and 1904—two very wet seasons. The listing method of planting is best adapted for light, warm soil, dry seasons, or dry climate. Also, listed corn may usually be more cheaply planted and cultivated than surface-planted corn, and is preferred in western and central Kansas; and when large areas are cared for with a small amount of labor, listing may be preferred in eastern Kansas, but surface-planted corn, in a well-prepared seed-bed, may give the larger

evaporation of soil moisture. Listed corn is more easily cultivated and kept free from weeds than surface-planted corn, and also has the advantages which result from level culture, since the plan is to gradually fill the furrows during the season, leaving the ground level at the last cultivation.

**SURFACE PLANTING WITH FURROW OPENER.**

By the use of the furrow opener attachment to the surface planter some of the advantages of listing corn may be secured with less of the disadvantages. One of these attachments, the Dempster disk-furrow opener, has been tested during the past two years in comparison with surface-planting corn. In 1905 this trial was made in three different fields, with three different varieties of corn, with the resulting yields:

As an average for the three trials the corn planted with the Dempster attachment yielded 4.91 bushels more grain per acre than the listed corn and 1.3 bushels more grain than the surface-planted corn. The yields of stover were not determined except for

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the Silvermine corn, and were similar for all plots.

early plowing and early listing apparently saved more water than the disk-

soil, while the listed plots had gained somewhat in the moisture of the deeper subsoil. The shallow plowed ground lost more moisture than the check plot, while the deep plowing gained very slightly. This apparent loss of moisture from the plowed ground might be accounted for on the plots in which the corn was surface planted by reason of the ranker growth of corn on these plots at the date the last set of samples was taken.

Although there are some irregularities, yet the results of all the moisture determinations prove that early cultivation does conserve soil moisture, and the larger yields, especially in the season of 1905, may, in part at least, be attributed to the effect of

HOW PLANTED.	Yield of corn per acre.			
	Hildreth bushels.	Silvermine bushels.	McAuley bushels.	Average bushels.
Dempster disk-furrow opener.....	52.30	48.92	58.50	53.24
Surface planted.....	46.41	45.68*	63.73	51.94
Listed.....	43.90*	43.21*	57.88	48.33

\*Not planted in this field, but yields calculated by surface planted check in another field; preparation of seed-bed trial.  
†Average of all cultivation plots.  
All the ground, except that planted with the lister, was plowed in preparing the seed-beds for the above plantings.

Through an accident the correct yields were not secured from this trial in 1906. However, the notes taken during the season indicated that the disk-furrow planting would again produce the largest crop. It was noted each season that the corn planted with the disk-furrow openers sprouted quicker and made a more vigorous, early growth than the surface-planted corn, and this ranker growth was observed throughout the season. There is an advantage, also, in cultivating the disk-furrow planted corn, similar to that secured by listing, in that the weeds in the row are more easily covered and destroyed by the early cultivation than is the case with surface-planted corn. Also, there may be a similar advantage, as obtained by listing, in that the corn roots lie relatively deeper in the soil and are covered with a greater depth of mellow soil at the last cultivation when the corn is laid by. It is well to remember, however, that when the furrow openers are used it is necessary to plow the land and prepare a good seed-bed the same as for surface planting, and also that it requires four horses to operate the corn-planter with the furrow-opener attachment.

Experiments carried on at this station in 1892-'96, as reported in Bulletin No. 64, gave results favoring listing as compared with surface planting as follows:

Listing, average yield, 29.47 bushels per acre.  
Surface-planting, average yield, 27.49 bushels per acre.

CONSERVATION OF SOIL MOISTURE BY EARLY CULTIVATION.

Some study of the moisture content of the soil of the several plots has been made each year in connection with these experiments. In 1903 soil samples were taken April 1, before the preparation treatment was begun, and again May 9, soon after the corn was planted. No appreciable saving of moisture was observed from any of the early cultivation treatments except the plowing, which showed a gain of 2½ per cent of water in the first foot of soil and 0.87 per cent in the first six feet, compared with the check plot. All of the treated plots made slight gains in the surface foot of soil.

A more complete soil moisture test was made in 1904, when samples were taken March 14, May 2, June 29, August 2, and September 28. Little difference was observed in the moisture content of the several plots from the later samplings. Comparing the first two sets of samples, it appears that the treated plots, compared with the check plot, gained in moisture as follows:

Early Treatment	Gain in moisture, per cent.
Disked.....	.42
Disked-harrowed.....	1.14
Listed-ridges split at planting.....	3.82
Plowed-harrowed.....	1.56
Plowed-harrowed, surface planted.....	1.98

These gains in moisture occurred usually in the first and second feet of soil. However, the early listed ground showed a large gain of moisture also in the third foot of soil. The

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ing. No moisture samples were taken from the plots in the spring of 1905, and the later samplings showed

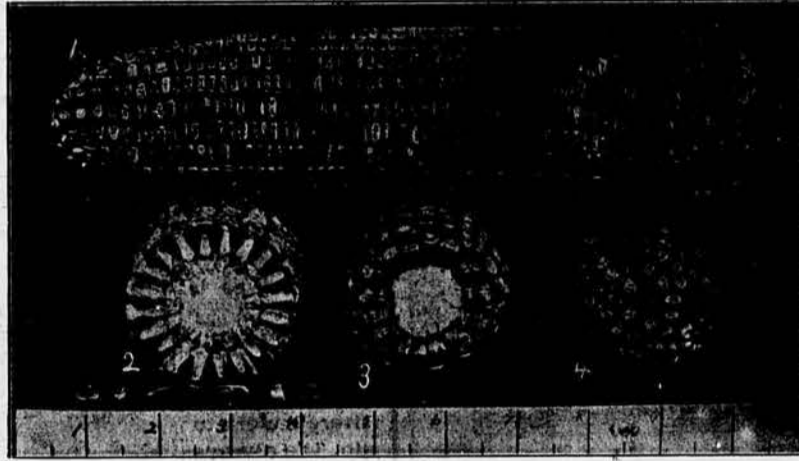


Fig. 1—Hildreth.

