

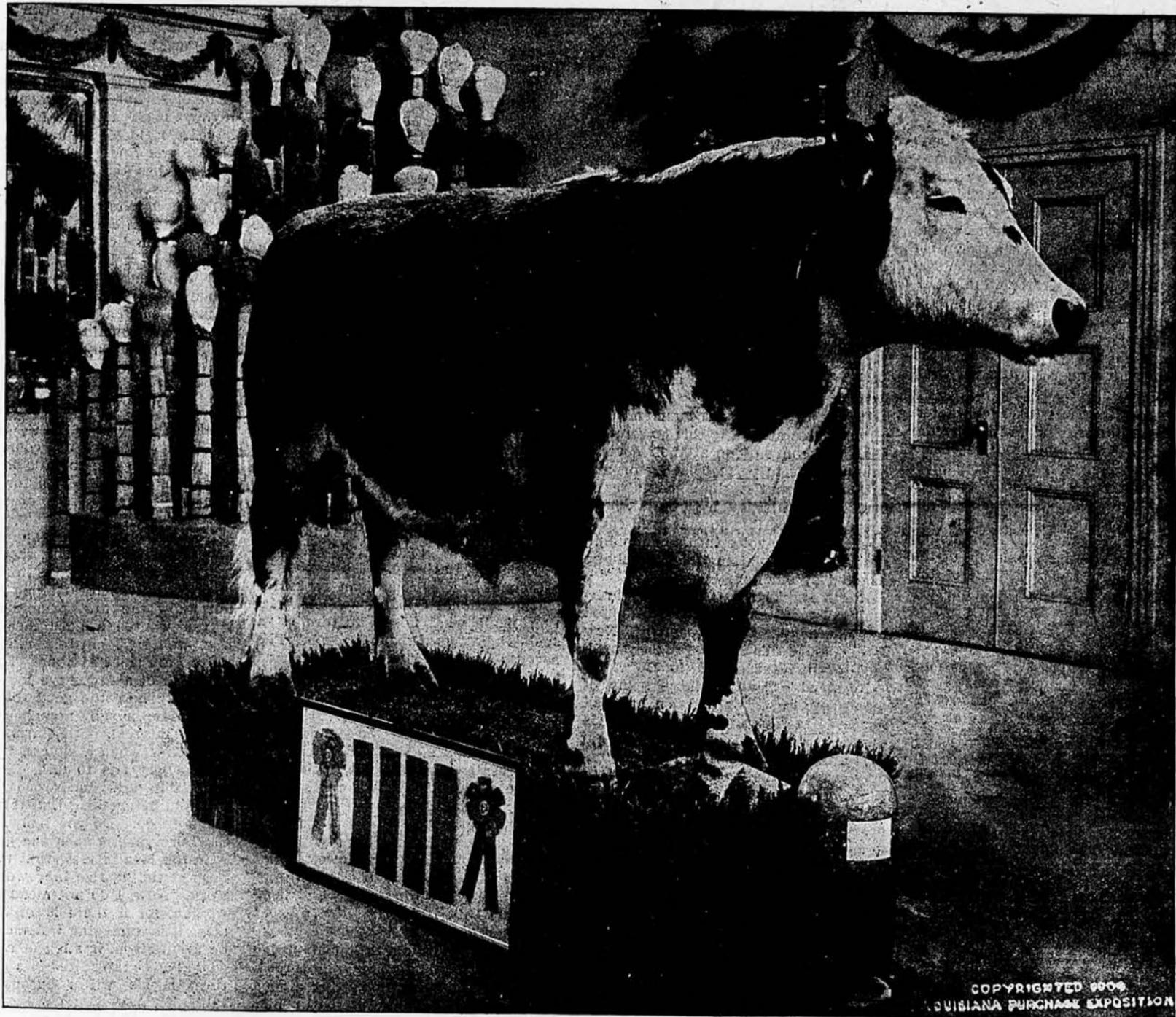
KANSAS FARMER

Library K S A C

Volume XLII. Number 32

TOPEKA, KANSAS, AUGUST 11, 1904.

Established 1863. \$1 a Year



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THE CHAMPION STEER "CHALLENGER" AT THE WORLD'S FAIR.

The above photograph shows the famous champion of the 1903 International as he appears in the Nebraska State Exhibit at St. Louis. On the pedestal are displayed the ribbons won by him, while the glass jar at the right contains samples of the feeding materials used. Between his fore-feet is a handsome brass tablet, bearing the following inscription:
"CHALLENGER," awarded first prize as Grand Champion Steer of the World at THE INTERNATIONAL LIVE STOCK EXPOSITION, Chicago, Nov. 28 to Dec. 5, 1903. Fattened and exhibited by the UNIVERSITY OF NEBRASKA. Live weight, 1,730 lbs. Sold by CLAY, ROBINSON & COMPANY to Dunning & Stevens for \$449.80, or \$26.00 per 100 lbs.

KANSAS FARMER.

Established in 1863.

Published every Thursday by the
KANSAS FARMER CO., - - TOPEKA, KANSAS

E. B. COWGILL..... President
J. B. MOAFER..... Vice President
D. G. NELLIS..... Secretary and Treasurer

SUBSCRIPTION PRICE: \$1.00 A YEAR

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

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



The Japanese are slowly closing in on Port Arthur in a manner similar

to that by which Grant took Vicksburg. The fall of that stronghold of Russia may be expected at any time. Farther north the Japanese seem likely to be able to compel the Russians to either fight or surrender, perhaps both, instead of pursuing their usual policy of fighting a little and retreating.

One of the most frightful railroad accidents on record occurred last Monday on the D. & R. G. about seven miles north of Pueblo. A bridge over a small creek was so weakened by a flood that it went down with the engine and all the coaches except the Pullmans. The train was returning

passengers from the World's Fair. Between 80 and 100 are known to have perished. Only four of the persons on the part of the train that went down escaped.

The time for sowing alfalfa is almost here. This crop, which grows in dry weather better than any other, and fails not to grow when the soil is so wet that it can not be worked, is easily the most profitable that can be planted in Kansas. A well-prepared seedbed, but rather firm below the surface, should give a good stand if sown by September 1, and should yield four pretty good crops next season.

THE BASIS OF COMPENSATION.

The present somewhat disturbed condition in the relation of employer and employed in important industries in several cities suggests consideration of two widely variant views of the basis of compensation for labor.

The farmer finds little difficulty in agreeing with the proposition that the laborer should be paid in proportion to the value of his services to his employer. On the contrary, a doctrine has been promulgated which holds that all should share alike in the results of the labors of the many individuals of the general community.

This latter doctrine is not usually stated in quite so simple and general (Continued on page 804.)

Miscellany

KANSAS GOOD ROADS' ASSOCIATION.

The first annual meeting of the Kansas Good Roads' Association was a decided success. The meeting was held in the Commercial Club rooms at Topeka, on August 2 and 3, and was characterized by a large attendance from over the State and a degree of enthusiasm which is not common even in Kansas.

Invitations had been sent to the breeders' associations, horticultural societies, county fair associations, the granges, the commercial clubs, each board of county commissioners, the farmers' institutes and the Agricultural College, to send delegates and the response was quite general, though the granges should have credit for sending the largest number of delegates. As each of these bodies was restricted to two delegates, the out-of-town delegation was very large, numbering nearly 100. Owing to the fact that there were a number of political meetings of various kinds in the city, the local attendance was not as large as might otherwise have been expected, though the large commercial club room was filled at each session.

The association was fortunate in having at its first meeting, the attendance of Col. R. W. Richardson, of the Office of Road Inquiry, Department of Agriculture, and secretary of the National Good Roads' Association. Colonel Richardson is one of the best posted men on all phases of the good-roads' problem in the United States, and the information he gave and the assistance he rendered were very valuable to the association.

This meeting was also characterized by the interest taken in it by the women's clubs, a number of representatives of which were in attendance. Mrs. Walter Bates, of the West Side Forestry Club, read an exceedingly interesting paper, which is herewith reproduced. Mrs. W. A. Johnston, wife of Chief Justice Johnston, of the Supreme Court, and president of the West Side Forestry Club, made a very witty and entertaining speech which served to increase the enthusiasm of the attending delegates. The presence of these ladies at the meeting was highly appreciated, because it indicates an interest in the good-roads' movement on the part of the club women of the State, and because the members of the association realize that their assistance will be invaluable.

The writer is accustomed to attend a great many meetings of various sorts, but he does not now recall the meeting of any State association which showed more enthusiasm throughout and which had a stronger program than did the first meeting of the Kansas Good Roads' Association, which was held in this city last week.

The two most important educational institutions of the State were represented at the meeting and their influence for good will be far reaching. Prof. Erasmus Haworth, of the State University, who has long been recognized as one of the foremost authorities on geology, discussed "Kansas Good-Roads' Materials." President E. R. Nichols, of the Agricultural College, showed his interest in the good-roads problem by a discussion of "Wide Tires."

The delegates who were in attendance were made to feel that they were heartily welcome in the capital city. The Commercial Club, through its secretary, Major T. J. Anderson, placed their handsome rooms at the disposal of the association for their meetings, and afforded them every facility for conducting their business. The Topeka Railway Company gave the delegates a very enjoyable trolley ride to Vinewood Park and about the city, so that they might have an opportunity to test a good road by riding over it. This is a most unusual courtesy, and was highly appreciated by the delegates, who were very complimentary in their remarks concerning the new

equipment of the Topeka Railway Company. The Topeka Automobile Club gave the delegates a touch of high life in a spin of about twelve miles about the city and suburbs, thus affording them an opportunity to inspect the city pavements, the partially finished West Sixth Street macadam road, and the remains of a former attempt to build a good road between Washburn College and Seabrook. The automobile ride was under the captiancy of Colonel Chappelle, of the Copeland Hotel, to whom the personal thanks of each delegate are due.

Col. R. W. Richardson expressed the general sentiment of the delegates and visitors when he congratulated the officers on the success of the meeting, and remarked that it was one of the most enthusiastic he had ever attended.

The officers elected for the ensuing year were as follows: President, Grant Billbee, Iola; first vice-president, H. W. McAfee, Topeka; second vice-president, C. L. McClung, Kansas City; third vice-president, J. C. Naylor, Baxter Springs; fourth vice-president, W. S. Williamson, Emporia; fifth vice-president, Alfred Docking, Manhattan; sixth vice-president, G. R. Wolf, Ellsworth; seventh vice-president, H. J. Harding, Wichita; secretary-treasurer, I. D. Graham, Topeka. Executive Committee, the president, secretary, and all vice-presidents. Permanent committee on legislation, Hon. J. T. Tredway, LaHarpe; Hon. Robt. Stone, Topeka; Hon. E. B. Schermerhorn, Galena; President E. R. Nichols, Manhattan; G. W. Skinner, Neodesha.

The committee on resolutions made the following report, which was adopted:

Resolved, That no industrial movement has succeeded or can succeed without organization.

Resolved, That we recommend that all delegates attending this convention shall call conventions at their several county seats to perfect county organizations where they have not already been made, this action to be taken as speedily as possible so that each county may have a voice in recommending good roads' legislation which should be enacted by our next Legislature.

Resolved, That we approve and recommend the State aid plan as adopted by Massachusetts, Connecticut, New Jersey, and other States, properly modified to suit Kansas conditions.

Resolved, That as large sums of money are raised by taxation for road purposes in Kansas, much of which is unwisely spent because of lack of engineering skill and intelligent economy, we recommend that a practical State engineer be placed in charge of and have supervision over the road officers of the State, and work with them in creating system and economy.

Resolved, That we favor, as far as practicable, the employment of convicts and county prisoners in the improvement of public highways and in the preparation of materials for the same to the end that there may be more good roads or fewer convicts.

Resolved, That we favor an amendment to our road laws which shall require that all our road taxes shall be paid in cash instead of labor.

Resolved, That we favor such amendments in our State road laws as will provide competent, efficient supervision in the actual construction and maintenance of the public roads so that the road funds may be properly and economically expended and permanent results secured.

Resolved, That we endorse the work now being done by the Office of Public Road Inquiries in the Agricultural Department of the Government. We believe that this office should receive liberal support from Congress in order that it may send expert road-builders into all States to demonstrate by object lessons the testing of suitable road materials, the drainage of rights of way, and exhibit all forms of modern and scientific road-making, so that all States, counties, agricultural and industrial colleges, road officials, and the public generally, may receive such practical and scientific information.

Resolved, That we tender our

thanks to the newspapers of the city of Topeka for the full reports of our meetings which they have given daily; to our honored president and secretary for their earnest, faithful and untiring efforts in making a success of this, our first State meeting. We also extend our heartiest thanks to the Topeka Automobile Club and to the Topeka Railway Company for the complimentary excursions given our members in and about the capital city. Our thanks are due and are hereby tendered to the mayor and citizens of Topeka, particularly to the Commercial Club for their courtesy in entertaining our members and making their stay pleasant while in Topeka. We extend our heartfelt thanks to the ladies of the West Side Forestry Club for their interest in our movement and for the excellent paper presented and read by Mrs. Walter Bates.

During the meeting the following program was rendered in full. The papers represented therein will appear in the KANSAS FARMER as space becomes available.

Address of Welcome, Mayor W. S. Bergundthal.

Response, President Grant Billbee, Iola.

"Kansas Pavements and Paving Materials," Jas. F. McCabe, City Engineer, Topeka.

"Good Roads in Fort Scott City and Township," A. J. Sherman, Fort Scott.

"The Improvement of Our Public Highways," Dr. A. L. Hitchens, Burlington.

"Wide Tires," President E. R. Nichols, State Agricultural College.

"State and National Aid," Hon. Edwin Snyder, Oskaloosa.

"The Good Roads Train," Secretary R. W. Richardson, National Good Roads' Association.

"Good Roads' Materials," Prof. Erasmus Haworth, State University.

"Good Roads," Gov. G. W. Glick, Atchison.

"Women Talk Good Roads," Mrs. Walter Bates, West Side Forestry Club, Topeka.

"The Wheels of Progress," C. F. Miller, Secretary Southeast Kansas Good Roads' Association, Fort Scott.

"Good Roads' Legislation," Hon. J. T. Tredway, LaHarpe.

Colonel R. W. Richardson, secretary of the National Good Roads' Association, made what might be termed "a spell-binding good-roads' speech." The seventy-five delegates who occupied seats in the chambers punctuated Colonel Richardson's speech with enthusiastic applause.

"Good roads must be founded as firmly as a man's character if he wants good results therefrom," was the keynote of Colonel Richardson's speech. "You must build well, you must build deeply, you must build for days to come. You must care for a road every day—and must never go away to let it take care of itself. It must be nurtured into strength, solidity and firmness and then it will last like a great and good character."

The speaker gave a technical outline of the best method of building a road. "Be sure," he said, "of getting a good berm or embankment on both sides to serve as wells for the bed. Make the bed into an oval shape, considerably higher in the center. Before spreading either rock or gravel, roll firmly. The roller will find all of the weak places, and then these can be filled up. If this is done conscientiously, there will then afterwards be no breaking down of the concrete. It is a mistake to make the road too thick. While it does no harm, it is an absolute waste of material. I was surprised when down at Fort Scott to find that the road there was being made eighteen inches in thickness. The majority of the roads are now being made only nine inches in thickness while many are being made not more than six inches. The point is not quantity but quality. Make six inches of road-bed properly and it is better than 16 or 18 inches poorly constructed at any time. Let me plead with you to get experts to build your macadam roads. Get men who know their business. Spend your money properly at the start and then you will have no trouble.

"Now there are two ways of paying for a road, by the voting of bonds and by direct taxation. While I do not want to arbitrarily advise following the former, it has big advantages, and the principal one is that it makes money available at once. Then, too, it must be remembered, that in the building of a road, it should not all be laid upon the farmer. That is unfair and unjust and is a burden to him. Besides the value of a good road is apparent to a man living in town just as well as one living in the country, in fact it affects the city man more acutely. A farmer can practically come to the city when he pleases for he always has enough provisions to supply him for his immediate needs and can wait for clear skies and better roads. But the man in the city who deals in farm products and many do, must turn his money quickly. He must sell his goods in their season. Margins are small and quantity determines his wealth. Therefore it must not be forgotten that the merchant in the city should feel it is just as incumbent upon himself to see that the roads in the country are good, as the farmer who must always use them to get to town.

"Don't forget another thing," said Colonel Richardson, "when you go to laying out a road, don't forget that you have a right of eminent domain to choose the route of the highway. A railroad has the same privilege. Did you ever see their engineers just take a line and follow it regardless of the natural advantages? But that is done in a section line road. Just because the land is measured off in a certain way the road must follow it, not because of any law or reason, but because of custom. You have the right of eminent domain to choose the line which a road shall follow and when you build a new one, remember that."

Women! Talk Good Roads.

MRS. WALTER BATES, TOPEKA, KANS.

I hope you have not come here today expecting me to talk on the construction of good roads, for you will be very much disappointed if you have.

No one enjoys and appreciates a good road more than I, for my rides for pleasure are always towards the country, but as for making one, I do not know the first principles. Now, if you wanted a good meal builded, that would be entirely different, for there I am right at home. I just want to speak of a few ways in which women may help the good roads' movement along, not by actual, hard labor, but by interest, enthusiasm, and talk. You know when a woman is interested she just has to talk. So get the women to talk good roads, and you will find before long that the men will begin to do. Do you know, I believe the Lord gave women the gift of talk with the idea in view that they might keep at the men so they would do the work. Now, I do not mean a nagging woman, for if there is anything I despise it is a nagging woman. It would be a mighty poor stick of a man that could not be interested in a good cause through his wife's enthusiasm and talk.

A farmer that will wade through the mud around his own place, with no walks, no drive to the main road, can not be expected to enthuse over good roads.

Wife, here is your chance. Talk walks, talk drive, and talk until you get them. If I am not very much mistaken, it will be the means of a good road to town. Just that little ride over the drive from the barn to the road, will make him wish he had a good road to town. Watch him close and when you see the hankering-after-good-roads sign, then talk road and talk it hard.

Branch out a little and talk to your neighbors. Now that you have your husband interested, impress him with the idea that it is money in his pocket first of all, for the farmer, like the rest of us, is working for the almighty dollar. Post yourself; read up and be able to give him some facts. You know facts are what count. Ask him if he ever considered that in addition to a great reduction in the wear and tear on horse and wagon, as well as

upon himself, a good road would increase the value of the land by, as it were, picking it up bodily and placing it nearer town? That it would enable him to take advantage of the market fluctuations in buying and selling; that it would economize in time and force in transportation between farm and market; allow hauling of farm products, and purchase of commodities during comparative leisure times.

There are innumerable ways in which a woman can help the good roads' movement, and still not get right out and do the hard work. I want to do a little talking myself right here. I understand it is intended to leave the piece of road that runs past the George Whitcomb place and on down past the Hartsock place, on the West Sixth Street road, without any top dressing. Now this is a perfect shame and I surely hope it is only a rumor. To think of ruining what is the finest drive around Topeka, just because of a little expense! Last week Mr. Bates and I were driving over that particular piece of road, when we discovered our horse limping. Mr. Bates got out of the buggy and took quite a large stone out of the horse's hoof. The idea of doing a thing in such a regardless way! Now if the women had put in that road and had decided to leave it in such shape, you would hear from all sides: "Oh, well! That is all a woman knows about such things." I heard a party of gentlemen talking about this very piece of road and they spoke of using sand for a top dressing. Now, I should think that would be a very good idea. They can get all the sand they want very cheap, and the best part of it is, that it is close by. It doesn't begin to be as far to haul from the river as it is from Martin's Hill, where they get their rock. I am going to ask the men here who are interested in that road, to see that it gets a top dressing.

I imagine the militia would have appreciated good roads, if they could have had them, when they were going from Leavenworth to Fort Riley for target practice. They were compelled the mobilize the troops here in Topeka to wait for the roads to dry, before they could complete their march. They not only lost time, which means money, but there was the hard wear on the men and horses, and you all know that Kansas mud does not help the lasting qualities of anything.

Now, when we get the good roads, that is not all. We must insist that they be kept up. I notice on the Sixth Street road places where the heavy hauling has begun to make little ruts along the main traveled parts. Perhaps wide tires would help this, in that they would not cut down as deep as the narrow ones.

I often think when riding out on the country roads, how fine it would be if all the farmers would keep the weeds cut along their lands. To be sure, some of them do, but up to the present time they are in the minority. I have a suggestion to offer in that it would not only keep the roadsides looking well, but I think the farmers would be glad to keep them cut for the feed. As you know, I am representing a forestry club here to-day, and we have for our club flower the alfalfa, so my idea is to plant alfalfa along the roadsides and ask the farmers to keep it cut. Where will you find a more beautiful green? And its dear little blue blossom, nothing is lovelier. Now, here is something for the women to be interested in. Talk alfalfa on the roadsides to your husbands, your sons, and any men you may have on the place, and after a while they will think that is a pretty good idea. How much better for a farmer to cut alfalfa along the roadsides, and have that much more to add to his feed, than to have to cut weeds and burn them; a waste of time, and as I said before, time is money, for weed-cutting time generally comes at the farmer's busiest time. I should like to see the West Sixth Street roadsides planted to alfalfa, from the city limits to Martin's Hill.

