



Volume XLIII. Number 37

TOPEKA, KANSAS, SEPTEMBER 14, 1905

Established 1863. \$1 a Year

KANSAS FARMER.

Established in 1863.

Published every Thursday by the
KANSAS FARMER CO., - - TOPEKA, KANSASE. B. COWGILL.....President
J. B. McAFEE.....Vice President
D. C. NELLIS.....Secretary and Treasurer

SUBSCRIPTION PRICE: \$1.00 A YEAR

E. B. COWGILL.....Editor
J. D. GRAHAM.....Associate Editor
H. A. HEATH.....Advertising Manager

Entered at the Topeka, Kansas, postoffice as second-class matter.



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The crop experts differ widely in their estimates of this year's American wheat crop. Two authorities have placed it at 725,000,000 bushels. Another says 624,000,000. On the first of these estimates foreigners figure that we can spare about 200,000,000 bushels.

The Wichita Star reports a conversation between two elevator men located in different towns. One said, "What are you paying for wheat?"

The price was given, when the other said: "I pay two cents more than that. A farmers' elevator has just opened up at my place, and I have to bid up or else they get the grain." "That is right," said the other buyer. "Bid up, don't let them get any more wheat than you can help, even if you have to bid the limit."

An address by John Clay before the agricultural students of the Iowa State College on "The Plow and the Book," is before us. This is one of those condensed compositions which baffle all attempts at further condensation. It abounds in information and hard, business sense. The best advice we can give in the matter is to send a postal card to Clay, Robinson & Co., Chicago, and get a copy of the address. You will enjoy reading it and can not fail to be profited.

Interest in domestic work for the young women of Kansas is growing rapidly. Forty young women, out of a graduating class of forty-one, were sent out from the Kansas State Agricultural College, at Manhattan, in 1905. This is without doubt the largest class of domestic scientists ever turned out of any education institution at any one time. A private laboratory, with electrical cooking apparatus, is now being installed for post-graduate students in domestic science.

FARMERS ENJOYING LIFE.

Shawnee County Horticultural Society and the Berryton Grange held a joint picnic meeting among the trees at the Berryton picnic grounds last Thursday. The management wisely provided a short program and allowed the people to enjoy the day in visiting and in watching the sports. The only address was that of Prof. Oscar Erf, of the agricultural college, who delivered a most instructive and interesting lecture on "Balanced Rations." This was illustrated in a way to make it understandable.

There was a fine display of fruits, vegetables and grains, on which premiums were awarded.

In mingling with the people on this occasion it was impossible to escape the impression that these thrifty farmers and their families are interested quite as much in making life enjoyable by the cultivation of their mental and social characteristics as in making their bank accounts large by good farming and judicious feeding. These people are to be congratulated on having passed beyond that stage of pioneering and of wondering what the soil will bring forth, in which the chief anxiety was to provide actual necessities, and have entered well upon the life of the independent farmer whose mind does a large proportion of his work, who is industrious, but knows how to make industry pay, and who with his family enjoys a good home where plenty abounds; where the telephone and the "R. F. D." bring the world within reach, and where may be found books, magazines and papers giving culture and solid information as well as the daily budget of the world's doings.

SILK WORMS—BURR CLOVER.

EDITOR KANSAS FARMER:—Will you please inform me as to the investigation you have made in regard to the silk-worm industry. Would you think it profitable business in this country?

Could you furnish me one pound of this kind of a clover to which your attention has been called of late? I believe you will call it Burr clover. I should be pleased to try it this fall.

ROY O. COPPOCK.

Woods County, Oklahoma.

Silk worms are profitable in some countries where the labor of women and children is worth only a few cents a day. The silk industry is not suitable for the hustling men of Western America where a boy can earn man's wages and where a girl can scarcely be hired at any price to assist at housework. The State of Kansas listened to a silk-worm crank some twenty years ago and established a silk-worm station. Eggs were furnished, likewise instructions and enthusiasm for the silk industry. The eggs hatched, the worms ate osage-orange leaves and grew; the instructions lasted very well, but the enthusiasm seldom survived the first crop. The man in charge of the eggs and the enthusiasm was much given to attending fairs where he exhibited a little machine for reeling silk from the body of the dead worm. He could turn that little crank and work his mouth at one and the same time. But, now, the Kansas State Silk Station is no more, and will not probably be again until somebody wants to muss around among worms at about five cents a day, without board. The crank who got the better of the Kansas Legislature has gone, likewise his little machine and its crank, together with all the interest Kansas ever had in the worm industry.

We have no Burr clover seed. It can probably be obtained through some enterprising seedsman.

TOURING WESTERN CANADA.

It was a dream and a revelation, the trip of agricultural editors touring Western Canada. The party returned to St. Paul on September 8, after a trip of eighteen days. It was composed of about twenty-five editors and representatives of leading agricultural papers of the United States, who were the guests of the Western Canadian Immigration Association.

The papers represented on the excursion were the KANSAS FARMER, the American Agriculturist, National Stockman and Farmer, Orange Judd Farmer, Indiana Farmer, Wallace's Farmer, Iowa Homestead, Successful Farming, Dakota Farmer, Farmer's Review, Farmers' Guide, New England Homestead, The Farmer, Farm and Home, Farmers' Sentinel, Country Life in America, and the Commoner, of Lincoln, Neb. The daily press was represented by A. W. Brokaw, of the Minneapolis Tribune, Willis Williams, of the St. Paul Dispatch, and R. K. Lindsay, of the Montreal Star.

The party was in charge of Theodore M. Knappen, secretary of Western Canadian Immigration Association, Minneapolis, Minn., and A. B. Brightman, of

the firm of advertising agents of Brightman & Brown, St. Paul, Minn. These two splendid men of Minnesota made themselves famous for all time by their ideal management of the trip and the magnificent entertainment afforded their guests who were unanimous in declaring it was a trip of a lifetime. One secret of their success lay in permitting the editors a free rein in doing what they pleased and saying what they pleased, and when asked what they could do to reciprocate the royal favors bestowed, simply and modestly replied, "Tell the truth about Western Canada, as you saw it."

Among the other guests of the excursion party, in addition to the newspapermen were Hon. Henry Wolfer, Stillwater, and Hon. S. W. Leavett, St. Paul, two State officials of Minnesota; also some officials of the Dominion Government, including Hon. C. W. Speers, General Colonization Agent, and Capt. F. C. Potts, Mr. Wright and Mr. Maier, of the Department of the Interior. In the different provinces the party had other guests for a time, which included province and railroad officials and leading business men of Western Canada.

This excursion of agricultural newspapermen in Western Canada was a wise business project of the Western Canadian Immigration Association for the purpose of correctly informing the publishers of the great farm papers of the United States of the wonderful resources, possibilities, and attractions of Western Canada—which they regard as the "Last West"—and the great American Annex which they contend presents the greatest opportunity on the American Continent for farmers, merchants, capitalists and investors. It is manifestly evident that the Western Canadian Immigration Association is doing more effective work for the rapid and substantial development of Western Canada and peopling the territory with a desirable and high-class immigration from the United States than any other known agency and certainly deserve the hearty cooperation and gratitude of the Dominion Government, as well as the Canadian Pacific and Canadian Northern and "Soo Line" of railways. In reference to the Association, the capable secretary, Theo. M. Knappen, said to the KANSAS FARMER that the association was organized in January, 1904, for the purpose of developing Western Canada with people of the United States. Its membership comprises about 400 persons which include, mainly, land dealers and owners, railroad and elevator lines, bankers, merchants and other public-spirited citizens of the provinces of Manitoba, Saskatchewan and Alberta of Western Canada.

The trip, to most of the editors, was a surprising revelation and showed that our Northern neighbors possess a wonderful heritage, a veritable agricultural empire in extent which to-day is only in its infancy in development of its natural resources. Our party traveled about 3,000 miles over the Canadian Pacific and Canadian Northern Railways, and about 400 miles by

(Continued on page 942.)

Agriculture

Barley and Wheat Questions.

I read in the KANSAS FARMER your report of the experiments with different kinds of grains, wheat, oats and barley. I am interested in wheat, as I expect to sow a piece and am also anxious to know more about winter barley. Is winter barley as hardy as wheat—especially Turkey red? Has it beards, or is it like the Success? How much seed is required per acre? Do you sow at the same time as wheat, or earlier? Does the Hessian fly injure it the same as wheat? Do you consider it as sure as wheat? What would be your opinion in regard to its feeding-value compared with corn for hogs?

What variety of wheat do you find to be the most hardy and the best yielder? How long have you raised winter barley? About what would you consider an average crop of winter barley compared to wheat? In your opinion which would be the better to seed clover in, winter barley or wheat? Have you any winter-barley seed for sale?

FRANK W. ARMS.

Caldwell County, Missouri.

We have only grown the winter barley at this station for two seasons, and it has proven hardy and more productive than spring barley. At the McPherson Experiment Station, McPherson, Kans.; and also at the Fort Hays Branch Station, Hays, Kans., winter barley has also proven hardy and a good producer. This grain is probably not so hardy as the Red Turkey wheat, and I fear that during the most severe winters it will winter-kill more or less. This crop has not been grown very extensively in Kansas, but is grown largely further south.

Our practice has been to sow winter barley at the same date that winter wheat is sown; the barley, however, may be sown earlier than the wheat. We have not observed injury by the Hessian fly with the winter barley, although I am not positive that the Hessian fly will not attack the barley. At this station we do not yet consider the winter barley as sure a crop as the harder varieties of winter wheat; however, it is a fairly sure crop, and in some seasons a very profitable crop to grow, as shown by the yields of last season.

As a feed for hogs, barley ranks next to Kafir-corn and corn. Experiments show that it produces a better quality of pork than corn. For feeding hogs it is best ground and fed as slop or mixed with other ground feeds, or it may be soaked and fed whole. Where corn is a good crop perhaps barley would hardly take its place as a fattening feed for hogs or cattle. It may, however, be probably grown as one of the small grain crops in rotation with corn, thus improving the land for the growing of corn and allowing the farmer to grow more than one kind of crop.

At this station hard Red Turkey or Russian varieties of wheat have proved to be the most hardy and the best yielders, such varieties as the Kharkof, Malakof, Defiance, Turkey, Red Winter, Crimean, and Ghirka, standing among the best-producing varieties. The Zimmerman wheat has also proved to be an excellent producing wheat at this station, while of the soft red wheats the Fultz is a standard, and one of the best-producing varieties at this station. All of the varieties named, except the Ghirka, Zimmerman, and Fultz, are bearded wheats, while the three last-named are smooth chaff.

From the test at this station the yield of winter barley is even more favorable than the yield of winter wheat. Last season the winter barley yielded twenty bushels more per acre than the best-producing wheat; but in 1904 the highest yielding winter barley produced 34.2 bushels per acre, while we had two varieties of wheat which yielded 35 bushels per acre. As a rule, however, I believe the barley will yield a third or a fourth more than wheat.

I would not advise to sow clover either with wheat or barley in this part of the State. Clover should not be seeded in the fall, and we prefer to seed it early in the spring, without a nurse-crop. If sown with wheat or winter barley, clover should be seeded in the spring and covered by harrowing. Perhaps wheat may prove the better nurse-crop of the two, provided you seed clover with a nurse-crop. The barley would have this advantage, however, that it matures ten days to two weeks earlier than wheat, although it is more leafy than wheat, and during its growth might shade the clover more than the wheat would. We have 100 bushels or so of the Tennessee winter barley for sale but our supply of the semi-winter seed has been exhausted. A. M. TENEYCK.

Alfilaria.

EDITOR KANSAS FARMER:—Alfilaria is not a new plant but one of the most common grasses over the range here. It is considered good for milch cows and for beef cattle. It starts to grow in the fall or winter after the rains set in, and cures on the ground after they stop. It is considered good feed till the rains come again. After getting wet, it is not so nutritious. Where the stand is good, it may grow 18 inches high; but where thin, the leaves lay nearly flat on the ground. The seed is hard to get and I have never heard of any being sown; but is a natural grass on the range. While I think it is all that is claimed for it in Arizona and California, or in a semi-arid country, I should want to go slow with it in Kansas. Burr clover, also, is a natural grass here and grows and cures on the ground the same as Alfilaria. I have seen it growing in an alfalfa field near Lawrence, Kans., but do not consider it a valuable grass for that locality. B. F. COWLES.

Ventura County, California.

Macaroni Wheat for Oklahoma.

Is there a spring and fall variety of macaroni wheat in this country? We settlers here are trying to get a wheat suited to our climate. Our falls are too dry as a rule to sow fall wheat, but usually we have ample moisture in the winter and spring. Therefore, we are trying to get a wheat which we can sow in either fall or spring. Can you recommend a variety of wheat which can be sown in spring if the fall be too dry? We have an abundance of rain in the spring, say up to June 10, after which time we have fair, dry weather.

I see by the papers that in Western Kansas both macaroni and Turkey Red wheat are being successfully raised, but we can not find out that it is sown only as fall wheat. We have a sandy soil which holds moisture admirably well. Do you think we could raise the same variety of spring wheat here that they raise in Northwestern Iowa? Would not our June weather prevent black rust, which menaces the northern spring-wheat growers?

J. P. EPPERSON.

Roger Mills County, Oklahoma.

The macaroni or durum wheat is really a spring wheat. We are attempting to develop a winter variety at this station, and have succeeded in getting the wheat to stand two winters without entirely winter-killing, in fact, this season we had a very excellent yield, 42.5 bushels per acre. M. A. Carleton, Cerealist, U. S. Department of Agriculture states that the macaroni wheat may be sown in the fall in the Southern States, but the wheat has usually winter-killed when sown in the fall in this State.

It may be that as a spring wheat the durum wheat will succeed well in your climate, since, as you state, the falls are unfavorable for starting the grain. It is unlikely that the same variety of wheat will succeed as well for both fall and spring seeding. Wheat becomes adapted for fall seeding or spring seeding, and if a spring wheat is sown in the fall it usually winter-kills, while if a fall or winter wheat is sown in the spring it will produce few heads. As a spring wheat, however, some of the best varieties of macaroni wheat may succeed well with you, and

perhaps the wheat could soon be adapted to grow as a fall wheat.

The macaroni or durum wheat has not produced very well in Western Kansas. It is grown there as a spring wheat, but the best-producing varieties of winter wheat have given larger yields than the macaroni wheat. The macaroni wheat is useful for seeding in Western Kansas under conditions similar to those stated by you; that is, when the fall has been too dry to start winter wheat, it is possible to still secure a crop by sowing the macaroni wheat in the spring. Compared with other varieties of spring wheat the macaroni wheat has produced nearly twice as much grain on the average at this station, as the Fife or Velvet Chaff, but the winter wheat has yielded twice as much on the average as the macaroni wheat.

As to whether the spring wheat grown in Northwestern Iowa will produce well in your soil and climate I am unable to say. We find that the spring varieties of wheat brought from the North and tested at this station produce as well, and sometimes give larger yields than the home-grown seed. In favorable seasons for rust development, rust will doubtless attack the wheat with you the same as it does here and in the Northwest. The best advice I can give is to try the macaroni wheat, and also try growing a small acreage of northern-grown spring wheat. This trial should be continued more than one season.

I advise you to write to the experiment station at Stillwater, Okla., and also to the Texas Experiment Station, at College Station, Texas, for further information. Doubtless experiments along this line have been carried on at these stations.

A. M. TENEYCK.

Hemp Growing and Curing.

I have forty acres of hemp and do not know where to find a market for it or how to prepare it for market. Please let me know the value of hemp and hemp-seed.

Geary County. L. W. HARDEN.

Personally, I have no experience in growing hemp. We have planted a little at this station, but have not attempted to save it as a crop, either for fiber or seed. I find from a study of this crop that two uses are made of it in this country. Either it is grown for fiber or else it is grown for seed.

When seeded for fibre-production it is usually sown broadcast or in close drills. The hemp is said to be in the best condition for harvesting for fibre when it is in full bloom. In Kentucky, where the larger part of the hemp is grown, it is usually cut by hand, bound into small bundles and put into the shock, or the bundles are allowed to lie on the ground until rotted by the dew and rain, when they are placed in shocks or stacked. The rotting of the stalk is necessary in order to separate the fibre from it. This is a rather difficult process and really requires a knowledge of the subject and experience in the work. Where the hemp is cured and put into the stack it is rotted later by being spread over vacant fields and left exposed to the dew and rain, as described above. In order that the stalks rot evenly it is necessary to turn the bundles after a few weeks of exposure. In Kentucky the fibre is separated from the stalk by hand-breaking, and the rough hemp-fiber is tied into bundles or bales weighing about 150 pounds each. Lexington, Ky., is a central market for hemp-fiber.

More recently hemp-growing has been undertaken in Nebraska, near Fremont and Havelock. Here more modern methods are used in harvesting and handling the crop. The hemp is usually cut with the mower or with the self rake-reaper. There is a simple attachment for the mower which bends the stalks over in the direction in which the machine is going, thus facilitating the cutting. It is estimated that the cost of cutting hemp in this manner is about 50 cents per acre, as compared with \$3 or \$4 per acre, the rates paid for cutting hemp in Kentucky.

"Hemp, after being mowed, is left where it falls until rotted, except

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where it is especially heavy, in which case it is necessary to turn it to secure uniformity in curing and rotting. It is then raked up and taken to the mill where the fiber is extracted by a series of fluted rollers and beaters. By these methods hemp tow is produced nearly equal in value to Kentucky rough hemp, and at a total cost, exclusive of rent of land, of about \$20, instead of \$45 per ton." The yield of fiber varies from five hundred to fifteen hundred pounds per acre; the price varies from five to seven cents per pound. Each increase of a foot in height of the plants adds about 150 pounds of fibre per acre. An acre of hemp plants twelve feet high should yield fifteen hundred pounds of fiber.

When hemp is grown for seed it is usually planted in rows and cultivated like corn. When the pollen has fallen the male plants are usually cut out. The crop is harvested like corn and the stalks placed in shocks in the field. When fully cured the crop may be stored in the shed or barn and the seed thrashed out with the flail during the winter. The yield of seed varies from 10 to 30 bushels to the acre and at wholesale has a market value of from three to six cents per pound, as bird-seed. To prevent the seed from heating it should be stored in sacks or in shallow bins.

You have not stated whether your hemp is sown broadcast or planted in rows. It may be saved for seed even if sown broadcast but will produce less seed and of a poorer quality than if planted in rows and cultivated; however, such seed has a market value as bird-seed.

You might correspond with the hemp-fiber mills located at Fremont and at Havelock, Neb., and find what proposition they would make you with regard to purchasing your crop for fiber. It is my judgment, however, that as this crop is new to you and you have no local market for the product, it will hardly be advisable for you to save the crop for fiber but rather to harvest it for seed. Although I have not had experience in this line, it seems to me that it may be a practicable plan to head the stalks the same as we do Kafir-corn, when these heads could be spread until they are cured and then placed in the stack and thrashed with the ordinary thrashing separator. For information regarding the growing of this crop I refer you to publications by the United States Department of Agriculture, Washington, D. C., also to the Farmers' Encyclopedia, published by the Orange Judd Co., New York, N. Y.

A. M. TENEYOK.

Winter Barley—Winter Turf Oats.

I would like further information regarding winter barley than than contained in reports in the KANSAS FARMER.—Is it hardy? At what season is it sown, and at what rate per acre should it be seeded?

The same questions with regard to Winter Turf oats. If only half hardy, would it not assist to drill in corn ground, leaving the stalks standing, or in millet-stubble when the ground is well plowed, say in June, and is perfectly mellow, the stubble to act as a partial mulch and to hold the snow?

Republic County. J. J. WARD.

The Tennessee and semi-winter varieties of barley have proven to be hardy at this station during the past two seasons, and have given larger yields than the best-producing varieties of spring barley. The winter barley has not been grown extensively in this State and is more of a Southern crop, and may not prove fully hardy during our most severe winters. The same may be said of the Winter Turf oats. The winter barley has this advantage, that it matures ten days to two weeks earlier than the earliest maturing spring barley; but the Turf oats are a late-maturing variety and may not produce as well as some of the spring oats, although the yield of Winter Turf oats this year was very good, but not equal to the yield of the Texas Red, Kherson, or Sixty-Day oats.

We have sown the winter oats and winter barley at the same date that we sow winter wheat—about the last of September or first of October. How-

ever, these grains will stand earlier seeding than wheat, especially if the purpose is to pasture the crop in the fall and winter, as is the common practice in the States further south. We have seeded both the winter barley and the winter oats at the rate of two bushels per acre, but less seed will do. In a good seed-bed, the weather conditions being favorable, I do not think it necessary to sow more than a bushel and a half of either grain per acre.

In a favorably moist soil your plan of sowing in corn-stalks or in millet-stubble should succeed well; the stalks or stubble may, as you suggest, give some winter protection, which would keep the grain from winter-killing in a severe, open winter. In the trials made at this station the grain has been sown on open plowed land. I believe the winter barley, especially, is a crop well worthy of trial throughout Kansas. I am not so sure regarding the value of the Winter Turf oats, they are so late in maturing.

What we need is an early-maturing variety of winter oats. For fall pasture, however, the oats may be superior to other winter grains, since they stool abundantly and grow very rapidly, and are not bothered by the Hessian fly, so far as I am informed, and therefore may be sown earlier in the fall than wheat. Our winter oats were badly infected with chess this year and we find it impossible to fully clean the chess-seed out of the oats.

We have no seed of the winter oats for sale but can supply seed of the Tennessee winter barley, price \$1.25 per bushel, f. o. b., Manhattan, with an extra charge of 10 cents each for two-bushel sacks. You can secure the Winter Turf oats from any seed firm.

Millet—Spelt—Milo Maize.

Kindly advise me as to the results from the test of the hog millet, Red Orenburg, Proso, and Red Veronezh Proso, seed for testing which I supplied you with in the spring, noting especially the difference in time of maturity as well as yield, etc. I have about ninety acres of the three varieties seeded from June 15 to 20, that is fine.

I notice your article in the KANSAS FARMER of August 17 advising caution in seeding spelt or emmer. This is my fourth year of raising it. I started on a small scale and the man who did the work for me planted it while I was in Kansas City, and either misunderstood or did not heed my directions, seeding only about half as heavy as I directed, and my directions were too light—one bushel per acre. The result was the weeds got the best of it, but the showing it made impressed me favorably. The three crops raised have more than justified my good opinion of it, in each case equalling or exceeding the barley. I seed at the rate of 1½ bushels to the acre, which I think is about right here. I cut when the grain is in the stiff dough, or as near that as I can. Believe it will stand more drouth than barley. Cut at the stiff-dough stage the straw is relished by stock as well as barley straw, and is comparatively free from beards, which are to me quite an objection to barley. All stock relish the grain, and I believe it a better grain to feed unground than our barley, as the hull is softer and a small portion will be swallowed without chewing. However, I think it pays to grind it. It has not justified the claim that Eastern seedsmen make, viz., that it matures as early as barley, grows as tall as rye, and outyields oats 2 to 1, barley 3 to 1. For me it matures about a week or ten days later than barley, under similar conditions, grows a little taller—not nearly so tall as rye, and has so far outyielded barley, which I have used as a test crop.

I am satisfied, however, that for use in this part of the State, the "Great American Desert," it should be grown, as it has continued to give me better results each year since brought here.

I am also testing a dwarf milo maize this year that makes a very favorable showing so far, heading nicely on sod, from the planting of June 1.

M. G. BLACKMAN.

Sheridan County.

The Red Orenburg, Red Veronezh,



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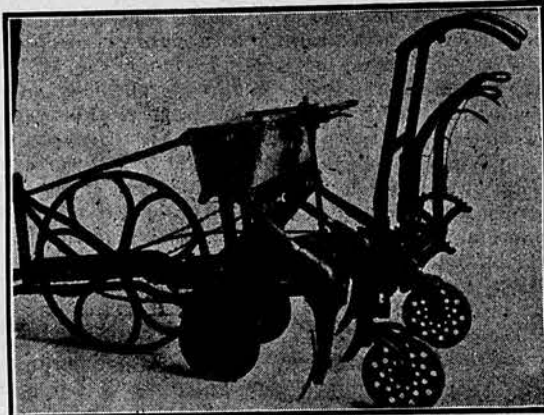
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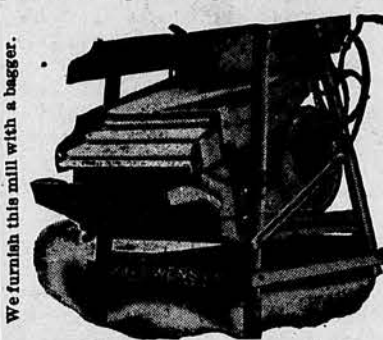
manner that the horse in his walking motion raises the disks, holds them out of the ground and cleans them. No lifting or heavy pulling to turn at the end of each row. Every working part of the Drill is adjustable; you can sow any depth you want to; this part is all left to the operator of the Drill, by simply setting his drill any depth as he goes along—no stopping of the horse. We also manufacture Mowing Machine and Binder Tongue Supporters and Hay Stackers. All kinds of brass castings made and foundry work. Write for particulars; we can interest you.

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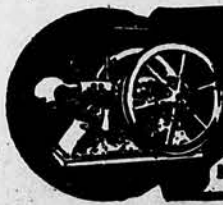
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and Yellow Manitoba, or hog millet, were seeded June 16 in a good seed-bed. We sowed at the same time a plot of New Siberian millet. Last week all of the plots were mowed. The broom-corn and hog millets were practically crop failures and no record was made of yields, while the New Siberian made a fair crop of hay, but not as good as when the millet was sown earlier. In our regular variety trial where the hog millet was sown earlier, it was also a failure, not worth harvesting for hay or seed; while the fox-tail millet, such as the Siberian, Hungarian, German, and common millet made a very fair crop of hay and seed. During the past three seasons similar results have been secured at this station with the hog and broom-corn millets. Fox-tail millets do fairly well, but do not make extra crops.

Last season we sowed hog millet quite late on a piece of fertile land, and this made a fair crop, but in our variety trial the hog millet was not worth harvesting. I know that the broom-corn and hog millet make an excellent crop in the Northwest, since I have tested them at the North Dakota Experiment Station, and at that station both make a good forage crop and produce a larger yield of seed than the fox-tail millets. Also, there is little question but that these varieties are quite well adapted for growing in Western Kansas; but at this station we have not succeeded in producing good crops of this type of millet.

Regarding emmer, will say that it has been grown at this station for three seasons in comparison with barley, and has made a better yield than barley for two seasons, although this year the yield of emmer fell much below that of the barley. I understand that the emmer crop at the Fort Hays Branch Experiment Station was a failure also. I think your plan the proper one, that is, to breed a Western strain of seed. Such a variety will doubtless be better adapted for growing in Western Kansas than seed introduced from the North and East.

I shall be pleased to receive a small sample of your dwarf milo maize to test next season, and you should also send a sample of it to the Fort Hays Branch Station. A. M. TENEYCK.

Japan Clover.

H. H. High, of Faulkner, Kans., sends a sample of the Japan clover plant, with a request for information. The so-called Japan clover is not strictly a clover in the botanical sense, since the clovers proper belong to the botanical genus *Trifolium*. The Japan clover, while belonging to the same family as the true clovers, viz., the legume family or *Papilionaceae*, are classified with the botanical genus *Lespedeza*, which is represented in our State by a number of species in our native prairie flora. Japan clover belongs to the species *Lespedeza striata*. The plants of the genus *Lespedeza* are classified by botanists into thirty-three species, found in temperate North America and especially in East Asia. The species *Lespedeza striata* or Japan clover grows wild in Japan, China and Manchuria. It has been introduced into the United States and has gone wild over the Southern States, to a considerable extent, where it is highly valued as a forage- and pasture-crop, although it rarely grows high enough to cut for hay, and at best is rather too "stemmy" for an ideal hay-plant. It is reported as being specially desirable on dry, poor soil. It seems to self-sow quite readily and might be desirable of introduction into Kansas, wherever a pasture plant of the leguminous sort is desired on poor lands, and where it is difficult or impossible to grow alfalfa. The seed does not seem to be plentiful in the market, as it sells in ten-pound lots at from \$3 to \$4, or at the rate of 30 to 50 cents a pound in pound packages. It is said that cattle eat it greedily and thrive on it. Probably any of our Western seed-houses can supply the seed, and if desired for experiment, I would suggest that say a quarter of an acre be sown in the same manner and with the same preparation as for alfalfa.

H. F. ROBERTS,
Botanist Kansas Experiment Station.

Chess in English Blue-Grass.

We have a case here where nice English blue-grass seed was sown and the entire crop harvested was chess. Does this seed do this at any time, and what will be the result to next year's seed crop if left? Any information along this line will be much appreciated.

C. SINK & SON.

Kay County, Oklahoma.

English blue-grass does not turn to chess. Either you sowed chess-seed or else the blue-grass contained a considerable mixture of chess-seed, and while the English blue-grass made little or no start the chess or chess made a good stand. The result was that the first crop was chess, or largely chess. If there is a sufficient stand of the English blue-grass, it will come on next year and make a crop, while much less chess will appear in the crop next year than appeared this year. Chess is an annual, and grows from the seed each year. Thus, if the chess was not allowed to seed on the ground this year and the blue-grass has made a start, you will not be bothered with the chess another year.

By examining the field carefully at this date you will be able to observe whether there is a sufficient stand of English blue-grass to warrant leaving the field for a meadow or pasture. If the blue-grass has made a poor stand, it will be advisable to plow the field at once and crop for the year or two with small grain or corn before reseeding to grass, in order to clear the soil of chess-seed. Wherever chess is mixed with English blue-grass in this way it is not advisable to save the crop for seed; rather it should be cut early for hay before the chess-seed ripens and falls to the ground. Also, if the chess makes a second growth and heads, it should be cut and not allowed to seed.