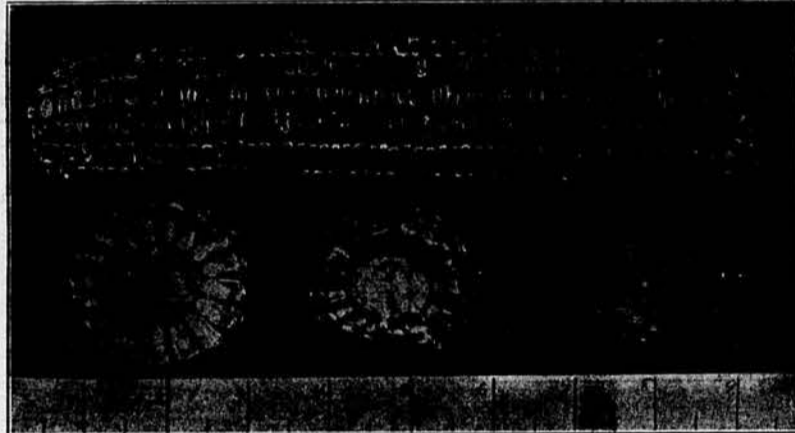


Fig. 2—Kansas Sunflower.

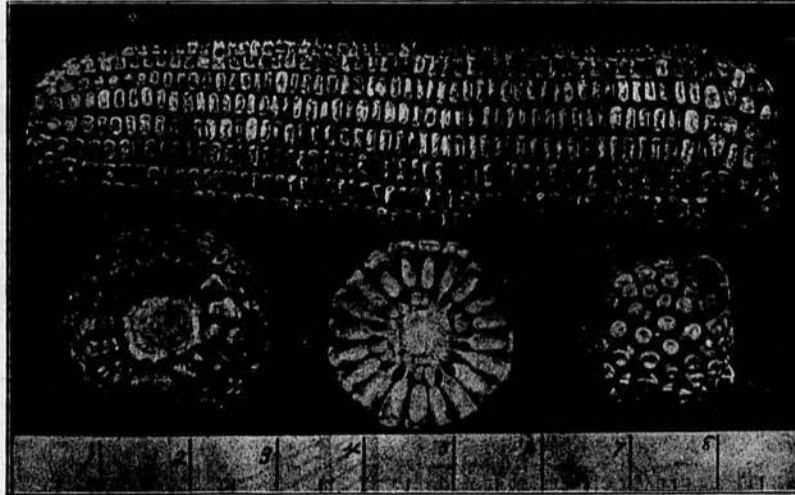


Fig. 3—Reid's Yellow Dent. PLATE III—TYPICAL EARS.

no regular or marked variations in the moisture content of the soil of the several plots.

In 1906 a full set of samples was taken April 16, but no samples were taken again until June 28. At that date the treated plots, compared with the check plot, contained more or less moisture in the first six feet of soil as follows:

Early Treatment	Gain or loss in moisture as compared with check plot, per cent.
Disked.....	+2.43
Disked-harrowed.....	+3.61
Listed-planted in same furrows.....	+1.40
Listed-breaking ridges at planting.....	+0.61
Plowed-harrowed.....	-2.79
Plowed shallow, surface planted.....	-2.79
Plowed deep, surface planted.....	+0.65

All of the treated plots except the plowed ground showed decided gains in moisture. The gains were irregularly distributed, the disked plots showing more moisture in the surface

the greater supply of moisture resulting from the early cultivation.

(To be continued.)

**Miscellany**

**Remarks on the Seasonal Occurrences of Some Injurious Insects in Northern Texas.**

BY E. S. TUCKER, FIELD ASSISTANT IN CHARGE OF GREEN BUG LABORATORY, PLANO, TEX., UNDER DIRECTION OF THE TEXAS AGRICULTURAL EXPERIMENT STATION.

**GREEN BUGS AND THE SO-CALLED KINDS.**

Since the first week of May when my work in the green bug investigation began with the establishment of a field laboratory two miles west of Plano, Collin County, under the direction of the Texas Agricultural Experiment Station, many kinds of plant-lice

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have been brought to my attention, being in every case called "green bugs" by the persons reporting them. All of the specimens examined proved to be some other kind than the disastrous grain pest (*Toxoptera graminum*), to which my researches are being applied. Trees and ornamental plants harbored most of these so-called "green bugs." Colonies of the corn louse (*Aphis maidis*), attracted particular attention late in June by their appearance mainly on the upper leaves and green tassels of corn. For a while the occurrence of this foe was frequently mentioned by farmers, who generally intimated by saying, "The green bugs are on my corn," that the grain enemy had invaded their corn fields. People in general seemed to be unable to distinguish any difference between the two kinds and needed to be assured of the fact. As no extensive injuries attended the presence of this *Aphis* in the corn fields, although it became quite well distributed during July, further heed of it soon ceased.

The real green bugs had about disappeared from the surviving fields of small grain at the time of my arrival; scarcely any wheat had escaped destruction from their ravages, and oats fared but little better. In a field of late oats, small and scattered colonies of the native grain louse (*Siphocoryne avenae*), were found on my first inspections in May, and winged forms were observed ready for flight June 27, in ripening fields. But the occurrence of the true green bug (*Toxoptera graminum*), barely came to notice in the same period. The particulars regarding its life, however, are being learned by means of breeding experiments in connection with field observations.

OTHER PESTS OBSERVED.

While searching for green bugs in various situations, various kinds of other insects whose presence endangers agricultural interests have been encountered. Only the more important ones need be mentioned here.

The chinch bug (*Blissus leucopterus*), attained maturity in late oat fields, but the restricted acreage of the wheat almost deprived it of the oat crop as well as of its first choice in food plants and breeding grounds, so that it did not occur abundantly enough to cause any concern.

PEACH ENEMIES.

A partial yield of early peaches in this section of the country suffered badly from infestation by worms of the curculio, (*Conotrachelus nenuphar*). No other enemy of the peach appears equal to this pest in extent of prevalence and consequent harm, excepting in localities where San Jose scale has gained supremacy. Peaches comprise the principal fruit grown here, and then only in a small way for individual supply. The prospect for successful growing is not at all encouraging unless some means are enforced which will control this insect. Only a very slight percentage of the yield escaped its attack, one and sometimes two worms in a peach being ordinarily found. The foul cavities produced by these worms in gnawing along close to the stone necessitated the cutting out of much waste matter from most of the fruit that was used. Since the wormy fruit ripens prematurely, beginning in June, the better part of the yield remained for later pickings in July, thus allowing a period of three or four weeks in which the fruit was picked as it ripened. Owing to the shortage in the yield, perhaps extra care was taken this year towards prompt gathering of the fruit at a stage approaching ripeness, so that a firm condition could be secured, especially for preserving purposes. By following such a course, few windfalls were permitted, and those left on the ground commonly met destruction as food for chickens. However, chickens should not be depended upon for destroying the worms, because a chicken may feed too closely or not completely upon any one of the fallen peaches. Meanwhile the worms have a chance to pass into the ground, there to undergo transformation into beetles which appear the following spring and lay eggs hatching out another generation of worms. Effective disposal of all wind-

falls is advisable. Hogs turned loose in an orchard, prove to be efficient agents for complete as well as prompt destruction of all fallen fruit.