As you all know, the Seventeenth Street road was the first macadam road to be ventured around here. Well, there is a sample of a poorly

kept up road. If you ride out that way, you will notice that the people who ride over it have made a new road down at one side, and they use the macadam only when it is very, very muddy.

I must tell you a little experience the West Side Forestry Club had a little while back. As you all know, Topeka celebrated her fiftieth birthday this spring, with a week of festivities and one day was turned over to the club women to arrange for. Among their plans was a flower parade, so the Forestry Club, being a working club, as well as talking, decided to take part. In order that you may understand, I will tell you that the club is trying to get hold of a piece of ground out in our part of town that is anything but beautiful, and have the city make it into a park. Well, for this flower parade we had this piece of ground laid out in miniature on a large wagon, not with paper flowers, but real grass and walks, trees, shrubs, flower beds, and the things that go to make a park beautiful. I suppose you wonder what all this has to do with good roads. Well, it had a good deal to do with good roads. There is about a block between the pavement and the macadam on Sixth Street that is in natural state, and if you remember at that time, dirt roads were rather soft. After the parade, going back to Gage Park, where the float was made, the wagon got stuck so fast in going over this piece of road that they had to throw everything overboard, as the saying goes, in order that they might pull out. I think you can depend on the float committee of the West Side Forestry Club to talk good roads.

There is one more thing. Could we not have a few trees planted along the roadsides? You who come from the East can look back and remember how delightful the country roads were. I do not want a row of trees, but have them scattered so as to afford occasional shade for those who are walking. You know that Kansas is a pretty warm place in summer, and some shade along the country roadsides would be very acceptable. Now, if I lived in the country, at the present time, when there is so much good roads interest aroused, I should try and organize a club of the women in my locality, and if successful should insist that part of our program each meeting be devoted to the good roads' question. There is so much good literature on this question that may be had just for the asking, and I think women would find it very interesting reading, especially those wanting a good road to town. I think it is the farmers who are or should be most interested in good country roads. Of course, town people are interested too, but for them it is not a necessity. It is only for pleasure riding they are interested.

Now, people who live in the country, don't be like the farmer who "planted more corn, to feed more pigs, to get more money, to buy more land, to plant more corn, to feed more pigs," etc., but have a few of the comforts as you go. And to have a good road to travel over to and from town, is not only a luxury, but an absolute necessity, and we all know it is far more comfortable. So I say to the women, work for it, and above all, talk.

State and National Aid in Good Roads' Construction.

HON. EDWIN SNYDER, OSKALOOSA, KANS.

We boast of our advanced civilization, of the wonderful material development of our country, surpassing that of any other nation in the world's history. We lead the world in public instruction, illiteracy is rare among our people. The arts and sciences are sedulously cultivated, churches and religious societies are everywhere, and our correctional and charitable institutions humanely care for the delinquent, dependent, and deficient.

These unfortunate wards of the State are cared for as nowhere else in the world. Our soldiers are better paid, better fed and clothed, and when disabled, better pensioned than the soldiers of any other nation. Yet, notwithstanding all these and other points of superiority, every civilized

nation on the earth has better public roads. For six months of the year, and sometimes longer, we are a great civilization stuck in the mud. And this condition of affairs exists because one class of our citizens alone, the farmers, are compelled to bear the whole burden of road construction, while all classes are to a greater or less extent benefited by good roads.

There are no more prosperous farmers in the world than those of this country, and yet they are unable to construct and maintain a system of permanently good roads. Farmers do not do this in countries having permanent good roads. Why should they be expected to in this? An objection to State and National aid in road construction is made, that it is paternalistic and entirely without the sphere of governmental duties.

The sole duty of the Government is to maintain law and order. If this doctrine obtained, this country would not now be enjoying its present era of unexampled prosperity. We would not excel all other nations in the extent and diversity of our manufactures. We would not be underbidding England in steel bridges to be built in Africa.

New York City was 200 years old before she became the commercial emporium of this country, made so by the vast trade brought to her by the Erie canal, which never would have been dug had not the citizens of the great State of New York repudiated the doctrine that the "sole duty of the Government was to maintain law and order" and taxed themselves to construct this great public waterway, which the State last year decided to further greatly improve by the expenditure of one hundred million dollars thereon.

Directly after the close of the War of the Rebellion, Congress resolved to subsidize railways to the Pacific, which was done by the most liberal land grants and generous loaning of the public credit. The building of these transcontinental lines would likely have been delayed for a generation but for Government aid, and the vast region which the roads opened to settlement and which is now the homes of busy, happy husbandry, would to a large extent be but a barren waste.

I believe the lending of the public credit to railroads, which has resulted in the marvelous development of this vast region, was a wise and beneficent public policy.

I believe the doctrine that the "sole duty of the Government is to maintain law and order" is narrow and bigoted, and that a judicious use of public credit to aid public enterprises which are too great for individual or private capital, is justified by former experience, and should be the settled policy of State and National Government.

The principle of Government construction of public highways is as old as civic government. Some of the famous roads of ancient Rome, although begun 312 years before Christ, are still in use, and others have been used as a foundation for modern road construction. Of course they were built of the best material and in the most substantial manner.

Caesar was a great military genius but the legacy of fine roads he built and left for Rome furnished a perpetual tribute to his far-sighted statesmanship, which far outshines his military achievements and will doubtless last to bless his name after his war record shall have passed away down the dim aisles of oblivion.

Why have not the State and National Governments done more for public road construction? Simply because the farmers who are the principal parties at interest have not asked for it. We are not organized as are all other callings and we are not represented in legislative bodies by efficient and persistent lobbies. Legislators do not know what we want. They are willing to grant us what help we may reasonably ask, if we only ask it in a way that will convince them of our serious earnestness in the matter. We know they will do this, as they have always listened to the demands of less numerous and influential interests than ours

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when asked for by organized bodies. For instance, where there was a popular demand for a transcontinental railway, Congress granted nearly 200 million acres of public land, and lent the company building the road 61 millions of dollars on second mortgage as security.

Congress appropriates annually over thirty million dollars for river and harbor improvements. At the instance of manufactures it has levied a high tariff tax on imported goods. It has appropriated large sums for the construction of wagon roads as object lessons in Cuba, Porto Rico, and the Philippines, and has begun the construction of a Panama canal at an estimated cost of 200 million dollars.

I believe these expenditures have been and are generally wise and beneficial, but they are almost wholly in the interest of trade and commerce, while the farmers who are by far the most numerous class and bear the greater share of the great burden of taxation, have received very little in the way of appropriations which have direct bearing on their calling.

Congress has endowed a few agricultural colleges, many of which are of very doubtful utility to farmers, established experiment stations which are better, made the commissioner of agriculture a cabinet officer, and established free rural delivery of mail to a limited extent, which is of more value so far as it goes than all other beneficences of Congress for the farmers combined. The latest benefaction for the farmers from the Government is the construction of stone and earth roads, as object lessons, by a corps of Government engineers equipped with modern road-building machinery, and traveling from place to place by rail where work is to be done.

I welcome this as a long step in the direction of road improvement. All civilized nations but ours have taken much interest in public wagon roads and have built and maintained many miles. France has 25,000 miles. I read that it is kept smooth as a floor and as hard as adamant. All other European nations have less, but all have more or less built and maintained at the National expense.

Lately a few States have been making appropriations to help civil subdivisions thereof in construction of macadam roads. The States of Massachusetts, New York, Pennsylvania, Connecticut, and New Jersey, lead in the matter of State aid, the general principle being the State to pay one-half or one-third the cost and construction, and the counties and townships the balance.

Pennsylvania leads with the large appropriation of \$6,500,000 to be expended in six years, the State paying two-thirds cost of construction, counties and townships where roads are located to pay one-sixth each. Many other States than those mentioned above, have recognized the principle of State aid, but none have as yet appropriated any large sum for the purpose. I believe our Legislature should next winter be asked to make a reasonable appropriation to aid counties and townships in beginning the construction of macadam roads. I believe no wiser use of public money could be made. The approval and sanction of the State and National Government will give the movement for good roads a powerful impulse, and in no way can that approval be so strongly manifested as in an appropriation for the purpose.

It is no part of my purpose in this paper to speak of the great benefits, even luxuries, of a smooth, hard, macadam road unaffected by conditions of weather, upon which the farmer and his family may travel on business or pleasure bent, at any season of the year with ease and comfort for himself and team, but I can not refrain from quoting from President Roosevelt's speech, made at the good roads' convention in St. Louis, April, 1903. He said: "The faculty, the art, the habit of road-building marks in a nation those solid, stable qualities, which tell for permanent greatness." We would have a right to ask that this people which has tamed a continent, which has built up a nation with a continent

for its base, which boasts itself with truth as the mightiest republic that the world has ever seen, and which we firmly believe, will in the century now opening, rise to a place of leadership such as no other nation has yet attained merely from historical analogy, I say, we should have a right to demand that such a nation build good roads.

In the President's last message to Congress he said: "The rural free delivery service has been steadily extended. More routes have been installed since the first of July last, than in any like period in the Department's history. No governmental movement of recent years has resulted in greater immediate benefit to the people of the country districts. Rural free delivery, taken in connection with the telephone, the bicycle, and the trolley, accomplishes much towards lessening the isolation of farm life and making it brighter and more attractive. In the immediate past the lack of just such facilities as these has driven many of the more active and restless young men and women from the farm to the city, for they rebelled at loneliness and lack of mental companionship. It is unhealthy and undesirable for the cities to grow at the expense of the country, and rural free delivery is not only a good thing in itself, but is good because it is one of the causes which check this unwholesome tendency towards the urban concentration of our population at the expense of the country districts.

"It is for the same reason that we sympathize with and approve the policy of building good roads. The movement for good roads is one fraught with the greatest benefit to the country districts."

The logic for State and National aid in helping the farmers in good road construction is unanswerable, but logic and reason are not always the most potent elements in securing legislation. There are influences stronger with which most of us are familiar.

We must convince our law-makers that there is a popular demand for what we ask, that the great farming public wants the Brownlow bill passed by Congress, and a moderate appropriation by our Legislature to aid in the beneficent work of good, permanent wagon-road construction.

The Wheels of Progress.

C. F. MILLER, FORT SCOTT, KANS.

The wheel is everywhere regarded as an emblem of transportation, industry, and progress.

The development and prosperity of any State or Nation depends in a large degree upon the lines and means of transportation. These include not only the great railway and steamship lines, rivers and harbors, but also include the common highways, over which all the products are transported, and the greater number of all the people must travel.

We, as Americans, are justly proud of our great railway and electric lines, for America to-day leads the world in her great modern lines of transportation. But when it comes to our common highways and country roads, no one will deny that they are not in keeping with the progress of our modern institutions and development, nor to be compared with the highway systems of our sister nations.

This is the one great problem affecting our commercial, industrial and social welfare to-day, that is not in keeping with the movement of the wheels of progress in other lines of National development. The bad and deplorable condition of our common highways is admitted, and undisputed by all.

It is no longer a question for argument. The people want good roads. It is simply a question of ways and means.

Our present system of road laws and road-making is inadequate. We depend almost wholly on the farmers for our roads. It is too great a burden to be borne by any one class, when all derive benefits alike from good roads. It is a State and National proposition, and the great and important question before us as citizens and delegates to this convention, is to arouse the people to a realization of their responsibility

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to favor and work for legislation that will secure State and National aid. This is the only solution to this great question.

The farmers are not able to build permanent highways, and it is only proper and right that the Government and State should assist in this important branch, as well as to appropriate millions of dollars for rivers and harbors, and other internal improvements.

We are told that damage and smooth surface are the important features of road-building; it is not my intention to go into details, but suffice it to say that these cardinal principles apply equally to hard roads, as well as dirt roads.

And now I want to speak of a seeming misunderstanding of this good roads' question in the minds of some people who are inclined to oppose it because they think that good roads, as advocated, means the macadamizing of all roads, main roads, cross roads, and all, and on account of the expense they naturally oppose it. This is a mistake, for good roads can be made out of dirt as well as other material, and of necessity dirt roads, or improved dirt roads, will continue to be used for many years to come, on cross roads and the less traveled roads. The good roads' movement is only in favor of hard roads on the main thoroughfares and heavy traveled roads, where dirt roads would not stand the travel—in other words, the construction of roads adapted to the needs of the travel over them.

In my judgment, I think that the ideal country road is a hard road center, with dirt road driveway on either side. This presents advantages for both wet and dry weather, and whenever practicable and possible, by sufficient width outside of the trenches, I should favor the construction of good roads in this way.

The subject of good roads is a very important question, and one that is truly worthy of our effort and careful study. There are many important features to be brought out in a discussion of this question, one of which I am pleased to present as "wheels of progress" in this movement. I refer to the use of wide tire wheels. They are road-makers instead of road-breakers. Already a number of the Eastern and Central States have enacted legislation favoring the use of wide tire wheels. England, France, and Germany have all recognized the benefits of wide tires as road-maintainers, and prohibit the hauling of heavy loads without the use of them, the width to be in proportion to the tonnage. Six-inch tires are very common in France, and the Government is encouraging the use of wagons built with the rear axle extending wider than the front wheels, for the purpose of giving greater rolling surface.

In this way two feet or more is rolled by the travel of the wagon, and it has been proved that very heavy loads can be hauled without injury to the roads. It has also been demonstrated by tests that the draft of wide tires is equal, if not less than the narrow tire on hard roads, making their use a double advantage to good roads.

Some one asks: If wide tires are such a good thing, can't they be used to improve our present bad roads? Wide tires, although useful, are not practicable on bad roads, especially in mud and ruts, on account of the increased draft. Under such conditions, where the narrow tire cuts through the mud, the wide tires will carry it, making heavier draft. I speak from practical experience, being a dealer in the implement and wagon trade, and having observed closely the progress of the wide-tire movement in our community, and believe that the use of wide tires should be advocated along with the building of good roads, and that favorable legislation should be enacted in Kansas for the encouragement of the use of same, for narrow tires and poor drainage are surely the greatest enemies of good roads.

Now as secretary of the Southeast Kansas Good Roads' Association, I wish to speak of some of the work accomplished by the association which was organized March 30, last, at the National Good Roads' meeting held at

Fort Scott, Kans. It comprises the nineteen counties of Southeastern Kansas, Lyon County being the northwest county of the block.

The object of this organization was to foster the movement of good roads in Southeastern Kansas, and to encourage county organizations, and the sending of delegates to the National meeting at St. Louis.

I am pleased to say that a number of counties have been organized, and that the representation at St. Louis was very satisfactory.

The Southeastern Kansas Association sent fifteen out of the twenty-one delegates from Kansas. The people of this district seem to be much alive to the importance of this movement, and on July 19 held a very enthusiastic good-roads' meeting at Iola, Kans., at which time a county organization for Allen County was perfected, resolutions adopted, and all delegates instructed to attend this State meeting at Topeka. The outlook in the Southeastern Kansas district is very encouraging for good roads.

Now a word about the good roads at Fort Scott. By special act of the Legislature Scott Township is building some very fine macadam roads at Fort Scott. The people are very much pleased with these roads. Even those who had been opposed to them are now very much in favor of them, after having seen how they are made, and the benefit they are to the people and to Fort Scott. Other townships are already taking measures to carry the good roads through these districts, so the good roads at Fort Scott are an object lesson, that we hope will continue to spread the movement of good roads all over Bourbon County and help the cause in the State.

Delegates, ladies and gentlemen, we have met here for larger and better organization in this movement. It is only by organization and concerted action that the "Wheels of Progress" will move forward in this great work. Let us therefore let no obstacle stand in our way, but work together with a will and determination. The people rule and by their voice and united action this great and good work can and will be accomplished.

The Improvement of Our Public Highways, and the Duty of the Government to Aid in Their Construction.

DR. A. L. HITCHCOCK, BURLINGTON, KANS.

Every progressive government, ancient or modern, has contributed large sums of money for public-road construction and care. No nation can achieve the highest position of social, political and industrial development until it gives to all its people the most improved means of primary transportation.

The public road is the direct conveyor of the three most potent civilizing influences, the press, the school, and the church. These should be linked inseparably. If it is the duty of the Government to protect its interest by an armed force, and if it is constitutional to expend money and aid in the improvement of its water courses for the extension of commerce, which courses must ever carry a small percentage of the total commerce of the nation, then it is surely the duty and constitutional right of the Government to aid in the improvement of the land, or primary means of transportation over which fully 95 per cent of all products must be moved before they reach a railway, express or steamboat. Within the last seventy years the United States Government has spent upwards of a half billion dollars to improve the rivers and harbors, and has only expended about seven and one-half millions on roads. It has also spent several millions to improve the roads of National parks, cemeteries, Government preserves, and insular possessions. The Bronlow-Lattimer Bill and other bills now pending in Congress, outlining plans for Government cooperation with the States and Territories in road improvement, are regarded by some, if enacted, unconstitutional steps. John C. Calhoun, the strict constructionist of State right, raised the same objection when an effort was made to se-

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cure Government appropriation to improve the Charleston harbor. The extension of the rural free delivery of mail was not thought of in Calhoun's time.

The Government is now appropriating millions of dollars annually for this service in establishing mail routes to serve the rural inhabitants. One of the requirements of the Government is to have a circuit of roads not less than twenty-five miles long, upon which live 100 to 500 families, said roads to be fit for travel every day of the year. The Government owns postoffices, custom houses, and has established courts in all States and Territories. It also possesses lands, parks, and other property. It has a direct interest in the advancement of every community and the reciprocal obligation of Government is to protect and foster the natural interest of each individual. These obligations will not be fulfilled until the Government assists in improving the public highways. No community should expect Government aid for any purpose until it organizes and shows a disposition to help itself.

Some say if the Government participates in State aid for road-building, there will be a great rivalry in communities as to where the roads should be constructed; this same objection was made in regard to the improvements of rivers and harbors, as to the localities the Government will both participate in the appropriation, and as all the roads can not be improved at once, the engineers will naturally agree and select the most necessary roads. A large number of States have created railway, insurance, and educational commissions, while only a few States have highway commissions; the nearer all States follow the example of railroads the more quickly will system and economy prevail in road construction. It is generally estimated, because in many States it is impossible to secure the facts, that about fifty million dollars are annually appropriated by the several States for public road improvement. The amount, if judiciously expended, would construct 10,000 miles of macadam road. A non-partisan State highway commission of not less than three members, one being a practical engineer, should be appointed in each State where they have not already taken such action. It should work with the road officials of each county, make a proper survey of all roads, locate them on public domain, where practicable establish uniform width, furnish blue prints for the construction of earth, gravel, and macadam roads, bridges, and culverts, and facilitate such other plans as will benefit the roads and the community. Those States which have adopted this system are making the most rapid progress in road improvement. At least a dozen Southern States are utilizing the labor of convicts in the preparation of material and in the construction of public roads. These unfor-

(Continued on page 812.)

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The Stock Interest

THOROUGHBRED STOCK SALES.

Dates claimed only for sales which are advertised or are to be advertised in this paper.

September 7, 1904—Combination sale Aberdeen-Angus, Peoria, Ill., W. C. McGavock, Manager.

October 1, 1904—Poland-Chinas, J. Clarence Norton, Moran, Kans.

October 6, 1904—Poland-Chinas, William Plummer, Barclay, Kans.

October 13, 1904—C. O. Hoag, Mound City, Kans., Poland-Chinas.

October 17, 1904—Poland-Chinas, E. E. Axline, Oak Grove, Mo.

October 18, 1904—American Royal Show and Sale by American Aberdeen-Angus Breeders Association, Kansas City, Mo., W. C. McGavock, Manager.

October 25, 1904—Duroc-Jerseys, J. B. Davis, Fairview, Kans.

October 26, 1904—Sabetha Combination Sale, Jas. P. Lahr, Manager, Sabetha, Kans.

October 28, 1904—Leon Calhoun, Potter, Kans., Poland-Chinas.

October 28, 1904—Combination sale Poland-Chinas at Clay Center, J. R. Johnson, Manager.

November 1, 1904—W. B. VanHorn & Son, Poland-Chinas, at Overbrook, Kans.

November 3, 1904—E. E. Lunt, Burden, Kans., Poland-Chinas.

November 17, 1904—Central Missouri Shorthorn Breeders Association Sale at Moberly, Mo. E. H. Hurt, Secy., Clifton Hill, Mo.

November 22, 1904—Herefords, at Hope, Kans., Dickinson and Marion County breeders; Will H. Rhodes, Tamps, Kans., Manager.

December 1, 1904—International Show and Sale by American Aberdeen-Angus Breeders Association, Chicago, Ill., W. C. McGavock, Manager.

December 5 and 7, 1904—Chas. W. Armour, Kansas City, and Jas. A. Funkhauser, Plattsburg, Mo., Herefords at Kansas City.

January 25, 1905—G. A. Munson, Maxwell, Iowa, Duroc-Jerseys.

February 1, 2, 3, 4, 1905—Percherons, Shorthorns, Poland-Chinas, Wichita, Kans.; J. C. Robison, To-wanda, Kans., Manager.