A. M. TENEYCK.

Onion Tops as Fertilizers.

Kindly inform me whether onion-tops have any value as a fertilizer. If so, when should they be put on the land, and in what condition, dry or rotten? Would it be advisable to make heavy or light application?

ERNEST J. GALLOWAY.

Shawnee County.

I am not prepared to make any definite statement as to the fertilizing value of onion-tops. I would not hesitate, however, to haul the tops onto the land and use as fertilizer, and I would not have very much preference as to the shape the tops were in, whether dry or rotten. You doubtless have plenty of land upon which to spread the tops and it will not be necessary to give a very heavy dressing. It may be best to haul the rotten tops onto the land and plow them under at once; some advantage is claimed in using manure in this way. Possibly the dry tops will soon blow off the land unless plowed under, or a surface dressing of tops, well disked into the soil, should give good results.

A. M. TENEYCK.

Pasturing English Blue-Grass—Alfalfa Seed Crops.

Will you kindly inform me if it is advisable to pasture English blue-grass this fall, which was sown last spring? If so, how early would it be best to begin pasturing it? Also, please inform me if it is injurious in any way to let alfalfa which has been sown about five years to go to seed two years in succession.

CLYDE SEON.

Washington County.

If you have a good stand and a good growth of spring-seeded English blue-grass, it will not harm it to pasture it lightly this fall. I would not pasture it much while the weather-conditions remain dry. However, if rains fall and renew the growth of the grass, it is advisable to pasture rather early in the fall, but do not pasture too late or too closely.

I can not answer your second question from experience. It is true that it is harder on the plants to allow the crop to seed than if the crop were taken off for hay, and if the effects of growing a single seed-crop may be observed in the growth of the succeeding crops of alfalfa or in the stand, doubtless the growing of two seed-crops in succession will have a still greater in-

jurious effect. In my judgment, however, the injury to the alfalfa as a result of taking two crops of seed in two successive years will depend upon the seasons and also upon the crops which are allowed to seed. In your part of the State probably the second crop will be the best for seed. If the fall succeeding the first seed-crop is favorable and the alfalfa makes a vigorous growth and goes into the winter in good condition, and if the spring conditions are also favorable for the growth of the alfalfa, you may safely take two crops of seed in succession without seriously injuring the stand or the growth of the alfalfa.

A. M. TENEYCK.

Old Hay as Fertilizer.

I can get 100 loads of old prairie hay just for the hauling; it is stack-bottoms, etc. What is the value of such hay as manure, and will it pay to handle it? I will have to haul one-half mile.

T. E. BAKER.

Neosho County.

Old prairie hay has a somewhat greater value as fertilizer than old wheat straw. Quoting from "The Fertility of the Land," by Roberts, I find that ordinary manure, somewhat rotted, contains about .5 per cent of nitrogen, .26 per cent of phosphoric acid, and .63 per cent of potash; while ordinary meadow hay, which would probably correspond to the prairie hay, contains 1.55 per cent of nitrogen, .43 per cent of phosphoric acid, and 1.6 per cent of potash. Probably the prairie hay which is partially rotted will contain a little larger proportion of the plant-food elements than new hay.

If it pays to haul barnyard manure and spread it on the fields, it would certainly pay to use the old prairie-hay as manure. The humus which the prairie hay will supply is really of greater value when cultivated or plowed into the soil than the plant-food elements which are supplied. Old lands become deficient in humus, resulting in a fine, compact texture, which is unfavorable for tillage and cultivation, and for the holding of water. Almost any kind of vegetable matter added to such soils will furnish humus and improve the soil texture.

Some care should be taken as to what crop is manured, and the method of manuring. With coarse manure it is not advisable to plow under a heavy dressing, unless the plowing can precede by a long interval the planting and growing of the crop. The old prairie hay could be used as a surface dressing on certain crops if it did not interfere with seeding and cultivation. Used in this way, the effect will be not only to add humus to the soil, but the manure will act as a surface mulch, tending to conserve the moisture in the soil. I think you can well afford to haul the old prairie-hay stack-bottoms one-half mile and spread upon the land for the manurial value of this product.

A. M. TENEYCK.

Horticulture

How to Tell a Ripe Watermelon.

EDITOR KANSAS FARMER:—Can you tell me a sure and simple way of telling ripe watermelons on the vines?

Allen County. D. C. EDWARDS.

The inquiry is one that is hard to answer without the opportunity for a demonstration. I can perhaps be a little more specific than if your correspondent had asked, "How do you tell a pretty girl from a plain one?" but the fact is that some little experience is necessary. Growers who are acquainted with any variety seldom make a mistake, as they know the change of color which, while it is in many cases very slight, usually accompanies ripening. This requires a close acquaintance with varieties, and I have been told by an experienced buyer that the change in color varies somewhat in different soils and probably somewhat with the season.

The "curl" or tendril on the stem near the melon is a point frequently observed. If this is dry, the melon is usually ripe, but sometimes with moist,

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cool weather, the "curl" will be quite green after the melon is well ripened. "Thumping" is a good old way to tell the stage of maturity of a melon, but it is not easy to describe the exact note which the thumb and finger produce from melons of various stages of maturity; the old "broom-corn harvest-hand" rule, "thump your boot and then the melon and if they are alike the melon is ripe" is still in quite general use. But the other method sometimes employed of pressing the open hand with all strength upon the center of the melon is to be condemned without exception. The pressure ruins the melon if it is but partially ripe, and if ripe it lowers its keeping quality. It is well for the novice to buy a melon warranted ripe and acquaint his ear with the characteristic note of the ripe melon. The best description of the sound produced by thumping the melons is embodied in a negro dialect poem published some twenty or more years ago. I remember only the direction:

"How tell when dey's ripe?
Why thump 'em and see,
An' if dey goes plunk, dey's ripe,
But if dey goes plank, dey is green."
ALBERT DICKENS.

Japanese Wineberry.
JOSEPH MEHAN.

A great many years have passed since the introduction of the Japanese wineberry to cultivation in this country. Hardly any introduction in the way of fruits has had such a mass of both praise and abuse heaped upon it as this fruit. Those who experimented with it spoke of it as they found it. Some succeeded with it, and praised it, others failed, and condemned it. The fact is that this fruit behaves well or otherwise, according to the treatment it receives, both in the way of soil and skill in management. These remarks are suggested to me by seeing to-day a patch of this wineberry which was a sight to see. Several rows of plants had been set out last spring a year ago. These had made some strong canes last summer. This summer these canes have borne a profusion of fruit, almost wonderful in its abundance, clusters of twenty to thirty in a bunch. And this fruit is not to be despised. I do not consider it first-class, but it is far from being inferior. The ornamental features of the bushes—for they grow in a bush shape—are worthy of consideration. The canes and branches are clothed with purplish crimson hairs, making the bush decidedly attractive, even did it bear no fruit. Disappointments often come from planting the wineberry in poor soil. It will not be a success in such a position. It must have good food to produce strong canes, and on the strong canes come the fat bunches of fruit the next year. It has been explained in former notes on this fruit that the berries are entirely enclosed in their calyxes until the fruit is ripe, when they expand, displaying their red fruit. While this fruit may not be among those to be grown for profit, it is well worthy a place in the home garden; and as an ornamental bush for the lawn, it is not to be despised.

No nation can be destroyed while it possesses a good home life.—J. G. Holland.

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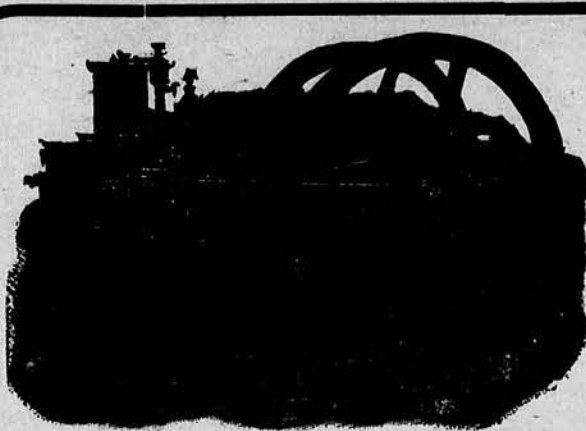
October 3, 1905—S. J. Marcum, Council Grove, Kans., Poland-Chinas.
Oct. 4, 1905, Shorthorns at Belleville, Kans. W. H. Shoemaker, Narka, Kans., owner.
October 5, 1905—W. H. Lawler and N. N. Ruff, Marshall, Mo., Shorthorns, Red Polls and Polled Durhams.
October 9, 1905—Poland-Chinas, E. E. Axline, Oak Grove, Mo.
October 11, 1905—American Hereford Cattle Breeders' Association sales at American Royal, C. R. Thomas, Manager, Kansas City, Mo.
Oct. 12, 1905—American Galloway Breeders' Association sale, Kansas City, Mo.
October 13, 1905—American Aberdeen-Angus Breeders' Association, Aberdeen-Angus, Kansas City, Mo., W. C. McGavock, Manager.
October 13, 1905—Herman Arndt, Alta Vista, Kans.; sale at Manhattan, Kans.
October 18, 1905—Fancy Poland-Chinas at Osborne, Kansas, by F. A. Dawley, Waldo, Kans.
October 18, 1905—Poland-Chinas, W. B. Van Horn, Overbrook, Kans.
October 19, 1905—Chris Huber, Eldorado, Kans.
October 19, 1905—Poland-Chinas, M. S. Babcock, Nortonville, Kans.
Oct. 19, 1905—Poland-Chinas and Duroc-Jerseys at Fredonia, Kans. H. E. Bachelder, manager, Fredonia, Kans.
Oct. 20, 1905—Shorthorn cattle at Fredonia, Kans., H. E. Bachelder, manager, Fredonia, Kans.
October 24, 1905—J. J. Ward & Son, Managers, Belleville, Poland-China hogs.
Oct. 24, 1905—Jno. W. Jones & Son, Delphos, Duroc-Jerseys.
Oct. 25, 1905—James Mains, Oskaloosa, Kans., Poland-Chinas.
October 26, 1905—Herman Arndt, Alta Vista, Kans.
Oct. 28, 1905—Newton Bros., Whiting, Kans., Duroc-Jerseys.
October 31, 1905—Polled Durhams and Red Polls for W. H. Lawless and N. N. Ruff, Marshall, Mo.
Nov. 8, 1905—John Bollin and Gus Aaron, Leavenworth, Kans., Poland-Chinas.
November 9, 1905—Will H. Rhodes, Phillipsburg, Kans., Hereford cattle.
Nov. 9 and 10, 1905—Poland-Chinas, Duroc-Jerseys, Shorthorns and Herfords at Wichita, Kans. H. E. Bachelder, manager, Fredonia, Kans.
November 11, 1905—Shorthorns and Herefords at Blackwell, Okla. J. P. Cornelius, manager, Braman, Okla.
Nov. 13, 1905—J. H. Cooper & Son, Winfield, Kans., Poland-Chinas.
Nov. 14, 1905—S. H. Lennert, Hope, Kansas Poland-Chinas.
November 14, 1905—S. H. Lennert, Hope, Kans., Poland-China hogs.
Nov. 15, 1905—S. H. Lennert, Dispersion Sale of Shorthorns.
Nov. 16, 1905—Registered stock at Arkansas City, Kansas by the Improved Stock Breeders' Association of the Wheat Belt. Chas. M. Johnson, Sec'y, Caldwell, Kans.
November 22, 1905—Berry Lucas, Hamilton, Mo. Aberdeen-Angus.
Nov. 22, 1905—Aberdeen-Angus combination sale at Kansas City, Mo. Berry Lucas, Hamilton, Mo., manager.
December 5, 1905—Nathan Brooks and others, Burden, Kans., Shorthorn cattle.
December 6, 1905—Marshall Bros., and J. F. Stodder, Burden, Kans., Duroc-Jerseys.
December 7, 1905—Marshall Bros., and Harry E. Lunt, Burden, Kans., Poland-Chinas.
December 7, 1905—American Aberdeen-Angus Breeders' Association, Aberdeen-Angus, Chicago, Ill., W. C. McGavock, Manager.
Dec. 8, 1905—American Galloway Breeders' Association sale, Chicago, Ill.
Dec. 8 and 9, 1905—Poland-Chinas, Duroc-Jerseys, Shorthorns and Herfords at Coffeyville, Kans. H. E. Bachelder, manager, Fredonia, Kans.
Dec. 12 and 13, 1905—Imported and American Herefords. Armour-Funkhouser sale at Kansas City, Mo. J. H. Goodwin, Manager.
December 15, 1905—S. H. Lennert, Hope, Kans., dispersion sale of Shorthorn cattle.
December 21, 1905—Poland-Chinas. A. P. Wright, Valley Center, Kans.
February 15-17, 1906—Third Annual Sale of the Improved Stock Breeders Association of the Wheat Belt at Caldwell, Kans., Chas. M. Johnson, Sec'y.
February 21-23, 1906—Percherons, Shorthorns, Herefords and Poland-Chinas at Wichita, Kans. J. C. Robinson, Manager, Towanda, Kans.

Smith's Hog Talk. "Push."

To farmers and others interested in the advancement of our agricultural pursuits.

We are at the present time at a period of PUSH all along the lines of farming as well as in other lines of business, and the man that does not "Push" and keep up with the procession will surely soon be out of the race.

Only a few years ago land was selling at what now seems very low values. How about prices now? Farm lands at the present are worth twice and in some sections thrice what they formerly were. Now we are coming to the point. How about your farm stock; are you raising more and better bred stock on your high-priced land than you did on the cheap lands? If you are not, hadn't you better begin figuring a little, and let me tell you RIGHT HERE if you are going to figure out how you can go ahead and raise JUST HOGS OR JUST CATTLE without regard to the breeding or good qualities and make the same interest on the money invested you don't want a small piece of paper, better take a nice day for it and go out and figure on the north side of the barn, in the shade, and figure all over the side of the barn and then get some red paint and cover it over, for it won't figure out; you can't figure it. There is now NOTHING IN IT for the man that does "just like pa did," for the old gentleman could afford it. He hadn't much invested, if he made anything out of the deal he was just that much to THE GOOD, but with you and me, brother, it is another proposition. If you buy a



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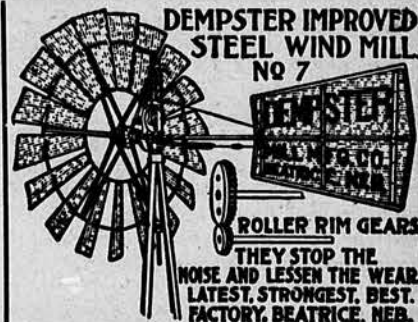
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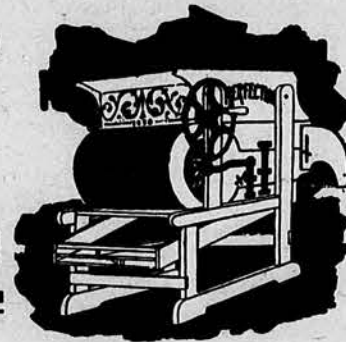
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THE IOWA STATE FAIR.

(Continued from last week.)

Cattle Awards.

SHORTHORNS.

W. J. Kennedy, Judge.

Bull 3 years old or over—First to F. W. Harding, Waukesha, Wis.; on Whitehall; second to C. H. Burg, Mt. Vernon, Ia., on Money Musk; third to Tebo Land & Cattle Co., Clinton, Mo., on Prince of Tebo Land; fourth to R. E. Watts & Sons, Miles, Ia., on Double Gloster 2d; fifth to E. C. Sage, Denison, Ia., on Robin Adair; sixth to C. R. Warren, Hillsdale, Ia., on Cumberland Banner Bearer; first Iowa special to R. E. Watts & Sons on Double Gloster 2d; second Iowa special to E. C. Sage on Robin Adair; third Iowa special to C. R. Warren on Cumberland Banner Bearer.

Bull 2 years old and under 3—First to F. W. Harding on Whitehall Marshall; second to C. A. Stewart, Ames, Ia., on Kintare Lord; third to M. A. Wagner, Fremont, Neb., on Marshall's Best; fourth to J. B. Brown, Solon, Ia., on Sunrise; fifth to F. A. Edwards, Webster City, Ia., on Secret Viscount; sixth to E. R.

Stangland, Marathon, Ia., on Prince of Marathon; first Iowa special to J. B. Brown on Sunrise; second Iowa special to F. A. Edwards on Secret Viscount; third Iowa special to E. R. Stangland on Prince of Marathon.

Bull 1 year and under 2—First to N. A. Lind, Rolfe, Ia., on Clear the Way; second to Tebo Land & Cattle Co., on The Conqueror; third to F. W. Harding, on Sightseer; fourth to E. E. Mitchell, Vail, Ia., on Lord Raglan; fifth to J. B. Brown on Sidelight; sixth to F. W. Akers, Laurel, Ia., on King Victor; first Iowa special to E. E. Mitchell on Lord Raglan; second Iowa special to J. B. Brown on Sidelight; third Iowa special to F. W. Akers on King Victor; fourth Iowa special to R. E. Watts & Sons on Challenger; fifth Iowa special to E. C. Holland, Milton, Ia., on Silver Crown.

Bull calf under 1 year—First to Tebo Land & Cattle Co., on Choice Good's Model; second to G. H. Burge on Wampum of Wayside; third to R. E. Watts & Sons on Gloster's Knight; fourth to W. E. Graham, Prairie City, Ia., on Scottish Admiral; fifth to C. R. Warren on Banner's Victor; sixth to N. A. Lind on First Choice; first Iowa special to R. E. Watts & Sons on Gloster's Knight; second Iowa special to W. E. Graham on Scottish Admiral; third Iowa special to C. R. Warren on Banner's Victor; fourth Iowa special to N. A. Lind on First Choice; fifth Iowa special to W. R. Livingston, Monroe, Ia., on King of Pine Grove.

Cow 3 years old or over—First to Tebo Land & Cattle Co., on Golden Abbot'sburn; second to F. W. Harding on Money Fuffe Maid; third to J. R. Peak & Son, Winchester, Ill., on Lady Victor; fourth to G. H. Burge on Jeanette B.; fifth to Michael A. Wagner, Fremont, Ohio, on Lady Marshal; sixth to F. A. Edwards on Fair Duchess; first Iowa special to G. H. Burge on Jeanette B.; second Iowa special to F. A. Edwards on Fair Duchess; third Iowa special to C. R. Warren on Mary Rose; fourth Iowa special to Conway, Carey & Raffenburg, Anita, Ia., on Pluma.

Heifer 2 years and under 3—First to Tebo Land & Cattle Co. on Princess Flora 2d; second to F. W. Harding on Anoka Missie; third to F. A. Edwards on Fennimore Princess; fourth to G. H. Burge on Countess of Wayside; fifth to Michael A. Wagner on Snow Flake; sixth to E. R. Stangland on Pleasant Hill Duchess; first Iowa special to F. A. Edwards on Fennimore Princess; second Iowa special to G. H. Burge on Countess of Wayside; third Iowa special to E. R. Stangland on Pleasant Hill Duchess; fourth Iowa special to N. A. Lind on Lady Brampton; fifth Iowa special to C. A. Saunders, Manilla, Ia., on Quiz Cumberlandland.

Heifer 1 year and under 2—First to Tebo Land & Cattle Co. on Sweet Briar Rose; second to F. W. Harding on Anoka Broadhooks; third to G. H. Burge on Princess Maude 6th; fourth to R. E. Watts & Sons on Daisy 3d; fifth to E. R. Stangland on Pleasant Hill Duchess; first Iowa special to G. H. Burge on Princess Maude; second Iowa special to R. E. Watts & Sons on Daisy 3d; third Iowa special to E. R. Stangland on Pleasant Hill Duchess; fourth Iowa special to N. A. Lind on Lady Brampton; fifth Iowa special to C. A. Saunders, Manilla, Ia., on Quiz Cumberlandland.

Heifer calf under 1 year—First to Tebo Land & Cattle Co. on Goldie's Jewel; second to Tebo Land & Cattle Co. on Fair Louisiana; third to Tebo Land & Cattle Co. on Clarabelle; fourth to G. H. Burge on Edelweiss; fifth to M. A. Wagner on Marshall's Princess; first Iowa special to G. H. Burge on Edelweiss; second Iowa special to R. E. Watts & Sons on Violet Maiden 2d; third Iowa special to N. A. Lind on Rose of Autumn; fourth Iowa special to N. A. Lind on Rose Belle; fifth Iowa special to R. E. Watts & Sons on Daisy 4th.

Exhibitor's herd—First to Tebo Land & Cattle Co.; second to F. W. Harding; third to G. H. Burge; fourth to M. A. Wagner; fifth to F. A. Edwards; first Iowa special to G. H. Burge; second Iowa special to F. A. Edwards; third Iowa special to E. R. Stangland.

Breeder's young herd—First to Tebo Land & Cattle Co.; second to F. W. Harding; third to N. A. Lind; fourth to G. H. Burge; fifth to R. E. Watts & Sons; first Iowa special to N. A. Lind; second Iowa special to E. R. Stangland; third Iowa special to J. B. Brown.

Calf herd—First to Tebo Land & Cattle Co.; second to N. A. Lind; third to F. W. Harding; first Iowa special to N. A. Lind. Get of sire—First and second to Tebo Land & Cattle Co.; third to N. A. Lind; fourth to G. H. Burge; fifth to Michael A. Wagner; first Iowa special to N. A. Lind; second Iowa special to G. H. Burge; third Iowa special to R. E. Watts & Sons; fourth Iowa special to J. B. Brown.

Produce of cow—First and second to Tebo Land & Cattle Co.; third to E. R. Stangland; fourth to M. A. Wagner; fifth to N. A. Lind; first Iowa special to E. R. Stangland; second and third Iowa special to N. A. Lind.

Sweepstakes, bull any age—F. W. Harding on Whitehall Sultan; Iowa special to R. E. Watts & Sons on Double Gloster. Sweepstakes, cow any age—Tebo Land & Cattle Co. on Golden Abbot'sburn; Iowa special to F. A. Edwards on Fennimore Princess.

HOLSTEINS.

F. H. Scribner, Judge.

Bull 3 years old or over—First to W. B. Barney & Co., Hampton, Ia., on Jewel of Home Farm; second to C. F. Stone, Peabody, Kans., on Ethel Alexander 2d Sir Netherland; third to Wisconsin Live-Stock Association, Appleton, Wis., on Sir Pauline Paul 2d's Colanhar.

Bull 2 years old and under 3—First to Wisconsin Live-Stock Association on Sir Pauline Colanhar.

Bull 1 year and under 2—First to W. B. Barney & Co. on Larrie's Netherland Jewell; second to C. F. Stone on Josephine Machtchode Sir De Kol; third to W. B. Barney & Co. on Sir Colantha Laddie; fourth to Wisconsin Live-Stock Association on Beryl Wayne's Son; fifth to Wisconsin Live-Stock Association on Sir Royal Korndyke Charge.

Bull calf under 1 year—First to W. B. Barney & Co.; second to Wisconsin Live-Stock Association on Sir Korndyke Hangerveld Paul De Kol; third to Wisconsin Live-Stock Association on Sir Korndyke P. De Kol; fourth to W. B. Barney & Co. on Olanda Gerben Jewell; fifth to C. P. McPherson, Fairfield, Ia.

Cow 3 years old or over—First to C. F. Stone on Wayne Parthenia; second to W. B. Barney & Co. on Parthenia Hangerveld; third to C. F. Stone on Markye 3d's Gerben 4th; fourth to W. B. Barney & Co. on Lady Josephine Aaggie De Kol; fifth to Wisconsin Live-Stock Association on 2d's De Kol Parthenia Pauline.

Heifer 2 years and under 3—First to W. B. Barney & Co. on Josephine Abberkirk De Kol 2d; second to C. F. Stone on Princess Pel Gerben; third to Wisconsin Live-Stock Association on De Kol Parthenia 2d; fourth to W. B. Barney & Co. on Riji Colantha; fifth to Wisconsin Live-Stock Association on Josephine Gerben 2d.

Heifer 1 year old and under 2—First to Wisconsin Live-Stock Association on De Kol Parthenia 3d; second to W. B. Barney on Gerben Empress of Home Farm; third to Wisconsin Live-Stock Association on Jewell De Kol Hangerveld; fourth to C. F. Stone on Parthenia Gerben De Kol; fifth to C. F. Stone on Princess Pel De Kol.

Heifer calf under 1 year—First to Wisconsin Live-Stock Association on Jewell De Kol Hangerveld; second to C. F. Stone on Rose Gerben; third to W. B. Barney & Co. on Josephine Abberkirk De Kol 4th; fourth to Wisconsin Live-Stock Association on K. Josephine De Kol Pauline 3d; fifth to W. B. Barney & Co. on Luster L. Belle Jee K 4th.

Exhibitor's herd—First to W. B. Barney & Co.; second to C. F. Stone; third and fourth to Wisconsin Live-Stock Association; fifth to W. B. Barney & Co.

Breeder's young herd—First to C. F. Stone; second to W. B. Barney & Co.; third to Wisconsin Live-Stock Association.

Get of sire—First to C. F. Stone; second to Wisconsin Live-Stock Association; third to W. B. Barney & Co.; fourth to Wisconsin Live-Stock Association; fifth to Wisconsin Live-Stock Association.

Produce of cow—First to W. B. Barney & Co.; second to Wisconsin Live-Stock Association; third to C. F. Stone; fourth to W. B. Barney & Co.; fifth to Wisconsin Live-Stock Association.

Sweepstakes, bull—W. B. Barney & Co. on Jewel of Home Farm. Sweepstakes, cow—C. F. Stone, on Wayne Parthenia.

JERSEYS.

F. H. Scribner, Judge.

Bull 3 years old or over—First to Hunter & Smith, Lincoln, Neb., on Emanon; second to C. E. Still, Kirksville, Mo., on Imp. Brookhill Fox; third to Hunter & Smith on Victoria's Champion Lad; fourth to A. P. Walker, Rushville, Ind., on Clara's Orphan; fifth to Mrs. S. B. Thomas, St. Joseph, Mo., on Uncle Peter's Gold Mine.

Bull 2 years old and under 3—First to Hunter & Smith on Vic's Success; second to A. P. Walker on Lucy's Folden Fern.

Bull 1 year old and under 2—First to Hunter & Smith on Exile's Gwenon Lad; second to Hunter & Smith on Black Prince of Lancaster; third to C. E. Still on Silverline's Lad; fourth to A. P. Walker on Rosebud's Fern Lad; fifth to Mrs. S. B. Thomas on Uncle Peter's Combination.

Bull calf under 1 year—First to C. E. Still on Silver Venture; second to A. P. Walker on Jubilee's Carnation; third to Hunter & Smith on Catillon's Bachelor; fourth to Hunter & Smith on Victoria's Shadeon; fifth to C. E. Still on Dairy Maid's Lad; sixth to C. E. Still on Oakland Fox.

Cow 3 years old or over—First to A. P. Walker on Golden Fern's Tulip; second to C. E. Still on Baronette of Ingleside; third to Hunter & Smith on Sultan Wonder; fourth to Mrs. S. B. Thomas on Boom's Nigretta; fifth to Hunter & Smith on Victoria's Rubano.

Heifer 2 years old and under 3—First to C. E. Still on Blue Belle's Pretty Belle; second to A. P. Walker on Fern's Rowena; third to C. E. Still on Hood Farm Golden Rose; fourth to Mrs. S. B. Thomas on Uncle Peter's Creamtop; fifth to A. P. Walker on Fern's Rosebud.

Heifer 1 year old and under 2—First to A. P. Walker on Lily's Carnation; second to Hunter & Smith on Victoria's Gypsy Gold; third to Mrs. S. B. Thomas on Uncle Peter's Dundas; fourth to C. E. Still on Silver Stella; fifth to A. P. Walker on Golden Rhyme.

Heifer calf under 1 year—First to Hunter & Smith on Victoria's Angelo Annie; second to A. P. Walker on Eminent's Brookhill; third to C. E. Still on Silverline's Lady Meg; fourth to Mrs. S. B. Thomas on Uncle Peter's Love; fifth to Mrs. S. B. Thomas on Uncle Peter's Bell.

Exhibitor's herd—First to Hunter & Smith; second to A. P. Walker; third to C. E. Still; fourth to Mrs. S. B. Thomas; fifth to G. S. Redhead, manager, Des Moines, Ia.

Breeder's young herd—First to Hunter & Smith; second to A. P. Walker; third to Mrs. S. B. Thomas; fourth to C. E. Still.

Get of sire—First to Hunter & Smith; second to A. P. Walker; third and fifth to Mrs. S. B. Thomas; fourth to C. E. Still.

Produce of cow—First and fourth to Mrs. S. B. Thomas; second to A. P. Walker; third to Hunter & Smith; fifth to C. E. Still.

Sweepstakes, bull—Hunter & Smith on Emanon.

Sweepstakes, cow—Mrs. S. B. Thomas on Golden Fern Tulip.

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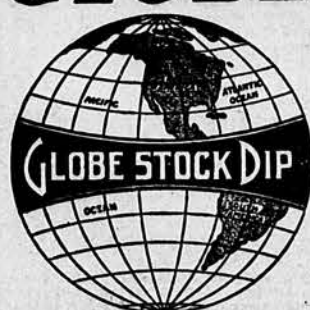
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HEREFORDS.

C. F. Curtiss, Judge.

Bull 3 years old or over—First to W. H. Curtice, Eminence, Ky., on Prince Rupert 8th; second to Van Natta & Son, Fowler, Ind., on Donald March On; third to Cargill & McMillan, La Crosse, Wis., on Fair Lad 6th; fourth to Steward & Hutcheon on Beaumont; fifth to S. J. Gabbert, Dearborn, Mo., on Columbus 63d; sixth to Cargill & McMillan on Full-filler; Iowa special to David W. Ohl, Iowa City, Ia., on Bovie 3d.