The elimination of worms from infested but otherwise usable fruit subjects an immense number of the pests to possible death. Carelessness in throwing away the peelings together with other waste matter when mixed with living worms may still afford these offensive creatures an opportunity to live and mature, provided they can enter suitable ground. Great numbers doubtless perish, especially when the leavings are fed to hogs, but the probable curtailment in this way does not seem to be effective enough to cause any appreciable mitigation of their havoc from year to year. The danger from even a few adult curculios is evident by their thorough conquest of this year's crop.

Another peach enemy, called the feeder, (*Allorhina nitida*), revealed itself in July, first on stalks of low branching sunflowers, and later in a willow tree. In the absence of any complaint made of its attack upon peaches this year, it nevertheless assumed a threatening position. It is reported as occurring in greater numbers during wet seasons than in others having much dry weather. As many as twenty-five beetles have been seen to feed together on one peach. A cluster of these feeders will wholly consume a peach in three to four days.

UNDERGROUND PESTS WHICH DEVELOP INTO LEAF DESTROYERS.

White grubs and June beetles hardly attracted the attention of farmers beyond the fact that hogs were induced to root up sod ground in a pasture for the purpose of finding and eating the grubs, which live on the roots of grass. An incident happening on July 13th, when a grub was found nearly exposed on the ground, which, at the time, was wet and soft from rain, indicates that the grubs are apt to work up close to the surface under such conditions. Probably the grub was preparing to form a cell where it could change into a beetle, without being imprisoned too deep in the ground when ready to emerge. No beetles appeared earlier than in June, and being night flyers, they noisily announce themselves wherever artificial lights allure them. Elm trees growing near the laboratory seemed to afford a favorite resort for the large form known as *Lachnosterna torta*, which predominated almost exclusively above any other kind. The loud buzzing noise produced nightly by these beetles in flying amid the foliage proclaimed them in throngs during July and August. Apparently the trees have suffered to some extent in consequence of their visitations, as a considerable number of the leaves have been reduced to mere remnants, showing the probable effect produced by the beetles in feasting thereon.

ALFALFA FOES.

Damage caused by web-worms in alfalfa fields came to notice on July 23rd, at a farm within two miles of the laboratory. Two small tracts, aggregating about ten acres, had yielded not more than four and one-half tons of alfalfa hay, when the crop should have amounted to seven tons. The owner stated that the loss plainly resulted on account of the despoiling of plants by hordes of web-worms. His statement was substantiated by finding web-worms still present in various stages of growth, hiding under litter and lumps of earth at the surface of the ground, there evidently shielding themselves from the direct heat of the sun, because the plants, being cut close to the ground, afforded practically no shade. The parent moths, probably *Loxostege similalis*, flew up in numbers before the feet of a person at nearly every step taken in the fields. The same kind of moths have been quite regularly attracted to light of the laboratory at night, besides being commonly observed in weedy stubble fields and roadsides.

THE WORST ENEMY TO CORN A MENACE TO COTTON.

The farmer mentioned above also spoke of the injuries to corn ears committed by the corn ear-worm, (*Heliothis obscura*), which later in the season goes under the name of boll-worm in cotton fields. An inch of waste on

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most of the ears amounts to considerable loss, so this farmer declared. Another farmer in referring to this enemy stated that as only the tip of the ears was ever affected, and the kernels destroyed were not always the best in quality, he could afford to make due allowance without complaint. Excepting early varieties of corn which showed few blemishes of the sort, scarcely one out of every six ears of the ordinary field crop is free from attack by the corn ear-worm. In nearly all cases, but one worm has infested an ear, so that in rare instances have two worms channeled in the same ear. Artificial light frequently allured the moths at night.

THE PRINCIPAL GARBAGE ENEMY.

The imported cabbage worm, (*Pontia rapae*), must be held accountable for the riddled condition of cabbages seen in gardens during July. Worms and chrysalids taken from the plants served to convince one farmer that these stages represented the development of the common butterflies which fluttered about the patch. Severe depredations were sustained in two week's time. In another garden, wood ashes had been dusted over the plants, but evidently this treatment had been enforced too late, though possibly such application might defer further ravages somewhat.

**FEEDING FARM ANIMALS**

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The author is certainly to be congratulated on the successful manner in which he has accomplished a most difficult task. His book is unquestionably the most practical work that has appeared on the subject of feeding farm animals.

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I'll tell you, boys, of Captain Kidd,  
Of who he was and what he did;  
And how, when on his ocean trips  
He murdered men and scuttled ships.

For many years he sailed the sea,  
And was as mean as he could be.  
His name would make the children cry,  
And spoil their appetite for pie.

His eyes were black as anthracite,  
And filled most persons with affright.  
He wore big boots upon his feet,  
And he would rather fight than eat.

Upon his ship he always dwelt,  
With mighty pistols in his belt.  
And sailing 'cross the ocean wide,  
A cutlass swung down at his side.

The flag he flew was deepest black,  
And as he'd quickly sail and tack,  
He'd walk the deck to see if he  
Could see a ship upon the sea.

When one was sighted he gave chase,  
And then there'd be an awful race.  
The sight would almost take your  
breath  
And likely scare you 'most to death.

I'll tell you, lads, it was no joke!  
His cannon spat out flame and smoke.  
The ship ahead would have to stop  
And down its flag would quickly drop.

Then Captain Kidd and all his crew  
Would swear until the air turned blue.  
And when it was quite blue, they'd  
swing  
Their swords and shout like anything.

Then great big holes were quickly  
drilled  
Into the vessel till she filled,  
And just before the vessel sank,  
The crew was made to walk the plank.

Immense bright heaps of shining gold  
The pirate loaded in his hold;  
He swept the sea, and swept it clean,  
Though no broom on his ship was seen.

And when they caught him in the end,  
He did not have a single friend.  
But everybody said, "Hooray!"  
We're glad that he's been put away!"  
—American Boy.

### The Doings of the H. S.'s.

GRACE S. HOWELL.

#### CHAPTER VIII.—THE SECRETARY ENTERTAINS WITH A HOUSE PARTY.

I hadn't intended to have a house party. We were sitting out in the lawn swing trying vainly to cool off before beginning our program, for it was such a close, hot afternoon.