February 18 and 17, 1905—Chas. M. Johnston, Manager, Caldwell, Kans., Combination sale of registered stock.

February 22 and 23, 1905—Shorthorns and Poland-Chinas, N. F. Shaw, Manager, Plainville, Kans.

Feeding Experiments with Cottonseed-Meal.

GRADUATING THESIS, R. S. WILSON, 1904.
(Continued from last week.)

The temperatures of the pigs were taken at four different periods in the experiment to determine, as was stated, whether or not cottonseed-meal produced a feverish condition of the system. November 22 the temperature of five pigs that were being fattened on corn were taken for a comparison with the experiment lots. They were: 103.4° F, 103.3°, 103.8°, 105.1°, and 103.8° respectively. These temperatures are the same as those of the experiment pigs taken the same day. On January 4, 1904, the temperatures of several hogs in the same lot as the first were taken, but the list was lost. They coincided with those of the experiment lots taken the same day. The table below gives the temperature of each of the experiment pigs on the assigned dates:

| Lot. | Pig No. | Nov. 22. Deg. F. | Dec. 7. Deg. F. | Dec. 21. Deg. F. | Jan. 4. Deg. F. |
|------|---------|---------------------|--------------------|---------------------|--------------------|
| I. | 157 | 108.8 | 104.5 | 103.4 | 103.6 |
| | 129 | 103.8 | 103.9 | 103.5 | 103.9 |
| | 162 | 103.7 | 103.7 | 104.2 | 103.3 |
| II. | 128 | 103 | 103.6 | 102.7 | 102.4 |
| | 126 | 104.3 | 103.7 | 102.8 | 103 |
| III. | 127 | 103.9 | 103.9 | 102.7 | 103.4 |
| | 155 | 103.2 | 103.4 | 103.9 | 103.5 |
| IV. | 120 | 103.3 | 100 | 103.4 | 103.2 |
| | 159 | 103.8 | 103.2 | 103.8 | 102.6 |
| V. | 124 | 103 | 103.3 | 103.2 | 103.2 |
| | 153 | 104 | 103.2 | 103.1 | 102.9 |
| VI. | 109 | 103.7 | 103 | 103.9 | 103.5 |

The normal temperature of a hog is 102° to 104° F. The table and the temperature of the other hogs show that the temperatures of the experiment pigs was normal.

Taken as a whole, the experiment was a success. These pigs were only seven months old when the experiment began and were in excellent condition, considerably fatter than the average stock hogs, yet they made an average gain of eight pounds per head per week throughout the experiment which was carried out in midwinter. Not a pig was off feed for more than a day or two. The gains would indicate that nothing was gained by using high-priced feeds with cottonseed-meal, as is shown by lots 2, 4, and 6. Whether the oil had any effect in producing the gains of lot 2 is a question. Evidently the oil was just that much high-priced protein wasted on lot 1, as the temperatures indicate their systems were normal, no temperatures being far from the standard 102° to 104° F. During the first half of the experiment the feces of lots 1 and 2 were moist and had a more oily appearance than that of the other lots, but later there did not seem to be much difference, even though the amount of oil fed lot 2 was doubled. The feces of all lots were more fluid than that of most hogs being fattened on corn and shorts. This was probably due in part at least to the sloppy nature of the feed of the experiment pigs. The cottonseed-meal

used in the experiment was part of a lot bought of a local dealer in May, 1903, and had been kept in dry all summer. It was not musty nor were there any lumps in it. A sample of the meal was analyzed by Professor Shaw, the assistant chemist of the Experiment Station, and was found below the average in oil and a little high in protein. The following is Professor Shaw's analysis and the average of 35 analyses given in Henry's "Feeds and Feeding."

| | Protein. Per cent. | Fat. | Crude fiber. | N. free Ext. | Water. | Ash. |
|---|-----------------------|-------|--------------|--------------|--------|------|
| Cottonseed-meal used in Exp. | 48.21 | 9.23 | 4.05 | 26.59 | 5.79 | 6.13 |
| Cottonseed-meal (Henry's Feeds and Feeding) | 42.30 | 13.10 | 5.60 | 23.60 | 8.20 | 7.20 |

Professor Shaw has also made an analysis for choline and betaine. Each of these ptomaines were present in small amounts. The exact percentage of each has not been determined at present, as the analysis is not yet completed.

In this experiment there was a waste of protein feed. The nutritive ratios of the rations ranged from 1:3.2 to 1:5.4. The nutritive ratio for a fattening hog given in Wolf's standards is 1:6.3. Thus it would appear that a smaller per cent of cottonseed-meal could have been used and the same gains resulted and there would have been a lessened danger of losing the pigs from over-feeding cottonseed-meal. The highly nitrogenous ration is needed not so much for fattening animals as for growing and breeding stock. It would seem that if cottonseed-meal can be used safely as a feed for this class of stock, its value, at present prices will be unlimited to swine-growers. For early pigs the sows are bred to farrow about March 1. No sow can produce a large litter of strong pigs if she has been fed only on corn and water during the winter months. Protein is necessary to the formation of body tissue. If the mother is not provided with sufficient protein in her food, her unborn young must suffer for lack of nourishment. Then, again, after the pigs are farrowed, they must have an abundance of milk if they are to make a satisfactory growth. To maintain a large milk-flow, rich protein feeds are necessary. Some breeders try to avoid buying protein feeds by having their sows farrow after clover-pasture is available, yet most farmers will agree that it is the early pigs (provided they can

be carried through to grass in a thrifty growing-condition) that bring the greatest profits to the feeder, because they get full benefit of the summer pasturage and are fattened for market before cold weather. Also by this method, two litters of pigs are raised each year by the same sows. To successfully raise pigs, the sows must have a nitrogenous ration from breeding time until the pigs are weaned, especially for the six weeks before farrowing. Cottonseed-meal is the cheapest protein-feed upon the market and to test its effect upon bred sows and their unborn pigs, Dr. Dinwiddie, of the Arkansas Experiment Station, fed a sow of common stock for eighty days previous to farrowing upon a ration containing one part cottonseed-meal and three parts bran. The sow improved in condition upon the feed and later farrowed three large, healthy pigs with no "still" births. There were no bad results from the cottonseed-meal unless the small size of the litter is attributable to that cause, which is hardly probable. The writer started an experiment with two bred sows, February 5, 1904. Both sows had raised one or more litters of pigs before. One sow was a pure-blood Duroc-Jersey, bred to a Tamworth male, the other a pure-blood Poland-China bred to a Poland-China male. The first lot of feed mixed for these sows contained 10 per cent cottonseed-meal, the rest equal parts corn and

bran. The amount of cottonseed-meal was increased until on March 12, one-fifth of the ration was cottonseed-meal. The sows did well. On April 7, the Duroc-Jersey farrowed seven strong, thrifty pigs and one "still" birth. These pigs were not weighed but averaged not less than three pounds. May 2 the Poland-China sow farrowed seven live pigs; no still births. These pigs were weighed within an hour after birth; they weighed as follows: 2½, 3½, 3¾, 3½, 3¼, 3, and 3½ pounds; average 3½ pounds.

This is considerably above the average weight of new-born pigs given by Professor Henry, which is about 2.5 pounds. The Poland-China sow killed one of her pigs the second day by lying on it. All the others are still living. April 23 the amount of cottonseed-meal was increased to one-fourth of the ration for the Duroc-Jersey sow, the other still getting one-fifth cottonseed-meal as before. At this time, June 1, the pigs are doing well, considering the fact that the sows get nothing but grain and water and are kept in small pens. The older litter are large enough to eat considerable quantities of feed from the trough when the sow is fed. No bad effects from eating the cottonseed-meal can be seen in either the sows or the pigs. In fact the pigs are doing as well as those whose dams are getting shorts and milk.

This experiment would seem to prove, in one case at least, that cottonseed-meal may be fed to breeding and growing swine with safety. The rations fed in both these experiments were narrower than the standards require, hence less cottonseed-meal could be used and still have a balanced ration. We believe that as the farmers begin to pay more attention to balancing the rations for their stock, small amounts of cottonseed-meal one-eighth to one-fifth of the ration, will be a valuable feed to go with corn or Kafir-corn. Clover and alfalfa pasture with the milk produced on the farm may provide the protein part of the ration through the summer months for the brood sows and their growing pigs, but before grass comes in the spring something else must be provided. Shorts and bran are available but at higher prices each year. We believe it is only a matter of time until cottonseed-meal will be an important feed in the regions adjacent to the cotton-oil mills of Oklahoma, Texas, and Arkansas.

The International Live-Stock Exposition.

KANSAS FARMER is just in receipt of the preliminary classification for the International Live Stock Exposition, which will be held at Dexter Park, Chicago, from November 26 to December 3. This classification is a handsomely executed publication and contains much of interest to stockmen in general as well as to the exhibitors who will participate. The association can not be too highly commended for certain steps they have taken in arranging for the 1904 and 1905 expositions. We note that a corn-judging contest has been added as a new feature and a beautiful bronze trophy, valued at \$1,500, has been given by Mr. A. E. Cook, of Odelbolt, Iowa, to be contested for by students of the State agricultural colleges.

A new rule has been adopted which will take effect at the exposition of 1905, prohibiting the removal of cattle to be exhibited in the feeder classes from their several districts more than thirty days prior to the exposition.

In the sheep department a new rule provides that where there is but one exhibitor only one prize will be awarded, two exhibitors admit of two prizes, and three or more exhibitors admit of three prizes. The exhibitor in each case must be the owner.

The most striking change shown in this classification, however, is that given in the swine division where breeding animals are dropped out entirely and barrows substituted. These, however, must be pure-bred. For a

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A Safe, Speedy, and Positive Cure
The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland, O.

\$5 to \$10 PER DAY. Horse can't get his tail over the line. Fine ornament for harness. Sells at sight. Big inducements to right parties. Address with stamp. Barlow & Taylor, Kokomo, Ind.

DEATH TO HEAVES guaranteed. NEWTON'S Heave, Cough, Dis-temper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strong recommenda. \$1.00 per can. Dealers. Mail or Ex. paid. The Newton Remedy Co., Toledo, Ohio.

LUMP JAW NO CURE NO PAY
W. S. Sneed, Sedalia, Mo., cured four steers of lump jaw with one application to each steer; and J. A. Keseman, Osborn, Mo., cured three cases with one application to each. Hundreds of similar testimonials on hand. Full particulars by mail. Write to CHARLES E. BARTLETT, Columbus, Kans.

Lump Jaw
Save the animal—save your herd—cure every case of Lump Jaw. The disease is fatal in time, and it spreads. Only one way to cure it—use Fleming's Lump Jaw Cure
No trouble—rub it on. No risk—your money back if it ever fails. Used for seven years by nearly all the big stockmen. Free illustrated book on Lump Jaw and other diseases and blemishes of cattle and horses. Write for it today. FLEMING BROS., Chemists, 312 Union Stock Yards, Chicago, Ill.

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IS GUARANTEED. Not to injure eyes, skin or hair. Is valuable in a hundred ways around house and barn; our free book tells all about it and gives price of dip tanks. Send for copy. For sale at dealers or direct, \$1.50 per gal., prepaid. Lower price in quantities. Ad. Moore Chemical & Mfg. Co. 1501-1503 Genesee St., Kansas City, Mo.

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Durable, handy for carrier, the only absolutely dust and storm-proof box on the market. Finished in 4 colors and highly ornamental. Descriptive price list free. Address

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ZENOLEUM

Famous COAL-TAR Carbolic Dip. For general use on live-stock. Send for "Piggies' Troubles" and "Zenoleum Veterinary Advisor" and learn its uses and what prominent stockmen say about it. Books mailed free. All druggists, or one gal., express paid, \$1.50; 5 gal., freight paid, \$7.50. BREWER DISINFECTANT CO., 81 Bates St., Detroit, Mich.

long time we have thought that in connection with the dangers incurred by the breeder who exhibits hogs that the change now announced, would be a wise one. The exhibition of barrows instead of breeding stock is also in line with Chicago's prominence as a fat-stock market and we desire most heartily to commend the management for this step in the right direction. Address, W. E. Skinner, Union Stock Yards, Chicago, for a copy.

A Great Importation of Horses.

McLaughlin Bros., of Kansas City, St. Paul, and Columbus, give some interesting information in regard to their latest importation. They say:

"There arrived in New York, Monday, July 25, a shipload of the best Percheron and French Coach stallions that ever left France. Among them was the great Victor Hugo, winner of first prize at the show of the Societe Hippique Percheronne de France at La Ferte Bernard, June 16 to 19, also winner of first prize at the Government show at Le Mans June 23 to 26. Victor Hugo is one of the most perfect draft horses that ever lived. In commenting upon him, Mr. James McLaughlin says that he is superior to Orangiste, winner of the same prizes at the same shows two years ago in France and also winner of first prize at the International Live Stock Exposition held in Chicago the same year, as well as at every State fair where shown.

"Another sensational prize-winner is the Percheron stallion, Chichi, winner of first prize at the great show of the Societe Hippique Percheronne de France at La Ferte Bernard. At the Government show held at Le Mans the following week Chichi was not shown. In the same class the first prize was won by Rapids, another sensational prize-winner in this remarkable shipload of horses.

"Our stallions won first prize as the best collection at both great shows in France this year. The prize-winners in every stallion class down to and including fourth with barely two exceptions at the Percheron show and without an exception at the Government show are included in this shipload.

"Mr. McLaughlin has exercised more than the usual degree of caution in making his selections this year in order to reinforce our already grand array of stallions to be shown at the great Louisiana Purchase Exposition next month.

"Two young stallions 2 years old were brought over in our first importation for this year, either of which would have most certainly won in their class in France at either show, but we could not afford to leave these two champions for our last importation because we thought it necessary to have them in this country long enough to become acclimated before the St. Louis show.

"During the last two years we have been placing in reserve our best horses. Herewith is a short list of our first-prize winners at previous shows with which we will compete for the St. Louis prizes:

"Univers weighs nearly 2,300 pounds and is in the best possible condition. He is an ideal draft horse. Last year he won first prize at the great annual show of France held under the auspices of the French Government at Evreux. He also won first prize and gold medal at the great show of the Societe Hippique Percheronne at Nogent-le-Rotrou.

"The great Sigebert is another of the greatest draft horses that ever lived. He won first prize and gold medal at Evreux last year, and he also won first prize at the Ohio State Fair, the American Royal, and elsewhere.

"Cascadeur weighs 2,000 pounds. He has every quality developed in a high degree that goes to make up a perfect draft horse. He won first prize and gold medal at the great annual show of France at Evreux last year, and also won first prize and gold medal at the great show of the Societe Hippique Percheronne at Nogent-le-Rotrou last year. We never were able to show him in this country after his importation on account of an accident that happened to him in transit, but this year he is in fine form and will be a formidable competitor for the highest honor at St. Louis.

"Fronton weighs over 2,100 pounds. Last year he easily won first prize at the Ohio State Fair, at the Indiana State Fair, and every other State fair where he was shown. We never owned a horse that more richly deserves the highest honor than does Fronton. He has developed into one of the greatest stallions of the breed.

"The great Belgian stallion Omer, winner of first prize at the Ohio State Fair and first prize and championship at the International Live Stock Exposition, is one of the most perfect draft horses that lives to-day of any breed. Words in praise of him can not carry with them the true description of this most perfect draft horse. He appears to us to be an outstanding winner, but our string of Belgians is, nearly every one of them, almost equal to and perhaps some of them, when mature, will equal this grandest of all draft horses.

"Our French Coach Stallion Torrent, winner of first prize at the Ohio State Fair in 1902, winner of first prize and championship at the Chicago horse show in 1902, winner of first prize at the Kansas City horse show in 1903, winner of first prize at the American Royal at Kansas City in 1903, winner of first prize and championship at the International Live Stock Exposition at Chicago in 1903, winner of first prize at the Indiana State Fair in 1903, and winner of first prize at the Arlington horse show at Columbus in 1903, is one of the most sensational actors and one of the greatest coach horses of any breed. He will be admired by the thousands who will see him at St. Louis.

"Apropos, winner of first prize in the 2-year-old class at the Indiana State Fair last year, has developed into a sensational show-horse and will be a formidable rival of Torrent.

"We have here enumerated a few of our horses that have won first prizes at shows of National and International reputation. Space will not permit us to describe the large number of stallions of all

breeds that we will show at St. Louis. Every horse entered for competition there has been a prize-winner at some great show abroad and will be admired by the great throngs that will visit the Louisiana Purchase Exposition. Each horse, even the poorest, standing by himself is a gem and is deserving of the highest praise."

Sneed's Duroc-Jersey Sale.

The public sale of Duroc-Jersey swine, advertised as the opening sale of the season, was held at the farm of Harry Sneed, Smithton, Mo., and while the offering was desirable as to quality and breeding, and the general inquiry for catalogues was quite large, the result of the sale was disappointing to the owner. That a higher average was not realized was because of the exceedingly busy time with farmers and stockmen, who were unable to be present, owing to the press of farmwork at this time of the year, and also to the fact that the bulk of the offering consisted of spring pigs which are not in demand at this time of year, especially with local buyers. However, notwithstanding these adverse conditions, the result of the sale was favorable to Mr. Sneed as a breeder, and an indication of a strong and regular demand for Duroc-Jerseys later in the season.

Twenty-seven gilts sold for \$490.50, aver-

the sale in a very efficient manner that was creditable to themselves and satisfactory to Mr. Sneed.

Gossip About Stock.

Harry E. Lunt, Burden, Cowley County, Kansas, is preparing to make quite a show of Poland-Chinas at the World's Fair, and also at the leading fairs of Kansas. He also announces that he will hold a public sale of Poland-Chinas at his farm on November 3, 1904.

E. P. Sherman, proprietor of the Clear Creek Herd of Poland-Chinas at Wilder, Kans., had a disastrous fire at his place early last Saturday morning, which consumed his horse and hay barns, the latter being full of hay and sheaf oats. He also lost a number of farm implements, hog-shed and six male pigs. It was a total loss, no insurance. Mr. Sherman contemplates holding a sale in November. The herd otherwise is doing well and he has some fashionably bred pigs of February and March farrow for ready sale.

C. M. Garver & Son, Abilene, Kans., are fitting up a strong Poland-China show for the World's Fair, consisting of the aged boars, Prince Proud and Kansas Chief, and some young gilts and males sired by them and their former

live-stock auctioneers in the West, at Davenport, Iowa, on some special work. He has already booked a large number of sales for Kansas and the West this fall, but still has room for more. His address is shown in his advertising card on page 815.

Kreso-Dip.

A little book which should be in the hands of every farmer and stockman, and which has just been issued by Messrs. Parke, Davis & Co., manufacturing chemists of Detroit, Mich., has been received at this office. While primarily published with a view to exploiting the Kreso-Dip prepared by this house, it contains so much of practical value to every man who owns a head of stock as to lift it quite out of the category of commercial literature.

There are chapters on parasitic and skin diseases of sheep, swine, horses and cattle, with explanations as to origin, mode of treatment, etc.; one on the prevention of disease by disinfection; another dealing with the methods pursued by some of the large ranchmen in New Mexico for the eradication of sheep-scab. Here is a paragraph from a common-sense chapter on "Prevention of Disease as an Investment":

"Probably no investment made by the stockman will bring him better returns than the money he expends for the prevention of disease among his stock. The old but true saying that 'an ounce of prevention is better than a pound of cure' appeals to no other class more forcibly than it does to the stockman. The presence of disease of any nature works greatly to his disadvantage. To take certain precautions against the inroads of disease is better than an insurance policy against fire. Animals poor in health from any cause are in condition to give only poor results. This having been found to be true by progressive, up-to-date stockmen, we only voice the sentiment of those who know, when we say, Prevent disease among your stock."

The pamphlet consists of forty-eight pages, and has an attractive lithographed cover, the text being embellished by a number of creditable half-tone illustrations from photographs. By way of introduction the reader is told something of the great house of Parke, Davis & Co., which, it is worth noting, has risen from a position of obscurity in 1867 to one far in advance of that occupied by any competitor in the world. Some conception of its magnitude may be gained from the fact that its big laboratories at Detroit cover fourteen and one-half acres of ground. The firm has other laboratories in England and Canada, and maintains branch houses and selling agencies in many of the leading cities of both hemispheres.

The booklet is well worth reading and preserving, and, as it will be sent free, postpaid, to any farmer or stockman upon receipt of request to Messrs. Parke, Davis & Co., at their Detroit offices, we suggest to our subscribers the propriety of writing for a copy. Ask for the "Illustrated booklet on Kreso-Dip."

Haggood's Anti-Trust Range.

The Haggood Manufacturing Company, that well-known and reliable firm of splendid reputation at Alton, Ill., which sells direct to the consumer, are offering special value in a double flue, hot blast range, guaranteed to save one-half the fuel over any other range; of highest quality and material, and the best workmanship; fully covered by a guarantee that means something.

If you are seeking kitchen comfort, and a satisfactory cooking implement that will give continued satisfaction, you can not do better than to take advantage of this bargain offer; the price of the range is \$21.75.