Bull 2 years old and under 3—First to J. A. Funkhouser, Plattsburg, Mo., on Onward 18th; second to S. L. Brock, Macon, Mo., on Rare Lad; third to Steele Bros., Richland, Kans., on Princes 8th; fourth to W. H. Curtice on Beau Donald 58th.

Bull 1 year and under 2—First to Steward & Hutcheon on Mapleton Beau; second to Van Natta & Son on Prime Lad 3d; third to S. J. Gabbert on Hela a Columbus; fourth to J. A. Funkhouser on Onward 31st; fifth to Cargill & McMillan on Privatier 2d; sixth to Benton Gabbert & Son, Dearborn, Mo., on Columbus F.; first Iowa special to Z. T. Kinsell, Mt. Ayr, Ia., on Advancer 10th; second Iowa special to David W. Ohl on Beau Royal.

Bull calf under 1 year—First to Cargill & McMillan on Bonnie Brae 3d; second to Van Natta & Son on Prime Lad 9th; third to J. A. Funkhouser on Onward 42d; fourth to Steward & Hutcheon on Magnet; fifth to Van Natta & Son on Prime Lad 16th; sixth to Steward & Hutcheon on Parsifal; first Iowa special to David W. Ohl on Lige; second Iowa special to Z. T. Kinsell on McKinley 6th; third Iowa special to J. W. Blackford on Randolph; fourth Iowa special to J. W. Blackford on Rubicon; fifth Iowa special to J. W. Blackford on Rattier.

Cow 3 years old or over—First to Cargill & McMillan on Heliotrope; second to Van Natta & Son on Lorna Doone; third to W. H. Curtice on Belle Donald 60th; fourth to Steward & Hutcheon on Priscilla 5th; sixth to W. H. Curtice on Belle Donald 44th; first Iowa special to David W. Ohl on Dora Thorne.

Heifer 2 years and under 3—First to J. A. Funkhouser on Kathleen; second to Cargill & McMillan on Armenta 4th; third to Cargill & McMillan on Miss Donald 3d; fourth to W. S. Van Natta & Son on Lady March On; fifth to Steward & Hutcheon on Mayflower; first Iowa special to Z. T. Kinsell on Rosebud; second Iowa special to Z. T. Kinsell on Jessie 6th; third Iowa special to David W. Ohl on Alice.

Heifer 1 year and under 2—First to Cargill & McMillan on Purple Leaf 2d; second to W. H. Curtice on Belle Donald 85th; third to Cargill & McMillan on Golden Lassie; fourth to Cargill & McMillan on Miss Donald 17th; fifth to W. S. Van Natta & Son on Loma Lars; sixth to J. A. Funkhouser on Bendana; first Iowa special to Z. T. Kinsell on Maud 4th; second Iowa special to Z. T. Kinsell on Daisy; third Iowa special to David W. Ohl on Stella May; fourth Iowa special to J. W. Blackford on Beauty 2d; fifth Iowa special to Z. T. Kinsell on Jessie 7th.

Heifer calf under 1 year—First to Cargill & McMillan on Estel 2nd; second to S. L. Brock on Lady Valeria; third to James A. Funkhouser on Geneva; fourth to Steward & Hutcheon on Pretty Face; fifth to W. S. Van Natta & Son on Brownie Lass; sixth to W. H. Curtice on Belle Donald 93rd; first Iowa special to Z. T. Kinsell on Graceful 2nd; second Iowa special to Z. T. Kinsell on Lady Advancer; third Iowa special to Z. T. Kinsell on Miss Advancer; fourth Iowa special to D. W. Ohl on Lady Hawthorne; fifth Iowa special to D. W. Ohl.

Exhibitors' herd—First to Cargill & McMillan; second to W. S. Van Natta & Son; third to J. A. Funkhouser; fourth to W. H. Curtice; fifth to Steward & Hutcheon.

Breeders' young herd—First to J. A. Funkhouser; second to Cargill & McMillan; third to W. S. Van Natta & Son; fourth to Steward & Hutcheon; fifth to Steele Bros.

Calf herd—First to W. S. Van Natta & Son; second to J. A. Funkhouser; third to S. L. Brock; fourth to Cargill & McMillan; fifth to Steward & Hutcheon.

Get of sire—First to James A. Funkhouser; second to W. H. Curtice; third to S. L. Brock; fourth to Cargill & McMillan; fifth to James A. Funkhouser; first Iowa special to Z. T. Kinsell.

Produce of cow—First to James A. Funkhouser; second to W. S. Van Natta & Son; third to W. H. Curtice; fourth to Z. T. Kinsell; second and third Iowa special to David W. Ohl.

Sweepstakes bull—First to W. H. Curtice on Prince Rupert 8th; Iowa special to D. W. Ohl on Bovie 3rd.

Sweepstakes cow—First to J. A. Funkhouser on Catherine.

GALLOWAYS.

Chas. Grey, Judge.

Bull 3 years or over—First to G. W. Lindsey, Red Cloud, Neb., on Pat Ryan of Red Cloud; second to W. M. Brown & Son, Carrollton, Mo., on Chief 2d of Stepford; third to Brookside Farm Co., Ft. Wayne, Ind., on Scottish Chief 3d of Castlehill; fourth to J. E. Bales & Son, Stockford, Ia., on Bobo; fifth to C. B. Rowland, Rose Hill, Ia., on Ronald 2d of Thornhill.

Bull 2 years old and under 3—First to G. W. Lindsey on St. L. of Red Cloud.

Bull 1 year old and under 2—First to J. E. Bales & Son on Canly Lad; second to Brookside Farm Co., on Locknagar; third to Brookside Farm Co., on Standard Royal; fourth to C. B. Rowland on Tuff R.; fifth to C. D. McPherson, Fairfield Ia., on King 14th of Fairfield; sixth to C. M. Moody, Atlanta, Mo., on Keny Mac.

Bull calf under 1 year—First to Brookside Farm Co. on Standard Favorite; second to J. E. Bales & Son on Royal McDougal; third to Brookside Farm Co. on Camp F.; fourth to W. M. Brown & Son on His Eminence; fifth to C. D. McPherson on Master of Fairfield; sixth to G. W. Lindsey on Miller B. of Red Cloud.

Cow 3 years old or over—First to C. N. Moody on Eveline 2d of Abondale; second to Brookside Farm Co. on Lady Harden 4th of Tarbreach; third to J. E. Bales & Son on Prairie Queen; fourth to C. B. Rowland on Darkness of Wavertsen; fifth to G. W. Lindsey, Red Cross, Neb., on

Banes Queen Di Do; sixth to C. D. McPherson on Muscosa of White Farm.

Heifers 2 years old and under 3—First to Brookside Farm Co. on Scottish Empress; second to W. M. Brown & Son on Grace of Wildwood; third to C. N. Moody on Miss McDougal; fourth to C. D. McPherson on Nellie of Fairfield; fifth to G. W. Lindsey on Sadonia of Red Cloud.

Heifer 1 year old and under 2—First to Brookside Farm Co. on Scottish Rosalind A; second to Brookside Farm Co. on Betty Miller 4th; third to C. N. Moody on St. Louis to See; fourth to C. N. Moody on Follow Moody; fifth to G. W. Lindsey on Fidelity of C. H.; sixth to J. E. Bales & Son on Annie Davis 5th.

Heifer calf under 1 year—First to W. M. Brown & Son on Eglantine; second to Brookside Farm Co. on Rosalind Bell; third to C. N. Moody on Miss Portland; fourth to G. W. Lindsey on Mollie C. of Red Cloud; fifth to Brookside Farm Co. on Fan Tan; sixth to J. E. Bales & Son on Judie's McDougal.

Exhibitors' herd—First to C. D. McPherson; second to J. E. Bales & Son; third to G. W. Lindsey; fourth to C. W. Rowland.

Breeders' young herd—First to Brookside Farm Co.; second to J. E. Bales & Son; third to C. D. Rowland; fourth to G. W. Lindsey; fifth to C. D. McPherson; sixth to Brookside Farm Co.

Get of sire—First to Brookside Farm Co.; second to W. M. Brown & Son; third to J. E. Bales & Son; fourth to C. B. Rowland; fifth to C. D. McPherson.

Produce of cow—First and fourth to Brookside Farm Co.; second to G. W. Lindsey; third to C. N. Moody; fifth to C. B. Rowland.

Sweepstakes, bull any age—G. W. Lindsey on Pat Ryan.

Sweepstakes, cow any age—W. H. Brown & Son on Grace Brown.

RED POLLED.

T. J. Wornall, Judge.

Bull 3 years old or over—First to G. W. Coleman, Webster City, Ia., on Irwin; second to Adolph P. Arp, Eldridge, Ia., on Naller; third to George B. Buck, Sunnyside, Ia., on King George.

Bull 2 years old and under 3—First to George B. Buck on Field Marshal.

Bull 1 year old and under 2—First to G. W. Coleman on Elmer; second to Adolph P. Arp on Thickset; third to George B. Buck on Dan.

Bull calf under 1 year—First to G. W. Coleman on Logan; second to G. W. Coleman on Silver King; third to George B. Buck on Ranger; fourth to George B. Buck on Trouble; fifth to Adolph P. Arp on Bouncer; sixth to Adolph P. Arp on Governor Eldridge.

Cow 3 years old or over—First to George B. Buck on Chick; second to Adolph P. Arp on Lola; third to George B. Buck on Eva 3d; fourth to G. W. Coleman on Tillie; fifth to Adolph P. Arp on Laura's Perfection.

Heifers 2 years old and under 3—First to George B. Buck on Eomas 6th; second to G. W. Coleman on Bar Maud; third to G. W. Coleman on Minnie Girl; fourth to Adolph P. Arp on Ruby Rose; fifth to Adolph P. Arp on Laura's Perfection 2d.

Heifer 1 year old and under 2—First to George B. Buck on Clara; second to George B. Buck on Maud's Lady; third to G. W. Coleman on Wild Rose; fourth to G. W. Coleman on Dollie; fifth to Adolph P. Arp on Lola.

Heifer calf under 1 year—First to Geo. B. Buck on Red Bell; second to G. W. Coleman on Wild Rose; third to George B. Buck on Maud's Baby; fourth to G. W. Coleman on Eunice; fifth to Adolph P. Arp on Alma; sixth to Adolph P. Arp on Laura's Perfection 4th.

Exhibitors' herd—First to George B. Buck; second to G. W. Coleman; third to Adolph P. Arp.

Breeders' young herd—First to George B. Buck; second to G. W. Coleman; third to Adolph P. Arp.

Get of sire—First and third to G. W. Coleman; second to G. B. Buck; fourth and fifth to Adolph P. Arp.

Produce of cow—First to Geo. B. Buck; second and third to G. W. Coleman; fourth and fifth to Adolph P. Arp.

Sweepstakes, bull any age—G. W. Coleman on Irwin.

Sweepstakes, cow any age—Geo. B. Buck on Red Bell.

ABERDEEN-ANGUS.

A. A. Armstrong, Camargo, Ill.

Bull 3 years old or over—First to C. J. Martin, Churdan, Ia., on Prince Ito 2d; second to M. P. and S. E. Lantz, Carroll, Ill., on Zaire the Great; third to W. A. McHenry, Denison, Ia., on Censor; fourth to J. B. Withers, Missouri City, Mo., on Errol's Rosegay; fifth to W. J. Miller, Metz, Ia., on Sir Novice; sixth to Oliver Hammers, Malvern, Ia., on Plumer.

Bull 2 years old and under 3—First to E. T. Davis, Iowa City, Ia., on Marone; second to W. A. McHenry on Baden Lad; third to M. P. & S. E. Lantz on Monarch's Eric; fourth to C. J. Off, Peoria, Ill., on Pride of Peoria.

Bull 1 year old and under 2—First to E. T. Davis on McDonald's Lad; second to C. J. Martin on Rosegay Lad; third to W. A. McHenry on Choice Goods; fourth to A. C. Binnie, Alta, Ia., on Postscript of Alta; fifth to O. B. Battles, Maqueta, Ia., on Brookside Fame; sixth to Louie Allard, Newton, Ia., on Newton King; first Iowa special to W. A. McHenry on Choice Goods; second Iowa special to A. C. Binnie on Postscript of Alta; third Iowa special to O. B. Battles on Brookside Fame; fourth Iowa special to Louie Allard on Newton King; fifth Iowa special to Oliver Hammers, Malvern, Ia., on Capt. of Mt. Vernon.

Bull calf under 1 year—First to Louie Allard on Newton King Dodo; second to W. A. McHenry on Star of Denison; third to A. C. Binnie on Quester Lad; fourth to J. B. Withers on Bluegrass Ridge Ajax; fifth to W. S. Kelly, Mondamin, Ia., on Elm Lake; sixth to C. J. Martin on King Ito; first Iowa special to A. C. Binnie on Quester Lad; second Iowa special to W. S. Kelly on Elm Lake; third Iowa special to C. J. Martin on King Ito; fourth Iowa special to C. J. Martin on Melito; fifth Iowa special to C. J. Martin on Boyer Ito.

Cows 3 years old or over—First to C. J. Martin on Blackbird 26th; second to E. T. Davis on Blackbird Favorite 2d; third

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THE KHARKOV, an excellent new variety. This wheat is of the hard Red Russian type, very similar to the Red Turkey wheat. It is one of the earliest maturing varieties and appears to be perfectly hardy. It is a bearded wheat. The straw is of medium height and of good stiffness. The berry is hard, red and plump. It is the best yielding variety of all the Red Russian wheats introduced. Our own crop here yielded 41 bushels to the acre.

Prices: sacked on cars here, 1 to 10 bus., per bu. \$1.50; 10 to 25 bus., per bu. \$1.40; 25 bus. and more, per bu. \$1.30. Have also Red Turkey, hard bearded at \$1.10 per bu.; Red Russian, hard bearded at \$1.10 per bu.; Fultz, soft, smooth, at \$1.10 per bu.; Harvest Queen, soft smooth, at \$1.10 per bu.; Seed Rye, at 80c per bu.; Winter Turf Oats, at \$1.00 per bu. Have new crop Alfalfa, Timothy, Kentucky, and English Blue Grass seeds, and other Grass seeds. Ask for prices.

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Also make Sweep Grinders, both Coated and Plain.

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FEED MILLS

(Continued on page 948.)

The Young Folks

CONDUCTED BY RUTH COWGILL.

What Uncle Sol Says.

Old Uncle Sol, he sez, sez he,
"Don't argy if you can't agree."

"Fer my part, I don't give a cent
For any kind o' argyment."

"If what a feller sez ain't so
It's jest as well to let it go."

"It only makes the matter wuss
Ter get het up an' start a fuss."

"A tonguy fool kin talk all day,
No matter what the wise kin say."

"You match your lung agin his lung;
It's for an' for an' tongue and tongue."

"The brains you've got don't count a bit
With fellers that is lackin' wit."

"If Billy's stock o' sense is slim,
Don't even up yourself with him."

"If Sam ain't right, I hain't no doubt
In course o' time he'll find it out."

"I don't feel called upon ter fight
My feller man ter set him right."

"Jest state your vews an' shet your head
It's soonest mended least that's said."

"That's jest hoss sense, it seems to me,
Don't argy if you can't agree."

"But if you reckon that ain't so,
Why, I'm content ter let it go."

—Chicago News.

The Bull-Fight in Granada.

ANNA MARIE NELLIS.

That the Spaniards hate the Moors quite cordially there can be no doubt, though their troubles and quarrels ceased over 400 years ago. However, the Moors some 800 years ago introduced into their country, Spain, a very unintellectual amusement that became so popular that the present Spaniard of Spain rejoices over it many times each year. That amusement is the bull-fight; and to the Spaniard it introduces into the heart the same pangs of happiness and enthusiasm as the circus creates in the intellectual in-warmness of a large portion of Americans.

I cannot say that I wish to boast of the fact that I saw a "first-class" bull-fight; but to be in Spain and not see all that principally interests the people of that country would be missing opportunities not always obtainable. So, for my party of Americans, I accepted the invitation of the Commandante to occupy his box in the big arena, on the Saturday after the grand Corpus Christi procession and celebration.

The excitement aroused by a circus in an American city, is a weak sample of the enthusiasm created by the announcement that a bull-fight will take place in Spain. These entertainments are somewhat expensive, also, for it requires not less than six bulls of the best fighting stock, costing from \$200 to \$500 each, to make up the program properly. Then there are the "Toreadors," "Espadas," "Picadors," and "Mata-dors" to be paid, each receiving amounts from \$100 to \$8,000 for each performance in a big city; besides, there are required from fifteen to twenty horses, to make up the list, many of which are killed in the fray, and then there is Satan to pay.

The arena is an immense forum, with seats rising above each other, as in a circus, but made permanent for continuous use. The last two tiers of seats around the forum—at the top—are very elegantly upholstered, and contain boxes for the nobility. The Commandante's box was next to that of the President, and we found ourselves nicely located for a good sight at all which might occur in the arena.

All the streets of the city were throbbing with life, gay turn-outs on every side, all horses wearing rows upon rows of sleigh-bells, their tails decorated with ribbons of fancy colors. The National colors of red and yellow were most frequently seen. The popular form of driving a fine equipage in Granada, is a team with a single horse in front. There were many beautiful private carriages filled with pretty women—that is, they would be fairly pretty if they did not plaster their faces so much with white paint which gives them the appearance of being

plaster casts. They seem to very much dislike the olive complexion. All the ladies wore beautiful lace mantles, mostly white, and their hair decorated with lovely roses.

The streets were lined with peasants and the poorer classes (and there are plenty of the latter in Spain), watching the procession as it proceeded to the "Plaza dos Toros" (plaza of the bulls). The fight does not begin till 4:30 p. m., but people begin to assemble early in the afternoon.

The amphitheatre holds about 12,000 people, and every place was filled. It was somewhat amusing to watch the crowd as it gathered in the big arena. When an especially pretty girl would come, all the men in front of her would deliberately get up in their seats and stare at her. The boxes were decorated with beautiful Spanish shawls—white, hand-embroidered in many beautiful colors—hanging over the front, and decorated with garlands of roses.

Just at the minute of 4:30 p. m., the band, which had been playing for nearly an hour, stopped the principal music, and a few of the trumpets executed a "fanfare," and the President entered his box, tipping his high silk hat to the crowds—every one cheering to the full strength of his lungs; and this was the signal for the beginning of the exercises. The great gates swung open, the procession, headed by two "Caballeros," solemn looking individuals, in black velvet, bestriding black steeds; then two "Espadas" (the men who kill the bull at the finish—the heroes of the day). They were dressed magnificently, one in lavender and green costume, trimmed luxuriously in heavy, gold trimmings, which glisten in the sun; they wore short knee trousers, pink silk hose, and small, heelless slippers, short jackets, almost solid in gold embroidery, and beautiful, gold-bordered capes thrown over the left shoulders. They walked with a confident, nonchalant air, as though saying, "We are the idols of the people, and we deserve it all." After these came six "Picadors," mounted, wearing the round, felt hats, short cloaks, and long, leather leggings, plated with steel. The "Picadors" are the gentlemen who supervise the hauling away of dead bulls. And after them four or five attendants, leading the horses which do the hauling, and these are decorated with plumes and rich trappings.

The procession moved in two columns, about twenty feet apart, to the center of the arena. There turning to left and right they halted and saluted the President. The latter gentleman then threw down the keys to the "toril" (place where the bulls are kept).

A few moments more and another "fanfare," which is followed by a big bull rushing into the arena, bellowing. For some minutes the huge animal seems bewildered, and rushes aimlessly about, scattering his tormentors in every direction, making them vault the barriers. The object of the first part of the entertainment is to tire the bull so that, when it is time for the "Espadas" to give the last "coup," it will not be dangerous for the "Toreadors."

The people are supremely delighted when the poor horses are killed by the bull, and if not enough are slaughtered to suit their exquisite tastes, they cry for more. The horses, poor things, are blindfolded, so that the "Picadors" with long lances can ride close to the bull and strike him with their pikes as they pass. The first bull was rather tame, and would not charge at the horses, in an eloquent manner. So the "Picadors" had to pull their steeds right in front of the bull, then the animal would charge, and the crowd would yell with glorious delight.

When the second bull came prancing out, there was a show of excellent fun for the Spanish crowd. The bull charged the "Picador," and the horse fell with the man underneath, and the bull's horns in the body of the horse. It looked gloomy for that "Picador," surely; but the assistants immediately came and threw their brilliant capes in the face of the bull, and the latter gentleman then charged the new as-

sailants, and the assistants picked up the wounded "Picador." The crowd was not happy; they hoped he had been killed.

The trumpets sounded another "fanfare" and the "Banderillos" came forward and politely and gracefully began sticking their ornamental darts into the broad shoulder of the bull. When they do it successfully, the crowd nearly cheer themselves into fits. All of a sudden there is a terrible shout, the bull had leaped the barriers among the gentlemanly spectators, and they "flee when no man pursueth."

When I saw this I began to gather up my skirts, intending exit, for although forty feet above the arena, I feared the bull might be able to climb the stairs. I was told that there is no luxury in hastening away, and that the very best is yet to be seen. By this time the bull is driven back into the arena, and upon another "fanfare" of trumpets, the "Espada," or hero, comes forward, greeted by deafening cheers. He makes a very deep bow to the President, then drives his Toledo blade into the top of the shoulder of the bull, reaching his heart and then the bull is free from all pain.

When the sixth bull came into the arena, he showed that he was the masterpiece of the whole entertainment. He came roaring and raging like a "bull of Bashan." He jumped the barriers twice and the people scattered in all directions. He killed six horses and threw one "Banderillo" from the arena into the second tier of seats above; then there was yelling of delight and screaming of terror.

When it came time for the "Espada" to give the final stroke, the bull seemed as fresh as ever; the men played him on all sides, but could not tire him. The crowd became impatient, and broke out yelling and calling the "Toreadors" cowards. Then, heated by the sun, wine, and excitement, they began throwing bottles and anything they could find, into the arena. The civil guards drew their sabers and plunged into the mob. By this time we were very much frightened, and asked the Commandante to take us out. So, escorted by our own guard of six soldiers, which had surrounded our box all the afternoon, we left, and the last I saw was the bull charging around the arena, the "Toreadors" jumping the barriers, the thousands of people yelling with delight, and the guards with drawn swords restoring peace and harmony.

There were six bulls killed that day and ten horses. The people seemed very well satisfied, indeed, and I came away determined never again to attend a bull-fight. I might also remark that two "Picadors" were killed, and a couple more were wounded, but the people were very happy.

"Waiting for a Bite" is the apt title of the front page picture of the August American Boy, bringing a vision of cooling breezes, sandy shores, camps, boats and woods, with all the delightful occupations incident to "the good old summer time." Of course every reader of The American Boy will want to know about the American Boy Day celebrations and this number contains an account of the splendid one at the Lewis and Clark Exposition at Portland, Ore., with pictures of many of the boys and their friends who took part in it, and also of the celebration at Bedford, Pa., with a large group picture. Those fine, continued stories, "For the Mikado" and "A French Frog and an American Eagle," still increase in interest. Among the other stories, of which there is variety enough to please every reader, "Jimmy and the Goat," in which a boy for a prize triumphantly rides a notorious "butter," will be read with delight. Other humorous stories are: "A Prophecy That Failed," "The 'Hayseed' Hurdler" and "Tommy Benham's Lesson." "In the Storm" is a thrilling story of a hunter and a wolf. "The Cheyenne Outbreak" and "The Last of the Moravian Indians" are fine stories of fights with the red men. "How Ernest Sazed the Herd and Routed Bolter's Gang" is a story of a 14-year-old cowboy. "Dopey and the Smugglers" tells of the bravery of a little New York shoeblack. "When the Old Adam Was

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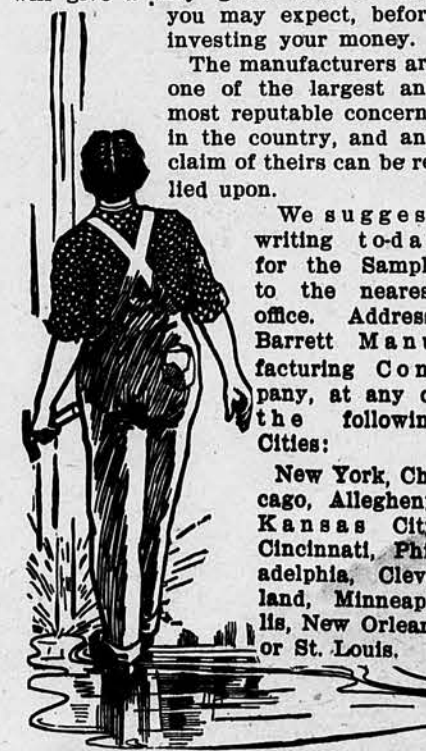
Readers of this magazine who are interested in a good roofing will do well to write to the manufacturers of AMATITE for a Free Sample.

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Aroused," and there are many other smaller stories equally pleasing. A few of the larger articles are: "The Oldest School for Boys in America," being an historical description of the Boston Latin School, "Lesson Clutches," "Easier to Supply a Good Manager Than a Good Office Boy," "A Remarkable Boy," "The Boy Who

Works and the Boy Who Shirks," "How the Club-House Was Built," "Children of the Farthest South," an account of how the boys and girls of Tierra del Fuego live, and "The Opossum." "Clever Work with the Pocket Knife" is resumed, and there are also articles on "How to Make a Home-Made Mouse Trap" and "Making a 'Safe' for Money." The various departments of The Boy Mechanic and Electrician; Stamps, Coins and Curios; The Boy Photographer; Boys as Money-Makers; Order of the American Boy, and Tangles, are all replete with good things. In addition there are over seventy-five illustrations. Subscription price \$1 a year. The Sprague Publishing Co., Detroit, Mich.

For the Little Ones

A Change of Plan.

"I've lately made a change of plans," said the brook across the way, while slowly crawling o'er the sands one hot midsummer day. "I planned"—and here he shed a tear, "I meant"—and then he sighed, "To make a lengthy tour this year through all the country wide.

"A neighbor told me there were fields with mosses ever green, A daisied meadow brighter far Than any I have seen. He told me of a wild retreat Where cooling shadows lie, Where overhanging branches meet To hide the sultry sky.

"And so I planned on ways and means This fairy land to seek, But find that these midsummer days Have left me very weak. Now I am forced to change my plans And take a little sleep." So down among the yellow sands The weary brook did creep. —Exchange.

A Little Digger of Weeds.

"Ninety-five, ninety-six, ninety-seven," counted Marian, with a long sigh. "Three more to make a hundred!"

Little Marian in her gingham slip gown, armed with a strong kitchen knife, was digging out dandelions for two cents a hundred. It was in the little green plot between the walk and the curbing. She had it free from weeds now, and she was to dig nowhere else. She had dug out some with the knife, and some with her sturdy little fingers, lying flat on the ground. The little strip had been kept so well mowed that the dandelions grew very low and close in among the short grass and were not easy to take out. She would have liked to go over and dig in the school-yard across the way, for there the dandelions were big and strong, each one crowned with fluffy blossoms; but she had been told to do her digging in that small green plot, so there she stayed.

"Oh, ninety-eight," cried Marian, spying out a stunted bit of a plant that fairly hugged the ground. "But, dear me! I don't believe there's another one."

Still, after a long search, she did discover another tiny mite growing almost under the edge of the sidewalk.

"Ninety-nine! Now, if I could get just one more!" sighed Marian, examining the grass with an anxious eye. "Who'd ever s'pose that dandelions would go and sow just ninety-nine of themselves, and then stop short?"

"Hello!" said Johnny Briggs, stopping short at sight of the little figure lying on the ground. "What's the matter with you?"

Marian told him. "And I don't s'pose I'll ever get that two cents," she said, "though I lack only one; but there isn't a single one more!"

"Does your mother always count things?" asked Johnny.

"No," said the little girl. "She just asks how many, and I tell her."

"Then it's easy enough," said Johnny. "She'd be sure, just looking at them, that there must be as many as a hundred!"

"Johnny Briggs!"

"Anyway," suggested Johnny, red spots coming into his cheeks, "how do you know you didn't make a mistake when you counted?"

"I know I didn't," said Marian. "I counted 'em nine times."

"See here, wait a minute!" said Johnny; and away he darted across the street.

"There!" cried he, returning with a dandelion plant and tossing it into Marian's basket. "Now you are all right."

"No, I'm not," said Marian, shaking her curly head. "Johnny Briggs, I think you're a kind boy; but I guess you're not honest! If you're going to live in our block, I hope you'll be honest. You see we're trying to make our block the nicest block in the street. That's why mamma and I are digging out our weeds."

"I'm pretty honest," said Johnny, who was also pretty red. "And say," he called back at the gate, "I s'pose maybe, every time I see a dandelion I'll think about keeping the block nice!"

Little Marian sat on the ground a few minutes longer, thinking about Johnny Briggs. "I guess he'll be a nice boy to have in the block," she thought. She liked very much what he had said at the gate.

When Marian carried her pan of weeds to her mother, she said, "Mamma, there's only ninety-nine in this hundred; but there isn't one left to dig. Couldn't I do something else to make up for that other dandelion?"

"Yes," said her mother, smiling. "You may run and wash my only little girl's hands for me, and then bring me my purse."—Carroll Watson Rankin, in Little Folks.

Speed of a Prairie Chicken.

That a prairie chicken flies with sufficient speed to propel itself through heavy plate glass was proved by a recent incident at the little town of Wolsey, Beadle County.

Professor Shepard, of the village school, in the discharge of his duty, rang the school bell, when a couple of prairie chickens that had taken refuge in the schoolhouse tower from a storm were frightened from their place of refuge. They flew as straight and swift as an arrow for the plate-glass front of a business house. The glass was five-eighths of an inch in thickness, but one of the prairie chickens went straight through it as though it were paper, and dropped dead on the floor inside the building at a distance of about twenty feet from the window. The prairie chicken went through the plate glass with sufficient force to cut a hole six inches in diameter in the heavy glass.—Minneapolis Tribune.