When we started to the house we discovered that Della and Verna were missing. Calling failed to bring a response, so we started toward the back of the house in search of them. On nearing the barn the sound of unusual hilarity came to our ears and we hastened in that direction. As we went around the barn we halted in amazement. Papa had just thrashed the week before and the hay stack behind the barn was simply immense. What we saw was my two younger brothers seated on a long sled, one at the front and the other at the back, with Della and Verna in between. They started from the very top of the stack and came whizzing down at a terrific rate. It was over in a flash and shouting gleefully they started around to where the stack sloped more gradually and where it was easier to climb. They had just started up when we recovered our breath and Mattie and Mae commenced giving commands while I, knowing Jim and George too well, tried to reason. It was simply useless; up they went and down they came. In vain we reasoned that they'd be killed. In vain Mattie and Mae commanded. All the comfort we got was a shouted invitation to come and try it for ourselves. Finally the girls dragged Verna and Della away by main force and we went to the house and the president soon had the club called to order.

We were proceeding with the program, which was along literary lines. Mattie was reading an essay on Longfellow, when Della suddenly said aloud, "Wasn't that thunder?"

The president favored her with a reproving look. Della ducked her head down between her shoulders in a way as though caught in mischief, and Mattie was allowed to finish her essay without further interruption. As we were finishing the program there came a vivid flash of lightning and almost in the same instant a most awful crash of thunder. With one impulse we sprang

to our feet, screaming and stopping our ears we rushed to the windows to see the rain come in one blinding sheet. It was grand. I thoroughly enjoy a thunderstorm. Mae is of a highly nervous temperament for all she keeps herself so well in hand. Today she sat down with a book, though it was too dark to read. She sat her jaw and clinched her hands and made no sign as though afraid. That's what papa calls "grinning and bearing." Verna knelt down, and stuffing her fingers in her ears, buried her head in Mae's lap. The rest of us watched the storm.

After the first dash the rain settled into a steady pour, and I had to give up all hopes of initiating my new croquet set. What were we to do? How could I entertain my guests? A good hostess must be ready for any emergency.

"O, girls," I cried, suddenly remembering the garret. "Come on," and I started for the stairway. We got the dandiest—yes, I've just got to use that word—garret. It extends the whole length of the house and is well lighted by two large windows.

The girls followed me in a regular stampede.

We had no more than reached the garret when Della and Verna set up a delighted squealing over some discovery they had made. It was the boys, Jim's and George's, Indian toggings. Della and Verna were already getting into them. That settled it; we must play Indian. I fixed it all up as a sort of Buffalo Bill play. The rest of us girls were settlers. We were getting lots of fun out of it.

We had repelled one Indian attack and were expecting another momentarily. However a long continued silence on the part of the Indians set us to wondering what could have become of them. Finally we decided to send Mae out as a scout. She went off in the direction of the ell, for that was the way the Indians had retreated. She returned to the opening, shortly, and silently beckoned to us. We crept stealthily forward and following her lead we peeped around some big dry goods boxes and saw two very fierce and warlike Indians playing with dolls. I said "Boo!" and the two savages jumped.


The girls had found the trunk wherein was stored my family of dolls. I am well supplied with uncles and aunts on both mama's and papa's side. They all consider a doll the one always appropriate gift for a girl. I have within the last few years so impressed those who live within seeing distance, with my grown-upness, that they have ceased to reckon on dolls.

I have two maiden aunts back in Illinois, however, who haven't seen me since I was three years old. To these aunts I am still three years old. Even though I write them the most grown-up letters, they do not understand. So twice a year the dolls come. With those and the ones I have saved since reaching the age of accountability, I have quite a collection. I keep them in a trunk and only get them out for visiting children. No one will ever know how many I've mashed. Papa, who was raised "careful," as he expresses it, always protested that it was a sinful waste of money to give dolls to such a destructive creature as I.

But to come back to my party. We got the dolls all out. There were twenty-three, of every kind, color, and degree, and before we realized it all of us big girls were playing with dolls. I brought the lunch up to the garret and we hunted up my various sets of dishes, and as there was no abating of rain we played until it was too dark to see. Then we went down stairs and made fudge and played games until bed time.

I have the large room over the front room, and as we often keep a girl there are two beds in my room. We wanted to talk, of course, so we wheeled the beds together and really slept six in a bed. Della and Verna were soon fast asleep, but we four girls talked far into the night. If you, reader, were ever a girl you know what we talked about, if you weren't you don't need to know.

(To be continued.)




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## The Little Ones

### Teaching School.

"I don't like doing housework.  
Said little Milly Brown;  
"I don't like washing dishes,  
Or sweeping cobwebs down.  
I do not like the ironing,  
Or making bread and pie;  
I hate to do the scrubbing,  
And sewing makes me sigh.

"But there's one thing I do like  
Be the weather hot or cool—  
From morning until evening  
I just love teaching school.  
So, early every morning,  
I take my little broom,  
And teach him how to hurry  
And sweep the sitting-room.

"And then I teach the duster  
The furniture to clean,  
Till everything is shining  
That room's four walls between.  
Each day I teach the dish-cloth  
To wash the cups and spoons,  
And all the time we study  
We sing the gayest tunes.

"I teach my little flatiron  
To gallop here and there,  
And leave the clothes behind him  
All shining, smooth and fair.  
I teach my little mopstick  
To scrub the kitchen floor.  
He says his lesson better  
Each day than e'er before.

"I teach my little needle  
To hem, to stitch and run;  
And, oh, he smiles so proudly  
When well the lesson's done!  
At night, when school is over,  
And the lessons all are said,  
I teach my feet to carry  
The teacher off to bed."

—Anonymous.

### An Afternoon Tea.

It was a glorious day in early summer, a little breeze stirred the leaves and grasses, and "the little birds sang as if it were the one day of summer in all the year." Out under the lilacs at the end of a garden two little girls were having tea. One sat at each end of a small table, and on either side two dolls stared across their cups of milk, water, and sugar. Just over the fence was a wide field of daisies and buttercups, and beyond the field was a small house with a solitary figure at the window. It was Miss Hibbs, who lived all by herself; nobody knew her very well and people said she was "queer" and "a little peculiar." She had been sick a long while, and though the doctor and some kind old friends had visited her, it was not very often that her red gate clicked, and Miss Hibbs, now that she was getting better, spent most of her time at the window, leaning her pale face on her thin hand.