A complete catalogue of the Haggood Manufacturing Company's goods may be obtained by addressing them at 223 Front St., Alton, Ill.

Sound and Well—One Bottle of Kendall's Spavin Cure Did It.

Halliday, Ark., February 3, 1904. Dr. B. J. Kendall Co., Enosburg Falls, Vt. Gentlemen:—Please send me a copy of your "Treatise on the Horse and His Diseases." I have used your Spavin Cure on a horse that stuck a nail in his hock joint, just under the cap, and it has taken all the soreness out and he is sound and well; one bottle did it.

Yours respectfully, J. G. QUILLMAN.

Publisher's Paragraphs.

Excelsior Springs, Mo., is destined, in the near future, to become one of the most popular resorts because of its famous sulpho saline, salt, sulfur, and iron springs, which are unsurpassed for their medicinal and health-producing value. The drinking of these waters and the use of Kihlberg's Karlsbad mineral baths will put in fine condition any one in ill health, as Mr. Kihlberg's establishment is strictly scientific Swedish massage by immediate attendants, giving special treatment for nervousness and all forms of rheumatism. The water used in this famous establishment is the Sulpho Saline water. The various kind of baths furnished are the Turkish, shampoo, bath, shower, salt rub and shower, Swedish movements, etc. For further particulars address O. Kihlberg, Excelsior Springs, Mo.

It is gratifying to note that a number of the best colleges of the country are now advertising in the Kansas Farmer, covering a very complete range of educational lines. Among the new ones this week is St. Marys College, St. Marys, Kans., advertised on page 803. This is one of the best and most popular Catholic colleges in the West. For further information address, Rev. James McCabe, S. J., President, St. Marys, Kans.

The Common Sense Rural Mail Box, invented by Ira F. Collins, of Sabetha, Kans., is something that will appeal to every farmer who lives on a free rural delivery route. It is a new design and the handsomest and most ornamental box on the market. It is absolutely water and dust proof, and the fact that it is made in Kansas should induce our readers to give it preference over others at the same price.

age \$18.13. Fifteen boar pigs brought \$189, an average of \$12.60, making a general average of \$16.18 for forty-two head. The most notable litter sold was four gilts of a March 7 litter sired by Frank M. 23757 by Surprise 19817, out of Red Cloud H. 44724 by Bernard 12245. These had been fitted for the fall show rings, were recorded, and were in nice condition. They averaged \$23 each, the top at \$41 selling to McFarland Bros., of Sedalla, Mo., who also secured one at \$29. R. H. Harris, of Lynch, Neb., bought two on a mail bid at \$21 each. Harris secured three head in all.

Powell & Rudy, of Smithton, Mo., were the heaviest buyers, and topped the sale, paying \$70 for the show gilt, Perfect Jewel, farrowed September 3, 1903. She will make one of their show herd this fall. Neighboring breeders bought fairly liberally, including Wm. Rudy, of Smithton. The top on boars was \$37.50, paid by W. M. McDaniel, of Fortuna, Mo., for the 11-months-old Sneed's Perfection, a litter brother to the 70 gilt.

The complete list of purchasers were: W. M. McDaniel, Fortuna, Mo.; F. W. Baker, W. M. Walker & Son, Malta Bend, Mo.; Powell & Rudy, Chas. Knox, L. Dilts, C. L. Wilson, Wm. Powell, G. W. Demand, McFarland Bros., Sedalla, Mo.; J. M. Ward, Warrensburg, Mo.; W. O. Long, John Sulkin, Colonel Taylor, Wm. Rudy, Smithton, Mo.; R. H. Harris, Lynch, Neb.

Colonel J. W. Sparks, assisted by Colonel Hieronymus, of Sedalla, conducted

herd-boar, Hard to Beat. This will be a very creditable exhibit that will reflect credit to Kansas and the breeder. Mr. Garver will have a number of very desirable and fancy-bred boars and gilts in the combination sale to be held at Clay Center this fall.

We call attention to the change in the advertisement of the Plimpton Herd of Poland-Chinas, owned by S. H. Lenhart, of Hope, Dickinson County, Kansas. Mr. Lenhart has been quite successful since he began the breeding of pure-bred Short-horn cattle and Poland-China swine. He has been quite fortunate in getting the most desirable blood lines, and in developing a very representative class of stock, which he has always sold at very reasonable figures. At the present time he has a fine lot of Royal Perfection pigs that are very desirable and ready to ship. Visitors are always welcome six days in the week at this place. For further information address as above.

Colonel Bert Fisher, of North Topeka, has adopted a plan which we think will meet with the approval of stockmen generally. He proposes to furnish a sale tent absolutely free of charge to all breeders who employ him as auctioneer. All he asks is that the owner of the stock shall pay the freight on the tent both ways and shall put it up and take it down at his own expense. Colonel Fisher is just now associated with Colonel Carey Jones, one of the best-known

The Young Folks

CONDUCTED BY RUTH COWGILL.

KANSAS SONG.

(The following verses were written by Rev. Elnathan Davis, in 1855. They were composed for the party of Kansas immigrants, 200 strong, who were just starting from Fitchburg, Mass., and among whom were Dr. Charles Robinson and his wife. They were sung at the station there to the tune of "Morning Light.")

Press on, the flowery Kansas
Is chiding your delay;
Her streams shall sing your welcome
As they ripple on their way.
A boundless wealth lies hidden
Within her virgin soil,
To gladden with its springing,
The reaper's manly toil.

Go, plant the tree of Freedom
In the valley of the West,
And bid the poor and needy
Beneath its shadow rest.
God's blessing on your journey,
On the homes where ye may dwell,
And on your great endeavor,
Brave pilgrims, fare ye well.

Strong in the love of Freedom
A brave, true-hearted band
Far from the hearths and alters
Of dear, old Yankee land,
Go forth with prayers and blessings,
Mid affection's gushing tears
And God's right arm defend you,
Ye sturdy pioneers.

Over the Border—A Story of the Kansas Pioneers.

XV.

(Copyright 1904, by Ruth Cowgill.)

CHAPTER XXXI.—UNDER THE OLD OAK-TREE.

Nathan came late that night bringing the unwilling Henry with him. "I wanted to see what they would do next," the boy kept reiterating, discontentedly.

The hospitable little house where they had found refuge was full of homeless people that night, and much of the talk was wild and vengeful. Nathan shook his head sadly as he listened, but his gentle and moderate counsel did not suit the mood of the people, and, seeing his words were of no effect, he soon withdrew himself from among them.

The next morning, he and Sarah and Henry went early to the claim, which seemed home to them, and he began at once to work again on his half-finished house. Sarah and Henry went to work again in the field, just as if they had not recently passed through a day historically momentous. Sarah came up to the house at noon to prepare the dinner and as they were finishing the meal they were startled to see Dolman walking toward them. He greeted them quietly, but she was troubled to see that he looked wan and worn.

Before any one could ask him any questions Henry was upon him with a welcome so genuine in its boyish expression of joy that it forced a smile to his grave face.

"Did thee get away?" said the boy. "Did they starve thee? Did thee kill any of 'em?"

"Yes," said Dolman, answering only the first question; "with the help of some of my friends—cowboys you would call them, and brave, loyal fellows they are, too—I broke away from them."

"I am glad," said Sarah, simply. "Thee will need to avoid them, now."

"Yes—they'll kill thee if they get thee again," said Henry. "We'll make a secret cellar, and hide thee in it."

The man only smiled, and Henry was not satisfied.

"Thee'll not let them get thee again?" he pleaded.

"No," said Dolman.

"Tell us about thy experiences," said Sarah.

"Some other time," said Dolman. "I must leave you now."

"Where is thee going?" asked Henry anxiously.

"I am going westward," he said. "I can do nothing for you nor your cause, now."

"I wish thee would not go," said Henry, wistfully.

"Ah, we shall miss thee," said Nathan. "Why does thee go out there into the wilds?"

Sarah, looking up, met the full gaze

of his eyes and she knew in a troubled half-knowledge, why he went.

"I like the free prairies," he said, after a scarcely perceptible pause. "Civilization stifles me." Then without another word, he went to Nathan, and took the old man's hand in his firm grasp.

"Good-bye," he said, almost brusquely.

When he came to Henry the boy burst into tears.

"I don't want thee to go," he wailed, digging his grimy knuckles into his eyes, while his face grew red with shame at this display of his feelings.

Dolman put his hand gently on the boy's head, and ran his fingers through his hair.

"You're the man of the family, Henry," he said cheerfully, ignoring the tears. "I trust you to let me know how things go here—the Free-State cause and all that—you can write to me if there is anything worth while."

The boy straightened himself and began to whistle a merry little tune, trying to look as though he knew not what tears were, though a pathetic sniffle now and then somewhat spoiled the effect.

"Sarah," said the man, coming to where the girl sat, waiting his farewell with the look of peaceful dignity which he loved. As she looked up into the strong face, it seemed almost beautiful to her, and she rose and walked by his side a little apart from the others. "Sarah, you are the love of my life. I can never forget you. You sit in my heart like a queen. I can not say 'good-bye' to you."

"I am sorry I have grieved thee," she murmured.

"Do not say that," said the man. "You have blessed me—and I am content." She looked into his face, but he was looking far away, his steady, level-gazing eyes searching the far horizon. She turned away, and he walked on till he disappeared beyond a rising knoll.

When she returned, her father and Henry had both gone to their work. She looked at Henry, and when she reached the field where they had been working all the morning, she found the boy sitting dejectedly upon a little mound of freshly turned earth. He arose and straightened himself when Sarah approached and set to work.

"I'll plow some more furrows," he said, "and thee can finish covering those."

Sarah accordingly took the hoe, and began industriously to cover with dirt the newly planted corn. Henry seeing slowly back and forth behind his plow, was sometimes within conversational distance, sometimes far beyond hearing.

"What did Friend Dolman say to thee?" he asked.

Sarah hesitated. Then she said: "He told me farewell, but there are some things, dear, that we do not repeat even to our best friends."

"Well, he's the best friend thee ever had and if thee hurt his feelings again, thee knows what I think of thee," and the boy passed on out of hearing.

Sarah went on with her work, her head bent low, and a sorrowful look upon her face, for her heart was heavy at thought of the pain she had unwillingly wrought.

She was aroused from her dreaming by the sound of feet on the soft earth and when she looked up, the shy color flooded her face.

"Honey," said Burk, very gently, "this is a strange pastime for you."

"It is no pastime," answered Sarah, bravely, though the color burned more hotly in her cheeks because she knew he was displeased. "I am helping Henry in his work."

Burk took off his coat and spread it upon the ground.

"Now you all may sit there," he said, taking the hoe from her hand.

"Very well," she said, meekly, "if thee thinks thee can do it thyself."

She sat demurely watching him working with the awkwardness of the utter novice, but with a vigor that was good to see. She was half-amused, half-crestfallen, yet wholly happy.

Henry came plodding toward them, and when he was near enough to them called out to Sarah, quite genially, "I see thee's got a new hand."

Burk nodded at the boy curtly, then catching the glint in Sarah's eye, forgot his displeasure and laughed with the girl.

"But, my sweetheart," he said, soberly, "you must promise not to come out here again. I reckon you will do this much to please me," he insisted, and because his face was proud and imperious and his voice was very gentle, she promised.

At last, when the corn was all covered, he held out his hand to her. "Come!" he said, "we have yet to speak to your father."

She arose obediently, and hand in hand they walked slowly to where Nathan was working.

"Mr. Fenton, sir," said Howard, going straight up to where Nathan stood, "Sarah and I love each other—"

Nathan stopped him with a groan. "Oh, my daughter! my daughter!" he cried, "I would rather see thee dead and in thy grave than married to such as he."

"Why, father," she cried, reproachfully, but he went on unheeding:

"A slave-holder—my daughter the wife of a slave-holder!" And he bowed his head in sorrow.

"But we love each other, father," she said, half-doubtfully, the color flaming in her cheeks.

"Mr. Fenton," said Howard, respectfully, "I have loved Sarah since that first night when we entered Lawrence together. My love has never wavered, sir, and it never will."

"I will never leave thee, father—I am not asking that thee let me leave thee. I only want thee to love Howard as thee does me."

"Does thee think it is a little thing thee is asking?" asked Nathan, almost bitterly. "Leave me now, children. Go to thy love-making, and let an old man think things out alone."

They could not disobey him, and turned away sadly.

Nathan perhaps caught the droop in their spirits in the shadow on their faces, for after a moment's struggle with himself, he called them back to him.

"Thee may have my daughter," he said, "when the South ceases to war against the North—and may that day come speedily."

At his gesture of dismissal, they turned away, not unhappily, to loiter hand in hand under the old oak-tree, dreaming, in the unconscious selfishness of youth, that their love was the greatest thing in the world; and the old man looking after them knew full well, in his heart of hearts, that what they dreamed was true.

CHAPTER XXXII.—AFTER THE WAR.

The nine long, desolate years that followed before Nathan's stipulation was fulfilled, I will leave untold. They have been written by poet, historian, and novelist many times and truly. It is enough to say that they dealt sternly with Kansas but she came out of them growing hardy and vigorous, and without the shame of slavery having ever stained her fair name.

But on a perfect day in June, an old, old man was sitting in an easy chair under a spreading oak-tree, and at his feet upon the long, soft prairie-grass, a deep-eyed woman sat, a book in her lap, but her wistful eyes upon the long, brown road that ran toward the east and the west till it was lost at either end among the long, low-lying hills and the leafy bushes that grew over them.

"Sarah, what horseman is that coming yonder?" the old man asked.

The woman sprang to her feet and stood for a second, shading her eyes with her hand, then with a low exclamation she bounded off, running like the girl of 1855.

"It is her lover come back from the wars," the old man murmured to himself, and he sat waiting long, a patient smile on his gentle face.

At last they came slowly over the crest of the low hill, their faces radiant, though sparkling drops still

hung on her lashes, and an empty coat sleeve was pinned back pathetically to his shoulder.

"Mr. Fenton, sir," said the soldier, "I have come back to claim my own."

The old man paid no heed to the words. His eyes were upon his daughter. "How like thy mother thee grows, child," he said.

"The South has ceased to war against the North, sir," said Burk. "I have come back, sir, defeated, maimed and broken, to the faithful love that has waited for me. I told you that my love would never waver. It never has, sir. In all these long years of bitterness, in the roar of battle, among the dead and dying, in prison, in brief victory or long defeat, my love has lived a warm, unchanging thing in my cold heart. Will you not give it the comfort of your blessing?"

"The old man reached out his thin hand, and Burk took it in his firm, brown one.

"Thee has served faithfully for thy Rachel," he said, very gravely. "I give her now to thee. She will bring thee happiness and contentment."

Sarah dropped on her knees at her father's side.

"And thee will be happy, will thee not, father?" she said, anxiously. "Thee will take Howard for thy son, and love him as thee does me?"

"Yes, yes, I will love him for thy sake. Hark, is not that Henry's whistle?"

At the moment, a young man in soldier's blue came into view, whistling light-heartedly. He swung along toward them with an independent stride, with his chin in the air. But the eyes were blue and clear and sturdy, and the face was firm-jawed and clean-looking.

He stared a moment at the stranger, then came forward with a frank hand outstretched.

"Hello, this is Burk, I suppose. Shouldn't have known you anywhere else." There was a twinkle in the blue eyes that made Sarah blush brightly, but Burk only tightened his arm about her, as he said:

"Yes, Henry; I reckon you all will have to accept a brother-in-law."

"I guessed as much," the boy said. Then he went on, with his old-time bluntness, "I'd prefer one who wasn't a rebel."

For a moment the black eyes flashed, but Henry said, quickly, "I beg pardon, I'm sure. That's all over now. I dare say we shall get along very well."

After an awkward pause, Nathan said, "Henry, I am weary. Thee may lend me thy arm and I will go into the house," adding in an undertone, as he got up stiffly, "They will have many things to say to each other alone."

Sarah watched them going slowly through the grass, the boy accommodating his vigorous steps to his father's slow walk. And though there were tears in her eyes, it was a happy face that she turned at last toward her lover. (The End.)

Why the Boy Failed.

He watched the clock.

He was always grumbling.

He was always behindhand.

He didn't believe in himself.

His stock excuse was "I forgot."

He wasn't ready for the next step.

He did not put his heart in his work.

He learned nothing from his blunders.

He felt that he was above his position.

He chose his friends among his inferiors.

He was content to be a second-rate man.

He ruined his ability by half doing things.

He never dared to act on his own judgment.

He did not think it worth while to learn how.

He tried to make "bluff" take the place of ability.

He thought he must take amusement every evening.

He did not learn that the best part of his salary was not in his pay envelope.—Success.

For the Little Ones

FROM DAY TO DAY.

TABLE MANNERS.

The bluejay is a greedy bird; I often watch him eat. When crumbs are scattered from our door he snatches all the treat. He drives the smaller birds away, his manners are so rude— It's quite a shocking thing to see him gobble down his food! And sometimes, when I'm not polite, I hear my mother say, "Why, now I see a little boy who's eating bluejay way!"

The sparrows are a noisy set and very quarrelsome. Because each hungry little bird desires the biggest crumb, they scold and fight about the food, all chirping "Me! Me! Me!" And sometimes when we children are inclined to disagree about the sharing of a treat, my mother says, "Why, you are acting now the very way the silly sparrows do!"

The jolly little chickadees are perfectly polite. They never snatch, they never bolt, they never, never fight. They hold the crumbs down daintily with both their little feet. And peck off tiny little bites—we love to watch them eat! And when my sister's good at meals, my mother says, "I see a little girl who's eating like a darling chickadee!" —Hannah G. Fernald, in Good House-keeping.

Gyp and Dummy in Monkey Land.

For a long time after Jocko Da Monka's story of the monkey-boy who sailed away in a ship and lived to sail back home again, to escape from the hand-organ man, Gyp kept up a very lively thinking about the ocean, the ship and the sailorman.

Gyp knew of a brook that ran from the mountain to the river; the great river he knew went flowing on and on, to somewhere beyond the forests, further than he could see from the highest tree tops.

One Friday evening Gyp told his mother he would like to go to bed early and get up before sunrise for an all-day outing with his fishing-rod and lunch-box.

"It is a secret, mother," explained Gyp, "but I will tell you all about it when I come back. I'm going to see where the river goes, as far as I can, but I'll be careful to get home by supper time."

"I'll trust my boy because he trusts his mother; you may go, and we will keep the secret between us," said the smiling mother as she kissed Gyp goodnight.

Gyp was up and off on his tramp very soon after sunrise with his well-filled lunch-box which his mother had prepared. Before noon he came to the shore where the river ended in a deep bay that was a part of the broad and wonderful ocean.

This was the ocean Gyp had heard about and thought about! Out in the bay was a ship lying steady and motionless, as if asleep on the water. Near by on the beach was a strange, smooth-face sailor playing with three queer, clumsy little animals that were flopping about on the sand and barking like hoarse puppies at play.

Gyp watched the frolic for a few minutes, then called out: "Oh, sailorman, may I come and play with you, and will you let me go home afterwards?"

"Hello, monkey-boy," answered the sailor. "What are you afraid of? Come over here and see the show; we are not kidnapping monkeys on this trip; don't be afraid."

The cheery voice and hearty manner of the sailor gave Gyp courage; without waiting a minute he ran down the beach and, taking off his hat, he bowed to the sailorman. Looking at the strange creatures, he asked: "What are they?"

"Never saw a baby seal before?" questioned the sailor.

"Baby seals! Where do they come from? What are they good for? How do they walk without any legs?" asked Gyp, all in a breath.

"You ought to carry a pocket dictionary, you ask so many questions at once," jokingly answered the sailor. "They are the brightest little cubs that ever went to sea in a ship, and have come with me from the other side of the ocean."

"Is it far?" asked Gyp. "Only several thousand miles from their home in the north," said the sailor. "These poor little orphans are good for pets, so long as they are happy; but I have known folks who kill them to use their fur for clothing," said the sailor.

Gyp shook his head, and then asked: "What do the seals do without legs?"

The sailorman chuckled as he answered: "The same as you do without wings! They use what nature gave them. They swim very well in the water, and flop around pretty lively on the rocks and beaches, with those strong flippers they use for arms and hands."

"They seem very good natured," said Gyp.

The sailorman picked up the smallest seal and patting his soft, plump sides, said: "Poor little cub has lost his voice and can't scold or find fault if he tries. Can you, Dummy?"

"Can the others talk?" was Gyp's next question.

"Yes, in their own way; they are learning fast how to talk with me," said the sailor. "This little cub lost his voice by plunging into the bay for a swim, when he was hot from play with the others. He can only try to talk with his eyes now. He smiles with them when he's happy, frowns with them when he is teased, and cries with them when he is hurt. Dummy seems to like you, on short acquaintance." The sailor carefully put the seal in Gyp's arms.

"Oh, please give him to me, I'll be so good to him!" begged Gyp.

"Have you any young monkey-sisters or brothers or cousins at home that you will give me in exchange?" asked the sailorman, with a twinkle in his kindly eyes.