Spider a Hearty Eater.

The spider, still and intent, watched the fly that struggled vainly in its web. "Spiders are voracious eaters," said the naturalist. "If you had, according to your size, an appetite equal to a spider's, do you know what you would eat daily?"

"No. What?"

"For breakfast you would eat an ox. For luncheon you would eat four barrels of fresh fish. For dinner two bullocks, eight sheep and four hogs would no more than fill you. For supper, in order to sleep well, you would need an ox and seven calves."—Chicago Chronicle.

A Poultry Mill.

Mary's father was trying the experiment of raising chickens with an incubator in his barn. The neighbors were much interested in this experiment, and meeting Mary one of them asked, "Mary, have you any little chickens at your house yet?"

"No, but we're makin' some," replied the little maiden.—Lippencott's.

Little Willie, who is a Philadelphia boy, had been watching a dog chasing his tail for three minutes.

"Papa," he asked, "what kind of a dog is that?"

"That," said the father, "is a watch dog."

Willie was silent for a moment. "Well," he finally said, "from the time he takes to wind himself up, I guess he must be a Waterbury watch dog."—Philadelphia Ledger.

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The Home Circle

CONDUCTED BY RUTH COWGILL.

Thinkin' Back.

I've been thinkin' back of late,
S'prisin'—And I'm here to state
I'm suspicious it's a sign
Of age, maybe, er decline
Of my faculties—yit
I'm not feelin' old a bit—
Any more than sixty-four
Ain't no young man any more.

Thinkin' back's a thing 'at grows
On a feller, I suppose—
Older 'at he gits, I jack.
More he keeps a-thinkin' back!
Old as old men git to be,
Er as middle-aged as me,
Folks'll find us, eye and mind
Fixed on what we've left behind—
Rehabilitatin'—like
Them old times we used to hike

Out barefooted fer the crick,
'Long 'bout Apr'l first—to pick
Out some "warmest" place to go
In a-swimmin'—Oh! my, oh
Wonder now we hadn't died!
Grate horseradish on my hide
Jes' a-thinkin' how cold then
That 'ere worter must 'a' ben!

Thinkin' back—w'y, goodness me!
I kin call their names and see
Every little tad I played
With, er fought, er was afraid
Of, and so made him the best
Friend I had of all the rest!
Thinkin' back, I even hear
Them a-callin', high and clear.

Up the crick banks, where they seem
Still hid in there—like a dream—
And me still a-pantin' on
The green pathway they have gone!
Still they hide, by bend er ford—
Still they hide—but, thank the Lord
(Thinkin' back, as I have said),
I hear laughin' on ahead!

—James Whitcomb Riley.

Thomas Alva Edison, the Wizard of Modern Times.

One of the most interesting figures of modern times is Thomas A. Edison. His mind, full of strange fancies, wonderful conceptions, daring purposes, interests with all the charm of the unknown and mysterious. His marvelous patience that can work and wait, and try again after a thousand failures, rises to the dignity of heroism. And his genius that finally succeeds, and astonishes the whole world with some magical contrivance for lessening its work or adding to its pleasures, wins him the crown of the king of witches and wizards.

This wizard, this magician, is a very companionable man. He is sunny-hearted and wholesome and his friends love him. He not only knows all that is known about electricity and its uses, but he can talk well and intelligently on any subject of real interest. He is not really a wizard at all, but a plain, hard-working man with a mind capable of formulating great ideas and a will to work them out, which combination of characteristics is what constitutes genius. "Genius is two per cent inspiration, and ninety-eight per cent perspiration," as he himself epigrammatically puts it.

Some one asked him, "What makes you work, Mr. Edison? What impels you to this constant, tireless struggle? You have shown that you care comparatively nothing for the money it makes and you have no particular enthusiasm in the attending fame."

"I like it," he answered, after a moment of puzzled expression, and then he repeated his reply several times as if this was a proposition that had not occurred to him before. "I like it. I don't know any other reason. You know, some people like to collect stamps. Anything I have begun is always in my mind, and I am not easy while away from it until it is finished; and then I hate it."

"Hate it?" I asked, struck by his emphatic tone.

"Yes," he affirmed. "When it is all done and is a success, I can't bear the sight of it. I haven't used a telephone in ten years, and I would go out of my way any day to miss an incandescent light."

"Do you have regular hours, Mr. Edison?" another interviewer once asked him.

"Oh," he said, "I do not work hard now. I come to the laboratory about eight o'clock every day and go home to tea at six, and then I study or work on some problem until eleven, which is my hour for bed."

"Fourteen or fifteen hours a day can scarcely be called loafing."

"Well," he returned, "for fifteen years I have worked on an average of twenty hours a day."

It is said that when he is at work on an invention, he is absolutely absorbed by it. He sometimes works continuously, day and night, even eating his meals in his workshop. Then when the thing is accomplished and he allows himself to relax from the terrific strain, he lies down and sleeps with the complete forgetfulness and peace of a boy, to awake refreshed and vigorous, ready for any other work that comes to him. He takes a vacation every year and then forgets his work as completely as at other times everything else, and enjoys his play with the zest of youth.

This ability to become completely absorbed in his work doubtless accounts for the immense amount of work that he has accomplished in a life not yet beyond its prime; and the correlative ability to lay his work completely aside when it is over, must account for his extreme vigor and health.

Edison was born in Milan, a little village in Erie County, Ohio, in 1847. His parents were poor and unable to send him to school, but for the first ten or twelve years, he went to the best of school-teachers, an educated and cultured mother. After this he had a few months in a common school, and the rest of his vast fund of information he got from reading snatched from hours of labor, and in the course of instruction which the common life of humanity offers to every one who can learn.

When he was twelve years old he became a newsboy on the Grand Trunk Railroad to Detroit. At once he showed the energy which was to distinguish him all through his life. He soon increased his business to such an extent that he needed four assistants, all of whom were boys, working under his direction.

He found time for other activities, also. He fitted up a small printing shop in one corner of a baggage car, and began to publish a paper of his own, which he called The Grand Trunk Herald, and offered for sale with his other papers. He also began to feel a great interest in chemistry at this time, and alongside his printing shop, fitted up a small laboratory, in which he experimented with all sorts of strange and ill-smelling drugs. The train-master seems to have been a very patient and long-suffering man, for he raised no objection to these peculiar uses to which the car was put, until, one ill-fated day the boy knocked over a bottle of phosphorus, which set fire to the car, and burned everything up, printing-establishment and all. Then he arose in his wrath, and discharged the budding genius and all his belongings.

It was while fortune still smiled upon him as newsboy that he discovered the free public library of Detroit. The thought of all these books at his disposal filled him with delight, and he resolved to make the best of the opportunity, and set to work to read them all through. He began at one shelf and read as many books as he could at one sitting, the next time beginning at the place where he had left off before. He had sense enough to see very soon, however, that this was no way to acquire knowledge, and afterward selected what he wanted and read methodically.

After he was discharged from his news business, he was without employment. But chance stepped in and helped him out. One day he was at the railway station, when the telegraph operator's baby child ran out onto the track before an incoming train. The boy snatched the child away, thus saving its life. The father was grateful, and offered to teach the boy telegraphy. This was a great opportunity, and he learned readily. Having acquired the necessary knowledge in this way, he became a tramp telegrapher, going about from one large city to another, working here and there, and making enough to feed and clothe him. Among his kind, the other tramp telegraphers, he was well liked, being jolly and companionable. He was one of them and lived as they did, except for one thing: His life was always clean;

he never drank, and was generally made the treasurer of the crowd, for the others would entrust to his care whatever of their earnings they dared not spend for drinks, and he kept it faithfully, remaining quietly in his own room studying some book, which was the self-indulgence for which he spent his money. One night, one of the men who had given him money to keep for him, returned drunk and demanded it. Edison refused it, for which kindness the man knocked him down.

The story is told that one morning, after sitting up all night to read the life of Faraday, his great predecessor as electrician, he started off with his roommate for his breakfast. He walked along silently, thinking doubtless of what he had been reading, then startled his commonplace companion by saying, "Adams, I have got so much to do, and life is so short that I have got to hustle," and started on a dead run for breakfast. Is it at all to be wondered at that for this period of his life he went among his acquaintances by the name of "Loony?" While he was a young man he was fun-loving and full of jokes and pranks, and was discharged from several positions because of some trick of his own. At one place the operator was required to send along the wire the watch-word "six," at stated intervals, to show that he was awake and at his post. Edison made some arrangement by which the signal was given automatically, while he was happily absorbed in a book. This was discovered, as the way of the evil-doer always is, and he was discharged.

Chance seems to have been with him, however. Being out of employment, he went across to Canada. The town where he went became snow-bound, and the telegraph wires were down. He mounted a locomotive and tooted a message across to the next town, repeating it over and over, until it was understood, and answered in the same way. This piece of ready wit earned him another position.

At another time he worked in the general office at Boston. He was seedy-looking and green, and the other operators decided to freeze him out at once. The swiftest man they had was set to give him a message, which he did as fast as he could. Edison was equal to him, however, and more than beat him at his own game. At the end, the other fellow said, "Who the deuce are you, anyway?"

"I'm Tom Edison," he answered. "Shake hands!"

While he was in Boston, he put that wonderful mind of his to work upon a practical problem. In his room the cockroaches were very troublesome and he invented a device for their automatic destruction. He put long, narrow pieces of zinc around the room and attached opposite poles of an electric battery to them. The cockroaches crawled in and out of the room between the pieces of zinc, closed the circuit, and thus electrocuted themselves.

After this period of tramp telegraphy, he was hanging around a big factory for several days. One day the machinery stopped and no one could find what was the trouble, or start it again. Edison walked in, a seedy-looking individual who met with no respectful treatment from those he was to help. He put his finger on the trouble at once, and for his skill was offered a good position. It was not long after this that he fitted up a workshop and factory of his own, to manufacture things of his own invention. To-day he is rich, and has a wonderfully equipped laboratory, and the finest scientific library in the world. He is famous, also. He is one of the world's benefactors, the mightiest electrical genius in the world. He is still a simple-hearted, wholesome man, unassuming and personally little known outside a small circle of friends. He is a big man, big in mind and heart, whom it is good for us to know something about.

Opportunity, sooner or later, comes to all who work and wish.—Lord Stanley.

PAINFUL PERIODS

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Thoughts of Various Kinds for the House-Mother.

HOUSEKEEPERS SHOULD BE METHODICAL.

Housekeepers often waste their energy and make their lives thoroughly uncomfortable by neglecting to plan out the work that lies before them. The good housekeeper looks forward, and before retiring to bed at night she has arranged her plan of campaign for the following day, and when the time comes she carries it out methodically. The poor housewife, on the contrary, exercises no forethought, and does not trouble about anything that has to be done until the moment comes for doing it. The consequence of this mental indolence is a lamentable loss of peace and comfort in the house, and a perpetual hurry to overtake time, which could easily have been saved by a little careful planning.

Another very common mistake of housewives is to overestimate their strength. The question of economy is never of greater importance than when applied to our energy and powers of endurance. It is of no use for us to practice the most rigid economies, if, at the same time, we overtax our strength. Some women with more energy and ambition than prudence will crowd into one day the work that ought to occupy two. You may perhaps feel inclined to admire their powers of despatch, but probably if you called the day following you would rather lament their want of discretion. Almost invariably, you would find them tired and exhausted, and very likely fretful and peevish, a source of discomfort to themselves and to their households. There is no economy in this sort of energy, for the work of the one day, if spread over two, could have been performed more easily, and

without detriment to health and spirits.—Ex.

THE JOY OF LIVING.

Do you enjoy your life as it passes, or are you living on the hope of tomorrow? So many men and women spend their previous days in hard work and self-denial, with the vague expectation of taking more enjoyment "after awhile." Their lives are a sort of prelude, as it were, to the expected time when they will really live. And, oh! how often the prelude goes on to the end, and they meet the Angel of Death before they have written even the first chapter.

We are possessed with a spirit of not having time to enjoy. That is the keynote of so much of the dissatisfaction of life. We feel that when the tasks of the moment are done we shall be freer, and shall have time to say the pleasant word or delight in the beautiful day. But the tasks are always before us, and so we go on; always looking for something better, while the best we shall ever have is even at hand.

We all know the woman who plods through her daily duties, weary and patient, even cheerful. She is hoping for a distant time of ease and enjoyment, and all the while the opportunities of joy are about her. The picnic with the children in the woods, the luxury of dressing prettily to meet her husband, the flowers awaiting her by the roadside, or even a half hour at ease in the hammock. She will say she has not time for these things. But she has. For these things are of more importance than her so-called duties. They are more like to prolong the days of her young life and to bring joy and happiness to herself and those about her.

And there is the man who spends all his time and thoughts in the scramble of dollar-getting. In his heart he intends to stop some time and "enjoy the rest of his days." But he doesn't know when to stop, or, if he does, he finds he has, in a great measure, lost the power to enjoy. For the power and capacity of enjoyment must be cultivated and will grow weak and dwarfed if left unused.

But most people do not know how to enjoy, and many phantoms are chased, and many idols are worshiped, in the name of happiness. Wealth and distinction, fame and popularity, the having of more than one's fellows, these do not bring true happiness, but rather envy and pain. Our extreme civilization has given us so many things to strive for that we lose sight of the simple little things at hand, the true little things that are always about us, within us, to make us happy every day.

Enjoy life as it comes to you. Listen to the bird-songs and the voices of the children. Linger to watch the sunset or the opening of a flower. Take into your life the goodness, the pleasure and the brightness of every day, for "we shall pass this way but once." And then when you reach the last day that is given you here, you will be content and can say, "I have lived."—Town and Country.

A HAPPINESS CREED.

Life is beautiful and happy to those cheerful, hopeful souls who are constantly looking for the good and the beautiful.

Life should not be simply the passing of a certain number of years of earthly existence as comfortably as possible; it should be a period of soul growth, a triumphant progress from mountain top to mountain top of the chain of experience that leads us on and up to the summit of life eternal, where, leaving behind all earthly cares and desires of the flesh we shall know only joys of the spirit. Those who attain unto greater soul growth here shall be the better fitted for life there.

The beauty of this thought is that the more unselfish and spiritual are our motives and acts here, all that we do to contribute to the comfort and happiness of others not only contributes as much and more to our own satisfaction in this life, but helps us to attain the greater soul growth and spi-

ritual stature necessary to our greatest happiness in the life to come.

This is verily a happiness creed—be happy and contribute as much as possible to the happiness of others—a good creed to live by and die by.—Farmer's Wife.

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Star Valley Women's Club, Iola, Allen County (1905).
West Side Forestry Club, Topeka, Shawnee County, Route 8, (1905).
Fortnight Club, Grant Township, Reno County (1905).
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Mutual Improvement Club, Vermillion, Marshall County (1905).
Frontier Reading Club, Cawker City, Mitchell County (1905).
Cosmos Club, Russell, Kans.
[All communications for the Club Department should be directed to Miss Ruth Cowgill, Editor Club Department.]

MISCELLANEOUS PROGRAM.

Modern Science.

Roll call—Discoveries and inventions.

I. Some practical achievements of modern science.

II. Edison, the "Wizard" and what he has done.

III. Debate—Resolved that the effect of modern scientific thinking has been beneficial.

The subject of this program is so broad that it can be touched only here and there in an afternoon meeting. This is the age of science. It has invaded every sphere from religion to hygiene. The first paper may take up the subject in its practical side. What has science done for the work-a-day world? What useful things has it given to humanity?

The subject of modern science can not rightly be taken up without mention of Edison, its high priest. The article in the Home Circle may be useful in this connection.

The third topic will probably be best used as a debate or discussion, since it is a subject upon which there is a wide difference of opinion. The theoretical side of the subject is brought out here. Is it a dangerous thing to apply scientific discoveries and theories to things intellectual and spiritual? There is room for a vast deal of earnest and intelligent discussion in this topic.

THE INTERNATIONAL SUNDAY-SCHOOL LESSON.

Third Quarter. Lesson XII. Daniel 1, 8:20. September 17, 1905.

Daniel in Babylon.

The antiquity, magnitude, splendor, and wealth of Babylon surpassed belief. Founded two millenniums before the Christian era, it covered ten times the area of the largest city of modern times. The fascinating loveliness of the metropolis diverted Alexander's attention from the incalculable treasures of the royal coffers. Though its ruins have been the quarry out of which a score of cities have been built, they still rise in vast mounds upon the plain.

Yet, when Babylon was shining in meridian splendor, one thing eclipsed it in the eye of God and angel, if not of man, and that, too, the most unlikely thing the city contained—the character of a young Hebrew captive. Daniel was greater than the city in which he lived. The city is dead. The man lives. The character of Daniel has



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been the noble model on which tens of thousands of young men have fashioned their lives.

He made the most out of his situation. He might have complained of his environment. He might have said, "I'm the puppet of a despotic ruler; might as well submit to the inevitable. I'm deprived of personality and influence. It makes no difference how I live or what I do." Instead of that, with courteous and winning manner, but without sacrifice of principle, he adjusted himself to his surroundings without giving offense, and achieved success through the very conditions which seemed to make it impossible.

He had fixed religious principles. He knew what he believed, and why. He was rooted and grounded. Religion was not a matter of geographical location with him. He felt its sacred obligations as strongly in Babylon as he ever did in Jerusalem. No doubt they had a proverb in his day which corresponded to our modern maxim, "When in Rome, do as Romans do." But he scorned the adage.

He was incorruptible. Babylon is the New Testament type of profligacy. In the midst of a self-indulgent and effeminate court and populace; among strangers, five hundred miles from the restraints of home and Church and acquaintances, with the subtle, undermining influence of general degeneracy, beset by the world, the flesh and the devil, the lust of the flesh, the lust of the eye, and the pride of life, "Daniel purposed in his heart that he would not defile himself."

"Jesus' words are strikingly exemplified, "Seek first the kingdom of God and His righteousness, and all else shall be added." Daniel stepped at once to the commanding position of prime minister of the proudest monarchy on earth and retained it half a century. He was able to befriend with patriotic services his unfortunate fellow-countrymen in their exile. He exalted the name and nature and worship of the true God in a heathen court

and country. He left at once an inspiration and a pattern for young men of every age.

The Teacher's Lantern.
Temptations of young men to-day



No Smoke—No Smell

Wouldn't you like to be rid of both forever? You will when you get a

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Of the Lewis and Clark Exposition, Portland, Oregon, telegraphs as follows:

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are not severer than those of Daniel. No possible environment is worse than his. Consequent encouragement of his example.

Total abstinence as a principle is physiologically as well as morally correct.

Temperance includes: (1) Moderation in eating. "Loaden stomachs make leaden brains." (2) Abstinence from narcotics.

Any apparent success achieved by those who are not abstemious, achieved in spite of, not because of, their habits.

The spirit of man for the present, at least, necessarily roots itself in the material. There is supreme danger that the material basis of life shall be unduly prized. The Spirit is to dominate. Everything is to be subordinate to it. This is the essence of temperance.

The gains of moderation are beauty, strength, health, mental power, influence, position, and long life. The story of Daniel admirably illustrates this.

TOURING WESTERN CANADA. (Continued from page 931.)

carriages on side-trips, so that we had a splendid chance to gain a comprehensive idea of the entire territory and its productions during the harvest season, and never before had the visitors seen such bountiful crops of wheat, barley and oats as were being garnered by the busy farmers. The harvest season over the territory runs from about August 15 to September 15. The Canadian August is very similar to our Kansas June during the harvest season.

It would require volumes to describe in general detail what the writer saw and learned, while on a three-weeks' trip, of the wonderful, fertile farm-lands, grazing districts, irrigation schemes, and other productive enterprises which afford such attractive inducements to the farmer, merchant or investor in the provinces of Manitoba, Saskatchewan and Alberta. The writer met quite a number of people formerly of Kansas, Nebraska and Missouri, who are making fortunes in the country and highly enthusiastic as to the future of this great American Annex.

They are delighted with the "square deal" of the Dominion Government and the liberal treatment and live-and-let-live policies of the Canadian railroads.

The people that you meet are our people, and it is quite difficult to realize that you are not all the time on American soil and among your home people. Taxes are very low, as the Dominion Government provides so much; and in the towns and cities nearly all public utilities are owned by the municipalities. Public schools and churches are as prevalent as in Kansas; in fact, the writer was wonderfully impressed that the whole country was simply an enlarged edition of Kansas, only better watered and more productive as a wheat country, but not so good for corn, which is grown to only a limited extent.

The chief attractions of Western Canada to American farmers are the cheap lands and the bountiful yields of small grains. Whether it is because the soil is still "new" or whether it is because it is exceptionally rich in the food of the wheat plant, it is indisputable that Western Canada is the most bountiful wheat-producing region on the Continent. For 21 crops, Manitoba has maintained an average of about 20 bushels to the acre, and has had several crops that averaged more than 25 bushels. During the six years that agricultural statistics have been collected in the territories the average yield of wheat per acre has been almost 20 bushels. Yields of as high as 40 bushels to the acre are not uncommon.

The class of horses and cattle seen on the farms and plains of Western Canada was one of the surprising features of the trip. No scrub stock anywhere. Only improved animals are

raised, and pure-bred sires are used almost exclusively. The horses are mainly the best draft breeds or standard-bred. The cattle are mainly Shorthorns, although Herefords and Galloways are quite numerous. Livestock everywhere was in splendid condition. The native grasses are very abundant and highly nutritious. It is quite a surprise to the writer that the winters had no terrors for the stockman or farmer.

In closing this brief general sketch of the trip, the writer hopes to present in subsequent articles something more in detail and with illustrations of things seen in the provinces of Manitoba, Saskatchewan, and Alberta.

Horticulturists will remember that the American Pomological Society is to meet September 19 and 20 at the Coates House, Kansas City. Secretary Barnes, of the Kansas Horticultural Society, will read a paper on "The History of Horticulture in Kansas," Wednesday afternoon. This will be followed by historical sketches of several other States of the Middle West.

"SOME KERNELS."

Secretary F. D. Coburn has published under the above title several facts about Kansas which are of striking interest. These kernels are as follows:

I.

"The value of the Kansas Corn crop of 1902, from only 13 per cent of her area, was sufficient to more than five times cover the cost of the entire Louisiana Purchase and nearly eleven times as much as the United States paid for Alaska."

II.

"In Corn Kansas is a billionaire; in the last twenty years the State has raised 2,957,122,161 bushels, worth on the farms where grown over \$821,000,000."

III.

"In Kansas Corn is the monarch cereal and prosperity's barometer."

IV.

"The fact that Kansas produces more Wheat than any other State or country in the world always causes much earnest watchfulness and discussion of its acreage, condition, prospects, yield and quality, at home and throughout the grain, milling, transportation, breadstuff, banking and commercial centers of civilization. This would naturally persuade those without knowledge of the facts to suppose that Wheat is by far the State's main and foremost crop; yet compared in importance and value with her Corn, Wheat is a side issue, and but one of various secondary items the worth of which must be aggregated to even approach the value of Corn."

V.

"In each of the past ten years save one, the annual Corn crop in Kansas was of greater worth than the same year's Oats, Rye, Barley, Buckwheat, Irish Potatoes, Sweet Potatoes, Castor Beans, Cotton, Flax, Hemp, Tobacco, Broom Corn, Millet and Hungarian Sorghum, Milo Maize, Kafir-corn, Jerusalem-Corn, Prairie Hay, Tame Hays, Alfalfa, and Horticultural Products marketed."

VI.

"Here is Uncle Sam's valuation of the Wheat crop of the year 1900 in each of the leading fifteen States, placed in proper rank:

State.	Rank.	Value of Year's Wheat.
KANSAS	1	\$45,368,760
Minnesota	2	32,450,829
California	3	16,555,302
Texas	4	14,973,384
Pennsylvania	5	14,602,560
Nebraska	6	13,145,007
Iowa	7	12,860,952
Washington	8	12,799,297
Missouri	9	11,873,429
South Dakota	10	11,686,817
Illinois	11	11,508,524
Maryland	12	10,783,372
Oklahoma	13	9,888,408
Tennessee	14	9,239,910
Oregon	15	8,908,907

"The other States did nobly, but the top-notchers of them all apparently didn't equal Kansas by about 40 per cent. The others were nowhere."

VII.

"In the past ten years the value of Kansas Corn crops has been \$106,000,000 more than that of the Wheat pro-

duced in the same period, which included three of the State's largest Wheat crops and one of the smallest of Corn. In the preceding ten years the Corn crop was worth nearly \$200,000,000 more than the wheat.

"The Kansas Corn crop was worth over \$6,000,000 more than all her other products of the soil in 1902, and in two preceding seasons Corn outvalued all the other field products, Wheat included."

VIII.

"In 1899, according to the Government's reports, the Kansas Corn yield was greater than that of all the New England States, New York, New Jersey, Delaware, Michigan, Virginia, South Carolina, Florida, West Virginia, Maryland, Minnesota, North and South Dakota, Montana, Wyoming, Colorado, New Mexico, Utah, Washington, Oregon, California and Oklahoma combined. Five years later, in 1904, in spite of her destructive floods Kansas produced more Corn than all New England, Pennsylvania, Minnesota, and Thirteen additional States and Territories.

"In almost any year three or four of the more northern of the State's 105 counties produce more Corn than the entire Dominion of Canada."

"In 1889 the yield of Corn in Kansas was 273,883,321 bushels."

IX.

"Uncle Sam's reports point out that in the five-year period ending with the year 1900

the combined value of Kansas Corn and Wheat exceeded that of the same crops of any other State in the Union.

"Illinois came next, but fell behind Kansas by a little less than \$19,000,000."

X.

"The three or four States excelling Kansas in total Corn-production are her immediate neighbors of the prairie. Of these she is neither jealous nor envious, and to overcome any deficits in meat-making foods caused by a decrease in Corn she has only to utilize one of her three, four or five cuttings of Alfalfa harvested each year. Missouri for example is admittedly one of the world's foremost Corn States; yet

Uncle Sam's reports show that Kansas in 1896 and 1899 raised more Corn by 40 per cent than was raised by Missouri."

XI.

"The value of her Corn grown in the past twenty years is \$100,000,000 more than that of all the Wheat crops grown by Kansas since her beginning."

XII.

"Great as the Wheat crops have been, for twenty-five of the forty-three years of which there is record, statistics reveal that

the aggregate value of the Corn crop was more than double that of the combined yields of winter and spring Wheat,

and in but few years has the value of the wheat crop approached or surpassed that of the same year's corn. The value of the Corn alone in each of fifteen years of the past twenty has been greater than that of all other field crops together, Wheat omitted, and in only one year (1901) of the past decade did Corn fail to outvalue the same crops."

XIII.

"Kansas raises a wide diversity of crops, and below are shown the bushels and home values of two of them (corn and wheat) for the past ten years:

Year.	Wheat, bushels.	Corn, bushels.	Combined value
1895	16,001,060	201,457,396	\$ 63,652,891
1896	27,754,888	221,419,414	48,890,206
1897	51,026,604	152,140,993	62,940,597
1898	60,790,661	126,999,132	63,235,140
1899	43,687,013	225,183,432	75,936,886
1900	77,339,091	134,523,677	81,555,980
1901	90,333,095	42,605,672	72,341,720
1902	54,649,236	201,367,102	107,461,143
1903	54,041,302	169,359,769	109,504,497
1904	65,141,629	132,021,774	102,123,211
Totals	580,765,179	1,607,078,361	\$777,642,371

The first aim for your time and generation shall be to foster a simple and self-denying life.—Thomas Hughes.

Your Face Tells

If it's soft, smooth and free from irritation, it's a sign you use the healing

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I have about 900 bushels of Khorkof Russian winter wheat for sale at \$1.25 per bushel. This wheat is of fine quality and weighs 61 pounds per bushel.

The Khorkof variety has proven one of the best at the Experiment Station at Manhattan, Kansas.

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The world is familiar with the wonderful prices which have been obtained for Oregon apples. The Rogue River Valley is the seat of the best Oregon apple land. It is equally well adapted for all fruits. Bartlett and winter pears are just as profitable as apples. Alfalfa yields four crops annually WITHOUT IRRIGATION. Climate is perfect. Write Secretary of Medford Commercial Club for reliable information, Medford, Ore.

Three Choice Shorthorn Bulls.

All dark red, 12 to 30 months old good breeding, good individuals. Also some cows and heifers bred. Twenty-five spring boys, good growthy fellows, out of mature sows and No. 1 boys. For description and prices, call on or write:

JAS. P. LAHR, Route 2. Seabath, Kans.

FITS POSITIVELY CURED, THE CAUSE removed. Trial bottle free. No failures. I cure. Dr. Lindley, 1855 Reta Street, Chicago.

Inventions of Ancient Rome: Some Forerunners of Modern Ingenuity.

ALEX. DEL MAR, M. E., IN SCIENTIFIC AMERICAN.

The mechanical and other inventions of the Romans, whether original with themselves or borrowed from the nations they conquered, were so numerous that, in order to describe them, first with the object to note how largely we are indebted to antiquity for the devices now in common use, and second, to derive from these inventions such practical advantages as they may suggest—for some of them yet await adoption—it is necessary to divide and classify them. In this arrangement, the inventions pertaining to agriculture naturally take precedence over all others.

Pliny's boast that "the Roman people has never shown itself slow to adopt all useful arts," is not without a substantial basis of truth. The notion which has been advanced in modern times, that the Romans were steeped in bloodshed, tyranny, and voluptuousness, is altogether erroneous. They were a warlike and pleasure-loving people; but they were also hard-working, industrious, and inventive. The number and prominence of their agricultural publications alone afford ample evidences of their industry. After twenty centuries of social cataclysms, we still possess the treatises of Cato, Varro, Columella, and

standing corn, the beasts being yoked behind it; the result being that the ears are cut off and fall within the frame." The wine-press, which anciently was worked by levers, was much improved by the Greeks during the Augustan period, by adopting the screw. About A. D. 50 this press was still further improved by the Romans, who used thicker plank, reduced the size of the press-boards and the height of the screw, and gave the latter more threads.