The tea-party under the lilacs progressed happily and rapidly. The two little mothers, Helen and Betty, discussed their children's clothes and their children's health, and then, when all the milk and hot water were gone, quietly drank up their children's tea.

"Now we must clean up," said Helen rising. "Do you suppose it would be worth while to take this little bit of sugar back to the house?" Betty thought not, so the sugar was divided and quickly disappeared. The "children" were put under the lilacs for their naps, and Betty's sleeves were rolled up in preparation for washing the dishes. There was one little pan, filled from the hose, and as Helen wanted to wash too, she took the drying cloth; and then both splashed away till it was discovered that the fronts of their dresses were all wet.

"They'll never get dry here in the shade," declared Helen; "besides, we can't wipe the dishes, 'cause I've got the drying cloth all wet. Let's just spread the plates and things in the sun, and go into the field and play."

"I'm afraid it's bad house keeping," objected Betty, but she followed up the suggestion and soon both were scrambling over the fence with their dolls.

Oh, how lovely that field was with its sweet-scented, tossing grasses, its wealth of bright flowers and the warm, genial sun shining down upon it. Helen and Betty laughed for joy, dolls lay forgotten as they frolicked and played like two young colts. Their happy laughter floated across the field to Miss Hibbs, as she sat watching them, and somehow two tears fell through the thin fingers and splashed on the window ledge. She felt very sad and lonely, there was no one to love her, not even a little child.

Meanwhile, out in the field the children's arms soon became full to overflowing with the bright flowers, and

they sat down to decide what to do with them.

"Every vase is full at home," said Helen. "Let's make chains to go round our necks and decorate our doll house."

"Oh, then they'll fade so soon," objected Betty; "they are so pretty, it's a shame that they must die so quickly." Then she looked across the field to the little lady watching them so wistfully. "I tell you," she cried, "let's take them to Miss Hibbs, who has been so sick."

Helen was appalled at the thought; they hardly knew Miss Hibbs. But Betty was resolute; so off they started to the little red gate. Miss Hibbs was very startled when she heard it click, and suddenly in answer to her faint "come in," the door opened with a burst of sunshine, and two small girls stood revealed, their arms full of the flowers she had been longing for.

"We brought them for you," said Betty, shyly, and then laid them in her lap. Poor little Miss Hibbs' face was radiant. She kissed them both; she could not help it. Then she showed them where they would find the cookery jar, and asked them all about the dolls and the tea party. And before long they had promised to invite her to one just like it as soon as she was stronger, and decided that she was really very nice. Then suddenly, Betty and Helen realized that it was late, and said good-bye, followed by an invitation to "come often."

Hand in hand they ran across the field, while Miss Hibbs still sat by the window, her face bright with such joy as she had not known for a long time. It was a very simple act that made her happy, but it came just at the right time and it meant ever so much more to her than the two little girls ever realized.—M. C. H. in Scattered Seeds.

### A Chinese School.

A description of Chinese school-room methods, taken from "A Corner of Cathay," is of interest as showing the contrast between schools in the Orient and schools in this country. Many elderly people will recall the time when practises in the district schools of the United States had some of the Chinese thoroughness and dependence upon the memory.

The beginner takes his book to the teacher and hears him read a column or more, after which the pupil returns to his desk and cons his lesson aloud, until he can recite it without looking at it. He then takes his book again to the teacher, turns his back to the master, and recites what he has learned. This is called "backing the lesson." In this way the pupil commits the whole book to memory, and he is expected to learn it so thoroughly that he can at any moment repeat the whole of any passage the initial words of which are mentioned to him.

Just before the noonday recess the teacher writes a sentiment, a proverb or a proposition upon a slip of red paper and pastes it upon the door. Each boy, as he goes out, reads the lines, and in the afternoon renders to the teacher another line which will, with the first, make a couplet.

The teacher encourages his pupils by telling of fine examples. He tells of So Chin, who, being afflicted with drowsiness when at his nightly studies, thrust a needle through his flesh so that pain might keep him awake, and of the restless Sai Lin, whose active body revolted against sitting at his books, and who cured himself of a constant disposition to rise and leave them by placing a pail of cold water where his feet would be immersed in it whenever he stood up.

A warning is given in the career of the unscrupulous Pang Kien, who cut off the ends of the straws that his teacher told him to arrange evenly, while the careful and honest Sung Pin separated a similar bundle and laid the straws straight, one by one, and found that they were all of uniform length without cutting. The character thus manifested by the two showed their teacher which of his pupils would best repay his efforts, and his judgment was justified by the event, for Pang Kien came to no good, while Sung Pin won renown and wealth, and great honor came through him to his preceptor.

## Women Avoid Operations

When a woman suffering from female trouble is told that an operation is necessary, it, of course, frightens her.

The very thought of the hospital, the operating table and the knife strikes terror to her heart.

It is quite true that these troubles may reach a stage where an operation is the only resource, but a great many women have been cured by Lydia E. Pinkham's Vegetable Compound after an operation has been decided upon as the only cure. The strongest and most grateful statements possible to make come from women who by taking

## Lydia E. Pinkham's Vegetable Compound

made from native roots and herbs, have escaped serious operations, as evidenced by Miss Rose Moore's case, of 807 W. 26th St., N. Y. She writes:

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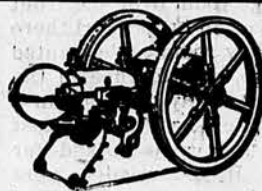
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**Dairy Interests**

**Preserving Ensilage.**

N. B. WHITE IN HOARD'S DAIRYMAN.

Many different plans have been tried to prevent ensilage from spoiling after it is put in the silo. The first plan was to cover with boards or plank and weight heavily with stone. The second plan was to make the covering air tight by putting on fine chaff, then a layer of boards covered with tarred paper and then another layer of boards covered with hay to hold the boards in place. For a dozen years or more, many farmers have used water with no covering. In a recent issue of Hoard's Dairyman the editor advocates putting twenty or thirty barrels of water on top of the ensilage. Last year a man living a few miles from me covered the ensilage with a foot of sawdust but even then he found eight inches of spoiled ensilage.

None of these methods have been perfectly satisfactory to me on account of the amount of labor involved. If a man has a force pump, hose, and windmill, there may be but little work in putting twenty barrels of water on the ensilage, but if the silo should be several hundred feet away and the farmer must buy a new pump and hose, there is considerable expense. Again, if there is no wind for a few days, some other power must be used.