Gyp dropped the seal on the sand and stepping a little farther away, he promptly answered: "We don't trade our own monkey-folk for anything. We are too fond of each other. But I wish you would give me the little one; you will have two left."

"Tell you what I will do," said the sailor. "Dummy's big brother is getting cross. If you will be kind to Dummy and let him live in the water most of the time, you may take him home."

Gyp's eyes sparkled as he thanked the sailor. "Hitch him with a light chain on the shore where he can paddle in the water. Give him plenty of fish to eat, until he gets tame and too fond of you to wish to go wandering away."

Gyp thought a minute, and then asked: "Couldn't we fence off a corner of our cove where the rocks are high and steep on both sides, and where Dummy could be left loose without the chain?"

"Capital plan," said the sailor. So clasping the baby seal close under the flippers, face to the front, Gyp proudly marched home with his prize. There he gave Dummy a fish supper, and put him to bed in an old boat that was half full of water.

With plenty to eat, and a good appetite between meals, Dummy seemed quite contented, except just before sunset on pleasant days, when Gyp would let him lie on a flat rock where he could see the river running to the ocean. At such times Dummy seemed homesick, and though he liked the music of Gyp's harmonica, he would turn his face toward the setting sun and look wistfully in that direction, sniffing the air as if he were hungry for a real sea-breeze.

Then Gyp would imagine Dummy was talking with his sad eyes, asking for his seal-mates, which made him almost willing to set his little pet free. But with more fish and music Dummy would seem to forget his homesickness.

The boy monkeys had great fun watching Gyp and Dummy go in swimming together. Gyp waded in the shallows while Dummy slashed and dived, and obeyed the lightest pull on the long cord when Gyp called him to come ashore.

Monkey-Pug, who was a hoodlum kind of a monkey-boy, was often present. He was a fearless swimmer and diver, and sometimes Gyp would let

him take Dummy into the deep diving pool near a tree on the river bank, where all could watch the sport.

One day after school, while Monkey-Pug was performing with Dummy in the deep pool, the baby seal became too frisky, and the quick-tempered monkey struck Dummy a sharp blow on the head.

Dummy dived and stayed under water so long that the impatient Monkey-Pug jerked hard on the cord, and began treading water while waiting for the seal to come up.

Suddenly Dummy's head appeared close beside Monkey-Pug. Quick as a flash Dummy clasped his flippers tight around the monkey's body, and with his full weight sank to the bottom, dragging Monkey-Pug with him.

The startled young monkeys on the bank watched for the heads to come up, but only ripples and bubbles could be seen where the water had closed over the pair.

A full minute, which seemed a much longer time, passed in silence, until the frightened watchers in the tree and on the bank thought Monkey-Pug must surely be drowned. Then at last up came the gasping monkey's head above water, with a gurgling cry for "help!"

With a long pole and quick work, the half-drowned monkey was pulled ashore, rolled on a log to get the water out of and the air into his lungs, until he was able to sit up; but the baby seal had disappeared.

Saddened by the loss of the pet, and the strange ending of the sport, the monkey-mates helped Monkey-Pug away; while Gyp ran home to the sunset rock, hoping that Dummy would come back where he heard his voice or the music.

Gyp played his merriest tunes on the harmonica. When twilight came, to his joy he saw Dummy pop up his head far out in the stream, and crane his neck from side to side as if trying to see if Gyp was alone.

"Come back to me, Dummy! Come home to your supper; no one shall strike you again!" cried Gyp.

Dummy shook his head sadly but firmly, and gave a few quick little barks the first Gyp had ever heard from his pet. Then he slowly came in toward the shore, with a new light in his talking eyes.

Gyp knew that his little pet was trying to say "good-bye," and as Dummy turned down stream, with a few more joyful little barks, Gyp waved his hand in silent farewell.

Standing alone on the sunset rock, Gyp watched his pet swim away into the darkness, and he fancied the sea-breeze brought back an echo of a parting message from Dummy, which seemed to say:

The wide, wide ocean is friendly,
And though I go alone,
I leave you with friends and kindred
You were kind—but I seek my own.
—John Howard Jewell, in Holiday Magazine.

A novel microscope for viewing melted or intensely hot substances has been described to the Vienna Academy of Sciences by Prof. C. Doeiter. An electric oven two inches high is mounted on the object stand, and yields temperatures up to 1200° C. In use the lens is separated from the heated object by about one inch. Even at the highest temperatures of the substance under examination, however, both microscope and objective are kept quite cool by a special arrangement of asbestos plates and a spiral tube carrying ice-cold water.

Watching the pulse adds seriously to the strain upon the surgeon during an operation under chloroform, cocaine or ether. This is done automatically by the new "pulse register" of Dr. Gartner, of Vienna, which consists of a watch-like box to be attached to the patient's forearm, the hands upon a graduated dial being made by an elastic spring to register very precisely the pulse and blood-pressure vibrations. The indications are much more sensitive than the physician's finger.

Repentance is the highest price we can pay for ennything, and yet mankind are continually bidding against each other for the privilege.—Billings.

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The Home Circle

CONDUCTED BY RUTH COWGILL.

KEEPING CARLO.

Carlo's gettin' kind o' old,
Was just twelve the other day,
An' he seldom leaves the yard,
'Cept when makin' of the hay—
No, he's not worth very much,
Gettin' so he can not see
Tho' he'll start when'er I call,
An' come runnin' up to me.

Charlie was just 'bout his age,
An' they both together played
Roamin' 'bout most ev'rywhere,
An' of nothin' bein' 'frald—
'Twas just 'bout five years ago
That they always were together
Drivin' up the cows an' horses,
Not a mindin' of the weather.

I can see them chasin' 'round
Just the same as yesterday,
Bringin' out the jug of water
When we's workin' in the hay—
An' when I would go to town
Comin' back with quite a load,
Would be met by both of them
Somewhere down along the road.

Then when Charlie took a fever
Carlo'd scratch about the door
'Till we'd let him in the room,
Then he'd lay down on the floor—
Stayin' in for quite a while,
An' just kept a lookin' 'round
Watchin' all the people close,
An' a-hearin' ev'ry sound.

Now along 'fore Charlie died
He had told me what to do
'Bout the feedin' of old Carlo
An' the way to call him, too—
An' I formed a resolution
After his request was made,
'Twas I'd always care for Carlo,
An' the place where they had play'd.

—Edgar S. Jones.

Doing the World's Fair in a Week.

(Continued from last week.)

I have been asked whether it pays to visit the shows on the Pike. Unless one wanted to spend a good deal of money or were fortunate enough to have a pass, and unless one had several weeks to spend there, or never grew tired, I should say generally, no. There are many good shows on the Pike, but one's purpose in going to St. Louis is to see the fair, and he feels that he has not time to squander upon things whose like he may see in other places. The financial consideration is something, also. It is said that it costs \$25 to "do" the Pike.

Perhaps no show at the fair appeals to more people than does the Boer War. Every one goes to the Boer War.

What will not people devise for the amusement of the world. Two years ago everybody was intensely interested in South Africa and the Boer War. We admired Kruger and Cronje and Ben Viljoen and wished, with all the longing of the hero-worshipper, that we might look upon their battle-scorched faces and stout Dutch forms. And now, this wish has been partly granted! Oom Paul, alas! is dead, but General Cronje and Ben Viljoen have lived to receive the plaudits of an idle but admiring crowd three times a day at St. Louis. Is it not a strange mutation of circumstance that these men, real heroes, who fought and bled and prayed in terrible reality, should now be waving their hats lustily, and swinging around a mimic field in a sham battle! It certainly shows a good deal of enterprise in the manager! But I was glad to see it. First, these heroes gallop into view on horseback, and are introduced individually. Then on come British officers, also, though they are of lower rank than the Boers. There is quite a contingent of private soldiers, both British and Boer, a tribe of wild-looking native Basutos, transport wagons, cannon, etc.

Finally, the organizer of this show comes in, mounted upon a beautiful horse. I was not much interested in the man, but the horse was the finest one I have ever seen. Indeed, it is called the finest trained horse in the universe. Its every movement was grace itself, its intelligence was almost human. I should not have been greatly surprised to hear it speak—but it didn't. Finally, after bowing profoundly in response to the enthusiastic applause, it floated gracefully away, light as a feather, on its dainty feet. After all this preliminary, the show begins. There are three sets of tableaux, representing certain move-

ments in the great real war. It is all wildly exciting and thrilling and noisy. I think, indeed, that one realizes something of how terrible a thing real war is, after looking at this realistic imitation of fighting.

Another place that offers one of the very best attractions is Cummins' Wild West. This shows you some "real live heroes," also, though it has sometimes been rather hard for the white man to appreciate their heroism. The wild old chief, Geromino, and Black Hawk and some half dozen more, with their families, are encamped here, besides a good many other Indians, and during the performance are brought out, dressed in their gaudy trappings of war. You are permitted to walk through the Indian village, which they have pitched, and to see the noble red man in his wigwam, lolling about in his particularly comfortable state of savage undress, while his squaw, hot and perspiring, fans him, or assists him to remove his warlike furnishings. It is really very interesting, though this much can be seen at the Indian school exhibit on the fair grounds, for nothing. The program of the show contains some crack rifle shooting, some fine Zouave drilling, some expert horseback-riding, an Indian battle, and a thrilling attack upon a settler's little cabin. But the finest part of the whole show, and the thing for which, personally, I should be willing to pay the price of admission, is the parade of the Indian warriors. It is one of the most picturesque of sights, the long lines of stern-visaged and savagely painted old warriors, marching or riding by in the wild and flaming beauty of their barbaric trappings.

There is yet one more village in this marvellous exposition of all the peoples. This is the Philippine exhibit. I went here one evening, arriving just too late for entrance into the separate villages, for they close at seven. Entrance into the general grounds is free, and one may see a good deal without going into the several villages. From the outside, through the bamboo fences, I saw the naked Igorotes, of whom so much has been said. It did not strike me as immodest for them to go with so little clothing, and I think it was silly for the papers to get so much amusement out of the kodak picture of Miss Roosevelt in conversation with one of them, which some one made. These people are living there in the manner to which they have been accustomed, and were brought here that they might be studied and it must be a prudish mind which can be offended by the innocent bareness of their brown bodies. These people eat dogmeat, and live in tiny thatched wigwams of bamboo. They are of the lowest tribe of Filipino, except the Negritto, who always are exhibited in their accustomed style of village. There are villages of the higher tribes also, but it is said that the highest class is represented by those who wear the United States army uniform. I was very much interested in them, and was pleased to see what a fine-looking lot of American citizens they make. They remind one of the Japanese, in size and color. They have little, finely-formed bodies, and well-shaped heads. They carry their heads proudly, and in two or three of their faces I saw the look of breeding and race. I remember one face that struck me particularly by its expression of intelligent enjoyment of the music which the band was furnishing. I was divided between the desire to give undivided attention to the music and my pleasure in watching the expressive face. The native band gives two concerts daily. It is a splendid band. It plays some beautiful and intricate music exquisitely and it has a dash and a fire and enthusiasm that one seldom hears even in an American band. It is a very pleasant hour that one spends here, especially if one goes in the evening, as the dusk is falling and the cool is coming into the air.

There are two other things which one ought to do in the evening, and I would not have missed either of them for a good deal.

The first is the ride in the Observation wheel, which was called the Ferris wheel at Chicago. This wheel is an immense thing, 285 feet in height. It has 36 cars as large as ordinary street-cars, with a capacity of 60 people in each. You step into one of these cars, and take a chair, and are lifted up so slowly that you scarcely realize that there is a motion. But gradually you see more and more of that great blazing fairyland, the fair. The illuminations are perfectly beautiful, and nowhere can you see them as a whole, as on the Observation wheel. There is no use in trying to describe to you the beauty of the sight, but having once seen it, it will remain with you, to "flash upon that inward eye which is the bliss of solitude."

The other pleasure which should be taken in the evening, is the ride on the lagoon. And here again, I find my pen quite inadequate to draw for you the beauty of the scene which is spread out before you. We stepped into a graceful gondola, our handsome gondolier took his place with his long oar, and we floated off on the water, in which sparkled the reflections of a million lights from the great buildings on either side. Before us were the beautiful cascades, and the terrace of States, which I have delayed in describing, because they are the gem of the exposition, and I can not even begin to tell you of their wonderful beauty. It was the mind of an artist which conceived and carried out the plan. Festival Hall, a small, gracefully ornate little dome of a building, is flanked by colonades, each column of which represents one of the States included in the Louisiana Purchase. At the ends of the colonnades are smaller buildings, in the style of Festival Hall. They are used for restaurants. In front are twin slopes of velvet lawn at whose feet are the lagoons. From Festival Hall comes a full torrent of water which falls in a cascade until it reaches the steps over which it runs, crystal clear, into the lagoon. In the lagoon are four fountains, like maids of the mist, tossing their draperies high over their heads, and dancing with a jubilation and an abandon that makes one think the water must be alive, to express, so triumphantly, the joy of life. There are statues at every turn and works in plaster. The electric lights glow mellowly upon the water, the oar splashes gently. Underneath the bridges, the gondolier stops and sings, now and again we pass another boat, the music of the pipe and accordion come across the water softened, plaintive and speaking to your heart of vague sad-

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ness whose like you have dreamed of, but never known. Too soon you come again to the landing, and reluctantly disembark, to mingle once again with the humdrum world of hustle and bustle and clatter.

(To be continued.)

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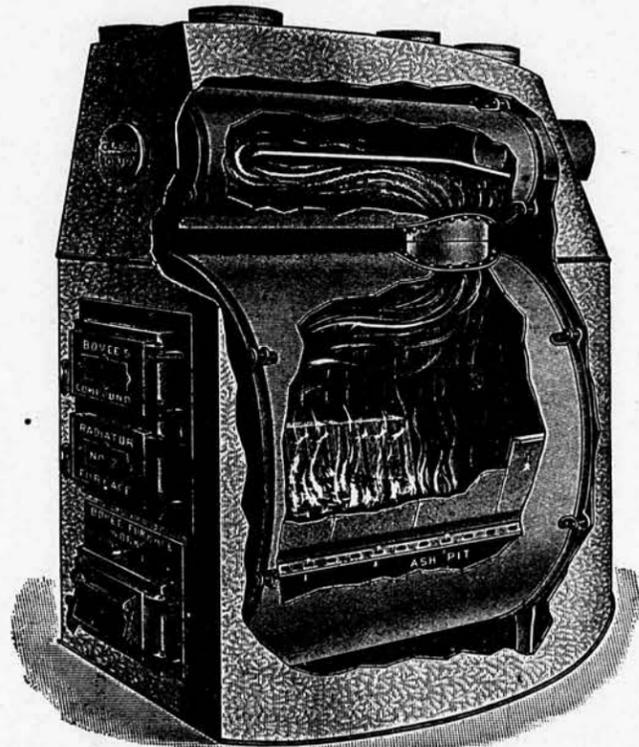
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The illustration and advertisement of the Bovee Grinder and Furnace Works, of Waterloo, Iowa, in this issue, will interest every one who loves the comforts of a home. There has been a vast improvement during recent years in the perfection of hot-air furnaces. The one shown herewith is a marked example of the modern day heater. This furnace has a very large radiating surface. Can not

possibly choke up. The radiator is always clean and radiates all of the heat which is a great saving of fuel. The Bovee furnace guarantees to save one-third of the fuel and will burn any kind of coal or wood. We advise readers of this paper to send for the tenth annual catalogue of Bovee's Compound Radiator Furnace for 1904, as per advertisement in this issue.

Agriculture

Alfalfa for the Kansas Farmer.

WALLACE N. BIRCH, KANSAS AGRICULTURAL COLLEGE.

(Continued from last week.)

SEEDING.

Alfalfa should be seeded in early spring or early fall. Where the proper conditions of soil and soil-moisture can be secured between August 15 and September 15, fall seeding is to be preferred. One reason is that the land does not lie idle so long as is necessary in spring seeding. Alfalfa sown in the spring usually produces no crop the first year, while alfalfa sown in the fall after the land has produced wheat, oats, Canada field-peas, or soy-beans will yield well the next year, in fact almost as well as if it had been sown the previous spring.

Weeds are less apt to be troublesome in the fall. The alfalfa must be sown early enough to make a vigorous growth before winter or it will winter-kill. Alfalfa plants while very young are too tender to live over winter. Weeds are less apt to be troublesome in the fall, and the following spring the alfalfa begins growth before most of the weeds, and is large enough to keep possession of the ground when the weeds are ready to start. When the alfalfa is sown in the spring it has only an even chance with the weeds. If crab-grass is in the field, it is almost certain to kill spring-sown alfalfa to such an extent that it makes an unprofitable stand and must be plowed up. In the eastern part of the State it is usually easy to obtain proper conditions for fall seeding, and generally speaking it is more satisfactory to sow in the fall. In the western part of the State, however, it is usually too dry for fall seeding, and spring seeding is the rule.

As to the amount of seed to use, successful alfalfa-growers differ widely. Some use only ten to fifteen pounds, while others use thirty pounds per acre. Where all conditions are favorable, the lesser amount is sufficient, if it can be evenly distributed, but under ordinary conditions it is best to use plenty of seed. If too little seed is used, labor and seed are both wasted, for a poor stand which must be plowed up is the result. Broadcast seeding is a success where air and soil are moist, but if there is much wind, the soil will drift and the young plants will be destroyed before they are deeply rooted. Professor Cottrell in his bulletin, "Growing Alfalfa in Kansas," recommends twenty pounds per acre, sown with a press-drill, the seed mixed with equal bulk of coarse corn-chop, bran, or fine sawdust and drilled both ways, one-half of the seed being sown at each seeding. With the drill there is more danger of getting the seed in too deep than too shallow, especially if a disk-drill is used. A general rule for planting is to plant at a depth equal to twelve times the diameter of the seed, and with a seed so small as that of alfalfa, there is little danger of sowing too shallow provided the seed is well covered.

CULTIVATION.

Disking is the principal form of cultivation required, and many an alfalfa-field grows well and yields good crops without disking. But disking is advisable, especially in the drier parts of the State. Alfalfa over 2 years old should be disked thoroughly early each spring, and it may sometimes be disked with advantage immediately after each crop of hay is removed. The disks should be set rather straight and weighted quite heavily. This treatment will provide an earth mulch which will serve to prevent evaporation of soil moisture which rapidly takes place on a new-mown field. The splitting of the crowns of the plants by the disk, causes the development of more buds, so that each plant produces more stalks.

FIRST CUTTINGS.

When the alfalfa has become well

established, frequent cutting appears to invigorate the plants. While the plants are small, the field should be mowed often enough to keep the weeds from getting above the alfalfa. Do not allow the weeds to get so large that they will require raking off to avoid smothering the alfalfa. If weeds are not troublesome, the alfalfa should be mowed at least twice during the first season, but it should not be clipped too short when the plants are young and tender, as the tendency will be to weaken and perhaps destroy the more feeble plants. Old fields of alfalfa should always be cut early in order to keep up the vigor of the plants. The later crops will be larger if the first ones are taken early. If the first crop is allowed to stand too long, the second grows slowly and makes an inferior crop.

PROTECTION FROM ENEMIES.

As cultivation includes protection from all enemies, the gopher and prairie-dog may be mentioned here. Poison is the only means of combating them. The gophers are fond of sweet potatoes, apples or raisins, and eat them greedily even when they contain strychnine. A little sweetening with molasses or sugar will increase their appetite for poisoned fruits. It is a comparatively easy matter to find their runways by pushing a wagon rod into the soil around the fresh mounds. After the runway is located, open a hole to it large enough to admit the poisoned bait. This is easily done with a pointed stick. Then drop the bait into the hole and the work is done. The gopher will soon come to close up the opening and while he is there will eat the poison. "Perseverance is the price of success" in checking the ravages of this pest. A few fresh mounds show that there are a few live gophers and that means that there will soon be more if they are not at once destroyed.

Wheat poisoned with strychnine and scattered through prairie-dog town in early spring or late fall is an excellent means of preventing the ravages of these little animals.

Crab-grass is one of the worst enemies of alfalfa. Land that is badly infested with it should not be seeded to alfalfa as there is much danger of the crab-grass killing the alfalfa before the latter is old enough to live through any treatment that will destroy the crab-grass. If there is only a little crab-grass in the soil, and the alfalfa is seeded in the fall, the chances of success are good. The alfalfa gets the start of the weeds and by the time the crab-grass appears the alfalfa is able to withstand the disking. Thorough disking followed by the harrow early in the spring and immediately after each crop is taken off, will often keep the crab-grass in check.

Dodder is an enemy of alfalfa, but seldom does much damage in this State. This is a parasitic plant which entwines itself around the alfalfa plant and draws its nourishment from it by means of suckers sent into the stems. The treatment is to cut the spots before the dodder seeds and burn the plants on the spot. If the ground is moist, the alfalfa will not be injured by the treatment. In buying alfalfa-seed, care should be taken to get seed which contains no dodder-seed.

(To be continued.)

Deep or Shallow Plowing for Wheat—Grass for Hog-Pasture.