WATER SUPPLY.

The city of Rome was supplied with no less than fourteen aqueducts, not necessarily for drinking purposes, because it always had the river, which afforded a copious flood of fresh water, but for the sake of convenience, and especially to supply the baths and drive the water-mills, most of which were located under Mount Janiculum. It was these water-mills which made Rome a great manufacturing city. They were employed in innumerable arts, and gave rise to endless mechanical inventions and improvements. When, in the sixth century, the Goths laid siege to Rome and cut off the aqueduct water, Belisarius established a series of floating boat-mills on the Tiber, which, being driven by the current, enabled the accustomed industries to be resumed. Grist-mills driven by streams, or the wind, were common in the rural districts; the more

Athens, devoted almost an entire work to the culture of this valuable grass; and the Roman writers were scarcely less enthusiastic on the subject.

THE SILO.

The silo, for preserving grain in the earth, is evidently an Oriental invention, which, before the Augustan age, made its way westward through Bactria, Pontus, and Thrace to Egypt, Greece, Italy, and Spain. The Pontic name of siri. Varro says that wheat, properly stored in dry soil, will keep for fifty years; and millet, a hundred. He mentions an actual instance of beans, which were preserved for a period of more than 220 years.

The same ingenuity that could preserve grain from rotting, protected wood from burning; and this also was a Pontine and perhaps an Oriental invention. Aulus Gellius relates that at a period about a century before the Christian era, Archelaus, one of the generals of Mithridates, painted a wooden tower with a preparation of alum, and thus rendered abortive Sulla's attempt to fire it. Another method of protecting wood from fire is mentioned by the Greek tactician, Aeneas, about 360 B. C. The Greeks also invented our roof gardens, and have left us very explicit directions how to construct them. The idea was doubtless taken from the hanging gardens of Babylon, while these again probably came from the Orient. But few things

monks, in the reign of Justinian, is unworthy of credit. Silkworms were cultivated in the Greek island of Cos nearly a thousand years before Justinian; and a tissue was made from their silk, which was then, as now, known as bombazine. The fact is mentioned by Aristotle and corroborated by Pliny, who remarked that the clinging garments made of it, disclosed almost as much as they concealed. The gossypium, or cotton plant, and manufacture, are fully described by the same author, who, after alluding to the culture of the plant in Egypt, says: "There is no tissue known that is superior to this thread, either for whiteness, softness, or dressing; the most valuable vestments worn by the Egyptian priests being made from it." To confirm his account abundance of cotton tissues have been found in Egyptian tombs of the Alexandrian age. Glucose, known to the Greeks by nearly the same name, al gleucos, or Always Sweet, and to the Narbonenses as dulce, or sweet, was gathered from raisins. "In order to make it," says Pliny, "they keep the grape hanging on the vine for a considerable time, taking care to twist the stalk." In many parts of Europe it is still made in the same way.

LIQUORS.

When we speak of champagne, it is neither cider, mead, nor perry that is meant, all of which were manufactured by the Romans, and are fully described in the works left to us; but of a wine made from grapes, and rendered sparkling and effervescent by artificial means. "As to wines which have been treated with marble, gypsum or lime, where is the man, however robust he may be, who has not stood in dread of them?" inquires a Roman moralist. What is this but champagne? Strange as it may seem, this too appears to have been an Oriental invention; for previous to the Roman imperial era, both the Greeks and Egyptians had it. In Africa, says Pliny, it was prepared with gypsum or lime, and in Greece with powdered marble, precisely as is done in many countries at the present day.

Hog lard is invariably referred to by the Greeks and Roman writers as axungia, or axle grease, that probably being its principal use in countries blessed with an abundance of pure olive oil. It was also largely used for ointments, unguents, and pomades.

SMOKING.

It will not be disputed that the culture of tobacco was brought into Europe from America in the sixteenth century; what is contended is that the smoking of pipes is of great antiquity, and was practised in India, China, and Egypt, long before the discovery of America. Pliny mentions the smoking of colt's-foot, "inhaled through the reed," as a cure for a chronic cough. Apollodorus, a writer of the Ptolemaic age, says that: "The barbarians, by inhaling the fumes of the cypros plant, diminish the size of the spleen. They never go out of the house," he adds, "till they have inhaled these fumes, through the agency of which they acquire strength and vigor." Pliny calls cypros an Indian weed; says it resembles the ginger plant; that some people chew it; and that it tastes like saffron. All of which certainly suggests tobacco. If the Indian traders of Ptolemy could introduce it no farther west than Egypt, and Oviedo first introduced it from America into Spain, it took nearly two thousand years to carry it from one to the other of these distant frontiers of the empire. It would be a curious subject to inquire what pantoscopic changes its soothing influences might have brought about, had the Romans encouraged its use during the interval!

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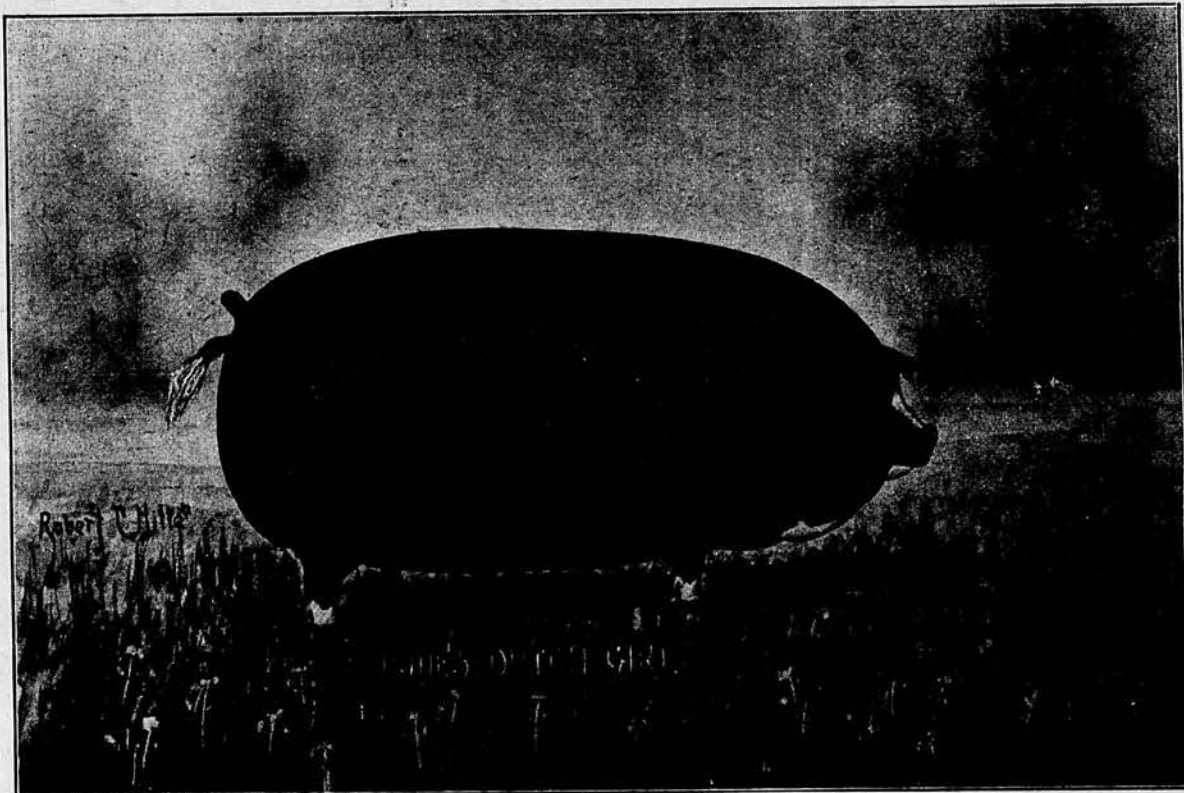
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THE KIND THAT WILL SELL IN THE E. M. METZGER CLOSING-OUT SALE AT FAIRFIELD, IOWA, ON THURSDAY, SEPTEMBER 21, 1905. SEE ADVERTISEMENT.

Pliny, to say nothing of the bucolic almanacs of Ovid, Virgil, Manilius, and others.

ROTATION OF CROPS.

One of the most important inventions or adaptations of the Romans was the two-course system, begun with cultivating the land and letting it lie fallow in alternate years, and ended with sowing it alternately with cereal and root crops. The specialization of guano was carried so far as to value the manure of thrushes, pigeons, and domestic fowls and other animals, in the order named.

ANCIENT AGRICULTURAL MACHINERY.

The sowing machine or seed-drill is doubtfully credited by Beckmann to Theophrastus; at all events, it is plainly described by Pliny, who also mentions the Rhaetian (Swiss) wheel plow. His measure of a fair day's work for a yoke of oxen for the first plowing, nine inches deep, is an acre, and for the second plowing, an acre and a half; with the wheel plow, about two acres. The machine reaper was another Roman invention. With the scythe, an acre of grass was a fair day's work; with the scythe-chariot, or reaping-machine, four times as much. The grain harvester was a Frankish invention. "In the vast domains of Gaul, a large, hollow frame, armed with teeth and supported on two wheels, is driven through the

ancient ones pounding the corn in gigantic mortars, the improved ones grinding it between revolving stones. Not only was flour produced in these mills, but also various cereal preparations, like our breakfast foods of the present day. Among these was one that yet remains to be reinvented. This was alica, a preparation of spelt, which the Roman writers allude to as a great delicacy.

ANCIENT YEAST.

It is not many years since the yeast cake was introduced into America as a novelty; yet it is an invention at least two thousand years old. Here are the words of the Roman encyclopedist on the subject: "Millet is more especially employed to make yeast. If kneaded with must (grape-juice) it will keep a whole year. The same is done, too, with fine wheat bran of the best quality. It is kneaded with white must, three days old, and then dried in the sun, after which it is made into small cakes."

ALFALFA.

The cultivation of alfalfa, which has made the fortunes of some of our far-western farmers, is another "antiquity." It was brought from Media into Persia in the time of Darius, and afterward into Greece and Italy. Medica was its Persian, lucerne its Italian, and alfalfa its Arabian name. Amphilocus, an agricultural writer of

are entirely new. Roof gardens are as much an evolution as steam engines. They both saw the light in halcyon ages; were neglected or forgotten in times of retrogression; and were resurrected, with improvements, in more propitious days.

VARIOUS INVENTIONS.

If now we turn from mechanical inventions to the agricultural products of the Roman period, especially those which are believed to be of modern introduction, we will find among the number esparto, silk, cotton, glucose, champagne, lard, and possibly tobacco. There will probably be no question about the first half dozen of these commodities; the disputable subject is tobacco.

Esparto, which is still largely used in Southern Europe for making sandals, mats, baskets, ropes, nets, sacks, etc., and which for similar purposes might be profitably cultivated in the United States, was known to the Romans as spartum. It was brought from Asia by the Carthaginians, and introduced by them into Spain during the fourth century B. C. At about the same time it was also cultivated in Greece, and employed in making the rigging of their sailing craft. From these countries it spread to all the intervening ones. The story that the silkworm and the manufacture of silk were introduced into Europe by two

In the Dairy

Dairy Queries and Answers.

Inquiry.—Is it possible for a certain cow's milk to test as follows: Tuesday morning, 5 per cent butter-fat; Tuesday evening, 6½ per cent; Wednesday morning, 7 per cent; Wednesday evening, 3¼ per cent; Thursday evening, 5½ per cent? F. H. S.

Answer.—I have seen such results from one of our farmer's cows, and it may not have been a mistake of the tester. It is a little dangerous matter for anybody to venture opinions as to what is possible concerning the yield or quality of milk a cow may give. The variations as given above are certainly unusual, and they should have excited enough suspicion on the part of the tester to induce him to have made a duplicate, subsequent tests. It is undoubtedly true that a cow can change her amount of butter-fat to this degree, and this is usually due to cases of fright or sickness. I have known cases in which cows have tested 10 per cent of butter-fat when sick.

Inquiry.—How much silage is needed to give a cow all she wants to eat? Is 30 pounds a day, with 10 pounds of hay and 4 pounds of bran and 4 pounds of gluten feed sufficient to produce a good quantity of milk?

G. C. H.

Answer.—The amount of silage that is profitable to feed depends upon a variety of conditions. When corn makes a good crop it is universally conceded that silage furnishes the cheapest forage that a farmer can grow, but where corn is only a medium or scant crop it is, of course, more expensive. There is practically no limit except the appetite of the cow as to how much silage may be fed. Where it is plentiful, we recommend feeding 40 pounds a day, where it is not, this may be reduced to 20 pounds, and still serve an excellent purpose. Thirty pounds of silage, 10 pounds of oat hay, and 8 pounds of grain will make an abundant ration.

Inquiry.—What is a good feed for young calves, to take the place of new milk when they are a couple of weeks old, and how much ought they to have at a feed twice a day?

Answer.—Sweet skim-milk, with a very little flaxseed jelly makes a splendid substitute for new milk. Where flaxseed jelly can not be conveniently obtained, oatmeal gruel may be substituted, and a very young calf may learn to eat whole oats, these forming an excellent addition to the skim-milk. However, very good calves, especially for dairy purposes, can be raised upon skim-milk alone, with an addition of a little, nice fresh hay every day. The amount must be governed by circumstances here, as in other cases. Ordinarily, six to ten pounds of milk at a feed is considered sufficient. O. ERF.

A Short-Cut in Butter-Making.

While in Ontario last winter in attendance at the dairy conventions, Prof. H. H. Dean announced a "short cut" in butter-making which promised much in economy of time and labor,

THIS SKIMMING MACHINE

takes the cream from the milk quicker than wringers squeeze water from clothes. It gets a quarter to a half more cream than by setting, because it uses centrifugal force—a force thousands of times stronger, quicker, more effective than the force that makes cream rise in pans.

Sharples
TUBULAR
CREAM SEPARATORS

Skimming finished five minutes after milking, because boy or ten can run tubular during milking. No skim milk to warm, because skim milk is fed still warm from cow. Half less washing, labor and expense, because only cream is put away. Catalog X-165 explains clearly.

THE SHARPLES SEPARATOR CO.
Toronto, Can. West Chester, Pa. Chicago, Ill.

and indicated better results and finer flavor; but time was wanted to test out the market side of the new experiment. It was, in brief, to take the sweet cream from the separator at about 32 per cent fat, cool it down to about 50° immediately, put it into the churn, add the starter, and churn at once. There is no difficulty in churning sweet cream, if it is about 32 per cent fat, and the temperature is down to about 52°. The granulation is about perfect, and its churning is quite as exhaustive as with very ripe cream. It has been market taste that has pronounced against sweet-cream butter. Now about eight months' market verdict has been given to the new plan, and it is very pronounced in its favor; so much so, that the Montreal market is paying a premium of ¼ cent over market price for it. For six months, the scores for the sweet-cream butter were considerably higher than the ripened-cream butter. In storage the sweet-cream butter lost 3.3 points, and the ripened-cream butter 7.8 points.

When the butter is taken from the churn, it has the sweet-cream flavor, but in forty-eight hours afterwards it has taken on the fine, delicate aroma that is desired; and time proves that it retains it much longer. Under conditions similar to the ripened-cream butter, it scores readily 97½ and 98 points. It is fair to state that the yield of the sweet-cream butter is slightly more than the other, but this may be due to slightly higher moisture content. It was also found that the high quality of this butter was better maintained at a high score by pasteurizing the milk, which was as applicable to the ripened-cream butter. In this there was a great gain. The labor and attention to holding vats of cream and maintaining temperature for twenty-four hours or longer and care of the tanks, were wholly dispensed with; and the liability of the culture going wrong in the time does not enter. It was also noticed that butter made early in May was taken out of storage early in June with its score up one point, a thing never known in the ripe-cream butter; in fact, the experts scored the latter as having an indicated fishy flavor.

This is a matter worth the attention of the creamery owners on this side of the line, and if it is a fact; saves the labor and the watching of the cream vats at least. The particular thing in this new method is in knowing that the cultures are true and kept pure and in ascertaining to a certainty the amount to use. Of course this new plan does not apply to creamery establishments that use gathered cream from a thousand or so patrons, for this cream is as a rule actively ripe when received and often wants a neutralizer, instead of a starter, a matter indicated by the mixed quantities of general market butter, even if Elgin is stenciled on the tub head.—John Gould, in Ohio Farmer.

The Ice-House on the Farm.

Can you tell us how to build an ice-house? We are contemplating building one this year for cooling dairy products and for some of our fruits the coming season.

SUBSCRIBER.
There are a number of very important points to be considered in building an ice-house. First is the location—whether it should be built above the ground or in the ground. Owing to the fact that the soil temperature is seldom higher than 52° F., while the air temperature varies from 32° to 110° F. during the ice-storage season, it is ordinarily supposed that an ice-house built in the ground would be more efficient than one built above ground. Experience has proven this not to be the case. While it is a fact that the average temperature above the ground during the ice-storage season is higher than the soil temperature, the soil on the other hand is a better conductor of heat. For instance, the heat units transmitted per square foot through one inch in thickness, per hour, with a difference of 100° in temperature, show that air transmits only 43 units, while ordinary soil transmits 335 heat units per hour through the same dimension and under the same conditions. This shows that air is eight times more ef-

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Seemingly perfect as they have been before, the later, 1905, DE LAVAL machines are still further improved, run still easier, have lower-down supply cans, and LARGELY INCREASED CAPACITIES, all for the SAME PRICES as heretofore.

STYLE	OLD	NEW
"HUMMING-BIRD"	250 lbs.	300 lbs.
"DAISY"	350 "	400 "
"BABY" No. 1	450 "	500 "
"BABY" No. 2 (IRON-STOOL)	600 "	700 "
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"BABY" No. 3	1,000 "	1,200 "
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ficient than soil for insulating purposes. It is, therefore, advisable in every case to build an ice-house above ground, where economy is sought and the conditions are such as make it possible to build it above ground. These conditions nearly always exist on the farm. The ice-house should always be built in a dry place, so that none of the ground-water and ice-water remains in contact with the ice, for water is a good conductor of heat and melts ice very rapidly, the heat being conducted from the ground below the ice-house. To avoid this, one or two tile drains, depending on the size of the ice-house, should be laid below the ice. On top of this, place a layer of cinders; or, if cinders are not available, a layer of coarse sand, at least one foot in thickness. On top of this sand place a foot of insulating material, such as is commonly used, either tan-bark, saw-dust, planer-shavings, or swamp or prairie hay. This will prevent the ingress of warm air, and will drain the water from the melting ice.

Efficient insulation is the next principal consideration. The house should be built as nearly square as possible. The roof should have a good pitch, and both gable ends as well as the top should be ventilated.

A plain house may be built of frame, with two-by-ten studding, lined inside with tar-paper and one-inch boards, the outside to be lined with one thickness of boards and two-ply paper, and the ten-inch space between should be filled with the insulating material that is available. Care should be taken that the insulation between these spaces is not packed too solidly, for the firmer the insulating material is packed, the better conductor of heat it becomes. To make it still more efficient, a four-inch air space on the outside of this is very useful, especially for small ice-houses, for the outside air space helps materially to insulate. This is then carried outside with tongue-and-groove weather boarding. The roof may be covered with paper or shingles or such material as can be

Don't Forget the Main Point

in dairying is to make it pay. The more cream you can get, the more pay, providing you do your skimming at the smallest cost in time, labor and running expenses. You can make it pay most, with least trouble and smallest expense, by using the Improved

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"I purchased a No. 7 U. S. Cream Separator last April. I have only three cows, but since the 8th of last April I have sold \$71.88 worth of cream. I find it everything that could be wished for. It runs very light and is a perfect skimmer.—U. B. GOEN."

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A little figuring will prove to you that Mr. Goen couldn't average about \$120 a year per cow unless he did get all the cream.

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You want to make money. Of course you do. You want to make this money as easily as you can and with the least amount of work necessary. Here's your opportunity.

The Easy Running EMPIRE Cream Separator

will make more dollars for you than you have ever thought it was possible to make from your cows. It will make far more dollars for you than you can possibly make by any other method of caring for your milk. It will get these dollars for you quickly and with far less fuss and work and bother than your cows now cause you. It will do all this

BECAUSE

The Empire Cream Separator runs easier than any other separator.

It is the separator that is most easily cleaned. It is built for durability and costs practically nothing to keep in repair.

It gets all the cream from the milk and does it twice a day, every day in the year for a long period of years. Any way you may look at it the Empire Cream Separator will make the most dollars for you.

We guarantee every statement we make and can prove them to you. Write for these proofs. EMPIRE CREAM SEPARATOR CO., Bloomfield, N.J. 811 Temple Block, Kansas City, Mo.

conveniently obtained. However, it is very important that the roof should be water-tight to prevent the dripping from warm rains running in upon the ice.

A cheap and effective insulating material frequently becomes quite a problem in some farming localities. Anything that is very light and porous may be considered as a fairly good insulator, if not of a metallic nature. Sawdust, tan-bark, planer-shavings, or prairie hay can be had in many of the States, and are the best, for the money that can be secured. However, if none of these are obtainable, cut rye or wheat-straw, or alfalfa-chaff may be used. If straw is used for insulating purposes, the insulated space in the walls should be at least fourteen inches thick. Wherever coal sparks can be obtained it is advisable to use these, especially in preference to straw or corn-stover, on and around the base of the ice-house. Coal sparks are very light, and are about as efficient as charcoal for building refrigerators, but owing to the scarcity of sparks they are seldom used. These sparks are located in the front end of the boiler of a locomotive, and they should never be mistaken for cinders. Sometimes prairie hay or swamp hay is used, and wherever such material as the wire swamp-grass can be obtained, it has proven to be excellent for packing ice.

The ice-house on the farm is becoming one of the necessary adjuncts in agriculture, for there are hardly any of the perishable products the farmer raises which do not deteriorate more or less before they can be delivered to market, sometimes causing great loss to the individual. This loss could probably have been saved if ice had been available. This is especially true in dairying, fruit-growing, or truck farming and poultry work. Besides this, ice adds materially to the relish of food-products consumed at the table. There is no question but that much of the summer troubles and ill-health of the average farmer is due to the fermented food-products which he consumes, which would not be the case had the food been kept on ice and properly served. O. ERR.

To brighten carpets after beating, wipe all over with a soft cloth dipped in ammonia water—one gill of household ammonia to one gallon of water; remove spots with oxgall and water—one pint of oxgall to three gallons of water. Tar or wax may be removed by rubbing with turpentine.

"Be praised not for your ancestors, but for your virtues."

The Apiary

Conducted by A. H. Duff, Larned, Kan., to whom all inquiries concerning this department should be addressed.

Bees in Early Autumn.

September work in the apiary is of great importance; as much so as in any month in the year. We will find several things that, done after the honey season is past, will insure the bees in condition to winter successfully. The first thing to look for is the presence of queens. The safety of a colony through the winter depends upon their having a good laying queen now. We want some young brood in the combs at this time, that we may have a goodly number of young bees hatched during the autumn months to carry the colony over the winter. We can not depend upon old bees, hatched during summer, to live over until next spring; a few may, but it is only a small per cent. It is the autumn-hatched bees that furnish the working force for the next spring. Good queens will not always answer this purpose, even; for if the bees are unable to gather honey in autumn so as to keep them stimulated up to brood-rearing, they will raise but few bees. Ordinarily, bees gather enough honey in the fall months to keep up brood-rearing to some extent, more especially if the queens are young ones reared the present season.

When there is a dearth of honey in autumn months, so that the bees are unable to get nectar from flowers, we can bring them up to the highest state of perfection by feeding. It frequently occurs that some colonies do not have



A MODERN APIARY.

enough honey to winter them, and the only remedy is to feed them, and September is the proper time to do this. By feeding all colonies this month (not only those that lack food for winter, but all others), we start brood-rearing and thus obtain the best results in wintering. To winter well, a colony must have a good supply of young bees, together with a good reserve of honey stored away in combs and sealed up. Feeding a little every day during the greater part of September is the right way to stimulate brood-rearing, and also to insure the food to be well ripened and sealed up in the combs. We can give much or little food as the circumstances demand. Feed only the best granulated sugar, as it is the best in the long run.

How to Arrange the Apiary.

EDITOR KANSAS FARMER:—I wish you would tell me through the "Old

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WE PAY THE FREIGHT

Reliable" just how to arrange an apiary. I mean that I want to know how the hives are arranged on the latest plan to date.

A SUBSCRIBER.

We herewith give you an illustration of a neat little apiary which is arranged on the latest plan. You will notice the hives are set on the hexagon plan, a six-sided figure. The advantage of this is that it gives a good foreground to each hive, and when working with a colony it puts you the farthest from the entrance of any colony. Eight feet apart is best, but if you are lacking space, you can get along with six feet.

Granges of Shawnee County and of the State: Are you learning the true gospel of the Grange? Are you improving in ritual work, etc.?

at a loss to know what insect is meant unless specimens are sent. Place a number of the insects (unless large in size, when one is sufficient), with some of their food in a tight tin, wooden or pasteboard box, wrap neatly, place your name and address on the outside, and mail, postage prepaid. Make no opening in the box for air, since no fresh air is needed. Send letter separately, stating nature of damage or any particulars known. Address to Dr. F. H. Snow, University of Kansas, Lawrence.

THE SCIARA ARMY-WORM.

(Maggots of Sciara fungus-gnats.)

"I send you accompanying this letter a rare specimen so far as my experience is concerned. It was found crossing a brick walk in innumerable numbers, traveling slowly, wound to-

Miscellany

Correspondence About Insects.

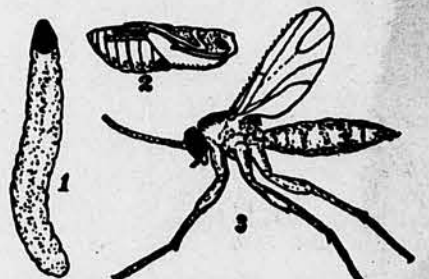
ELBERT S. TUCKER, MUSEUM ASSISTANT IN SYSTEMATIC ENTOMOLOGY, UNIVERSITY OF KANSAS, LAWRENCE.

Many kinds of insects are not yet understood, as we do not know what plants they attack or in what way they may be injurious, or perhaps beneficial; and for these reasons, we collect insects and keep them for study. At least they should be known by a scientific name. Many thousands of specimens are thus classified in the museum of the University of Kansas.

DIRECTIONS FOR SENDING.

We invite inquiries regarding insects or their work, but we are often

gather like a robe about one-fourth of an inch in diameter. If the objects



Life history or stages of Sciara inconspicua, Fitch, as an example of fungus-gnats: 1, maggot; 2, pupa, side view; 3, adult or fly, showing one side only. All enlarged. (After figures by J. S. Hine.)

are of any interest as viewed from an entomological standpoint, please report."

Chetopa, Kans., July 6, 1905.

This letter was followed by the next,

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DISEASES OF WOMEN. Of the thousands of prominent people cured by our mild method, NONE PAID A CENT TILL CURED—we furnish their names and letters on application. 1033 Oak St., Kansas City, Mo., and DRS. THORNTON & MINOR, 2006 Olive Street, St. Louis, Mo.

TILL CURED

which reported a similar occurrence more at length.

"I write to inquire the origin of a circumstance that happened a few days ago at our residence. We have an outside cellar kept for milk; it is about ten feet square and six feet deep, with sandstone floor which is washed every few days and kept clean. Milk was put down as usual in the morning when nothing unusual was seen, and when going in at noon for milk, we discovered what looked like a string or small rope lying in a serpentine shape across the floor, about five or six feet long and about one-quarter of an inch in diameter. We discovered that it was a live, moving mass of small worms, each about one-fourth of an inch long, nearly white with a black point on the supposed head; they kept together in this shape and moved at the rate of an inch in about five or six minutes. I poured water in front of the column and the worms spread out as fast as crowded by those behind; but when some three or four inches of the column had reached the water-line and spread out, a new column was formed which assumed the original round shape, moving at the same rate. The rear of the column commenced to taper about a foot from the end of the tail, which would leave perhaps or two worms to the inch. I lifted some two or three inches of the column with my knife and put that portion in a glass jar; about an inch of the column hung together on a small snipe-blade, and the worms lived about twenty-four hours enclosed. I send you a specimen the best I could save; perhaps with magnifying glasses you can discover something of interest. I would request information as to their origin, as I am 77 years old and never saw anything compared with the spectacle. Can you give me the desired information?"

Yates Center, Kans., July 17, 1905.

In personal answer to the first letter, a statement was made that such a report would probably be the first to go on record for Kansas, but after the second letter was received, Prof. F. H. Snow recalled that he had answered an inquiry about the same phenomenon thirty years ago. His communication, which will answer all questions, was printed in a local paper under the title of "Entomological Notes No. 5," here extracted from his scrap-book:

"Lawrence, July 21, 1875.

"Editor Journal:—The attention of Judge Smith was this morning arrested by what at first sight appeared to be a snake over two feet in length, slowly crossing a narrow brick walk in front of his residence on Kentucky Street. A closer inspection of this object revealed its true character. It was what might be called an animated rope whose strands consisted of innumerable larvae or worms twisted into a compact, elongated mass about one inch in breadth and half an inch in height at its thickest portions. The individual members of this living column were actively in motion and an onward movement of the entire mass at the rate of about two inches per minute was produced by the hinder ones working their way over the top of the rest. Each of the worms was one-fourth of an inch in length with a small, jet-black head and glassy, transparent skin. I find these to be the larvae of a species of fly belonging to the order of Diptera, family Mycetophilidae, and genus Sciara. Dr. Packard states that the members of this genus are more gregarious than the other genera of its family, and have the singular propensity of sticking together in dense patches, generally under the bark of trees. When fully grown they sometimes march in processions in a dense mass often several feet long and two to three inches broad and half an inch in thickness, whence the Germans call them "Army-worms." To the same genus belongs the apple-midge (S. mali) whose larvae devours the interior of apples.