Whenever at work on a difficult problem, it has been a general rule of my life that there would be twenty years of failure, then came success. After working twenty years upon this problem, I found a solution which was perfectly satisfactory, theoretically. Let us see how the theory worked in practise. When helping one of my neighbors fill a silo, I told him I wanted to try a new trick. At my request, he made eight gallons of strong brine and we put it in milk cans and drew up four gallons at a time. We used a common sprinkler and put it on the top and they reported one inch of spoiled ensilage. The cost was five cents for salt and the time of two men for twenty minutes. The silo was round and fourteen feet in diameter. If ensilage is rather dry, use more brine.

A farmer built a stone silo last year and was surprised to find that the ensilage spoiled around the sides. I offered to furnish him a remedy for one dollar. He said that was cheap

enough. If the ensilage spoils around the sides or around the doors, use strong brine when filling. The question naturally arises, "Is there any danger in using salt in the silo?" I reply there is danger in carrying a lantern to the barn, but any man, who can be trusted to carry a lantern, can be trusted to use salt, for in taking it out a small quantity of salt ensilage becomes mixed with a large quantity of fresh.

**Sanitary Inspection of Dairies and Distributing Depots.**

ED. H. WEBSTER, M. S., CHIEF OF THE DAIRY DIVISION, BUREAU OF ANIMAL INDUSTRY, BEFORE A CONFERENCE AT WASHINGTON, D. C.

**BAD CONDITION FOUND ON INVESTIGATION.**

A systematic sanitary inspection of dairy farms and milk-distributing depots can not be too strongly recommended. Recent investigations in various parts of the country have conclusively shown that the conditions on many of the farms and at many milk depots are anything but ideal; they are, in fact, about as bad as it is possible to conceive. Stables are poorly lighted, many having no windows whatever, and ventilation is not provided for. Little attention is paid to floors, ceilings, walls, or stable yards. Swine, horses, and poultry are often found in the same barn with the cows. Manure is not removed, or, when removed, is thrown through an opening in the wall or just outside the door, frequently near the milk room. The necessary appliances for sterilizing and cooling in the milk room are often lacking, making it impossible to properly wash and sterilize pails, cans, bottles, and other appliances, or to properly cool and hold at a low temperature the milk before delivery.

Milk-dealers as a rule have more regard for sanitation and have better appliances than are to be found on the average farm, but some common practices are deplorable. Very few dealers have appliances for sterilizing bottles. Drivers not infrequently bottle milk on the wagon, using bottles that have come from some household and have not been sterilized. Wagons and appliances are not kept in as sanitary condition as should be required. A number of dealers do not separate business from home operations. Help of unknown origin and doubtful habits is employed and is a constant menace to purity of milk. Up to April 5 of the present year a careful examination had been made, under the supervision of the Department of Agriculture, of 727 dairies supplying milk to the District of Columbia. This examination took into account only the sanitary condition of the farms and did not include the health of the animals nor an examination of the water supply, except as these points would be revealed by observation on the premises at the time of inspection. The average rating of these 727 dairies, on the basis of 100 as perfect, was 45.1 per cent. Thirty-three were above 75 per cent, 278 between 50 and 75 per cent, and 407 scored less than 50 per cent. The tuberculin test had been applied to but 4 of the herds, though many proprietors stated that the test would be applied in the near future. With tested herds and a pure water supply assured, this showing would be deplorable, but under existing conditions of probable water contaminations and but 4 out of 727 herds tuberculin tested, what shall be said?

A similar study has been made of conditions in the city, and the situation there is not nearly so bad as in the country. Seventy-three milk depots were examined, of which 46 were rated above 75 per cent and 27 between 57.5 and 75 per cent.

**RECOMMENDATIONS.**

The situation in Washington is not different from that confronting the health departments of most of the cities of any size throughout the country. The public is gradually awakening to the fact that these conditions must be changed. In order to bring about these changes within the District of Columbia the following recommendations are made:

1. That a sufficient number of in-

**Galloway Cream Separator**

**Direct From Factory to Farmer**

**Saving You 40%**

**Money Refunded with 6% Interest from Date of Order if not Satisfactory**

There is something wrong with a Separator when its manufacturer won't guarantee it. I guarantee the Galloway not for a week or month or year, but until it wears out. My \$25,000 bond is your assurance that I'll do it, too. This means that I'll replace, free, any parts broken due to inferior workmanship or material. The Galloway will skim as close as any Separator on the market—none excepted. No question about it. Now what I want most is a Galloway Separator in your locality. It's my only and best salesman.

I've a special arrangement to make with the first person that answers this ad whereby he can pay part or entirely for a Galloway. Remember the first answer to this ad from your locality gets my special offer that will save some one some money. The Galloway Separator is made in three sizes, and they must do as I say they will or no sale. Remember also that it must keep on doing as I say it will. If unsatisfactory send it back and get your money with interest at 6% from date of purchase. You see the Galloway is so simple in construction there are no parts to wear out. It cannot get out of order. When it comes to cleaning, the Galloway skimming device only has two parts. No crack or crevices to clog where dirt can accumulate. Now I don't ask you to take my word for anything. I want you to be your own judge. A trial of the Galloway on my free trial plan will convince you in ten minutes that it's the Separator you want, and furthermore it must keep on convincing you or no sale. Don't forget that. The farm that goes without a Separator one day with such a chance as this is losing money. Any farmer in the U. S. can afford it. I mean exactly what I say. Address me personally.



It's very easy to operate. The gearing in the Galloway is the simplest yet most efficient. The weight of the handle will start the bowl.

**Yours to try 30 Days FREE**

**\$25,000 Guarantee**

Then remember you are further protected by my \$25,000 legal bond, that your Separator shall make good in every respect. You simply cannot lose.

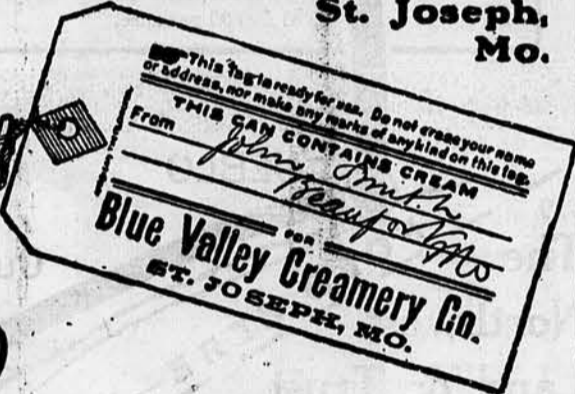
**I have a special proposition to offer for the first one answering this advertisement**

**Wm. Galloway, President, THE WM. GALLOWAY COMPANY, 383 Jefferson St., Waterloo, Iowa.**

I also sell a wagon box manure spreader on the same plan. Catalog free.