Please inform me which is the better way to plow for wheat, deep or shallow, after all these rains? What will be a good grass to sow for hog-pasture where there is now timothy? I do not like timothy alone for hogs. Brown County. A. B. BENGTON.

The depth at which land should be plowed will depend much upon the soil. If your general practice is to plow deep, I think it advisable to continue that practice this summer or fall in preparing the ground for wheat. If your ordinary plowing has been shallow it would not be advisable to plow much deeper this fall. If the ground remains wet it will doubtless be best to plow the land rather shallow in preparing a seed-bed for wheat. The general recommendation is to

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plow shallow in the spring and deep in the fall, because deep plowing on wet land tends to puddle the soil and injure the texture more than does shallow plowing. Again, in case the ground becomes dry and baked, rather shallow plowing may be preferable to deep plowing, because a thin furrow slice can be pulverized better and will more readily soften up with the rains than will a thick furrow slice. It is difficult to plow shallow after the ground has become dry on account of the hard, compact crust which forms. In general, I prefer rather deep plowing wherever the soil will allow it, but always cultivate sufficiently after plowing to settle and fine the soil before sowing the wheat.

In your part of the State a combination of clover and English blue-grass will make a better hog-pasture than timothy. Timothy and clover are preferable for pasture to timothy alone. I believe it advisable also, especially if your farm is upland and well drained, to include Bromus inermis in combination with the English blue-grass and clover. Seed at the rate of about ten pounds of each of the grasses and four pounds of red clover per acre. Clover alone will make an excellent pasture for hogs but will not be so permanent as the combination mentioned above. The same may be said of alfalfa; a combination of alfalfa with the grasses mentioned above will also make an excellent pasture, especially on upland where clover will not thrive so well as alfalfa.

A. M. TENEYCK.

THE BASIS OF COMPENSATION.

(Continued from page 793.)

a form as here presented, but some modification of it enters into most of the stipulations offered by labor organizations in their negotiations of wage scales. In these cases it is provided that employees of a class shall receive specified compensation, making no differences in favor of the more efficient workers of any class. The doctrine of equal sharing is more specifically taught by the communist branch of the socialists. It is held in a more or less vague way by very many persons who give rather desultory thought to present-day problems without close analysis with a view of ascertaining equities, but attach most importance to motives of compassion for those whose share in the ultimate products of labor is meager.

It will not be disputed that the crafty often obtain from the general stock of the good things of this world far more than the value of their services to mankind warrant. Indeed, some even extort great returns for efforts which result detrimentally to their fellows, while others whose labors are of the utmost benefit are very poorly paid. But it is not the purpose here to discuss these irregularities in the economic world, but rather to follow briefly the theory of compensation on which our industrial development has proceeded.

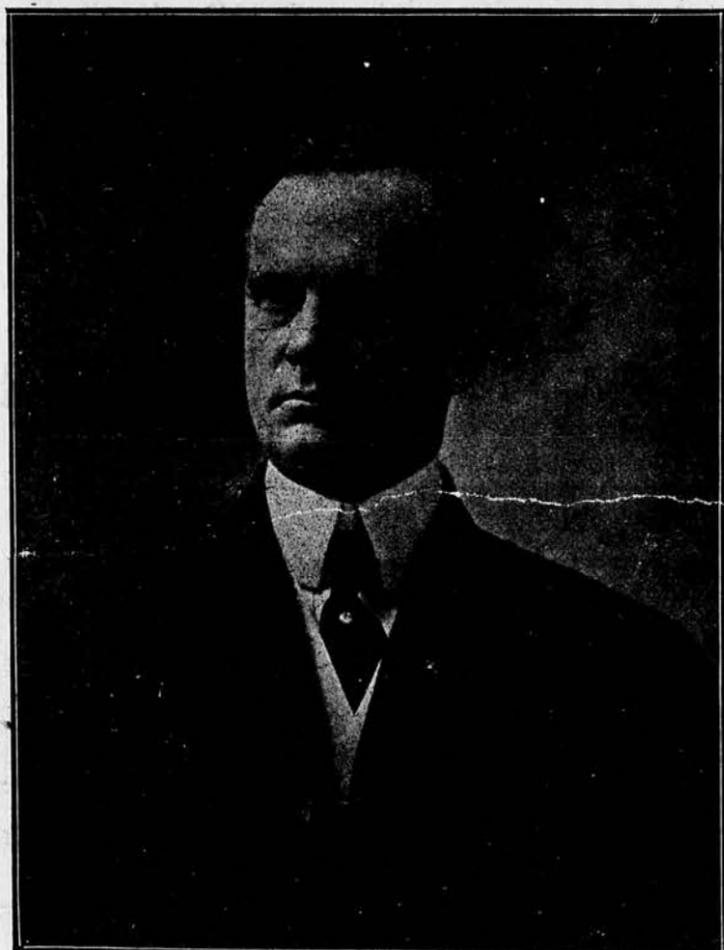
In a primitive state men are conceived as having gathered the gratuitous gifts of nature and appropriated them to their use and benefit. The fruit belonged to him who reached forth his hand and took it, or, if it must be sought, to him who found it. The sluggard who would not help himself had no right to a share in the things secured by the diligent. The young were fed and cared for in obedience to the parental instinct—an instinct which some suppose was given in its entirety to the earliest beings, and which others conceive to have been developed by the slow processes of heredity and the perishing of offspring of such as possessed it in inferior degree. As progress was made, the more thrifty tended flocks and enjoyed the certainty of supplies of milk and meat. It has been imagined that the plodder who devoted labor and care to his flocks was ridiculed by his neighbor who supplied his wants by taking wild game. So, too, when one, in his primitive way, cultivated crops, he may easily have been the sport of such as relied still upon products ready grown. But no modern thought of equity would allow that the primitive hunter after animals and wild

grains, roots and fruits had the same interest in and right to the products of the primitive farmer's toil that was possessed by that same primitive farmer. Again, we may imagine two of these primitive farmers cultivating their patches with their hands and with such sticks as they could pick up. But one with great labor fashions a rude hoe and the other laughs at him for his sacrifice of ease and pleasure while making the implement. But the hoe has more than doubled the efficiency of the man who worked overtime to make it. With this capital he can produce a much larger and better supply of food than the other. Shall he not have the advantage of the capital he has created or shall he share and share alike with him who lay in the shade while the other made the hoe which constituted him a capitalist?

Another illustration may be taken from the observation of almost every old settler of Kansas: The land had lain unappropriated for untold ages. Finally settlers came. One very soon found that there were many privations to be endured and much hard work to be performed in making a

drink, who wastes his powers in sensuous pleasures. By his side may be found the diligent and frugal who finds a way to lay by at least a small portion of his earnings. By the time these two reach middle life the one is almost a dependent, and the other is a capitalist. It would be unwise policy as well as unjust to compel the second to share and share alike with the first, for one of the incentives to diligence would thus be taken away.

Mankind long ago passed the primitive stage and is constantly adding complications to the relations and transactions of its individuals. The theory still is that the diligent and frugal is entitled to the results of his diligence and self-denial, and that these virtues normally produce capital for those who exercise them. Tempered with compassion for the weak and the unfortunate and modified by restraint for the crafty and the vicious, this doctrine is that upon which civilized man has produced the beneficent conditions of to-day. Wisdom will be slow in departing from the principles upon which society's best achievements have been won. There is no modification of the communists'



O. P. Updegraff, Superintendent Horse Division, World's Fair.

farm and home from the virgin prairie. He decided that those who wanted this land badly enough to get it at such a price might have it, but as for him, he would go back and take his chances for employment in shop or factory in the East. The other endured the strenuous life of the frontier, increased his small holdings of live stock, slowly improved his farm, rescuing from the wilds many fertile acres, and becoming a capitalist with an assured income and pleasant surroundings of his own creation.

The settler who would not stand the privation and hard work of the frontier probably became a recruit in the army of the discontented. The settler who paid the price of diligence and self-denial is now enjoying the comforts of life and the esteem of many friends. It is needless here to describe the differences in the prospects of the children of these two. Equity as understood by advanced peoples would confirm the right of the diligent man and his offspring to the fruits of his lifework. It would be an unjust sentimentality that would compel him to share alike with the man who quailed before the trials endured by the pioneer.

In all ages and in all countries may be found the profligate and slothful, who finds continual excuses for taking a "lay off" from his labors, who spends his earnings for tobacco and

doctrine that can produce as good results as follow from the practice of equity among men and its enforcement by the authority of organized society. Compassion and love may well temper the administration of equity, and they have a large place in the beneficent voluntary actions of men. The power of the law is properly used to restrain the crafty and to control the exercise of strength, but it can not safely be invoked to overthrow equity among men.

The proper basis of compensation is the value of the services rendered to the employer. The ultimate employer in every case is the whole community.

OUR SUPERINTENDENT OF HORSE DIVISION AT WORLD'S FAIR.

It is a source of gratification to announce the fact that Mr. O. P. Updegraff, of Topeka, owner of Riverside Stock Farm, has been appointed superintendent of the horse division of the live-stock department, World's Fair.

This is a well-merited appointment of a man well fitted in every way to assume the duties of this responsible position. The exposition management has honored Mr. Updegraff and Kansas in giving him the preference over a hundred or more worthy applicants for this position.

Oliver Price Updegraff was born in the State of Ohio about fifty years

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ago. He was educated in the common and high schools of the village and continued his education at the Quaker school, Earlham College, Richmond, Ind., afterwards gained a business education in the banking business, and successfully filled all the positions from sweep to cashier in succession. A short time before attaining his majority his father, a farmer and stock-breeder, gave him an Ohio farm, stocking the same with brood mares, cattle, and hogs, which he managed until 1879, when he sold out and moved to Topeka, Kans., which has been his home ever since.

After Mr. Updegraff's arrival in Kansas he engaged in the stock business on a more extensive scale than in Ohio, and at Riverside Stock Farm made a specialty of breeding Standard-bred and Draft horses, as well as Hereford cattle and pure-bred swine. In addition to his farm and stock he was interested in the lumber business and realty throughout Kansas.

During recent years Mr. Updegraff has been largely identified with the leading district and State fairs, serving them in the capacity of starting judge and expert judge on Standard-bred and roadster horses; also identified with the leading horse shows of the Western and Southern States, and especially those of Kansas City, St. Louis, Denver, and New Orleans, where he acted in the capacity of master of ceremonies and manager of exhibits. In this capacity he has achieved a National reputation and perhaps no one engaged in this special service stands better with the horsemen and the visitors to the shows and race meetings than Mr. Updegraff.

Ever since the American Royal show at Kansas City added the horse show division, Mr. Updegraff has been manager of that department.

Mr. Updegraff still resides at Riverside Stock Farm, two miles west of Topeka, where he is raising Standard-bred and road horses with Honor 6694, Senator Updegraff 8741, and Disk 13857 the sires in use. He is also an extensive breeder of Poland-China and Berkshire swine.

He has always been identified with the Kansas Improved Stock-Breeders' Association and the Kansas Swine-Breeders' Association, which he helped to organize; also actively identified with the National Live-Stock Association.

Mr. Updegraff's success as manager of live stock shows and displays, as well as his ability to manage men and serve the interests of both exhibitor and visitor, in some degree accounts for his appointment by the Universal Exposition at St. Louis. And to be selected from among the best-known and most prominent horsemen of the United States for this place is an honor to be proud of. The fact that Mr. Updegraff's father in Ohio was a breeder of note, owning at

one time such noted stallions as "Flying Hiatoga," "Star Hambletonian," "Rob Roy," "Young Cadmus," "Diamond Tackahoe," "Dan Rice," etc., to whose blood lines many of the sensational horses now on the turf, trace, makes it quite natural that this business comes easily to Mr. Updegraff, who was born a stockman as well as a Quaker.

SHALLOW CULTIVATION FOR CORN.

L. W. Chesley, Nemaha County, writes to Secretary Coburn a description of the method by which he has kept his corn growing vigorously, under conditions which have proven much less favorable to a good deal of corn that has come under his observation. His method is one of shallow cultivation. He remarks that the roots of the corn plants are as near the surface as they can find moisture. The season was very cold and wet, bringing the corn roots much closer to the surface than they usually grow. In plowing the corn in the ordinary way those roots were broken off so that the corn, in Mr. Chesley's opinion, was confined for its sustenance to the narrow unplowed strip near the corn. Mr. Chesley says: "Heavy rains melted all the loose, plowed soil into a solid and in a few days the sun had baked the surface, taken out the moisture, and left no food for the corn." Mr. Chesley's corn is on upland that has been in cultivation for thirty years and no fertilizers ever used. He planted his corn in April, plowed on June 6 and 7, and three-fourths of it was again plowed on June 18. He harrowed between the rows three times, June 20-21, July 15-16, and August 1-2. The harrow had fourteen teeth and was set to cultivate all the surface between the rows from two to three inches deep. The surface soil was thus made very fine and loose and acted as a mulch. The corn will be ready to cut by August 18, being well filled and maturing properly.

The only improvement that can be suggested on the above described treatment would be to work vegetable matter into the soil by some method known to farmers, as manuring with stable manure or rotating with grass and clover.

BLOCKS OF TWO.

The regular subscription price of the KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, every old subscriber is authorized to send his own renewal for one year and one new subscription for one year with one dollar to pay for both. In like manner two new subscribers will be entered, both for one year, for one dollar. Address, Kansas Farmer Company, Topeka, Kans.

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THE AMERICAN ROYAL SHOW.

In another column of this issue we present an illustration showing a reduced copy of the poster which is being sent out to advertise the American Royal Show to be held at Kansas City this fall. It is a very unique and striking picture and creditable to the designer and an attractive means of publicity.

The prospects for the American Royal Show were never more promising than at the present time. So many breeders have fitted for the circuit of leading fairs, as well as the

World's Fair at St. Louis, that the shows this year will probably present the best prepared specimens of all breeds of pure-bred stock ever shown in America, and the American Royal will this year take front rank as the great American breeders' show. Parties who contemplate making an exhibit at Kansas City should send at once for the preliminary classification and get everything in readiness to participate in this great National live-stock event.

CHANGES IN THE LAND LAWS.

A conference of the officers of the National Live Stock Association with officers of the Government, held last week at Denver, recommended the transfer of control of the Bureau of Forestry from the Interior Department to the Department of Agriculture; the passage of a law giving the Secretary of Agriculture authority to classify the vacant public lands and determine on those that should be leased for grazing purposes; Government control of all public grazing areas under local government rules, with a proviso that whatever may be done by Congress shall not be radical or antagonistic to vested rights.

Mrs. A. E. Jones, whose husband was formerly editor of the dairy department of the KANSAS FARMER and is now Kansas Dairy Commissioner at the World's Fair, was burned in a gasoline fire at her residence in Topeka last Sunday. She lived only six hours after the accident. Mr. Jones was at St. Louis, but was summoned by telegraph to a sad home-coming. Some derangement in the gasoline stove resulted in a fire which Mrs. Jones tried to extinguish by throwing a rug over it. The flames rushed out under the rug, caught Mrs. Jones' dress, spread to her other clothing and, before help reached her, inflicted injuries from which she died. Mr. Jones has the sympathy of a very wide circle of friends in this bereavement.

Miscellany

About the State Fair.

"We are on the circuit with the St. Louis Exposition," said Secretary Charles H. Samson, of the Kansas State Fair, at Topeka, in speaking of the outlook this year for the State Fair.

"To those who have not investigated the situation this may be startling, but it is true. In the different live-stock departments of the St. Louis World's Fair, exhibits will be made lasting ten days or two weeks or such a matter. But one class of live stock will be exhibited in competition at a time. This means that the St. Louis Exposition will have a hold on the live-stock exhibited there but a couple of weeks.

"What are the breeders going to do with their exhibition stock the rest of this summer? Let them go back into the pastures after they have cared for them for months to get them into shape for exhibiting? No, not a bit of it, as is shown by the queries we have received from breeders in many Western States. Before going to St. Louis to exhibit their stock and after exhibiting there, they are going to tour the circuit of Western State fairs and many of them will come to Topeka after exhibiting at Sedalia, Des Moines, and Lincoln, etc. It is apparent to me that the St. Louis fair this year, instead of being a detriment to State fairs, is going to be of the greatest assistance.

"The people should visit the State fairs this year for the reasons given above; that the live-stock exhibits will be unusually good. They will see much of the World's Fair stock exhibits. Besides that, the States are making agricultural displays at St. Louis and are keeping the farmers at home busy supplying them with fresher agricultural products. This means that in every State hundreds of farmers are looking keenly for the best of every product. They are in the business

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this year of collecting grains, fruits, vegetables, etc., and while they are collecting them for the World's Fair, they can do so also for the State fairs.

"For our State Fair at Topeka, September 12 to 17 inclusive, we will make a special effort this year to furnish new and interesting attractions. We will have Dan Patch, the fastest harness horse in the world, with a record of 1.56 1/4, go against his half-mile tract record of 2.03 1/4 on Wednesday of fair week. This is a particularly attractive event in Kansas, for Dan Patch is the noble son of the famous Kansas horse, Joe Patchen.

"On Tuesday we will have our third Kansas Derby, a mile course, for a purse of \$500 and the Derby Trophy cup. This is an event open to all runners of 3 years old and over and always attracts runners from many Western States.

"One of our special features will be music. Sorrentino's famous Banda Rossa, from SanSevero, Italy, will give a concert at the fair grounds every night of fair week, in front of the grand stand. During these concerts, Mr. Thomas Bass, the champion high-school saddle-horse trainer of Mexico, Mo., will give an exhibition with his horses of fancy riding and of high-school steps and gaits. Every afternoon during the races Marshall's band will play and the horsemen of the West, as well as the audiences, know Marshall's hand.

"The State Fair will offer \$20,000 in purses and premiums, giving premiums in every department that will attract exhibitors. We will have 20 harness races, the Kansas Derby, Dan Patch against his record, and three running races every day.

"The railroads have granted a special rate of one fare for the round trip to Topeka for fair week from all Kansas points. This is a great inducement. We are going to have the best, the most attractive, and the biggest fair we have ever given in Topeka."

COMING EVENTS.

Will secretaries and those having the management of coming events, oblige the Kansas Farmer by sending dates?

September 1, Shawnee County Horticultural Society at Berryton, O. F. Whitney, Topeka.

October 17-22, 1904—American Royal Live-Stock Show and Sales, Kansas City, Mo.

November 26-December 3, 1904—International Live-Stock Exposition, Chicago, Ill.

Farmers' Institutes.

August 17, Farmers' Institute, Michigan Valley, Osage County, E. G. Louk, secretary.

August 20, Farmers' Institute, Dole's Park, McPherson County, B. F. Dole.

August 25, Farmers' Institute, Randolph, Riley County, W. Fryhofer, president.

August 25, Farmers' Institute, High-

Headache

Can be Cured with Dr. Miles' Anti-Pain Pills.

If your nerves are subject to disturbances, such as Headaches, Neuralgia, Backache, Rheumatism, Menstrual Pains, Sleeplessness, etc., their jarring and jangling can be quickly ended with a Dr. Miles' Anti-Pain Pill.

Dr. Miles' Anti-Pain Pills are pleasant little pink tablets, which do not act on the bowels, nor do they have any disagreeable weakening or habit-forming effect on the system.

They are the result of the latest scientific knowledge on the subject of Pain, and bring relief safely and quickly to the greatest sufferer.

You should always keep a box of Dr. Miles' Anti-Pain Pills in the house, since you never know when pain may attack you, and it is wrong to suffer when your suffering can be so quickly relieved.

Dr. Miles' Anti-Pain Pills contain no opium, chloral, cocaine, morphine, or similar drugs, and are sold by druggists under a guarantee to relieve you or pay your money back.

By relieving Pain, Dr. Miles' Anti-Pain Pills shorten suffering, and lengthen life. 25 cents. Never sold in bulk.

"I have used Dr. Miles' Anti-Pain Pills when troubled with headache, and find that one pill infallibly effects relief in a very short time. I also use Dr. Miles' Nerve and Liver Pills when necessary. I am considerably afflicted with neuralgia of the head and find these pills of much benefit to me. They are all that is claimed for them."—GEORGE COLGATE, 219 Oakland St., San Antonio, Tex.

FREE Write to us for Free Trial Package of Dr. Miles' Anti-Pain Pills, the New Scientific Remedy for Pain. Also Symptom Blank. Our Specialist will diagnose your case, tell you what is wrong, and how to right it. Free. DR. MILES MEDICAL CO., LABORATORIES, ELKHART, IND.

land Station, Doniphan County, Mrs. Levi Kunkel, secretary.

August 31, Farmers' Institute, Summerfield, Marshall County, S. Bariger, secretary.

September 15 and 16, Farmers' Institute, Holton, Jackson County, A. M. Shaw, secretary.

November 18 and 19, Farmers' Institute, Altamont, Labette County, C. E. Hildreth, secretary.

Following is a list of farmers' institutes to be held with the assistance of members of the faculty of the Kansas State Agricultural College, with the names of the professors who will attend:

August 10, Rush Center Farmers' Institute, Frank N. Runell, secretary—President E. R. Nichols.

August 11, Shawnee Horticultural Society at A. L. Entsminger's, Silver Lake, O. E. Whitney, secretary, Station A, Topeka—Prof. Albert Dickens.