"Before reaching their full size these larvae live in decaying vegetable matter, fungi or manure. I placed some of these creatures before noon in a vessel containing earth, into which they soon burrowed and are now entirely concealed from view. In a few

days they will complete their final transformation and emerge as winged flies, thus enabling me to determine the species to which they belong.

"Yours truly,
"F. H. Snow."

Once in a while an entomologist receives a bouquet from an appreciative person, and such compliments indicate that his efforts to serve and please are not all in vain. Pardon the vanity for producing an instance, yet it shows how a little information can help the earnest seeker after knowledge.

"Dear Sir:—Your answer was received, carefully read, and contents noted. I owe you a compliment for your kindness and instructions. I claim to be but a novice in the science of entomology. The specimens were brought to my office for examination, but my limited knowledge was inadequate for the task of classifying or naming the erratic, wandering visitors, who had, as migrating strangers, sought refuge under the Italian sunny skies of Kansas. Please accept many thanks, and hoping in the future, we may enjoy the pleasure of being mutually benefitted through our correspondence."

Chetopa, Kans., July 13, 1905.

NOTES ABOUT INSECTS WHICH HAVE BEEN PREVIOUSLY DISCUSSED.

The helgrammite or dobson-fly, (*Corydalis cornuta*, Linnaeus), was described with reference to its life history and illustrated with three figures in the KANSAS FARMER, of June 23, 1904. A male specimen was received from Cottonwood Falls, Kans., June 21, this year, and two females were sent from outside of the State, one from Pawhuska, Oklahoma, July 4, the other from Monett, Missouri, July 7. This common insect usually attracts attention wherever found; even though it is figured in dictionaries, very few people know about it.

Information regarding the cecropia silkworm, (*Samia cecropia*, Linnaeus), together with illustrations of its life history, was given in the KANSAS FARMER, August 11, 1904. The caterpillars then mentioned as being received July 22, from Hill City, Kans., formed cocoons on their arrival, from which moths issued on April 11 and May 29, of last spring; the appearance on the early date was probably due to the effect of heat through the winter in room where cocoons were kept, thus hastening the development of one moth at least. From a cocoon brought from Leavenworth County, early in the spring, a moth emerged May 30, which indicates the normal time for moths to appear from cocoons that have been exposed to the cold of winter. In Eastern Kansas or where timber abounds, the baggy, parchment-cased cocoon is quite a familiar object and furnishes an example of ready instruction to children or old folks who in time may be favored with a view of the moth as it emerges. Yet the error of calling the moth a butterfly is common.

The luna silkworm, (*Tropæa luna*, Linnaeus), was treated of in the KANSAS FARMER, also August 11, 1904, when its life history was represented by illustrations. Since then, several specimens have been presented to the museum, the first two being captured in Lawrence, one on April 22, which is a rather early date for appearance of the moth, and the other on May 23. One was forwarded from Sedan, Kans., June 10. Dr. F. H. Snow was presented with a specimen, July 13, taken in Lawrence, and another was found dead, though still fresh, under a box-elder tree where it had evidently fallen and died, August 14.

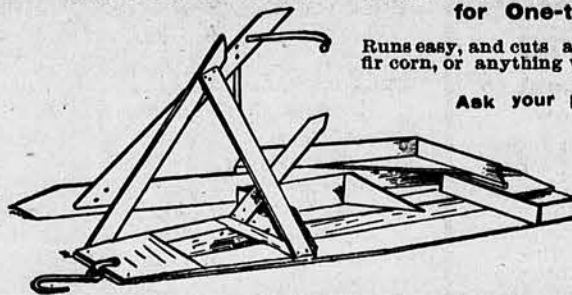
REGARDING THE POLYPHEMUS SILKMOTH. (*Telega polyphemus*, Cramer).

Another silkworm, known as the polyphemus, whose life history is so similar to the cecropia and luna that it need not be discussed here, was received from Pawhuska, Oklahoma, August 11. All that might appropriately be said of it here is in regard to its distribution which ranges through Kansas, the caterpillars generally being feeders on oak leaves. The larger dictionaries usually contain a picture of

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Farm Grasses of the United States

By W. J. SPILLMAN

Agrostologist, U. S. Department of Agriculture

An intensely practical discussion of the farm grasses of the United States of America is presented in this volume. It is essentially a resume of the experience of American farmers with grasses, and it is safe to say that no other work has covered the ground so thoroughly. No attempt has been made to give a connected account of all the grasses known in this country, but the aim has been rather to give just the information which a farmer wants about all those grasses that have an actual standing on American farms. The whole subject is considered entirely from the standpoint of the farmer. One of the most valuable features of the book is the maps showing, at a glance, the distribution of every important grass in the United States; and the reasons for the peculiarities in this distribution are fully brought out. The principal chapters treat on the grass crop as a whole and the relation of grass culture to agricultural prosperity, meadows and pastures, the seed and its impurities; the bluegrasses; millets; southern grasses; redtop and orchard grass; brome grasses; grasses for special conditions; haying machinery and implements; insects and fungi injurious to grasses, etc., etc. The methods followed on some pre-eminent successful farms are described in detail, and their application to grass lands throughout the country is discussed. The discussion of each grass is proportional to its importance on American farms.

This book represents the judgment of a farmer of long experience and wide observations regarding the plan in agriculture of every grass of any importance in American farming. In its preparation its use as a text book in schools as well as a manual of reference for the actual farmer has constantly been kept in mind. The book is most conveniently arranged and splendidly indexed, so that the reader may find any subject at a glance. Illustrated, 5x7 inches, 248 pages, cloth. Price, postpaid, \$1.00.

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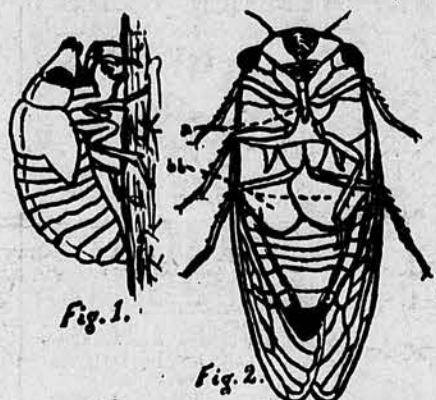
C. P. & T. A.

TOPEKA, KAN.

the moth, cocoon or caterpillar, with the definition of the name.

THE CICADA, OR DOG-DAY HARVEST-FLY.
(Cicada tibiae, Linnaeus).

Now that the shrill cry of the cicada



The Cicada:—Fig. 1, nymph; figure 2, under side of male (a, beak; bb, musical plates.) Natural size.

is heard by day, generally loudest in chorus at time of sunset when the intensely grating noises seem to issue from every tree, town people in particular who live where shade-trees are thick are often annoyed by the racket produced and remark about the cause. The insect is a true bug, by which the entomologist means that it belongs to the order Hemiptera or sucking insects with four membranous wings as a rule, in this case all being transparent. Ordinarily it is called a locust, but this name properly applied means a grasshopper, in comparison with which the cicada is quite a different kind of insect. Then again this noisy insect is often confused with its near relative, the more injurious and appropriately named periodical cicada, commonly called the seventeen-year locust, whose development requires 17 years for the Northern broods and 13 years for the Southern. The two kinds can be readily distinguished on sight, whenever the latter occurs, by the difference in size and color; our common neighbor measures about two inches in length with its wings closed and the periodical visitor is one-third less in size. Besides the approved names used in the heading of this article, other names have been given to the insect, such as Lyerman, Scythe-whetter, and Drought-fly (sometimes spelled without the "t"), and perhaps many others in various localities. So many names are confusing, the use of the approved one is preferable.

The early stages of life of the cicada are concealed from general observation for the reason that the young insects live underground during two years, after which they emerge and change into the winged or adult form, in the months of July, August and September. During the period of changing, the nymph (any immature form of bug is so called), appears as an ugly-shaped creature without any resemblance to the fly which it will presently become. Were it not animated, it might be mistaken for a lump of clay; it is then as large as a common hickory-nut and on account of its past burrowing habits, the legs fold compactly together, although the enlarged portions of fore legs exhibit a strange provision for digging purposes. Directly it crawls up the trunk of a tree or out on a limb where it hangs with the claws securely hooked to the bark. Before long the outer skin splits along the back, and behold! the adult fly wiggles out soft and limp, but clings to the bark above its shell until the wings are expanded, a process accomplished by inflating the veins with air, at the same time stretching the membranes which become dry and stiff. Then the insect enters into a new phase of life given it by the power of flight, but the cast-off skin remains clinging to the tree for some time afterwards as a reminder of its former condition. Close examination of such familiar objects as these empty skins are will reveal their peculiar structure.

After all the amount of noise a person hears, we find that only the males are provided with musical apparatus, and this is situated under the base of the abdomen and consists merely of two membranous plates, which vibrate rapidly over the hollow spaces underneath, producing the rasping sound.

"Happy the cicadas' lives,
For all have voiceless wives."

Yet it has enemies, and should the large, digger wasp, *Magastizus speciosus*, spy a cicada, its fate is usually doomed; the wasp, after stinging her prey, carries the insensible body into her burrow in the ground where it is buried together with an egg laid by the wasp. The egg hatches into a grub which feeds on the body of the cicada there stored for its food.



Female digger wasp (*Magastizus speciosus*) carrying a cicada to her burrow. Natural size. (After Riley.)

The female cicadas lay their eggs in slits made in bark of twigs, and, after hatching, the young drop to the ground which they enter and suck their food from the juices of roots.

Vegetable Time Table.

Young fresh garden products require less time for cooking than older ones. One important rule should be followed, namely, when vegetables have been cooked tender remove from the fire as soon as possible, and remove the water, where there is an excess, as in potatoes or beets. An experienced housewife gives the following time table for the preparation of vegetables:

Bake potatoes, thirty to forty-five minutes.
Steam potatoes, twenty to forty minutes.
Boil potatoes (in their skins), twenty to thirty minutes.
Boil potatoes (pared) twenty-five to forty-five minutes.
Asparagus (young), fifteen to thirty minutes.
Beets (young), forty-five minutes.
Corn (green), twelve to twenty minutes.
Cauliflower, twenty to forty minutes.
Cabbage (young), thirty-five to sixty minutes.
Celery, twenty to thirty minutes.
Carrots, one to two hours.
Lima or shell beans, forty-five minutes to one and one-fourth hours.
Onions, thirty to sixty minutes.
Oyster plant, forty-five to sixty minutes.
Peas, twenty to sixty minutes.
Parsnips (young), thirty to forty-five minutes.
Spinach, twenty to sixty minutes.
String beans, thirty to sixty minutes.
Summer squash, twenty to sixty minutes.
Turnips (young), forty-five minutes.
Tomatoes (stewed), forty-five to sixty minutes.
When vegetables are served with boiled salt meat, they must be cooked in the liquor from the meat after it has been removed.—Selected.

Oil Burners.

EDITOR KANSAS FARMER:—I saw in your paper a notice of a Mrs. Sears, of Topeka, experimenting on a crude-oil burner stove. Can you tell me what success, if any, she had?

Neosho County. J. B. OSBORNE.

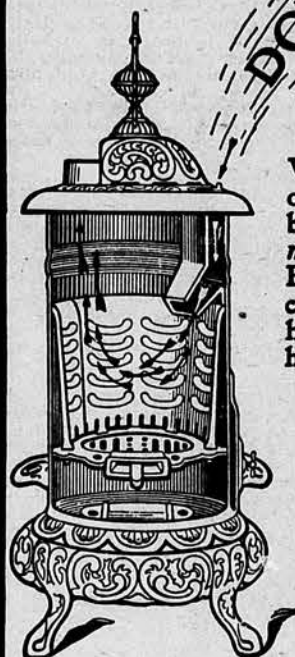
Late experiments with the crude-oil burner have shown that the quality of the oil has much to do with the success of the burner. The manufacturers had a barrel of oil which gave quite satisfactory results, so that Mrs. Sears was well pleased with it. With other crude oil and with fuel oil from the refinery, results were very different. It is hoped that further experience will determine just what oils can be used if, indeed, it does not obviate the difficulties met in trying some oils. The spray burner used with steam is reported as being entirely satisfactory.

This is a sectional view of the Wilson Hot Blast Heater. It shows the patent method of taking the draft from the top, one of the secrets of the great superiority of the Wilson over all other heaters.

The Most Important Part

of a heater is the draft. The most perfect draft ever invented is the patent Hot Blast Down Draft of the Wilson Hot Blast Heater. This method of taking the draft secures perfect combustion, makes fire control easy and more than this—the wonderful Hot Blast Down Draft actually lessens the consumption of fuel as it burns into heat all the gases generated in the heater. In every way the

Wilson HOT BLAST Heater



is far superior to other heaters; a fire can be started in a Wilson Heater and be roaring in ten minutes, and it will hold fire for thirty-six hours. The picture shows the Wilson Heater which burns soft coal. If you burn wood the Wilson Wood Heater will interest you.

If your dealer does not sell Wilson Hot Blast Heaters, write us; we will tell you where to get them, and send you a book on house heating free.

SIMMONS HARDWARE CO., St. Louis, Mo.

Wilson Ranges are the most wonderful bakers in the world.

THE KANSAS STATE FAIR

(Authorized by law to issue premiums in the name of the State.)

Hutchinson, September 18, 19, 20, 21, 22 and 23

THIS FAIR pays more premiums than any other Fair in the United States, except those helped by State appropriations. All departments represented same as State Fairs in other States. The National Associations of Cattle Breeders and Percheron Horse Breeders appropriate money for this Fair.

RACES

Our ONE THOUSAND DOLLAR races are already filled, and in the \$500 purse races there will also be a fine field of starters, making the best racing to be seen in the West over a good track. FREE ATTRACTIONS. FINE SHADE AND WATER.

ONE HALF FARE ON ALL RAILROADS FOR PEOPLE AND EXHIBITS

28 Regular Trains Daily; also special excursion trains. Send for catalogue or other information to

A. L. SPONSLER, Secretary.



THEY MAKE THE WAGON STRONGER, MORE DURABLE lighter running. Axles are re-inforced by a continuous steel bar, let in edgewise, and nitted at points of stress, making them practically unbreakable. CLIPPED GEARS—No bolt holes to weaken axles. THOROUGHLY SEASONED MATERIAL and the best of workmanship only, are used in building

THE MILBURN WAGON

If you are looking for the BEST WAGON that money can buy, let us tell you more about THE MILBURN.

ROCK ISLAND IMPLEMENT CO. KANSAS CITY, MO.

A vegetable pearl found in cocoanuts is frequently of good size and color and is hard to distinguish from the oyster pearl. It consists of pure carbonate of lime without a trace of salts or other vegetable matter. The natives of North Borneo wear it as a charm against disease and evil spirits.

One of the greatest curiosities among the domesticated animals of Ceylon is a breed of cattle known to the zoologist as the "sacred running oxen." They are the dwarfs of the whole ox family, the largest specimen of the species never exceeding thirty inches in height.

THE IOWA STATE FAIR.

(Continued from page 937.)

Produce of cow—First to A. C. Wood & Son; second to L. G. Shaver; third to H. W. Denker.
Sweepstakes, bull any age—L. G. Shaver on Secret Knight.
Sweepstakes, cow any age—A. C. Wood & Sons on Pride's Prince.

Fat Cattle by Breeds.—Awards.

SHORTHORNS.

Steer or spayed heifer 2 years old and under 3—First to C. A. Saunders, Manilla, Ia., on Farmer's Friend; second to J. R. Peak & Son, Winchester, Ill., on Grant; third to Wm. Smiley, Malcom, Ia., on General Tobo.

Steer or spayed heifer 1 year old and under 2—First to J. R. Peak & Son on Jerry; second to J. R. Peak & Son on Ray; third to Wm. Smiley on 2d Reformer.

Steer or spayed heifer under 1 year—First to N. A. Lind, Rolfe, Ia., on Brampton's Choice; second to Wm. Smiley on Edgar; third to J. R. Peak & Son on Barter.

Sweepstakes, champion steer or spayed heifer—C. A. Saunders on Farmer's Friend.

Sweepstakes, champion group, group of 3 head—First to J. R. Peak & Son; second to Wm. Smiley.

HEREFORDS.

Steer or spayed heifer 2 years old and under 3—First to S. L. Brock, Macon, Mo., on Silver Lad; second to Cargill & McMillan, LaCrosse, Wis., on Burnsides.

Steer or spayed heifer 1 year old and under 2—First to Cargill & McMillan on Puritan 2d; second to S. L. Brock, Macon, Mo., on Dispenser.

Steer or spayed heifer under 1 year—First to Cargill & McMillan on Fair Lad 1st; second to S. L. Brock on Disclosure.

Sweepstakes, champion steer or spayed heifer—Cargill & McMillan on Fair Lad 2d.

Sweepstakes, champion group of 3 head—First to Cargill & McMillan; second to S. L. Brock.

ABERDEEN ANGUS.

Steer or spayed heifer 2 years old and under 3—First to M. P. & S. E. Lantz, Carlock, Ill., on Plunkit; second to A. C. Binnie, Alta, Ia., on Driftwood; third to J. W. Miller, Metz, Ia., on Wellington of Homedale.

Steer or spayed heifer 1 year old and under 2—First to Chas. J. Off, Peoria, Ill., on Exillo; second to M. P. & S. E. Lantz on Siberian; third to J. W. Miller on Sunflower Advance.

Steer or spayed heifer under 1 year—First to M. P. & S. E. Lantz on Syberian 2d; second to J. W. Miller on Prince; third to Chas. J. Off on Proud Fellow.

Sweepstakes, champion steer or spayed heifer—M. P. & S. E. Lantz on Plunkit.

Sweepstakes, champion group of 3 head—M. P. & S. E. Lantz; second to A. C. Binnie; third to W. J. Miller.

GALLOWAYS.

Steer or spayed heifer 2 years old and under 3, 1 year and under 2, and also under 1 year—First to C. D. McPherson, Fairfield, Ia., on Hero 15th of Fairfield; second to C. D. McPherson on Dick; third to C. D. McPherson on King 13th of Fairfield.

Champion steer or spayed heifer—C. D. McPherson on King 13th of Fairfield.

GRADES AND CROSS BREEDS.

Steer or spayed heifer 2 years old and under 3—First to Krambeck, Marne, Ia., on McHenry; second to J. R. Peak & Son on Adkins; third to W. J. Miller on Wild Tom.

Steer or spayed heifer 1 year and under 2—First to S. L. Brock on Scotch High Ball; second to Wm. Smiley on Arc Light; third to W. J. Miller on Jimmie.

Steer or spayed heifer under 1 year—First to W. J. Miller on Black Prince; second to W. J. Miller on Black Victor; third to J. R. Peak & Son on Barter.

Sweepstakes—champion steer or spayed heifer—S. L. Brock on Scotch High Ball.

Champion group of 3 head—First and second to W. J. Miller; third to J. R. Peak & Son.

Grand champion—Steer or spayed heifer any age or breed—M. P. & S. E. Lantz.

Grand champion group of 3 steers or spayed heifers—Cargill & McMillan.

Grand beef herd—First to Cargill & McMillan; second to E. T. Davis; third to C. J. Martin; fourth to Brookside Farm Co.

Mill's test—First to W. B. Barney & Co., Hampton, Ia., on Lady Josephine (Holstein); second to W. B. Barney & Co. on Parthenia Hangeveld (Holstein); third to Geo. S. Redhead, Des Moines, Ia., on Trustee's Lizette (Jersey); fourth to Geo. S. Redhead on Daisy (Shorthorn-Hereford).

Gossip About Stock.

The well-known breeder of Shorthorns, J. M. Miller, Muscatine, Atchison County, Kansas, is now advertising a number of choice bred bulls, cows, and heifers, for sale. Mr. Miller has at the head of his herd the Scotch bull, Violet Lad by Golden Lad. Ready buyers will be pleased with the class of stock Mr. Miller has to offer.

What promises to be the great fall sale

event of Northern Kansas is the combination sale of Poland-China swine to be held at Belleville, October 24. Nearly twenty prominent breeders of Kansas and Nebraska will consign hogs from the tops of their herds. J. J. Ward, Belleville, is manager. The advertisement and full particulars will be found in the Farmer in due time.

E. P. Pendleton, of Princeton, Kansas, had a very pleasing exhibit of Herefords from his Pendleton Place Hereford Lawn herd, at the Ottawa fair and won a goodly share of prizes in the individual classes of herds, besides that of Sweepstakes cow.

The Elderlawn Shorthorn show-herd of T. K. Tomson & Sons was right at the head of the show at the Nebraska State Fair, last week. They won prizes as follows: First on 2-year-old bull; first on yearling bull; first on senior bull calf;

first and second on yearling heifer calf; first on young herd, sweepstakes junior bull and sweepstakes junior heifer; first on get of sire and first on produce of cow. This is a great record for a young herd, and when classes were as strong as these were, makes the victory so much the greater.

J. T. Stodder, of Burden, Kans., is at the Colorado State Fair week with his herds of Shorthorns and Duroc-Jerseys from Silver Creek Farm.

A movement is on foot to organize the Poland-China breeders of Northwestern Kansas into an association. J. J. Ward, of Belleville, starts it, and should there be sufficient encouragement, a meeting will be called to meet probably at Concordia during the fair there the first week of October. It is proposed to bring the breeders nearer together socially, to push the Poland-Chinas and to hold annually a swine show, a sale and a judging school. It is believed this can be accomplished better through a district association than through the present State organization.

R. F. Norton, of Clay County, Kansas, is the leading Duroc-Jersey breeder of that part of the State. He will hold no fall sale but sell his young stock at private treaty. All sale expenses are eliminated and none of the pigs are reserved. The tops and all go. In fact Mr. Norton is pricing spring boars at \$5 to \$20 less than same class of stock can be bought anywhere else within the writer's knowledge. The 25 boars were mostly sired by Norton's Wonder 24685, by Fancy Wonder 14405, and a grandson of the champion sow at Chicago. The dams include Mina 31150 by Briggs's Model, Miss Jumbo and Mina N. by Improver 2d, and Fancy Babe 4.0556 by Peterson Boy 2d. The individuals of this herd are good—good enough to win prizes. At the recent Riley County Fair they won all blue ribbons competed for and some are on exhibition at Topeka State Fair this week. If you need a nice boar, write Mr. Norton. He is absolutely reliable and you may depend upon a square deal every time.

C. S. Nevius, Chiles, Kans., was very successful with his show herd at Ottawa, winning a goodly share of the prizes. He is fitting for the Kansas City Royal sale, the 4-year-old cow Lydia-Shanon, by Gloster 137952; her dam is by Lavender King 4th; second dam by Armour-Bearer; this cow is due to calf December 1, to service by Victor of Wildwood; the other that goes in sale is 13th Elderlawn-Mary by Gallant-Knight. This is a good daughter of Gallant-Knight with a nice line of Scotch tops, and is due to calve early in the year by Prince-Pavonia. These are a pair of cows that will be desirable additions to any herd.

J. R. Killough & Sons, Ottawa, Kans., have a good lot of Poland-Chinas on hand for the fall trade; these are by American Royal and Onward. They are making a special offer of one 2-year-old boar by American Royal that is considered an extra good one. They have ten fall and winter boars and twenty spring boars besides some gilts and sows, prices on which they will gladly quote to Kansas Farmer readers on request.

At the Ohio State Fair this week, McLaughlin Bros. write: "In the largest classes ever shown at this fair, we won every first prize for which we competed, in Percheron horses. Our stallions won first in four year olds, first in three year olds, first in two year olds, first in yearlings, first in get of sire, first in produce of mare, and first in 2-year-old mares. They also won the following special prizes: Champion Stallion, any age; Champion Mare, any age, and Champion Group of five animals. Our French Coaches were equally successful, winning in 4-year-old stallions, three year old stallions, 2-year-old stallions, get of sire, produce of mare, and the following special prizes: Champion stallion, any age, and Champion Group of five animals."

During the same week, the great Minnesota State Fair was held. At this fair, in spite of the fact that our lot of horses were divided, and we were making two great shows, we were enabled to win, on our stallions at the Minnesota Fair, every first prize for which we competed, with one exception. At this fair we won fifteen first prizes and three championships.

Our fourth importation, for this year, will arrive in New York on Monday next, and will come, by special Adams Express train, direct from the docks to our stables here.

Henry Avery & Son, the well-known Percheron horse breeders of Wakefield, Kans., will start this week with a big carload of the best Percherons that ever walked into a show-ring. Among them will be the champion pair of Percheron mares of the world that won their honors at St. Louis last year and a number other World's Fair winners will be in the collection. Bosquet, their new herd stallion, who has been a winner in Minnesota, Illinois and International show-rings, will have a new field to conquer. Predictions are always unsafe, but this reliable stallion has all the appearances of making good his reputation as a winner. The Averages are particularly strong in their showing of a stallion and four mares. Their stud will be made up of the following animals: Bosquet, twice a winner at the International; the Champion pair of Percheron mares of the world, Mina and Lena; Altesis, another 3-year-old mare of equal merit; and Belina Belle, her full sister. These fine animals make a collection of Percheron quality that will be heard from before they get back to their stalls. The Averages will be at the Colorado State Fair, the Kansas State Fair at Hutchinson, and the Royal at Kansas City. Parties interested in Percherons should not fail to carefully inspect these famous specimens of the popular breed. Look them up.

I do not suppose there is a reader of the Kansas Farmer who has not looked up the advertisement of the Oakwood Farm & Stock Co.'s Poland-China sale to be held at Mastin, Kans., on September 19. After reading the ad. you all know about what to expect in this sale.

The offering is pronounced by judges to be nearly, if not quite, as good in individuality and breeding as the choice offering so well appreciated by breeders, the 19th of last month. You have all read the report and know the way that lot sold. Meddler, the grand champion boar, was sold after the sale for \$3,000, to be delivered October 10, to Ed Ware, Douglass, Ill. The show yard success of this herd in times past has demonstrated that the easiest way to raise winners was to breed them from winners, or at least the families that were the closest to the winners. Buyers at the other sale have a right to go to the best state fair with their purchases and are winning some of the best prizes. The boar "Meddler," referred to above, was pronounced by the judge of the fat-barrel classes at the World's Fair last year, as a perfect type of market hogs as is seen. It has been the determined endeavor of the management of this farm to produce the nearest to a perfect market-hog possible, and how well they have succeeded is fresh in the minds of all our readers. The way the last offering were bought by the best breeders demonstrates the fact that good hogs were never in better demand than at the present time. We trust that our Western breeders will be able to secure more of this offering than they did of the last. Breeders who find it impossible to attend this great sale may send their bids to John D. Snyder, care of Oakwood Farm, Mastin, Kans., who will see that they are well handled in the interests of the buyer.

Publisher's Paragraphs.

Seed wheat and grass seeds, is the text of the new advertisement of F. Barteldes & Co.'s Kansas Seed House, Lawrence, in this issue. The Kharkov is a new variety that has much promise for Kansas people; owing to the large yield. Read the announcement as it may be worth many dollars to you.

As will be seen by the advertisement in this week's Kansas Farmer, the Midland Foundry Company, of Topeka, has placed on the market its oil burner for domestic use. The difficulties have disappeared one by one before persistent experimentation. The last of these was that of determining what oil can be satisfactorily used. The Uncle Sam Refinery Company furnishes the right kind at \$1 a barrel in Topeka. Prices at other points will probably vary from a little below to a little above this figure according to distances from Cherryvale.

A New Enterprise

Which promises to help and advance country boys. The National Railway Training School, of 11 Boston Block, Minneapolis, Minn., have opened a Training School to educate boys and young men, by correspondence, to become competent to take a position as brakeman, fireman or engineer, at a salary from \$80, to \$125 per month, with more opportunities of advancement than in any other line of business. Positions can be secured as soon as competent. This enterprise deserves the support of everybody.

"Moore's Stoves Always Please."

This is the trade phrase of the Moore's, Stove Makers, whose announcement appears elsewhere in this issue. These people are among the oldest makers of stoves in the country, their business having been established almost half a century ago, in 1857. At the same time they have always been progressive and there is probably no line of stoves made which has so many useful improvements as Moore's. Instead of the customary catalogue they issue "The Wife of the Wonder-worker," which, to use their own language, is "a beautifully illustrated story full of human interest which incidentally tells much that you would like to know about stoves." A copy will be mailed free to any reader who is interested in stoves. Address the factory, Joliet Stove Works, 509 Benton St., Joliet, Ill., mentioning Kansas Farmer.

American Royal Shorthorn Sale.

The wonderful popularity of the American Royal is due to the large and excellent class of live stock annually exhibited and to the liberal business methods of

HOGS WILL MAKE YOU RICH
Send 10c for a whole year's trial subscription to the best hog paper in the world. Free sample.
SWINE BREEDER, Lincoln, Neb.

WET WEATHER WISDOM!
THE ORIGINAL 132
TOWER'S
FISH BRAND
SLICKER
BLACK OR YELLOW
WILL KEEP YOU DRY
NOTHING ELSE WILL
TAKE NO SUBSTITUTE
CATALOGUES FREE
SHOWING FULL LINE OF GARMENTS AND HATS.
A. J. TOWER CO., BOSTON, MASS., U.S.A.
TOWER CANADIAN CO., LTD., TORONTO, CANADA.

8,000 ACRES

Wheat and Alfalfa Land in Logan and Wallace.

These lands are prime No. 1 land, selected, smooth, well grassed and well watered. Price \$4 to \$6 per acre; part cash, and long time for balance.