**See That Your Tag Reads:**

**Blue Valley Creamery Co. St. Joseph, Mo.**



**We Inaugurated the Individual Direct Cream Shipper's System.**

**WE HAVE NO LOCAL AGENTS SHIP WHEN YOU ARE READY**

YOU get all the Profits instead of dividing with the middlemen. Our booklet explains the system fully. Write for it. "KEY TO SUCCESS, or Full Information of the Individual Direct Shipper's System."

**BLUE VALLEY CREAMERY CO., ST. JOSEPH, MO.**

**The Cream of Cream Separators**

The Sharples Dairy Tubular is the cream of cream separators—the pick of the whole bunch. Supply can wait low, you can fill it with one hand. All gears enclosed, dirt free, absolutely self-oiling—no oil holes, no bother—needs only a spoonful of oil once or twice a week—uses same oil over and over. Has twice the skimming force of any other separator—skims twice as clean. Holds world's record for clean skimming.



Bowl so simple you can wash it in 5 minutes—much lighter than others—easier handled. Bowl hung from a single frictionless ball bearing—runs so light you can sit while turning. Only one Tubular—the Sharples. It's modern. Others are old style. Every exclusive Tubular feature an advantage to you, and fully patented. Every Tubular thoroughly tested in factory and sold under unlimited guaranty. Write immediately for catalog J-105 and ask for free copy of our valuable book, "Business Dairying."

**The Sharples Separator Co., West Chester, Pa. Toronto, Can. Chicago, Ill.**

spectors be employed so that each inspector shall have not over 100 farm dairies, and at least three inspectors shall be employed to cover milk stores. That one of these inspectors shall be at the same time chief dairy inspector and shall receive a salary of \$2,000 per annum and traveling expenses.

2. That the inspectors so employed shall devote their entire time to the work of inspection, and that the salaries be commensurate for the technical

skill and experience of the men employed—not less than \$1,600 to \$1,800 per year and traveling expenses.

3. That these men shall have technical training in the production and handling of milk, and that at least 5 of every 10 inspectors employed to inspect farms shall be skilled veterinarians.

4. That the health officer shall have full authority to make rules and regulations and enforce the same, so as to safeguard the milk supply of the



District from contamination through carelessness, ignorance, or malicious intent.

5. That the health officer or any authorized inspector shall have authority to revoke instantly the license or right to sell milk in the city if provisions of such regulations are not complied with, where, in his judgment, such violation endangers the health of the consumer.

TWENTY-ONE SUGGESTIONS.

The following are suggested as ideal conditions, which might be used as a basis for rules and regulations:

THE COWS.

- 1. Have the herd examined frequently by a skilled veterinarian. Promptly remove any animals suspected of being in bad health. Never add an animal to the herd until certain it is free from disease, especially tuberculosis.
2. Never allow a cow to be excited by hard driving, abuse, loud talking, or unnecessary disturbances; do not unduly expose her to cold or storms.
3. Clean the entire body of the cow daily. Hair in the region of the udder should be kept short. Wipe the udder and surrounding parts with a clean, damp cloth before milking.
4. Do not allow any strong-flavored feed, such as garlic, cabbage, or turnips, to be eaten except immediately after milking.
5. Salt should always be accessible.
6. Radical changes in feed should be made gradually.
7. Have fresh, pure water in abundance, easy of access, and not too cold.

THE STABLES.

8. Dairy cattle should be kept in a stable where no other animals are housed, preferably without cellar or storage loft. Stable should be light (4 square feet of glass per cow) and dry, with at least 500 cubic feet of air to each animal. It should have air inlets and outlets, so arranged as to give good ventilation without drafts of air on cows. The presence of flies may be reduced by darkening the stable and removing the manure as directed below.

9. The floor, walls, and ceilings of the stable should be tight, walls and ceilings being kept free of cobwebs and whitewashed twice a year. There should be as few dust-catching ledges and projections as possible.

10. Allow no musty or dirty litter or strong-smelling material in the stable. Store manure under cover at least 40 feet from the stable in a dark place. Use land plaster daily in gutter and on floor.

MILK HOUSE.

11. Cans should not remain in the stable while being filled. Remove the milk of each cow at once from the stable to a clean room; strain immediately through cotton flannel or absorbent cotton; cool to 50° F. as soon as strained; store at 50° F. or lower. All milk houses should be screened.

12. Milk utensils should be made of metal, with all joints smoothly soldered, or, when possible, should be made of stamped metal. Never allow utensils to become rusty or rough inside. Use milk utensils for nothing but handling, storing, or delivering milk.

13. To clean dairy utensils use pure water only. First rinse the utensils in warm water; then wash inside and out in hot water in which a cleansing material has been dissolved; rinse again, sterilize with boiling water or steam; then keep inverted in pure air that may have ready access, and sun if possible, until ready for use.

MILKING AND HANDLING MILK.

14. The milker should wash his hands immediately before milking and should milk with dry hands. He should wear a clean outer garment, which should be kept in a clean place when not in use. Tobacco should not be used while milking.

15. In milking be quiet, quick, clean, and thorough. Commence milking at the same hour every morning and evening, and milk the cows in the same order.

16. If any part of the milk is bloody, stringy, or unnatural in appearance, or if by accident dirt gets into the

milk pail, the whole mess should be rejected.

17. Weigh and record the milk given by each cow.

18. Never mix warm milk with that which has been cooled, and do not allow milk to freeze.

19. Feed no dry, dusty feed just previous to milking.

20. Persons suffering from any disease, or who have been exposed to a contagious disease, must remain away from the cows and the milk.

21. It is needless to say that the shorter the time between the production of milk and its delivery, and between delivery and use, the better will be the quality of the milk.

A FINE STLYE BOOK FREE.

Nebraska Clothing Company Issues Elegant Book Printed in Two Colors—Sent Free for a Postal.

The Nebraska Clothing Co. have just issued their semi-annual fashion book for men and boys, showing every correct and approved style for the season 1907-8.

This book is valuable to every household—with it you do not have to guess at the correct dress for any occasion. It tells you and tells you correctly.

Forty pages of illustrations and descriptions of every popular article of apparel for men and boys, with a liberal assortment of samples of the newest cloths.

This book will be sent you for the asking—a postal will do. Simply address the Nebraska Cloth Co., 1113-1115 Main street, Kansas City, Mo., and ask for Book 16 and mention THE KANSAS FARMER.