August 18, Burlingame Farmers' Institute—Prof. A. M. TenEyck.

August 18, Farmers' Institute, New Lancaster, Miami County, F. B. Conner, secretary—J. T. Willard, Miss Margaret Minis.

August 31, Richmond Farmers' Institute, J. A. Hargrave, secretary—Profs. A. M. TenEyck and J. T. Willard.

PILES NO MONEY TILL CURED. 25 YEARS ESTABLISHED.
We send FREE and postpaid a 200 page treatise on Piles, Fistula and Diseases of the Rectum; also 100 page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
DRO. THORNTON & MINOR, 614 S. 1st St., Kansas City, Mo.

Horticulture

Replies to Inquiries About Insects.

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

Among a number of inquiries lately received, several subjects are presented regarding some common insects, in reference to which, a published reply in each case worthy of general interest or concern is here offered for the benefit of the readers of the KANSAS FARMER.

CORN BILL-BUGS (Sphenophorus, species).

In a former communication published in the KANSAS FARMER, June 23, ultimo, an account was given regarding "A Corn Bill-bug" which was reported from Florence, Kans., as injuring young corn. As the insects then received came in a crushed condition inside the letter of inquiry, a request for more specimens was honored by the correspondent, with the result that several perfect bill-bugs were obtained, from which the name of the species was determined as *Sphenophorus robustus*. The correspondent also wrote: "All of our creek bottoms were flooded here June 2, together with the field of corn that was infested with these bugs; the water washed the corn mostly away, also the ground as deep as it was plowed. I have since double-disked the ground and drilled to millet, calculating to put in wheat this fall. I would like very much to know the life history of the bugs."

The life history and preventive measures were stated in former communication as referred to above. Fur-



Corn Bill-Bug (*Sphenophorus* sp.). Drawn from Hunter's "Elementary Studies in Insect Life."

ther notes might be added here in regard to the different kinds of bill-bugs of the genus *Sphenophorus* which are found in Kansas. Thirteen species of *Sphenophorus* have been recorded in the State, eleven of which are represented in the entomological collection of the University of Kansas, from various localities, as follows:

Vomerinus, from Gove and Wallace Counties; *ochreus*, from Douglas County and Florence, Marion County; *pertinax*, from Douglas County, Cedarvale in Chautauqua County, and Augusta and Leon in Butler County; *robustus*, from Florence, Marion County; *costipennis*, from Douglas County; *cariosus*, from Douglas County; *sculptilis*, from Douglas, Clark, and Neosho Counties; *placidus*, from Douglas and Clark Counties; *parvulus*, from Douglas and Clark Counties; *cultellatus*, from Douglas County; and *compressirostris*, from Douglas County.

The names of the remaining two kinds are *scoparius* and *melanocephalus*. Those known to be injurious to corn, in Kansas or elsewhere, are *ochreus*, *pertinax*, *robustus*, *cariosus*, *sculptilis*, and *parvulus*.

THE MELON PLANT-LOUSE (Aphis gossypii, Glover).

I will take the liberty to write to you for some information in regard to an insect that kills my cucumber vines



Aphis or Plant-lice, many times enlarged. a, winged female; b, pupa; c, wingless female

each year. Perhaps, during your experimenting time, you have found a way to get rid of the pest; if so, I will be very thankful to hear from you. I will enclose a leaf with the bugs on it. Kiowa, Kiowa County, Kans., June 12, 1904.

The pest is probably the Melon Plant-louse, so named by Forbes, of

Illinois, who described the insect as *Aphis cucumeris*, though it has since been found to be the same as the Orange Aphis and also the Cotton Aphis known by Glover's name, *Aphis gossypii*. It belongs to the order Hemiptera Homoptera, family Aphididae. Professor Forbes reported it in 1882 as "a minute, very sluggish, green or greenish-black insect, occurring in immense numbers from spring to late summer upon the under sides of the leaves and also upon the roots of muskmelons, watermelons, cucumbers, squashes, and other cucurbitaceous plants, causing the leaves to curl and shrivel and lose their color, and greatly hindering the development of the plant."

Regarding prevention and remedy, Professor Forbes says, "The only preventive measure which I can suggest is based upon the probability that the plant-lice winter in the fields where they grow. Prudence would consequently dictate that the kinds of plants attacked by them should not be raised upon the same ground two years successively. It might suffice, however, to collect and burn the vines in the fall. If the eggs are deposited upon them, this would answer instead of a rotation of crops. The fact that the lice occur only on the lower surface of the leaves, which soon curl and wrinkle so as to protect them largely, make it very difficult to reach them with any of the applications usually made to insects of this class. Experiments were made, however, with substances in powder, with fluids, and with vapors.

As a result of these experiments, we may say that no effective remedy was found applicable on a large scale, except at an expense which would considerably outweigh the benefit, especially as the probabilities are that the natural enemies of the plant-lice will put a stop to their ravages even sooner than artificial measures can do.

The natural enemies of these lice are of the usual kinds, and attack this species with their customary vigor. They include the common Coccinellidae (lady-birds) and their larvae, the larvae of *Syrphus* flies, and hosts of the parasitic *Aphidius*, which lays its eggs in the bodies of the lice. The extent to which this parasitism prevails at any given time, is a good index of the time the pest is likely to last, as the parasites, when once well started, multiply very rapidly, and will soon reduce the number of their hosts to insignificance. A parasitized louse may be recognized at a glance by the swollen body and the pale brown color—very different from that of the living insect. Where any large percentage of these are seen, only some unlucky turn of affairs can prevent the speedy suppression of the plant-lice, and the owner need waste little further anxiety on them."

THE LUNA SILKMOTH (*Tropæa luna*, Linnæus).

The enclosed moth was captured here this evening. We do not know what it is, whether injurious or not. Will you kindly inform us?

Frankfort, Marshall County, Kans., June 13, 1904.

Regarding the Giant Silkmths and Silkworms, which are classed in the order Lepidoptera, family Saturniidae, the references found in Comstock's Manual are sufficient for enabling a person to recognize the common species. The author says: "The large size of the members of the Saturniidae, and the ease with which the cocoons of most of the species can be collected, render them well known to every beginner in the study of entomology. The family includes our largest lepidopterous insects; and all of the species known to us are above medium size. They are stout-bodied, hairy moths, with more or less sunken heads, and strong, wide wings, often furnished with transparent, window-like spots.

California and Return

\$45.00

The 29th Triennial Conclave, Knights Templar U. S. A., and Sovereign Grand Lodge I. O. O. F., at San Francisco in September, are the next occasions for which the Santa Fe will make reduced rates to California. Any one, whether member or not, may take advantage of the reduction. If you're going to make the California tour, this is your chance to do it economically, comfortably, and thoroughly. On sale August 15 to Sept. 10, inclusive. Limited to October 23.

For full particulars address the undersigned. Descriptive Literature free.

T. L. KING, Ticket Agent, Atchison, Topeka & Santa Fe Ry. Co., TOPEKA, KANS.

The larvae live exposed on the leaves of trees and shrubs; they are more or less armed with tubercles and spines,

verse yellow line on the back between each two abdominal segments. The cocoon is very thin, containing but little silk."

The caterpillar when grown descends to the ground and forms its cocoon among leaves away from the tree.

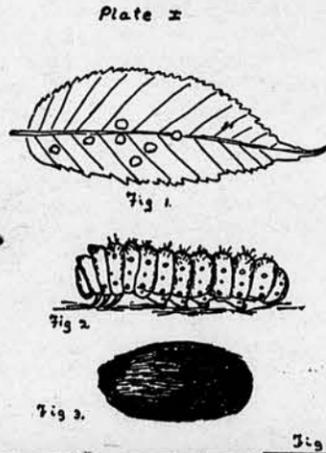
The insect likely occurs in Kansas wherever its food trees grow; it has been captured as far to the southwest as Winfield and Arkansas City, Cowley County.

One moth was received July 29, from 102 Perry St., Lawrence, Kans.

THE CECROPIA SILKMOTH (*Samia cecropia*, Linnæus).

I am forwarding you a specimen of what I suppose is a butterfly, though not being versed in the ways of entomology, I will leave that for you to decide. I am a farmer, and, being in close touch with nature, I have become acquainted with all the common kinds of insects; but this one is something I have never seen before. So I must turn to that fountain of knowledge, the University of Kansas. You may keep the specimen if you think it worth while. But I would ask, as a special favor, that you write me telling what species it belongs to, and if it is a rare variety or not, and oblige.

Marion, Marion County, Kans., June 26, 1904. Another kind of silkmth belonging to the same family as the Luna, just



Life History of the Luna Silkmth.—Fig. 1, walnut leaf, showing disposition of eggs, generally in rows of 3 or 4; Fig. 2, larva or caterpillar; Fig. 3, cocoon, showing opening in end through which the moth has emerged; Fig. 4, moth or imago. (Figures reduced to two-thirds natural size, from original drawings by Miss E. Stanton.)

and are very conspicuous on account of their large size. They transform within silken cocoons, which are usually very dense, and in some cases have been utilized by man. These cocoons are often attached to trees and shrubs, and are sometimes inclosed in a leaf. They can easily be collected during the winter months, and the adults bred from them.

The magnificent Luna moth is a great favorite with amateur collectors. Its wings are of a delicate green color, with a purple-brown band on the costa of the fore wings; there is an eye-like spot with a transparent center on the discal vein of each wing; and the anal angle of the hind wings is greatly prolonged. The larva feeds on the leaves of walnut, hickory, and other forest trees. It measures when full grown about three inches in length. It is pale bluish green with a pearl-colored head. It has a pale yellow stripe along each side of the body, and a trans-



Life History of the Cecropia Silkmth.—Fig. 1, section of leaf showing disposition of eggs, generally laid on upper side in short rows; Fig. 2, larva or caterpillar; Fig. 3, cocoon; Fig. 4, moth or imago. (Figures reduced to one-half natural size, from original drawings by Miss E. Stanton.)

described, can very readily be mentioned here; for the general characters and life history of the latter, as quot-

DON'T BUY GASOLINE ENGINES

UNTIL YOU INVESTIGATE "THE MASTER WORKMAN." A two-cylinder gasoline engine superior to all one-cylinder engines. Has no vibration, can be mounted on any light wagon as a portable tractor. Weighs less than half of one-cylinder engines. Especially adapted for irrigation in connection with our centrifugal force pumps. (Sizes 2, 3 1/2, 4, 5, 6, 8, 10, 12 and 16 Horse Power.) High-grade Gasoline Engines, 3 to 6 horse power—adapted for Electric Lighting, Marine and Pumping purposes. Mention this paper. Send for catalogue. THE TEMPLE PUMP CO., Manfra, Meagher and 16th Streets, CHICAGO, ILL. This is our 50th year.

ed, will apply as well to this species, though in appearance, Comstock describes it in his Manual as follows:

"The Cecropia Moth (*Samia cecropia*).—This is the largest of our Giant Silkworms, the wings of the adult expanding from five to six and one-half inches. The ground color of the wings is a grizzled, dusky brown, especially on the central area. The wings are crossed beyond the middle by a white band, which is broadly margined without with red, and there is a red spot near the apex of the fore wing just outside of a zigzag line. Each wing bears near its center a crescent-shaped white spot bordered with red. The outer margin of the wings is clay-colored. The larva is known to feed on at least fifty species of plants, including apple, plum, and the more common forest-trees. When full grown it measures from three to four inches in length and is dull bluish green in color. The body is armed with six rows of tubercles, extending nearly its entire length, and there is an additional short row on each side on the ventral aspect of the first five segments following the head. The tubercles on the second and third thoracic segments are larger than the others, and are coral-red. The other dorsal tubercles are yellow, excepting those of the first thoracic and last abdominal segments, which with the lateral tubercles are blue; all are armed with black bristles.

"The Cecropia moth occurs from the Atlantic coast to the Rocky Mountains."

From Hill City, Kans., July 22, fourteen grown caterpillars found on small choke cherry-trees, were sent to the University of Kansas, and when received seven of them had formed cocoons.

THE BLACK KISSING BUG (*Melanolestes picipes*, Herrich-Schaeffer).

Inclosed is a couple of bugs which we wish you would analyze and let us know if they are poisonous. My wife was bitten on the finger by one of them, and, in about twenty minutes after she was bitten, she found difficulty in breathing. She walked out on the porch and took a drink of water when she became numb all over and could hardly speak, her tongue feeling two or three times larger than it was. We washed her face in camphor and gave her four runningover tablespoonfuls of pure alcohol. She felt no effect of the alcohol. They are new around this part of the country and the people here are anxious to know what they are. We would like to have you send us a report of them, and oblige. Redfield, Bourbon County, Kans., June 26, 1904.

In the order Hemiptera Heteroptera, the true bugs which carry their wings, when present, folded over each other



The Black Kissing Bug.—Natural size, drawn by Miss E. Stanton.

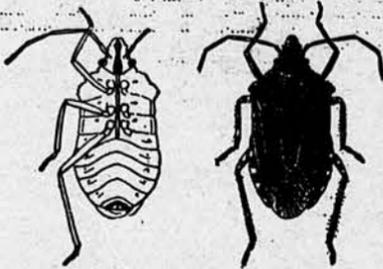
on their back, is a family, the Reduviidae, commonly called Assassin Bugs. The specimens submitted with the above letter have been named *Melanolestes picipes*, which, translated, means "black-noted black robber." The insect is three-fourths inch long and entirely black in color; it is provided with long antennae, and is active either flying or running. Under the head is a stout three-jointed beak with which it can inflict painful stings. All members of the family are predaceous, feeding on other insects whose blood they suck. They are also known as "annihil bugs" and "pirate bugs." Several kinds have gained notoriety through newspaper mention as "kissing bugs," and many persons yet dread to meet with one as a result of the bite. Scientists assert that the bite of the kissing bug is not poisonous or more dangerous than that of a mosquito. Yet some persons suffer more from bites than others, and one subject to nervous fright on being bitten by a dreaded insect may have a case for exaggerating the effect.

This same kind of insect is common in the houses of Lawrence, appearing at night seemingly in search of prey, and it has been taken from May until October.

A PENTATOMID TREE-BUG (*Brochymena quadripustulata*, Fabricius).

I send you under separate cover a small box containing two insects, which please submit to your entomologist and let me know the name and habitat. They were found on a pear-tree, the limbs of which they were puncturing with their bills, causing blight.

Kansas City, Kans., July 6, 1904. These insects are true bugs of the order Hemiptera Heteroptera and belong to the stink-bug family, called



A Pentatomid Tree-Bug, somewhat enlarged, lower and upper sides. Copy from plate of U. S. Dept. of Agriculture.

Pentatomidæ. The species, known as *Brochymena quadripustulata*, is very common throughout the Eastern United States and Canada, and even ranges westward to Arizona, Utah, and California. Few instances are known of the *Brochymena* being injurious to fruit-trees, such as apple and plum, so that the pear as mentioned in above letter may be new to the list of food plants. L. O. Howard, in *Insect Life*, Vol. 7, records a complaint from Virginia that many twigs and limbs of apple-trees were killed by the insect. He advised the kerosene-soap emulsion spray, although no great damage was anticipated.

F. M. Webster, in Bulletin 68, Ohio Agricultural Experiment Station, recommends: "In young orchards, it would seem practicable to shake or jar them off and kill them. If both eggs and young are found on the trees, or if it becomes necessary to fight the pest in the vineyard, kerosene emulsion can be applied, but this must not be used on grapes after the fruit has set on account of spotting it and thus injuring the market value."

Specimens of the above species have been collected for the University of Kansas, in Douglas and Hamilton Counties, thus showing their range to extend across Kansas. The insect measures five-eighths inch in length.

Tomato Plants Dying.

EDITOR KANSAS FARMER:—Can you give me any information in regard to my tomatoes? I have four or five varieties and all are affected the same way. The plants are dying at the bottom; the leaves seem to die first, then the stem, and finally the whole plant. No fruit to speak of is setting and what is on the vines is rotting.

MRS. M. KARENBERG.

Wood County, Oklahoma. From your description it is hardly possible to say just what the disease is, but it is quite probable that both tomato blight and tomato rot are to be found upon your plants, as these diseases have been quite prevalent this season.

About the only treatment which is practiced in a commercial way is the use of Bordeaux mixture. For best results, spraying should be commenced while the plants are young and repeated at intervals until the crop begins to ripen. The maintenance of good sanitary conditions in the tomato-patch is believed to be very helpful; all diseased fruits and leaves should be removed and buried or burned and the soil cultivated frequently. This treatment is about all that can be done to prevent or check tomato diseases which are believed to be caused by bacteria and which are not so well understood as the blight and the rot.

ALBERT DICKENS.

Constant cutting will kill out all kinds of weeds.



Many women are denied the happiness of children through derangement of the generative organs. Mrs. Beyer advises women to use Lydia E. Pinkham's Vegetable Compound.

"DEAR MRS. PINKHAM:—I suffered with stomach complaint for years. I got so bad that I could not carry my children but five months, then would have a miscarriage. The last time I became pregnant, my husband got me to take Lydia E. Pinkham's Vegetable Compound. After taking the first bottle I was relieved of the sickness of stomach, and began to feel better in every way. I continued its use and was enabled to carry my baby to maturity. I now have a nice baby girl, and can work better than I ever could before. I am like a new woman."—MRS. FRANK BEYER, 22 S. Second St., Meriden, Conn.

Another case which proves that no other medicine in the world accomplishes the same results as Lydia E. Pinkham's Vegetable Compound.



"DEAR MRS. PINKHAM:—I was married for five years and gave birth to two premature children. After that I took Lydia E. Pinkham's Vegetable Compound, and it changed me from a weak, nervous woman to a strong, happy and healthy wife within seven months. Within two years a lovely little girl was born, who is the pride and joy of my household. If every woman who is cured feels as grateful and happy as I do, you must have a host of friends, for every day I bless you for the light, health and happiness Lydia E. Pinkham's Vegetable Compound has brought to my home. Sincerely yours, MRS. MARY P. WHARRY, Flat 31, The Norman, Milwaukee, Wis."

Actual sterility in woman is very rare. If any woman thinks she is sterile let her write to Mrs. Pinkham at Lynn, Mass., whose advice is given free to all would-be and expectant mothers.

\$5000 FORFEIT if we cannot forthwith produce the original letters and signatures of above testimonials, which will prove their absolute genuineness. Lydia E. Pinkham Med. Co., Lynn, Mass.

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 Our Hapgood Anti-Trust Range, \$21.75
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 The only manufacturing company in the world in their line selling direct to the consumer.

The Poultry Yard

CONDUCTED BY THOMAS OWEN.

Pullets for Layers.

It is the pullets that do the late fall and early winter laying, and if we would have an abundant supply of eggs at the time of highest prices, a goodly proportion of our birds must be early-hatched and well-grown pullets. An experiment illustrating the double profits to be gotten from pullets, as compared with year-old hens, was carried on at the Utah Experiment Station not long ago, and the results were most instructive. Two pens of old hens averaged eighty-five eggs apiece, while two pens of pullets averaged one hundred and seventy eggs apiece, exactly double the number. The doubled number of eggs laid by the pullets does not rightly present the ratio of profit, however, because from one-half to two-thirds of the increase comes at a time of decidedly higher prices, hence the proportion of profit is much more than double. In this Utah experiment the average value of the eggs per hen was 78 cents, while that of the eggs per pullet was \$1.78. The food, cost, labor and interest on buildings is no greater for a pullet than it is for a hen, and it would seem to be the part of wisdom to have the bulk of our flocks early hatched and well grown. The oldest hens in above experiment were not 2 years old. How much less the percentage of profit would have been if 3- or 4-year-old hens were used! There are many such on the farms of the country. Sell off the most of your old hens.

Poultry Entries for World's Fair.

The rules of the department of live stock of the Universal Exposition provide that a separate application blank for making entries must be used by respective exhibitors of each variety of poultry, ducks, geese, turkeys, etc. The perfect form of blank provided for entry of poultry exhibited at the World's Fair saves the exhibitor all the usual troubles of writing the details concerning entries. After giving the number of the class and variety of the poultry he exhibits at the top of the blank nothing further is necessary to complete the same than to check the entries the exhibitor may wish to make, name the breeder, sign his name and forward the blank with remittance for coops to Col. Charles F. Mills, chief of the Department of live stock, World's Fair grounds, St. Louis, Mo.

The World's Fair of 1904 is the first exposition to give due recognition to the breeder of the prize stock exhibited and the rule relating thereto reads as follows:

"4. Awards to breeders will follow those in the regular classes to owners and consist of badges and certificates. The badges and certificates will be provided for the purpose of thereby giving due prominence to the breeder's skill, which makes possible the exhibition of animals worthy of a prize at the Universal Exposition of 1904."

Exhibitors of poultry will see the necessity of filing without delay with the chief of the department of live stock of the World's Fair a list containing the names of each variety of land and water fowls, capons, etc., for which blanks are desired.