Chas. A. Wilbur, 111 W. 6th St., Topeka, Kans.

FIFTH TERM

JONES' NATIONAL SCHOOL OF Auctioneering and Oratory Davenport, Iowa

Opens Dec. 18, 1905. All branches of the work taught. Students now selling in thirteen states. For Catalogues write Carey M. Jones, President.



Farmers' Portable Elevators

will elevate both small grain and ear corn. For prices and circulars, address

NORA SPRINGS MFG. COMPANY
NORA SPRINGS, IOWA

MACHINE OIL \$3.50 A BARREL

You will find it a better machine oil than anything you have been buying for 35 cents to 45 cents per gallon. Premium Oil is a natural oil, greenish black in color. There is no made oil that is superior to Premium Oil for engines, shafting, shops, elevators, thrashing machines and farm machinery. It will not gum, has good body, is not affected by hot and cold weather as most oils are. If a farmer, you say you won't need as much as a barrel. Get your neighbor to take half of it. But remember \$3.50 for a 55-gallon barrel, and the empty barrel is worth at least one dollar; gives you oil at less than 6 cents per gallon at your railroad station. If within 300 miles in Kansas freight will not be over 75 cents per barrel. Sample sent on request.

T. C. DAVIS, Benedict, Kans.

Benedict, Kans., August 26, 1905. I have this day sold my interest in K. C. Dailey & Co. to T. C. Davis, who will hereafter conduct the business in his name. Signed, K. C. DAILEY.

METZGER'S CLOSING OUT SALE OF POLAND-CHINAS

TO BE HELD AT
DES MOINES, IOWA, THURSDAY, SEPT. 21.

Big Live Stock Pavilion at the Iowa State Fair Grounds

This is an absolute closing out of Metzger's great prize-winning herd of Poland-Chinas. The sensational breeding boar

NEMO L'S DUDE 51917

Will lead the way to this first sale ring of the season.

50—GRANDLY BRED POLAND-CHINAS IN THE METZGER SALE RING—50

We can and do show the size, the bone, the quality and the finish that win everywhere.

Nemo L's Dude has sired more State fair prize-winners than has any other boar of the present day. He gets the size, the dash, the style, that command attention.

This sale embraces all our show stuff of the present season. It embraces several spring litters of crack stuff got by the Nebraska champion, Winning Dude—also some "killers" of his fall yearlings—and a big lot of Nemo L's Dude's great stuff that you must see. Catalogue is fully illustrated and gives much particular information. Read the field notes likewise.

Catalogue sent you by return mail.

E. M. METZGER, Fairfield, Iowa.

COL. H. S. DUNCAN, Auctioneer. HARVEY J. HANSON, Clerk.

Hogmen's Headquarters at the Iowa Hotel; free accommodations.

those who have the management of the show.

An important feature of the show this year will be the sale of choice Shorthorns that will be held under the management of the American Shorthorn Breeders' association Tuesday, October 10, at 1 o'clock p. m. Sixty head will be sold and they will be found to be a good, useful, representative lot of Shorthorns, and have been carefully selected with a view to future usefulness. They come from leading herds of Missouri, Kansas and Iowa and are the produce of some of the most successful sires now in use. It is seldom that stockmen have the opportunity to buy from one sale the produce of so many noted bulls, and the following list should encourage cattle breeders to attend this sale: Choice Goods, Lavender Viscount, Merry Hampton, Best of Archers, Gallant Knight, Victorious, Lord Mayor, Headlight, Collynie, Scotland's Crown, Courtier 2d and others.

The Shorthorn is without question the farmer's cow, affording him a large quantity of rich milk and also the largest carcass of choice beef. As the area of free grass is brought in subjection to the plow and the sickle, and the public demand becomes the individual hearthstone, the demand for the dual-purpose Shorthorn will constantly increase.

Remember that this sale is Tuesday, Oct. 10, at 1 o'clock p. m.

About Highland Park College.

In a private letter from President Longwell, of Highland Park College, Des Moines, Iowa, he states that the school has opened this year with a largely increased attendance over that of any previous year. We take it for granted that this will be a banner year for all colleges and universities. The harvests are bountiful and the people are anxious to educate their children.

Highland Park College is centrally located and is known to be one of the largest and best equipped colleges in the Central West. The attendance the past year was over 1900 students. President Longwell says with the present increase the attendance will reach at least 2500 the current year.

Highland Park College is a comparatively new institution. It was founded fifteen years ago and has had a remarkable growth. Besides the regular college courses that are usually maintained in colleges, there is a regular Norman and Primary Training Course for public school teachers. The College also has the most thoroughly equipped College of Pharmacy in the United States. The Engineering School at Highland Park College is now recognized throughout the Central West. President Longwell says there are quite a large number of students registered in the Engineering Department from Ohio and New York. The practical phase of the Engineering Department at Highland Park College is especially commendable. Students in all departments of the Engineering College receive shop work from the beginning and all the exercises in the shops are of such a nature as to make the products available for the market. There is also a short Traction Engineering Course to prepare students to handle traction engines. The department is thoroughly equipped for Electrical, Steam, Mechanical, Civil and Telephone Engineering work. The new electrical laboratories have been most thoroughly equipped. Besides these, the Highland Park Business College is in every way the most completely equipped Business College in the West. The Business Exchange Room is said to be the finest Business Exchange Room in the United States. There is also an extensive school of Telegraphy in which there is a miniature railway with twelve trains running on it to teach the block system practically. The College of Music is known to be the largest in the West and has some of the most noted artists in the country at the head of it. There were over 300 students last year in the College of Music alone.

Advertisements for Highland Park College have appeared in this paper from time to time and we are always glad to speak a kindly word for this large and well managed institution of learning. We feel that parents will make no mistake in sending their children there to be educated.

About Farm Gasoline Engines.

The gasoline engine has in recent years come into very general use on the farm. A few pertinent suggestions to readers or to any one considering the farm-power question will not, therefore, be out of place here. A first consideration with the farmer should be to get an engine that will work in any kind of weather. His case is different from that of the shopman. His greatest use for an engine is out of doors. Farmers must remember that through the constant and rapid explosions in the cylinder, gasoline engines generate no little amount of heat. Cooling by some means is a necessity. Up to this time water has been the chief cooling agent employed. If the weather be warm or fair, such an engine as is used in a building may very well answer for out-of-door work. But when the temperature is at or below freezing point, then the trouble is on. The water usually employed for cooling will be frozen and the engine must stop. It is imperative in the farmer's case, if the engine is to be used at all in winter time, that he have an engine that is not affected by weather conditions. Such engines have been perfected.

A little book entitled, "Helpful Hints on Farm Power," by S. D. Ross, a gas-engine specialist, has lately come to our notice. It is a good work for would-be gas-engine buyers to read. Its theme is the care, adjustment and successful operation of four-cycle engines. The author takes as his type the excellent engines manufactured by the Fuller & Johnson Mfg. Co., Madison, Wis., but he treats in a general way all four-cycle engines. The Fuller & Johnson Company manufacture three styles of gasoline engines, which differ from each other chiefly in the important matter of cooling. One style is the water-cooled with circulating tank, a style well adapted to indoor work. Another is their oil-cooled, frost-proof, and the third, the subject of this illustration, is their water-cooled, frost-proof engine. These two last are manufactured

with special reference to meeting the wants of the farmer. All are of the four-cycle type. We can not here go into details on this or other features of these excellent powers. They are all satisfactorily set forth in the book we have alluded to. We strongly urge its reading before buying. It may be had by addressing either the author or the Fuller & Johnson Company at Madison, Wis.

\$1.50 to Fort Scott and Return—Account W. O. W.

On September 23, the Missouri Pacific will run special train from Topeka to Ft. Scott and return, leaving Topeka at 7 a. m., and Ft. Scott 10 p. m., rate \$1.50 for the round trip.

Carthage, Missouri, Fair.

The Carthage, Missouri, fair just across the line from the southeast corner of Kansas was a success in spite of the wet and inclement weather. On Friday, after having no less than a half-inch of rain, between half past 12 and 1 o'clock, the race program was pulled off in the mud; saddle-horse and other exhibitions given in front of the grand stand and the 5,000 or more people who had braved the weather were given a royal entertainment. The show of Shorthorn cattle at this fair was a great deal better than the average county fair. Sam W. Cox, of Greenfield, Mo., had his state fair herd on exhibition; Hall Bros. had out an excellent herd, and Sandford M. Smith had a nice herd on exhibition. The prizes went as follows: Aged bull—First to Hall Bros., on Grassland-Victor; second to Cox. Two-year-old bull—First to Hall Bros., on Victor-Blythe. Yearling bull—Hall Bros., on Commodore. Bull calf—Hall Bros., on Golden Hero. Aged cow—Hall Bros., on Golden Royal; Mr. Cox had second on aged cow. Two-year-old cow—Sandford M. Smith, on Rosette; second to Hall Bros., on Beauty. Yearling heifers—First to Hall Bros., on Lady Emily; second to Mr. Cox. Calf—First to Mr. Cox; second to Hall Bros., on Bedelia. The sweepstake prizes went to Hall Bros., on Grassland-Victor and Golden Royal. A number of these prize-winners of Messrs. Hall will be included in their sale at Carthage, Mo., October 2.

Barton County Fair.

The following are the premium awards in live stock and poultry at the 1905 Barton County Fair:

CATTLE.

Galloways—C. M. Croft & Sons, first on 1-, 2-, and 3-year-old bulls; first on bull calf; first on 1- 2- and 3-year-old cows; second on 1-year-old bull, 2- and 3-year-old cows; first on heifer calf, on herd of 5 head, and on young herd; second on 1-year-old cow, heifer calf, and herd of 5 head. Total awards, \$109.

Herefords—Moses Bros. & Clayton, first on 3-year-old bull, bull calf, 1- 2- and 3-year-old cow, heifer calf, young herd, and herd of 5 head; second on 1- 2- and 3-year-old cow, and on heifer calf. Total, \$85.

Shorthorns—R. A. Stewart. First on 1-year-old bull, bull calf, 1- 2- and 3-year-old cow, and second on 1-year-old bull. Total, \$32.

Shorthorns—Geo. Peck, Jr., first on 1- and 2-year-old bull and bull calf; second on 2-year-old bull. Total, \$19.

HORSES.

Grade Horses—F. H. Schrepel, first on 2-year-old stallion, and 3-year-old roaster; second on 1-year-old stallion.

Registered Percherons—F. H. Schrepel. First on 2- 3- and 4-year-old stallions; on 1- and 2-year-old mares; on mare colt; second on 1- 3- and 4-year-old stallion; on colt and span of draft-horses. Total, \$85.

Registered Percherons—P. P. Lorimer, first on 1-year-old stallion, 4-year-old mare, and span of draft-horses; second on 2-year-old stallion. Total, \$24.

Grade—A. M. Sipes, first on 3-year-old mare and on colt. Total, \$9.

Grade—Allen Curry, second on 3-year-old mare. Total, \$4.

The Franklin County Fair.

The Franklin County Fair at Ottawa brought out an especially good exhibit of cattle, horses, hogs and agriculture products. The weather was very much against them, as it rained nearly all the week and practically all the races were called off, but many people attended to view the exhibits of agriculture products and the fine herds of stock on exhibition. C. S. Nevius, C. F. Wolf & Son, J. A. Rule & Son exhibited Shorthorn cattle and won the prizes as follows: On aged bull—First to C. F. Wolf & Son; 2-year-old bull, C. F. Nevius, who also won first and second on yearling bull; first on bull calf; first on aged cow; second on 2-year-old cow; first and second on yearling heifer; first and second on heifer calf; first on aged herd and first on young herd; also on sweepstakes bull. C. F. Wolf & Son had first on 2-year-old heifer. Messrs. Wolf & Son had only three head on exhibition and did not have a show in the herd prizes. Mr. Rule had second on 2-year-old bull; second on bull calves, and second on aged cow. In Red Polls Geo. Groenmiller & Son won prizes as follows: First on 2-year-old bull; first on yearling bull; first and second on calf; first and second on aged cow; first and second on 2-year-old heifer; first and second on yearling heifer; first and second on yearling bull and second on bull calf. In Herefords Henry Ackley had first on 2-year-old bull; first and second on 2-year-old heifer; first on bull calf; second on heifer calf. E. P. Pendleton had first on yearling bull; first on aged cow; first and second on yearling heifer; first on heifer calf, and sweepstakes cow; second on aged herd and second on young herd. J. E. Hake had first on aged bull; second on yearling bull and second on bull calf. L. M. Todd had second on 2-year-old bull, and second on aged cow. C. M. Albright had first on aged Polled Durham bull and second on yearling Polled Durham bull. Pendleton Place Herefords were considered best country herd and L. M. Todd's second best.

The hogs were filled and overflowed pens were under a tent built to take care of the exhibit of hogs, of which there was a very creditable showing of Poland-

Chinas, Duroc-Jerseys and Chester-Whites.

In the Poland-China classes the awards were as follows: On aged boar—First to Dietrich & Spaulding; second to J. N. Wood. Yearling boar—First to Dietrich & Spaulding; second to P. L. Ware & Son. Boar, under 1 year—First and second to Dietrich & Spaulding. Boar under 6 months—First to Dietrich & Spaulding; second to Ware & Son. Aged sow—First and second to J. N. Wood. Yearling sow—First to J. N. Wood; second to Dietrich & Spaulding. Sow, under 1 year—First to Dietrich & Spaulding; second to J. N. Wood. Sow pigs—First and second to Wood & Son. Chester White, yearling boar—First to C. P. Stoffer; second to W. V. Foster. Boar, under 6 months—Second to Foster. Boar pigs—First and second to Stoffer. Aged sow—First to Stoffer; second to Foster. Yearling sow—First to Foster. Six-months sow—Second to Foster. Sow, under 6 months—First and second to Foster.

In Duroc-Jerseys: Aged boar—First to J. F. Stodd; second to L. A. Keeler. Yearling boar—First to E. B. Rozell; second to W. G. Whicher. Boar, under 1 year—First to Stodd; second to Whicher. Boar pigs—First to Whicher; second to Stodd. Aged sow—First to Whicher. Yearling sow—First to Whicher; second to Rozell. Sow, under 1 year—First to Stodd; second to Whicher. Sow pig—First to Whicher; second to H. B. Nelson. Sow and litter—First to Howser; second to Keeler. Aged herd—First to Dietrich & Spaulding; second to J. N. Wood. Get of boar—First to Ware & Son, on litter by U. S. Perfection; second to Wood. Best boar—Dietrich & Spaulding, by Grand-Perfection. Best sow—J. N. Wood. There was a large exhibit of horses, all local, several very nice draft stallions, and a nice string of standard-bred and road horses.

EVERY CORN PICKER

should write for illustrations and descriptions of the largest line of WRISTLETS, FINGER PEGS, THUMB, CENTER AND WRIST HOOKS, single or double, which are invented by an EXPERT HUSKER and also the kind which made Chas. A. Rennack famous by husking over 200 bu. in 10 hours. R. N. Thomas, Manufacturer, Shenandoah, Iowa.

LEGAL.

PUBLICATION NOTICE.

The Chicago, Topeka, Light, Heat and Power Company, a corporation, and The Northern Trust Company, a corporation, defendants, will each of them, take notice that they have been sued in the District Court, Shawnee County, State of Kansas, by N. J. McBryer, as plaintiff, and the defendants, and each of them must answer the petition of the plaintiff filed in said court on or before the 19th day of October, 1905, or said petition will be taken as true. P. H. FORBES, Attorney for the plaintiff.

Attest:
I. S. CURTIS,
Clerk of the District Court.
By ANNA M. TILLSON,
(Seal) Deputy Clerk District Court.

Special Want Column

"Wanted," "For Sale," "For Exchange," and small want or special advertisements for short time will be inserted in this column without display for 10 cents per line of seven words or less per week. Initials or a number counted as one word. No order accepted for less than \$1.00.

CATTLE.

HOLSTEINS—Bull calves cheap while they are little. H. B. Cowles, Topeka, Kans.

FOR SALE—10 Registered Galloway bulls, cheap. J. A. Darrow, Route 3, Miltonvale, Kans.

REGISTERED GUERNSEY BULLS.—Ready for service. Also pure-bred Scotch Collie puppies. G. C. Wheeler, Mgr., Perkins Farm, Harlem, Mo.

FOR SALE—Eight good, registered Shorthorn bulls, four straight Cruickshank, good ones, and prices right. H. W. McAfee, Station C, Topeka, Kansas.

FOR SALE—One straight Cruickshank bull, 14 months old, dark red, extra good animal. H. W. McAfee, Topeka, Kansas.

FOR SALE—My entire herd of Reg. Shorthorns, consisting of Ruby's Elizabeth and Rose Sharrons, choice individuals. 10 cows, 8 2-year-old heifers, 4 yearling heifers, 5 spring heifers and 6 bulls. Red Sirius heads herd and a splendid herd bull. These cattle have been carefully bred and someone will get a bargain in them at \$40 per head. Address, W. L. Heiniken, Nortonville, Kansas.

RED POLLS—6 pure bred Red Polled bull calves, from 5 to 7 months old. Also two excellent yearling bulls. Write for prices and full description, or visit us. CHARLES FOSTER & SON, Butler Co. R F D. 4. El Dorado, Kansas.

SWINE.

FOR SALE—Say! I have some fine, big-boned, broad-backed Berkshires, brood sows or pigs. Want some? Write me; turkeys all sold. E. M. Melville, Eudora, Kans.

FOR SALE—Three Poland-China boars ready for use. Pedigreed. H. W. McAfee, Topeka, Kas.

FOR SALE—50 choice shoats (mostly thorough-breds,) ranging in weight from 35 lbs. to 135 lbs. Will sell for \$8 per head. They are of Duroc-Jersey breeding. R. O. Stewart, Alden, Kansas.

30 DUROC-JERSEY SPRING BOARS—Large body, growthy, heavy bone, and good feet and color. Price low. A. G. Dorr, Route 5, Osage City, Kansas.

HORSES.

FOR SALE—Or trade for young cattle or land, a 4-year-old brown Registered Coach Horse Stallion, broke to drive. Inquire at Henry Flach, R. F. D. No. 2, Maple Hill, Kansas.

FOR TRADE FOR OTHER STOCK—One, two or three good stallions, and one, two or three good jacks; all well bred. Hughes & Cary, R. F. D. No. 3, Hartford, Kansas.

HORSE FOUND—On my ranch at time of purchase, a young horse, dark gray, shading to roan, about 15 hands high, weight not far from 1100 pounds, no distinguishing marks. I was informed that he had been on the place about six months and not advertised. W. B. Williams, Logan Co., 8 miles S. W. of Winona.

SEEDS AND PLANTS.

WANTED—English Blue Grass or Meadow Fescue seed, Alfalfa, Red Clover, Timothy and other Grass seeds. Correspond with us. Kansas Seed House, F. Barteldes & Co., Lawrence, Kansas.

FOB SALE.—Fall barley cleaned seed 75 cent per bushel, sacks free. Bert E. Myers, R. 6, Wellington, Kans.

WANTED—English blue-grass or meadow fescue seed. Correspond with us. Kansas Seed House, F. Barteldes & Co., Lawrence, Kans.

FARMS AND RANCHES.

FOR SALE—My imported Percheron Stallion, nine years old, black, weight 1800. Have used him four seasons. Will be pleased to show you his get. A fall stand will make a man big interest on his investment. Write for price and pedigree. Also Poland-China boars, ready for use, good ones. W. W. Stegeman, Route 1, Hope, Kansas.

KANSAS LANDS.—I have a choice lot of well-improved farms in Marion County, varying from \$20 to \$50 per acre. Also large list of Western Kansas lands. For full particulars, address, A. S. Quisenberry, Marion, Kans.

200 ACRE WELL IMPROVED FARM for \$2,200, to close an estate. Address Hurley & Jennings, Emporia, Kans.

FOR SALE—Good farm and pleasant home, one-half mile from county high-school and city public school, three-fourths of a mile from several churches and stores, 2 grain elevators and stations. Farm consists of 800 acres, adapted to farming and stock raising, good 2-room house, with water, bathroom and good cellar, ice-house, tool-house, barns and sheds sufficient to hold 40 tons of hay and 150 head of cattle and horses, alfalfa, shade and fruit trees. Farm can be divided. Price, \$15 per acre. Call on or address the owner, Box 192, Wakeeney, Kans.

CHEAP HOMES—80 acres, 60 acres bottom \$1,800. 160 acres, well improved, \$2200. 320 fair improvements, \$4500. 480 fine improvements, \$10,000. Write for list, to Florence, Salina or Minneapolis, Kansas. Garrison & Studebaker.

FIFTY farms in Southern Kansas, from \$15 to \$70 per acre; can suit you in grain, stock or fruit farms. I have farms in Oklahoma, Missouri and Arkansas for sale or exchange. If you want city property, I have it. Write me. I can fix you out. Wm. Green, P. O. Box 966, Wichita, Kans.

LAND FOR SALE in Western part of the great wheat State. H. V. Gilbert, Wallace, Kans.

FOR reliable information about Southwest Texas real estate, write Word & Moore, R. E. agents, San Antonio, Texas.

FOR SALE.—By the owner, two good farms, 160 and 350 acres in Lyon County, Kansas. J. C. Hume, Council Grove, Kans.

MISCELLANEOUS.

"THE CEMENT WORKER'S HAND BOOK"—Tells you how to do all kinds of cement work successfully, walls, floors, walks, tanks, troughs, cisterns, fence posts, building blocks, etc., etc. Second edition. Sold in all English-speaking countries. Sent no any address for 50c. Address, W. H. Baker, Seville, Ohio.

FOR SALE—Fine Catalpa and Black Locust seedling trees. W. K. Stephens, Winfield, Kansas.

FOR SALE—Second-hand engines, all kinds and all prices; also separators for farmers' own use. Address the Geiser Mfg. Co., Kansas City, Mo.

5,000 FARMERS to handle best woven wire fence—100 styles—movable corn cribs, high grade bugles, implements, harness, barbed wire, paints, etc. Our premium bugles lead them all. Everything guaranteed. Write today and save money. American Trade Union, Wichita, Kansas.

WANTED—Your apples to grind. I do custom work every Saturday at my mill on West Sixth st. H. W. McAfee, Topeka, Kansas.

FREE—Souvenir postals from all the world. National Clearing House, Copp Bldg., Los Angeles, Cal.

WANTED—Position as bookkeeper. Address, C. A. Morris, Narka, Kansas.

FOR SALE—50 White Wyandottes and 50 White Rocks at \$1 each or \$10 per dozen, to close out quick. Address, I. R. Moore, Wichita, Kansas.

WIDE-AWAKE agents wanted in every locality, to sell the "Farmers' and Stockman's Complete Account Book." Best seller ever saw; every farmer wants one. Write at once for particulars. R. H. James, Publisher, Pleasanton, Kansas.

Stray List

Week Ending August 24, 1905.

Kearny County—F. L. Pierce, Clerk.
COW—Taken up Jacob by Holloway in Lakin tp., July 12, 1905, one red cow with two-months-old calf; branded "S-4" on left hip; weight 800 pounds; age 10 years; valued at \$20.00.

Marion County—D. D. McIntosh, Clerk.
HORSE—Taken up by O. B. Stovall, in Fairplay tp., June 25, 1905, one bay mare weighing 900 pounds, rope mark around neck; valued at \$20.00.

Week Ending August 31, 1905.

Leavenworth County—J. W. Niehaus, Clerk.
HORSE.—Taken up by John Schneider in High-Prairie tp., July 9, 1905, one horse light bay 7 years or more; 15 hands high. A large letter "R" on left shoulder.

Hodgeman County—D. Hume, clerk.
COW—Taken up by A. Schawildge, in Hallet tp., March, 1904, one red steer, 2 years old or over, branded "X" on left hip, both ears marked but not distinguishable, valued at \$20.00.

Week Ending September 14, 1905.

Johnson County—Rosco Smith, Clerk.
HOG.—Taken up by A. Owen, in South Park, Merriam P. O., Sept. 4, 1905, one black male hog; weight, 150 pounds; scar on hams and nitch in right ear.

PATENTS.

J. A. ROSEN, PATENT ATTORNEY,
418 Kansas Ave., Topeka, Kans.

Miscellany

Disking More or Less.

In the issue of the KANSAS FARMER of August 17, we notice on the first page, a picture and description of a field of alfalfa belonging to A. H. Bates. The article states that the soil had been well prepared by plowing, disking, and harrowing, having been gone over nine times before seeding, and at the time of writing the article, he expected to cut the third crop.

Now we wish to call attention to the experience of H. C. Colburn, who wrote us that he seeded alfalfa the last of March, packed it three times with the Topeka Foundry Packer, and at the time of writing us, May 21, he had alfalfa six to eight inches high, and as thick as hair on a dog's back. This was in the dry spring of 1902, at which time we had no rain up to June 1.

We wish to call attention to the economy of using the Topeka Foundry Packer. Mr. Colburn went over his ground but three times with the Packer, and Mr. Bates, to get the same results, went over his ground nine times. Now, on the supposition that it cost Mr. Bates 25 cents per acre to go over the ground once, to go over it nine times would cost \$2.25 per acre. Twenty-five acres would cost \$55.25. Mr. Bates went over his ground five times more than he need to have done, had he used the Topeka Foundry Packer, or he has done almost enough extra work and expense on 25 acres and in one season to have paid for a Topeka Foundry Packer.

O. A. HOLCOMB.

Topeka, Kans.

Hubbard's Farm Don'ts.

1. Don't fail to paint your roofs if you don't want them to fuzz up and catch fire from sparks.
2. Don't mow the weeds in your pastures and along your fence and roadsides. (If you do, some one will think your farm looks pretty and want to buy it.)
3. Don't fence the pigs and chickens out of the yard. (If you do, a nice carpet of cheerful grass may soon be spread around your residence. That's too nice for a farmer.)
4. Don't put a pump in your well at the house. (That will make it too easy for your wife.)
5. Don't shut the colts and calves away from the shade-trees around the house. (If you do they can't rub the young trees down and eat them up. Nicely kept trees around a farmhouse don't pay, you know.)
6. Don't provide shade for your pigs and hogs. (They would be too comfortable and grow too rapidly.)
7. Don't fail to go to town whenever it sprinkles rain. (If you stayed at home, that stable and that barn might cry unto you, "Clean us out and repair the doors and mangers.")
8. Don't fail to go visiting early Sunday morning and stay till too late in the evening to feed the stock and poultry, and milk the cows. (Didn't you say it was a sin to feed and water stock on Sunday?)
9. Don't try to get better seed-corn. (You might raise too big a crop—too much work to gather. Just raise small ears and only a few of them.)
10. Don't buy a modern manure-spreader and haul out those piles of manure. (It might make your corn grow too rapidly so that you can't get it cultivated enough before it gets too tall.)
11. Don't provide much feed and shelter this winter for your calves. (If you do, they may grow and get so big by the time they are 12 months old they might sell for \$37.50 per head, as one of mine lately did at that age. Just skin your cattle through and let them go to pasture next spring with nothing but frames; they may be worth half as much as they were in the fall.)
12. Don't hunt around for high-bred sires to improve your hogs and cattle. (Neighbors might say you are getting "stuck up.")

13. Don't pile the brush promptly when you trim the hedge. (Just let it lie until the wind blows it over onto your neighbor's prairie meadow, pile it and burn it there, and burn out a space of his grass. Weeds will come instead of that carpet of grass.)

14. Don't concern yourself to plow under that crop of grass and weeds in your stubble field. (If plowed under, it would be likely to enrich your field.)

15. Don't stop to harrow while your ground is fresh plowed. (Let it lie in the sun and bake those clods as hard as bricks.)

16. Don't take time and pains to plant a small patch of melons. (You can take your wife's chicken money and buy melons in town.)

17. Don't price your farm too high if you want to sell it.

18. Don't paint your roofs if you don't want to sell your farm. (If you paint and make things look neat and bright some one may admire and want to buy your farm.)

THOS. D. HUBBARD.

Neosho County.

The Poultry Yard

CONDUCTED BY THOMAS OWEN.

Poultry Notes.

For diarrhea in fowls, boiled rice and milk will effect a cure, if given in its first stages. Ground nutmeg is another simple and powerful remedy, but the after effects are not always so satisfactory as the boiled rice and milk.

Regarding the keeping of eggs in cold storage, experts agree that the temperature should be as low as possible without freezing the eggs, and should be maintained evenly. The proper temperature is from 31° to 33° F. The air should be as dry as possible. When eggs are taken out of cold storage they should be used as soon as possible, as they soon spoil when removed to a higher temperature. That is one reason why cold-storage eggs are so frequently declared to be not good.

When scaly leg has affected a large flock of fowls, it is quite a task to take each fowl separately and grease its legs. Here is a method that is much handier when treating large numbers of fowls affected with this disease: Take a quart canful of lard, coal-oil, and carbolic acid and set the can in an old bucket, piling hot ashes and some coals around it. Then with a swab, made by wrapping rags on the end of a stick, proceed to the henhouse and, holding each perch over the bucket, sliding it along as you grease it, completely fill every crack and crevice with the mixture. The lard cools rapidly, leaving the perch very greasy, and the legs of the fowls roosting on such perches become saturated with the mixture and soon are bright and clean. It serves a twofold purpose, ridding the perches of lice and preventing and curing scaly leg.

Overgrown chicks are not those that have grown rapidly and attained a large size, but the term applies to chicks that can not stand on their legs, due to rapid growth. The difficulty occurs with cockerels more than with pullets and indicates high feeding. The chicks have good appetites and are healthy in every respect, except that they can not stand on their feet but try to get around on their knees. The remedy is to avoid overfeeding them, and to give them ground bone in their soft feed so as to strengthen their legs. The disease is not fatal, as a rule, as they usually get over the leg weakness and become the largest and finest birds.