The Poultry Yard

CONDUCTED BY THOMAS OWEN.

Poultry Notes.

We are often asked what is the reason that there are so few large poultry plants in operation in this western country. One of the reasons is that there are but few persons who are willing to put enough money in such plants to make them successful. Those who do start poultry farms, quite often, have had no experience whatever in the business and think all they have to do is to put up a few cheap buildings, buy a lot of chickens, and the hens will begin to shell out enough eggs right away to made a fortune. But the poultry business is not a get-rich-quick system of making money. It means lots of hard work and lots of care and attention. There must be practical experience and scientific knowledge in the assets of the promoter, besides an adaptability to the business that is natural and not acquired. With these requirements, there is no reason why the large poultry plants should not prove as successful as the small ones.

It would be a good plan to see that your poultry house is free from lice and mites, before you are compelled to shut up your fowls in the same for the winter's sojourn. If the liquid lice killers are not handy or a cheaper insecticide is desired, one of the best kind can be made at little labor and expense. It is prepared by adding one-half pound of carbolic acid crystals to five pounds of common washing soap. Put the soap into a pan with a little water and heat slowly until dissolved. Put the carbolic acid crystals into a dish of hot water, stirring them till they are dissolved in the water. Pour this liquid into the melted soap and stir thoroughly, then set it away to cool. This soap will keep for an indefinite time and whenever you wish to get rid of the lice in your hen house, take some of the soap and mix with water till you have a strong soap-suds. Wash the roosts, nest boxes, and dropping boards with this and the vermin will leave or die.

Eggs four years old! Just think of it. Such eggs preserved in water glass, were recently examined by an



DE LAVAL THE WORLD'S RECORD CREAM SEPARATOR

Considered from "every point of the compass," so to speak, DE LAVAL Separators are truly "World's Record Machines." In original inventions, in skimming efficiency, and important improvements, in durability and ease and economy of operation, as well as in widespread usage and number of sales, the DE LAVAL has no competitor, or one that even approaches its record on any one of these points. The DE LAVAL was the original cream separator and by such all-important inventions as the "Alpha-Disc" system and "Split-Wing" device it has always led and is today from five to ten years ahead of all other machines. In close skimming, durability and ease of operation it shown an unbroken victorious record covering more than twenty-eight years. Thousands of tests have proven that it will save from \$3 to \$5 per cow each year of use over other separators. Nearly 900,000 machines have been sold to date and are used in ever country, being distributed by more than 1000 DE LAVAL branch houses and agencies in different parts of the world. Over 98 per cent of the world's creameries use only DE LAVAL machines, also all government and state experiment stations and every dairyman who has had real separator experience. The latest DE LAVAL models are ideal in every respect and represent the experience of over a quarter of a century in building separators. Send for new July, 1907 catalogue of the "World's Record" Separator.

THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS. CHICAGO
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Old Colony Home Farm Herd of Poland-Chinas

L. W. TIMBERLAKE, PROP., WILL SELL AT PUBLIC AUCTION AT

Centralia, Kans., October 10, 1907

50--Head of Poland-Chinas--50

consisting of 19 spring gilts, 11 sows, 1 and 2 years old, his herd boar, Peter Pan, 4 yearling boars and 15 spring boars. Hosanna Chief 35531 by Highland Chief Jr., is the sire of part of this offering; he has 10 1/2 inch bone, and weighs 800 pounds. Here is the place to get herd headers and brood sows with size and quality. Everything is properly fitted, well grown out, and will be sold to the highest bidder without reserve. Sale will commence at 1 P. M. sharp. Write for catalogue.

L. W. Timberlake,

CENTRALIA, - - - KANSAS

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# AMERICAN ROYAL LIVE STOCK SHOW.

AT THE KANSAS CITY STOCK YARDS.

**Kansas City, Mo., October 14-19, 1907**

## SALE DATES:

Herefords, Tuesday, October 15.  
 Angus, Wednesday, October 16.  
 Shorthorns, Thursday, October 17.  
 Galloways, Friday, October 18.  
 Poland-Chinas, Wednesday, October 16.  
 Duroc-Jerseys, Thursday, October 17.  
 Berkshires, Friday, October 18.

For premium list and other information address  
**T. J. WORNALL, Secy.-Treas., Liberty, Mo.**

When writing our advertisers please mention Kansas Farmer

# Pure-Bred Poland-Chinas

AT AUCTION

**Independence, Mo., Saturday, Oct. 12, '07**

41--Head of Pure-bred Poland-Chinas--41

Consisting of bred and open sows, gilts, and young boars, representing some of the most popular blood lines of the breed. Sired by Proud Perfection, Missouri's Keep On, Grand Perfection and other good boars.

The offering has been carefully selected and you will find something here that you can turn in your brood sow sale this winter with profit. If you are looking for good hogs don't fail to attend this sale. Remember the date and place, October 12, at Independence, Mo. For catalogue address

**D. C. STAYTON, Blue Springs, Mo.**

Auctioneers: { **Col. Jas. W. Sparks**  
**Col. F. J. Zaun**

# Eighth Sale of Poland-China Hogs

**Sale Pavilion, Rosendale, Mo., Thursday, Oct. 3, '07.**

**32 Boars**

**18 Sows**

We are offering as good a lot of money-making Poland-Chinas as was ever put in the sale ring. Everyone of them is the descendant of large prolific ancestry, possessing great size, bone and smoothness. We cordially invite you to attend our sale on October 3.

**M. BRADFORD & SON, ROSENDALE, MO.**

Auctioneers: **Duncan Bros., K. C. Deaton.**

## GRAND TWO DAYS SALE

# Poland-China Hogs and Shorthorn Cattle

**Edgerton, Kans., Thursday and Friday, October 10 and 11.**

**FRIDAY, OCTOBER 11,** I will hold my annual fall sale of Poland-Chinas which includes the get of Grand Keep On, Grand Perfection 2d and Corrector 2d (these of my own raising) and others by the best boars of the breed, which I have bought in some of the best sales the past year. I have bought some of the best animals in the prominent sales both east and west and I believe my offering will include some of the best stock to be offered this fall.

**THURSDAY, OCTOBER 10,** I will disperse my herd of Shorthorns. These cattle are of choice breeding, but are in just plain farm condition and there will be bargains galore for Shorthorn buyers.

Catalogues are now ready and will be sent on application. Address

**J. F. HASTINGS, Edgerton, Kansas.**

Auctioneers: **Sparks and Zaun.**