A new poultry paper has appeared in Manhattan, Kans., called the "Western Poultry Review," and is the only exclusive poultry journal now in the State. We are not acquainted with the editor, G. I. Winans, but we learn that he has been a traveling preacher for seventeen years and if he does not know something about "yellow-legged chickens," we do not know who does. The business manager, however, Chas.

C. Smith, we have known for a number of years as a journalist of high repute and a chicken crank of the first water. The first two numbers of the paper are very nicely gotten up and are a credit to the management. The subscription price is ridiculously small, only twelve cents a year. No poultryman in the country can afford to be without it.

The Practical and Theoretical Feeding of Laying Hens.

FRED VAN DORP, TOPEKA.

(Continued from last week.)

There is more than sufficient nutrients in the medium and narrow ration. There is apparently a deficiency in the wide ration. Since it maintained the fowls, a part of the other rations must have been wasted. The comparative profits were as follows:

	Cost of food per hen.	Value of eggs per hen.	Profit per hen.
Medium.....	\$1.17	\$1.31	\$.038
Narrow.....	.28925	.214	.17525
Wide.....	.11095	.114	.00305

The medium ration made the most profit and is approximately balanced.

The record of a flock of hens in New York is as follows:

First.—December 1 to 27; number of hens, 499¾.

Second.—March 1 to 28; number of hens, 493¼.

Eggs produced in December, 2,229; in March, 9,553.

RATIONS FED.

	First Period.	Second Period	
	Pounds.	Pounds.	Cost.
Wheat.....	1,443.5	1,435.5	\$22.350
Fresh meat and bone.	705.5	10,587	11.794
Cabbage.....	329.2	5,584	.864
Total.....	2,878.2	\$35,616	3,070.4

Ounces digestible nutrients per hen per day:

	First.	Second.	Nutrient Ratio.
Dry Matter	2.722	418	1.546
Pro	3.088	469	1.795
Carbo	1.546	1.75	275.3
Fat	.175	.103	290.438
Cal	275.3	1.4	1.4

Subtracting amount used in eggs produced, we have left for maintenance, in ounces per hen per day:

	First.	Second.	Nutrient Ratio.
Dry Matter	2.605	374	1.546
Pro	2.805	287	1.500
Carbo	1.546	1.03	282.133
Fat	.1442	.103	233.376

An excess of nutrients is shown, the birds weighing 3½ pounds; but in March it was practically balanced. At least, a part of the excess in December was used in increasing maintenance requirements at that season. The following shows the relative profits at the two seasons of the year:

	Cost of food per hen.	Value of eggs per hen.	Profit per hen.
First.....	\$.0714	\$.0818	\$.0104
Second.....	.0722	.264	.1918

RECORD OF ANOTHER FLOCK IN NEW YORK.

First.—February 1 to 28, 349 hens.

Second.—March 1 to 28, 333¾ hens.

Average weight, 4½ pounds.

The following rations were fed:

	First.	Second.	
	Pounds.	Pounds.	Cost.
Corn.....	756	407.2	\$2.899
Wheat.....	504.9	755.9	7.559
Oats.....	308.9	325.9	2.972
Bran.....	105.2	842	.61
Corn meal.....	105.2	789	.951
Middlings.....	147.5	1.78	1.083
Ground oats.....	84	789	.718
Meat scraps.....	63	1.575	48.3
Skimmed milk.....	299.1	.598	325.8
Clover hay.....	47.7	.477	.558
Total.....	2,559.5	\$21.204	242.9

The first laid 2,589 eggs; the second, 4,874 eggs.

Ounces digestible nutrients per hen per day:

	First.	Second.	Nutrient Ratio.
Dry Matter	3.355	2.21	1.43
Pro	3.08	2.053	1.18
Carbo	2.21	1.18	309.615
Fat	.143	.118	291.037

Subtracting eggs produced, we have for maintenance in ounces per hen per day:

	First.	Second.	Nutrient Ratio.
Dry Matter	3.1695	3143	2.231
Pro	2.723	2349	1.843
Carbo	2.231	1.18	.0096
Fat	.118	.118	288.568

Our standard is:

	First.	Second.	Nutrient Ratio.
Dry Matter	2.9425	.345	1.675
Pro	.345	.115	.115
Carbo	1.675	.115	265.15

Here we have a deficiency of protein, making the ratio wider than desirable. This and former examples suggest that our maintenance requirements perhaps are too heavy. The following compares the profit:

	Cost of food per hen.	Value of eggs per hen.	Profit per hen.
First.....	\$.061	\$.111	.05
Second.....	.057	.195	.138

We find that 1:4 ratio is nearest the balanced ration, but about 1:5 produces eggs the cheapest in the coldest weather. The rations most nearly balanced produced eggs at the most profit per hen.

(To be continued.)

POULTRY BREEDERS' DIRECTORY

CHOICE B. P. ROCK cockerels and pullets—Colt pups; send for circular. W. B. Williams, Stella, Neb.

B. P. R.—Bradley strain, from stock scoring to 94, cockerels \$2 to \$5. Other strains \$1 to \$2. F. F. Wood, Wamego, Kans.

FERRETS.—Fine young ferrets, with full instructions for handling. Singles, \$3.00. Pair, \$5.00. Roy F. Cope, Topeka, Kans.

100 PURE PARTRIDGE COCHINS—Cockerels and pullets for sale at \$1 each. Very choice lot Order early. H. Woodring, Elk City, Kans.

S. C. B. LEGHORNS EXCLUSIVELY—Some fine young cockerels and pullets for sale cheap if taken early. J. A. Kaufman, Abilene, Kans.

EGGS FOR SALE—S. C. W. Leghorns, W. Wyandottes; \$1 per 15. W. H. turkeys, \$1.50 per 9. Bantam geese, 20c each. W. African guinea, \$1.75. All guaranteed pure-bred. A. F. Hutley, Route 2, Maple Hill, Kans.

STANDARD BRED SINGLE COMB BUFF LEGHORNS—Headed by first prize pen Chicago Show 1903 and took six first prizes and first pen at Newton 1904. Eggs, \$3 for 15. S. Perkins, 801 East First Street, Newton, Kans.

A FEW choice S. C. Buff Orpington cockerels from stock with a record of 15 eggs per hen in January, '05, 16 in February and 22 in March. Also a few Barred Rocks, pullets and cockerels. F. W. Kinsley, Mound Valley, Kans.

S. C. W. Leghorns and Buff Rocks. Winners at State Fairs. Eggs, \$1 per sitting. J. W. Cook, Route 3, Hutchinson, Kans.

TO GIVE AWAY—50 Buff Orpingtons and 50 Buff Leghorns to Shawnee county farmers. Will buy the chicks and eggs. Write me. W. H. Maxwell, 921 Topeka Ave., Topeka, Kans.

BARRED AND WHITE PLYMOUTH ROCK Eggs, \$2 per 15; \$5 per 45. Hawkins and Bradley strains, scoring 98½ to 94½. Mr. & Mrs. Chris Bearman, Ottawa, Kans.

Golden Wyandottes

Winners at Topeka Poultry Show, January 1905, 2, 3 hen, 3 pullet, 2 cock, 2 cockerel. A few birds for sale. Eggs, \$2 per 15.

J. D. MOORE, Route 2, Blue Mound, Kans.

"A NINE TIMES WINNER"

Bates Pedigreed Strain of White Plymouth Rocks have been shown in nine poultry shows the past two years and

Won in Every One of Them.

If they win for us, their offspring ought to win for you. Eggs, \$1.50 per 15. Elmwood strain of White Wyandottes also hold their own in the show-room. Eggs, \$1 per 15.

W. L. BATES, Topeka, Kansas.

White Plymouth Rocks

EXCLUSIVELY.

Good for Eggs, Good to Eat, and Good to Look at. W. F. Rocks hold the record for egg-laying over every other variety of fowls; eight pullets averaging 280 eggs each in one year. I have bred them exclusively for twelve years and have them scoring 94 to 96½, and as good as can be found anywhere. Eggs only \$2 per 15; \$5 per 45, and I prepay expressage to any express office in the United States. Write at residence, adjoining Washburn College. Address THOMAS OWEN, Sta. B, Topeka, Kans.

POULTRY SUPPLIES

Thanolite (lice powder).....	25c
Croco-carbo (lice killer).....	50c
Egg Maker.....	25c
Poultry Cure.....	25c
Roup Pills.....	25c
Medicated Nest Eggs.....	5c
Conkey's Roup Cure.....	50c
Buckeye Cholera Cure.....	50c

OWEN & COMPANY

520 Kansas Ave., Topeka, Kans.

SCOTCH COLLIES.

SCOTCH COLLIES.—Scotch Collie pups from registered stock for sale. Emporia Kennels, W. H. Richards, V. S., Emporia, Kans.

DUFF'S POULTRY

Barred Plymouth Rocks, White Plymouth Rocks, Buff Cochins, Partridge Cochins, Light Brahmas, Black Langshans, Silver Wyandottes, White Wyandottes, Silver Spangled Hamburgs, Brown Leghorns. First-class Standard Stock of Superior Quality. Stock For Sale. Eggs in Season. Write Your Wants. Circular Free.

A. H. DUFF, Larned, Kans.

Grange Department

Woman's Work in the Subordinate Grange.

It is most gratifying to note the increasing interest in woman's work in the subordinate grange. Our mails bring letters daily asking for information and our State officers, on the occasion of visits to granges, are besieged with questions concerning this work. Really, there is no limit to the work which may be done, but one of the most natural lines which presents itself is the care of the children.

In many granges there are members who would gladly attend the meetings were it not for the children who must either be left alone or be brought to the hall, where in poorly lighted and heated ante-rooms they stand about during the business meeting, growing sleepy and cross and endangering health. The juvenile work is eminently fitted to some woman or women, enthusiastic for the good of the order. With a small number and limited accommodations, this work can be made very successful and profitable and the children thus trained will make the best Patrons of Husbandry for the future. The work will be fully explained to any who apply to the members of the State Woman's Work Committee.

It is a most deplorable fact that the brothers in many of our larger granges are extremely selfish and persist in monopolizing the whole evening with business matters. They have no right to defraud others of the benefit of the literary hour and I think these same brothers if treated to meat alone would soon call loudly for more variety—for bread and vegetables, and, being Americans, for pie. The mind's appetite calls also for a mixed diet and each member is refreshed by features entertaining as well as business.

A bright woman who was appointed lecturer last fall, wrote recently for advice. She had formed many original plans for the work and had taken the office with enthusiasm, but since installation had been given only three opportunities to have a program at all. Think of it! And a majority of the brethren were in sympathy with her, but a few old wranglers were allowed to fill in the time with arguments on matters which could have been settled

in short order had they been followers of the Golden Rule.

Lecturers should avoid falling into "ruts." Nothing is so monotonous as a continual juggling along in the same line, because, surprises are as restful and agreeable as flowers by the wayside. One of the most resourceful lecturers I have been so fortunate as to meet abounds in surprises both in regular as well as open meetings. Last fall, at an open meeting, after the regular prepared program had been completed she arose and made a few apologetic remarks, hoping that she had not overstepped her authority, and then said that because of the difficulty in securing speakers she had taken the liberty to engage the celebrated Peak Sisters whom she would then introduce. Of course it was home talent, but the complete surprise of it is mentioned yet more prominently than the merits of the farce, which is indeed most amusing and which was exceedingly well acted.

It is a privilege to be a member of so great an order as the Patrons of Husbandry and the least that we can do is to give it the best that is in us. This we can do at no loss, for its returns are far more than the best we can give. Who does not know of men to-day, prominent in the affairs of the State, whose voices are heard from the public platform and whose judgment is sought in matters of importance and who would have lived humdrum, isolated lives and died unknown had it not been for the ennobling, uplifting help of this order!

No better work, then, can be assigned to the women of the Grange than the looking after and training of the Grange children. Through them the parents can be reached and influence broadened. It is the beautiful old illustration of the tiny pebble cast into the stream by the hand of a child causing the ever-widening circles which cease not until they break on the far distant shore.—Elizabeth Phelps Farnham, Chairman Woman's Work Committee, N. Y. State Grange.

We have from time to time touched upon the advisability of concerted action in the granges of the State in taking up certain measures of public interest. The subordinate granges were requested to bring up at a specified time the question of the parcels post, good roads, etc., for thorough discussion. This may have been done but we have received no assurance of it. New Hampshire is in the lead so far. A systematic record has been compiled by the State Lecturer. In a single month in 197 different granges 1,279 people discussed, simultaneously, "State aid for highways."

More than two and one-half millions of dollars have been expended for grange halls during the past thirty-five years. These halls are the farmer's schoolrooms, places of business, and of social intercourse for the farmer's family.

Michigan is a Grange State, having a membership of nearly fifty thousand in over seven hundred subordinate granges.

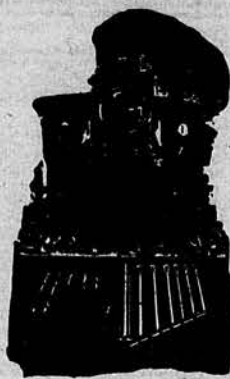
He who purposely neglects to attend his grange meetings is false to his obligations.

The National Grange meets November 13, 1905, at Atlantic City, N. J.—"the playground of the American people."

The discovery of an ocean desert, a vast submarine Sahara, destitute of every vestige of plant or animal life, and covering millions of square miles of the bed of the Pacific, is the astonishing news brought back by Professor Alexander Agassiz, recently returned from a six-months' cruise in the Government, deep-sea sounding-boat, Albatross.

The State railroads of Belgium have instituted a system of railroad hospitals. Each car in the service contains eight movable couches, a dispensary and an operating room. The cars are being distributed at convenient points of the system.

A single honor acquired is surety for more.—Rochefoucauld.



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Denver, Colo.

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Kansas City Southern Railway

"Straight as the Crow Flies"

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Along its line are the finest lands, suited for growing small grain, corn, flax, cotton; for commercial apple and peach orchards, for other fruits and berries; for commercial cantaloupe, potato, tomato and general truck farms; for sugar cane and rice cultivation; for merchantable timber; for raising horses, mules, cattle, hogs, sheep, poultry and Angora goats.

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New Colony Locations, Improved Farms, Mineral Lands, Rice Lands and Timber Lands, and for copies of "Current Events," Business Opportunities, Rice Book, K. C. S. Fruit Book.

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CLIMATE IDEAL, AMPLE RAINFALL.

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Reward will be paid to any person who can find one atom of opium, chloral, morphine, cocaine, ether or chloroform in any form in any of Dr. Miles' Remedies.

This reward is offered because certain unscrupulous persons make false statements about these remedies. It is understood that this reward applies only to goods purchased in the open market, which have not been tampered with in any way.

Dr. Miles' remedies cure by their soothing, nourishing, strengthening and invigorating effects upon the nervous system, and not by paralyzing and weakening the nerves as would be the case if these drugs were used.

For this reason Dr. Miles' Anti-Pain Pills are universally considered the best pain remedy.

"I have suffered for 25 years with severe pains in my head, heart and back, and have tried everything I could get and could not find any relief until I got a box of Dr. Miles' Anti-Pain Pills. I suffered as long as 12 hours at a time with such severe pains that I feared I would lose my mind. The Anti-Pain Pills gave me relief in from 10 to 20 minutes. I do not have to use Morphine any more. I wish you would publish this so that other sufferers may find relief."

I. A. WALKER,
R. F. D. No. 6, Salem, Ind.
Dr. Miles' Anti-Pain Pills are sold by your druggist, who will guarantee that the first package will benefit. If it fails, he will return your money. 25 doses, 25 cents. Never sold in bulk.
Miles Medical Co., Elkhart, Ind.

DUROC-JERSEYS.

D. M. TROTT Abilene, Kans., famous Duroc Jerseys and Poland-Chinas.
COUNTY SEAT HERD DUROC-JERSEY SWINE
 Geo. Briggs & Son, Clay Center, Neb.
 Young stock for sale.

DUROC-JERSEYS—Large-boned and long-bodied kind. A fine lot of spring pigs either sex for sale. Prices reasonable.
E. S. COWEE, R. F. D. 2, Scranton, Kans.

MAPLE AVENUE HERD **J. U. HOWE,** Wichita, Kansas
 Farm two miles west of city on Maple Avenue
Duroc-Jerseys

FAIRVIEW HERD DUROC-JERSEYS
 Now numbers 150; all head for our two sales, October, 1905, and January, 1906.
J. B. DAVIS, Fairview, Brown Co., Kas.

GOLDEN RULE STOCK FARM
LEON CARTER, Mch., Asherville, Kans.
 Gilt-edged Duroc-Jersey Swine.

THE OLD RELIABLE KLONDIKE HERD.
 Of Duroc-Jersey Swine, Shorthorn Cattle and B. P. Rocks. Durocs of all ages for sale. Two choice bull calves, 7 months old for sale. Annual sale in October.
Newton Bros., Whiting, Kansas.

Wheatland Farm Herd DUROC-JERSEYS
 For Sale—Fall gilts, tried brood sows, bred and open and spring pigs of either sex.
GEO. G. WILEY & SON, South Haven, Kans.

FOR SALE 75 head of pedigree spring pigs, boars or sows, no akin, good color, well built, very cheap, order now from
CHAS. DORR, Route 6, Osage City, Kans.

SUNNYSIDE HERD OF DUROC-JERSEY SWINE.
 Aged sows, yearling sows, spring boars and gilts for sale cheap. Our brood sows have all been prize winners in hot competition. Our spring pigs are sired by Burrells Hague 21469 and Sunnyside Prince 31899. Hague & Sons, Route 6, Newton, Kansas. Phone on farm.

Orchard Hill Herd OF DUROC-JERSEYS
 Spring pigs are ready to go. They will be sold at a bargain to make room.
R. F. NORTON - Clay Center, Kans.

THE CHERRY RED HERD Our Durocs are better than ever. Some No. 1 February and March boar pigs; as pretty as can be found in any herd. Also just as fine gilts of same age for sale at low prices, with Keen Champion 34469 to head herd. Also some W. P. Rocks and Pekin Ducks.
Mr. and Mrs. Henry Shrader, Wauneta, Kas.

PLAINVILLE DUROC-JERSEYS
 Herd headed by King of Kansas 28283, sired by Improver 24, the hog which brought \$300 for a half interest. For sale: A lot of pigs sired by King of Kansas. The brood sow, Daisy E, is very large and a good breeder of show hogs. There are several sows in the herd of the Tip Top Notcher strains. Send in your orders and get a bargain.
J. M. YOUNG, Plainville, Kans.

MUNNEOLA HERD DUROC-JERSEY SWINE
 Prince 17799 and Red Rover 27665 at head of herd. Young boars and bred and open gilts for sale.
L. A. KELLER, Route 7, Phone 891 G, Ottawa, Kans.

POLAND-CHINAS.
 Kansas Herd of Poland-Chinas has bred gilts and W. B. C. Leghorn chicks. F. P. Maguire, Hutchinson, Kansas.

FOR SALE Poland-China Hogs, Holstein-Friesian Cattle; either sex. Best strains represented
H. N. HOLDEMAN, R. R. No. 2, Girard, Kans.

THE ELM GLEN FARM HERD OF POLAND-CHINAS
 Eight choice young boars, bred and open gilts, good size and finish. Best draft for \$20; take choice of boars. **WM. KNOX, SOUTH HAVEN, KANS.**

Pecan Herd of Poland-Chinas
 Best strains. Large and grothy, yet with plenty of finish. A few sows bred for Sept. Farrow for sale (good ones). Write us what you want.
J. N. WOODS & SON, Route 1, Ottawa, Kans.

DIRGO BREEDING FARM
J. R. Roberts, Prop., Deer Creek, Okla.
 Breeder of up-to-date Poland-Chinas. A choice lot of boars of serviceable age for sale at prices which should make them go at once. Write me before placing your order.

E. E. Axline's Annual Sale
 Oak Grove, Missouri
 Monday, October 9, 1905
 Sixty head, tops of all 1904 and spring 1905 crop. You know the kind. Catalogue ready September 10.

Elm Grove Stock Farm Poland-Chinas.
 Herd headed by Nonpareil 86105A. Sweepstakes boar at Missouri State Fair 1904. Can spare a few choice sows bred for May and June farrow.
F. A. DAWLEY, Waldo, Kans.

MAPLE VALLEY STOCK FARM
 Pure-bred Poland-Chinas from leading strains. Visitors welcome and correspondence solicited. Satisfaction guaranteed. **C. P. BROWN, R. 2, Whiting, Kas.**

POLAND-CHINAS.

Main's Herd of Poland-Chinas
 A grand lot of spring and last fall pigs, sired by the great show hog, Empire Chief 303766 out of number one sows. They take on the large size and heavy bone of their sire. Sows including Empire Chief gilts, bred for fall litters to Roller Trust, he by High Roller, the Ohio champion. 240 in herd. Fed for breeders. Priced reasonable. Annual sale October 25.
James Mains, Oskaloosa, Jefferson Co., Kan.


Spring Creek Herd of POLAND-CHINA SWINE
 Pigs by On and On and U. S. Model. 3 fall boars and a number of choice gilts, large, fancy and well bred. Perfection and Sunshine blood
G. M. Hebbard, Peck, Kansas

ROME PARK POLAND-CHINAS and BERKSHIRES.
 I have about twenty boars ready for use and twenty-five sows bred, and some unbred, and a large number of good pigs, both breeds.
T. A. HUBBARD, (County Treasurer Office), Wellington, Kans.

GUS AARON'S POLAND-CHINAS
 Route 5, Leavenworth, Kans.
 Choice young boars of April and May farrow sired by Beauty's Extension, for sale. Also bred sows and gilts, all with good colors, bone, fancy head and ears. The herd boar, Beauty's Extension 27966, for sale. Some snaps here. Visitors welcome. Mention Kansas Farmer and write for prices.

Pure Poland-China Hogs.
 We have a few fall and winter boars sired by American Royal 81505 A and Onward 97359 A, he by Keep On 61015 A, out of some of our best sows. Also some spring pigs by same boars.
J. R. KILLOUGH & SONS, OTTAWA, KANS.

HIGHLAND FARM HERD OF PEDIGREED POLAND-CHINAS
 Twenty serviceable boars at special prices for next 30 days, sired by Black Perfection 37132, Black Perfection 32804, Perfection Now 32580, and Ideal Perfection. They are lengthy and good-boned pigs, with plenty of finish. Write me description of what you want and I will guarantee satisfaction.
JOHN BOLLIN, Route 5, Leavenworth, Kans.

CHESTER WHITES.
 **D. L. Button,** Elmont, Shawnee County, Kansas
 Breeder of Improved Chester-White Swine. Young stock for sale.

World's Fair CHESTER-WHITE HOGS
 Shorthorn cattle, Oxford sheep and Peafowls. I won 13 prizes on 14 head of Chester-Whites at World's Fair, 1904. Four herd boars in use.
W. W. WALTIRE, Peculiar, Mo.

High Point Stock Farm
 I have choice O. I. C. and Duroc-Jersey males. Also bred O. I. C. and Duroc-Jersey gilts for sale. B. P. Rock cockerels and eggs in season. Write or come and see
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Ohio Improved Chester White Swine.
 We offer for sale a nice lot of good pigs sired by Hoosier Boy 2d 10395, one of the best and out of such noted dams as Bessie W 19074 and Ada S. 19072, and other good brood sows. We price nothing but good straight stuff. We also have a few choice black and tan pups, nicely marked, that are sure death to rats. Prices reasonable.
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PRIZE WINNING O. I. C. SWINE
 Sows and gilts bred to Kerr Dick, sire to World's Fair Junior Champion, or by Kerr Dick and bred to other equally good sires. Also fine crop of spring pigs from such sows as Big Mary, grand champion at St. Louis, Kerr Ulna, Silver Mina and others. Headquarters for Boars and Gilts. Write me.
O. L. KERR, Independence, Mo.

O. I. C. Hogs
Scotch Collie Dogs
B. P. Rocks
 One hundred grand pups sired by the two greatest stud dogs in the west, Cragmere Wonder and Brandane Noble. We are selling more Collies than any firm in America. Why? Because we have the blood, our prices are moderate, and our dogs are workers as well as blue blooded. With each Collie sold by us we send a book "The Useful Collie and How to Make Him So." Write at once for they are going fast.
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O. I. C. THE WORLD'S BEST SWINE
 200 head all sizes, both sexes, singly, pairs, trios or small herds. A large number by Norway Chief 12363 grand first and sweepstake boar Nebraska State Fair, 1904. Top quality. Rock bottom prices. Write to-day for prices to
FISHER LIVE STOCK CO., Hastings, Nebraska.

BERKSHIRES.

CEDAR LAWN BERKSHIRES My sows are sired by Elma's Prime 64778, and Berryton Duke 72946. Boar at head of herd, Tourist 76277.
Wm. McAdam, Netawaka, Kans.

BERKSHIRES
 From the best breeding that can be had, for sale at all times. Male and female, bred and open. Prices and breeding that will suit you.
J. P. SANDS & SON, WALTON, KANSAS


Ridgeview Berkshires
 Boars of July and August, '04, farrow for sale, sired by Forest King 72668. Orders booked for spring pigs.
MANWARING BROS., Route 1, Lawrence, Kans.

SUTTON'S BERKSHIRES
 Imported Blood
 30 extra choice Boars, 100 to 150 pounds.
 40 extra choice Gilts, 100 to 150 pounds.
 Fancy heads, strong bone and all-around good ones. Bargains at \$15 to \$25 to close quick.
Chas. E. Sutton, Russell, Kansas

BERKSHIRES
 I have purchased the great S. B. Wright herd, of California—are of the best in America, and the best sows and boars I could find in Canada, and have some fine young boars by several different herd boars. Can furnish fresh blood of high quality. Eight pure Collie pups, cheap
E. D. KING, Burlington, Kansas

KNOLLWOOD BERKSHIRES
 Pacific Duke 56891, the 1,000 pound champion show and breeding boar from herd of S. B. Wright, Santa Rosa, Cal., bred by N. H. Gentry; Model Princess 60134, by Halle 60125, sweepstakes Pan-American sow; Stumpy Lady 63469 by Combination 56023, sweepstakes Kansas City and Chicago 1902. Lee's Model Princess 62314, the \$180 daughter of Governor Lee 47971; Lady Lee 96th 65035, the \$150 daughter of Lord Premier 50001, and other "Blue-Bloods." Sows bred to 3 grand boars and young stock for sale.
E. W. MELVILLE, Eudora, Kans

SUNNY SLOPE

 **BERKSHIRES**
 40 bred gilts, 50 boars large enough for service and a large number of fine spring pigs of both sexes for sale. Berryton Duke 72946, litter brother to Masterpiece, and the choice pig of that litter at head of herd. Our sows are large and growing, the choice from my large herd after years of careful breeding. I can sell you as good hogs as you can buy in America. Write for prices before buying.
 Address all correspondence to
C. A. STANNARD, - Emporia, Kansas

SHEEP.
R. C. JOHNSTON, Lawrence, Kansas.
 Breeder of thoroughbred
REGISTERED ANGORA GOATS
 Buck for sale bred from Turkish and South African Stock. I guarantee satisfaction.

ELMONT HERD SHROPSHIRE SHEEP
 Herd headed by Huntsman 155655 and Marshall 178211. Choice young bucks ready for service, for sale; also extra good spring ram lambs. All registered
JOHN D. MARSHALL, Walton, Kas

ABERDEEN-ANGUS.
Aberdeen-Angus Cattle and Percheron Horses
 A few fine bulls ready for buyers. Aged cows will be sold cheap. Two jacks for sale or exchange for good Percheron stallion or mare.
GARRET HURST, Peck, Kans.

THE SUNFLOWER HERD PURE-BRED Angus Cattle
 Herd headed by HALE LAD 30645. Herd numbers 250 head, the largest herd bred by owner in America. Stock for sale
PARRISH & MILLER, Hudson, Route 1, Stafford Co., Kas.

ANGUS BARGAIN.
 I want to sell my herd of registered Aberdeen-Angus cattle, consisting of nine, two and three year old cows, and one bull. Will give some one a bargain.
C.A. LONG, Fredonia, Kan.

GALLOWAYS.
O. E. MATSON, - FURLEY, KANSAS
 Breeder of choice Galloway Cattle. Eighty head in herd. Young stock for sale. Write for prices.

SHORTHORNS.

Plainville Shorthorn Herd
 Headed by Prince Lucifer 188685
 A pure Scotch bull.
 Stock for sale at all times.
N. F. Shaw, Plainville, Reels Co., Kans

ROCKY HILL HERD SHORTHORN CATTLE
J. F. True & Son, Perry, Kans.

D. P. NORTON'S SHORTHORNS
 Dunlap, Mo., is County, Kansas/
 Breeder of Pure-bred Shorthorn Cattle.
 Yearling bulls and heifers, \$40 each.

Meadow Brook Shorthorns
 Herd headed by Baron Goldsmith 224633 by The Baron 121327; females bred to him and choice young bulls for sale.
T. C. KINGSLEY, Dover, Shawnee County, Kansas.
 Railroad Station, Willard, Kans. Long Distance Telephone

SHORTHORN CATTLE POLAND-CHINA SWINE
 Best strains of stock for sale at popular prices.
M. WALTIRE, - - Carbondale, Kansas

SILVER CREEK SHORTHORNS and DUROC-JERSEYS
 In Special Offer. 8 young cows and heifers bred to Imp. Aylesbury Duke and Lord Thistle. Some choice Duroc pigs of either sex sired by and gilts bred to Maybury. First prize winner at Am. Royal, Mo. State, and World's Fair, 1904.
J. F. STODDER, Burden, - Cowley County, - Kansas

MILKING SHORTHORNS
 Young bulls from heavy milking dams, sired by the Scotch Topped Giltspur's Knight 171591 whose heifers are excellent milkers. Write us.
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GLENWOOD HERDS Shorthorns and Poland-Chinas
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