Mr. T. E. Orr, superintendent of poultry for the World's Fair, is making preparations for an exhibit of ten thousand birds, and can not be expected to manage this great undertaking successfully unless exhibitors file complete and correct applications for the entry of their birds. Exhibitors of poultry generally have made up their minds what they will show at the World's Fair, and should not delay filling entries.

Poultry Notes.

The breeding season being now over, we would advise the selling off of all stock not intended to be kept

over for another year. Where fowls are kept for home and market purposes only, it is best to dispose of all hens over 2 years old, as they then cease to be valuable as egg-producers. But with the fancier it is different, and if he has some extra good hens, they can be kept to advantage for several years. The chicks from old hens are larger, stronger, grow faster and develop into better birds than those from pullets. You will not get so many of them, but the quality will more than overbalance the quantity.

A flock of fowls is capable of saving certain portions of crops that can not be sold to advantage, as immature, small potatoes, windfall apples, etc. There is always on a farm a lot of valuable refuse which can not be saved except by the use of poultry. It is true that a pig is also serviceable in that respect, but the hens give more immediate returns, supplying eggs daily and bringing in cash when there are no returns from other sources. In keeping a flock of fowls, the object should be to feed nothing to them that can be sent to market, as long as there is something unsalable, that will answer the purpose. Economy adds to the profit, and one of the chief purposes in keeping a flock is to utilize the waste products.

A large quantity of excellent meat suitable for poultry is wasted in the country every year. Old horses that are intended for destruction are as suitable as ordinary beef for chickens. In France, the poultry plants make a practice of buying old, worn-out horses and slaughtering them for chicken feed. More money can be realized from a useless horse by taking off the hide, feeding the meat and using the bones for fertilizers, than by any other mode of disposing of it. Any kind of meat answers for poultry. Where rabbits are plenty they can be utilized for chicken feed. Horses can be converted into "ground meat" and sold in that form. They can be used to better advantage if the meat is fresh. A green bone cutter will reduce both bones and meat to a fineness suitable for poultry and increase the number of eggs wonderfully. In winter such meat will keep for a long time. It pays better to use horses for a large flock than to buy grain, as the extra number of eggs secured will more than return the cost of the meat. Meat will induce hens to lay when all other means fail. We have often thought that if all the useless dogs that are kept in the country could be ground up into sausage meat and fed to hens, what a grand thing it would be for the farmer, in saving him the great damage the dogs do and converting them into a revenue making agency in the production of more eggs.

Father—Now, see here! If you marry that young pauper, how on earth are you going to live?

Sweet Girl—Oh, we have figured that all out. You remember that old hen my aunt gave me?

"Yes."

"Well, I have been reading a poultry circular, and I find that a good hen will raise twenty chicks in a season. Well, the next season that will be twenty-one hens; and as each will raise twenty more chicks, that will be 420. The next year the number will be 8,400, the following year 168,000, and the next 3,360,000! Just think! At only fifty cents apiece we will have \$1,680,000. Then, you dear old papa, we'll lend you some money to pay off the mortgage on this house."—New York Weekly.

I won't ask enny man to prove to me that there iz a hell, or a heaven, but I will give him 80 dollars, if he will prove to me what makes a hen's egg white, and a turkey's egg speckled.—Billings.

The St. Louis Line is Open.

The new Rock Island line to St. Louis, the best new railroad ever built in the West, is operating service daily Kansas City to St. Louis, commencing Sunday, June 5, at 7.50 p. m. This is the only line offering passengers a view of the entire World's Fair grounds before stopping at the main

gate to discharge passengers. For full information address, Jas. A. Stewart, General Agent, Kansas City.

Kansas Fairs in 1904.

Following is a list of fairs to be held in Kansas in 1904, their dates, locations, and secretaries, as reported to the State Board of Agriculture and compiled by Secretary F. D. Coburn:

Allen County Agricultural Society, J. T. Tredway, secretary, LaHarpe; September 6-9.

Barton County Fair Association, W. P. Pedler, secretary, Great Bend; September 12-15.

Brown County—Hiawatha Fair Association, Elliott Irvin, secretary, Hiawatha; September 6-9.

Butler County Fair Association, H. M. Balch, secretary, Eldorado; September 19-24.

Chautauqua County—Hewins Park and Fair Association, W. M. Jones, secretary, Cedar Vale; September 20-22.

Clay County Fair Association, E. E. Hoopes, secretary, Clay Center; September 6-8.

Coffey County Agricultural Fair Association, S. D. Weaver, secretary, Burlington; September 12-15.

Cowley County Agricultural and Stock Show Association, W. J. Wilson, secretary, Winfield; August 20-September 2.

Cowley County—Eastern Cowley Fair Association, J. M. Henderson, secretary, Burden; September 7-9.

Crawford County Agricultural Fair Association, Frank McKay, secretary, Pittsburg; September 12-15.

Elk County Agricultural Fair Association, J. F. Deal, secretary, Grenola; September 14-16.

Finney County Agricultural Society, A. H. Warner, secretary, Garden City; August 24-26.

Ford County Agricultural Association, J. H. Churchhill, secretary, Dodge City; August 29-September 1.

Franklin County Agricultural Society, Carey M. Porter, secretary, Ottawa; September 6-10.

Greenwood County Fair Association, C. H. Weiser, secretary, Eureka; September 13-16.

Harper County—The Anthony Fair Association; H. E. Whitney, Secretary, Anthony; August 23-26.

Harvey County Agricultural Society, John C. Nicholson, secretary, Newton; October 3-7.

Jefferson County Agricultural and Mechanical Association, Geo. A. Patterson, secretary, Oskaloosa; September 6-9.

Jewell County Agricultural Association, Henry R. Honey, secretary, Mankate; September 6-9.

Marshall County Fair Association, E. L. Miller, secretary, Marysville; September 13-16.

Miami County Agricultural and Mechanical Fair Association, H. A. Floyd, secretary, Paola; September 27-30.

Mitchell County Agricultural Association, P. G. Chubbic, secretary, Beloit.

Morris County Exposition Company, M. F. Amrine, secretary, Council Grove.

Nemaha County Fair Association, W. H. Fitzwater, secretary, Seneca; August 31-September 2.

Neosho County Fair Association, H. Lodge, secretary, Erie; September 27-30.

Neosho County—Chanute Fair and Improvement Association, A. E. Timpans, secretary, Chanute; August 29-September 2.

Ness County Agricultural Association, I. B. Pember, secretary, Ness City; September 23-30.

Norton County Agricultural Association, L. V. Graham, secretary, Norton; August 30-September 2.

Osage County Fair Association, E. T. Price, secretary, Burlingame; September 6-12.

Reno County—Central Kansas Fair Association, A. L. Sponsler, secretary, Hutchinson; September 12-24.

Rice County Agricultural Fair and Live-Stock Association, W. T. Brown, secretary, Sterling.

Riley County Agricultural Association, R. T. Worboys, secretary, Riley; October 4-6.

Rocky County Fairs Association, Olmer Adams, secretary, Stockton; September 21-22.

Sedgwick County—Southern Kansas Fair and Carnival Association, H. L. Realing, secretary, Wichita; September 28-October 1.

Shawnee County—Kansas State Exposition Company, C. H. Samson, secretary, Topeka; September 12-17.

Smith County Fair Association, E. S. Rice, secretary, Smith Center; August 23-26.

Stafford County Fair Association, G. E. Moore, secretary, St. John; September 7-9.

Wilson County—Fredonia Agricultural Association, J. T. Cooper, secretary, Fredonia; August 23-24.

State Fairs and Live-Stock Shows.

Missouri State Fair, Sedalia, August 15-August 19.

Iowa State Fair, Des Moines, August 22-August 29.

Minnesota State Fair, Hamline, August 29-September 3.

Nebraska State Fair, Lincoln, August 29-September 2.

Ohio State Fair, Columbus, August 29-September 2.

Wisconsin State Fair, Milwaukee, September 5-September 9.

Kentucky State Fair, Lexington, September 5-September 10.

Pennsylvania State Fair, Bethlehem, September 6-September 9.

New York State Fair, Syracuse, September 5-September 10.

Indiana State Fair, Indianapolis, September 12-September 16.

South Dakota State Fair, Yankton, September 12-September 16.

Central Canada Exhibition, Ottawa, September 16-September 23.

West Michigan State Fair, Grand Rapids, September 19-September 23.

Interstate Fair, Trenton, N. J., September 24-September 30.

Colorado State Fair, Pueblo, September 24-September 30.

Washington State Fair, North Yakima, September 26-October 1.

Illinois State Fair, Springfield, September 29-October 7.

Louisville Horse Show, October 3-October 8.

Kansas City Horse Show, October 17-October 22.

American Royal Live Stock Show, Kansas City, October 17-October 22.

San Antonio, Texas, International Fair, October 22-November 2.

Chicago Horse Show, October 24-October 29.

St. Louis Worlds Fair—Horses, August 23-September 3; Cattine, September 12-September 24; Sheep and swine, October 3-October 15; Poultry, dogs and cats, October 24-November 5.

National Horse Show, New York, November 14-November 19.

International Live-Stock Exposition, Chicago, November 23-December 3.

The World's Fair.

In making your arrangements for the World's Fair at St. Louis, this summer, if you consider convenience and saving of time, you will take the Wabash Railroad, as it runs by and stops at its station at the entrance of the fair grounds, thus saving several miles' run and return, and the inevitable jam at the big Union Station. By all means consider the advantages of the Wabash.

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ROSE COMB RHODE ISLAND REDS—Superb in colors. Extra fine layers, mated for best results. Eggs \$1.50 per 15. L. F. Clarke, Mound City, Kans.

NEOSHO POULTRY YARDS, Established 1882. Breeder of Rose Comb R. I. Reds and Buff Orpingtons, scoring from 91% to 94% points, by Atherton. Eggs the balance of the season, \$1 per 15. Stock for sale after July 1. J. W. Swartz, Americus, Kans.

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In the Dairy

Electric Sterilization of Milk.

The sterilization of milk is a problem that was once regarded as solved, but which is at present being earnestly discussed. The technical press has for several years been making public the profound transformations that heat brings about in the nutritive ingredients of milk. In order to sterilize milk, in fact, and guarantee its preservation almost indefinitely, it is necessary to prolong the action of fire for a considerable length of time. Ebullition of the liquid, however, even for a long time, does not by any means destroy all its germs, and, in practice, we are obliged to attain a temperature of 120° C. (248° F.) and continue the operation for twenty minutes in closed vessels. It is not astonishing that, through such a treatment, the milk should undergo a great modification. It is especially in infants that, through the gastric disorders that it occasions, we recognize the absence of digestive properties in milk thus treated. We remark, besides, in infants fed with sterilized milk, a tendency toward rachitis, due, it seems, to a want of phosphorus. The true cause of such anomalies has been found within the last few months. A very able chemist recently presented to the Academy of Sciences of Paris a highly interesting study of this subject based upon a long series of experiments. From this it results that in milk sterilized by the action of fire, lecythine, the valuable ingredient that furnishes the organism with the phosphorus necessary for its normal development, becomes transformed and ill adapted for absorption by the stomach, especially by that of infants. Although, on the one hand, hygienists wish to ostracize milk thus sterilized, the same disciples of Esculapius, on the other, put others on their guard against the germs of tuberculosis insidiously concealed in milk that has not passed through the sterilizing digester. The problem that therefore confronts us is this: how shall the microbes of milk be killed without altering the latter's composition? Some efforts have been made to solve this question, and in different ways. Ozone has been employed at various times on account of its bactericidal properties; and trial has been made also of oxygenated water, which is quite a powerful disinfectant, but the practical results obtained do not seem sufficiently encouraging to warrant the use of this agent. In order to effect the destruction of

the germs without carrying the action of fire too far, a partial saturation with oxygen has been tried. It is probable that in this direction the perseverance of experimenters will some day reach the solution of the important problem of milk sterilization. Driven to despair, and not knowing to what other saint to turn, an appeal has been made by some to electricity to perform for milk one of those numerous miracles that it alone can effect. The researches made up to the present day, especially in Italy, have not, however, given the results that were anticipated. Mr. Guarini and Dr. Samarini, nevertheless, have just solved the problem at Brussels after numerous and long researches. They have not only succeeded in sterilizing milk electrically, but have also explained why their predecessors were unable to obtain results reached by themselves. The alternating as well as the continuous current had been employed and it was concluded from the unsuccessful issue of the experiments that the problem could not be solved by electricity. Such was not the opinion of Messrs. Guarini and Samarini when they took up the question, since it was evident, a priori, that the investigators had not made their experiments with a sufficient knowledge of the phenomena invoked by them. In fact, for the experiments with a continuous current they had employed one generated by a few batteries or a high-tension one furnished by a static machine. If we consider that the deadly effects of the electric current are not produced by the tension, but by the intensity of the current, we shall see that the effects sought could be obtained in neither case. In the case of batteries the tension was too low to permit a current of sufficient intensity to traverse the milk, being given the great resistance of the latter. In the second case, the tension was sufficient, but the intensity was negligible, as it generally is in static machines. In order to verify the matter, Messrs. Guarini and Samarini, after trying the experiment again, with the same negative results, rendered it more striking by substituting fishes in the water for the microbes in the milk, and found that the animals exhibited no uneasiness in the presence of the current. The experimenters then employed a continuous current up to 170 volts, and, with a quart of milk, raised the intensity to five amperes. By extracting some of the milk at a certain distance from the electrodes, by means of pipettes, it was found that it was perfectly sterilized and could be preserved. Unfortunately, however, the experimenters were confronted by another difficulty, and that was that the milk, beginning in the vicinity of the electrodes, became coagulated. Upon employing fishes in water, the animals were of course perfectly electrocuted. Upon employing special electrodes with a current of water, the coagulation was much diminished and almost imperceptible. The experimenters nevertheless abandoned the continuous for the alternating current. In the first place they repeated the experiment of their predecessors, employing the Ruhmkorff coil. The milk was not sterilized, and the fishes, moreover, experienced but a slight shock. Messrs. Guarini and Samarini then had recourse to a 110-volt alternating current, with carbon electrodes. The milk was perfectly sterilized when the density of the current was adequate and was not coagulated when the frequency of the current was sufficiently elevated. It might be thought that it would prove advantageous to add to the milk certain substances of a nature to render it more conductive; but the experimenters found that such was not at all the case, and that in such an event it became necessary to employ a much stronger current. They made this fact evident by electrically treating some fishes in fresh and salt water. In the second case it required a much greater intensity to kill the animals than it did in the first, because the greater part of the current went through the water and not through the body of the living organism.

It may be concluded from these very interesting experiments that, in order to effect an electric sterilization of milk, the three following conditions must be realized: (1) The milk must be traversed by an alternating current of sufficient frequency to prevent the decomposition of the liquid; (2) the density of the current must be sufficient to electrocute the microbes; (3) the alternating current must be of a sufficiently high tension to overcome the somewhat high resistance of the milk. If we have only an alternating current of low tension at our disposal, we might at a pinch add a salt or an acid to the milk in order to render it more conductive. In this case there would be required a much greater current intensity and substances capable of being subsequently eliminated without altering the quality of the milk. As for the practical application of the process, the apparatus for that is very simple, and consists of a well insulated receptacle and two electrodes, say of platinized carbon. Two factors evidently intervene—the duration of the treatment and the intensity of the current. Since the use of electricity is daily becoming more general, it may be that the process will be adopted to a certain extent, since it gives absolutely sterilized and in no wise altered milk.—Emile Guarini, in Scientific American.

Clean Milking.

EDITOR KANSAS FARMER:—In the past year I have made a study of milking cows, and I have learned more about that art than I ever knew in my forty-five years of previous experience. In fact, I have come to the conclusion that for forty-five years I did not know the first principles of milking; and as there may be others just as ignorant as I have been, I may say a few things in this letter that may set them to thinking, and if I do I shall have accomplished much good.

In all probability, when the calf sucks the cow he draws the milk in the only clean way there is, and the closer we imitate his action the nearer we will approach to thorough cleanliness. As a precaution against dirt and flies, I blanket each cow in her stall in the cow barn, and pin a sack up over her tail. I then wash the udder in lukewarm water and wipe dry before milking.

The calf gets his food direct from the cow, hence unadulterated. But let us see how it is with the poor orphan baby that must be raised on cow's milk, or with any one else who uses milk that has been milked into an open bucket. Every cow that is milked in this way has mixed with her milk from twenty-five to thirty hairs, and about a hundred little specks of dirt and filth of the foulest sort.

The bucket I use has a covered top, which prevents any possible dirt from getting inside. The stream of milk leaves the cow's teat and only travels three inches until it strikes a strainer

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eight inches across, made of wires with 120 squares to the square inch (forty squares finer than the druggist's strainer and eighty squares finer than the ordinary milk strainer), and passes through this strainer into another which is still finer. From this it passes into a well or trap sunk into the middle of a sort of saucer made of tin, that is eight inches across and has one-fourth of its outer rim up-

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 Three competitors, each beaten hundreds of times singly, band together and enter a contest against the Sharples Tubular. Providing the "combine-of-three" are allowed to furnish the milk. Providing the "combine-of-three" dictate temperature of milk. Providing the "combine-of-three" dictate quantity of milk. Providing the "combine-of-three" run three machines, and if any one leaves less than double the fat of the Sharples Tubular they win. The "combine-of-three" select cold, hard-skimming cows' milk (62° to 70° 200 lbs. at a run).
The Result
 Sharples Tubular..... .05
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turned. Between this rim and near the well or trap, there is a perpendicular wall all around the well made of fine strainer wire cloth, so that the clean stream of pure milk leaves the cow and drops through the strainers into the saucer, thus areating it and evaporating all smells caused by the cows eating onions, rape, or silage. The amount of filth caught in the first strainer is surprising, especially when one considers that with the open bucket it is all dissolved in the milk and used for food.

Our scientific milk-teachers tell us how to ripen cream, areate, pasteurize and sterilize, but they never think of going to the fountain head and telling us how to keep the filth out of the milk in the first place.

J. CLARENCE NORTON.

Allen County.

Grange Department

"For the good of our order,
our country and mankind."

Conducted by E. W. Westgate, Manhattan, to whom all correspondence for this department should be addressed. Papers from Kansas Granges are especially solicited.

National Grange.

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Lecturer..... N. J. Bachelder, Concord, N. H.
Secretary..... C. M. Freeman, Tippicanoe City, Ohio

Kansas State Grange.

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National Master Jones in Kansas.

The ten days' campaign of Grange field meetings opened at the Haskell Institute at Lawrence.

One of the professors from the University, and Professors TenEyck and Calvin of the Agricultural College, at Manhattan, gave us interesting addresses.

The speech of the meeting was by Aaron Jones, master of the National range. Brother Jones gave a high-toned, able, and eloquent address, giving in a pleasing manner an account of some of the accomplishments of the order, among them being the creation of the Department of Agriculture at Washington, and the rural mail delivery. His address was well received and some encouragement given towards forming a subordinate grange in that vicinity.

On account of the unprecedented pressure of work on the farms, caused by the unusual amount of rain, the audience was much smaller than it would have been under ordinary circumstances.

At McLouth, the next day, we met a large audience. The rain of the previous night rendered field work impossible. Past State Master Reardon was master of ceremonies and did much towards the success of the meeting. It was said to have been the most important grange meeting ever held in McLouth. Stores and business places were closed during the hours of the speaking and business men gained new ideas of the aims and objects of the Grange. Several applications for membership were received after the meeting.

Brother Reardon accompanied us to Meriden for the next day. The meeting was in a beautiful grove two miles from town. Master A. E. Dickinson had control of arrangements. Several members of Indian Creek Grange were present, coming some miles for the occasion. The audience was small for the same reason as at Lawrence.

After an all night's journey by rail we found ourselves at Canton. Bro. J. S. Hoover met us at the depot and entertained us till near noon, when we went out to a large and beautiful

grove, every tree in which had been planted by the owner of the farm. Professors TenEyck and Calvin were with us again. The grange here is of recent organization and was greatly encouraged by the presence of the National master. A secret session was held in the evening and thorough instruction given in the unwritten work of the order.

At Carbondale, on Monday, a large and enthusiastic audience greeted us. Three granges united their efforts and did all that could be done for the success of the meeting. The Hon. J. W. Robison, president of the Live-Stock Association, gave an address upon transportation. The necessity for work in the corn-fields kept hundreds away from the meeting, and yet there were fully a thousand present, several of whom had shown their interest in the meeting by working in the fields on Sunday to gain time to hear Brother Jones. This county (Osage) is probably the most active in Grange work in the State. The only Pomona Grange in the State is in this county.

At Garnett and Paola smaller audiences received us, but equally good work was done and many declared their determination for more earnest Grange work.

On Thursday, at Cadmus, the largest crowd of the series greeted us, nearly 3,000 being present. Professor Dickens and Miss Minis, librarian of the Agricultural College, were present on invitation of the Grange, and added much to the interest of the meeting. Cadmus Grange is the largest one in the State and always rises to the demands of the occasion at picnic time. This was the fourth time Brother Jones had addressed the Cadmus picnic, and he pronounced it the most satisfactory he had attended here. All unnecessary machines for making noises had been ruled off the grounds here, as at all other places we visited.

A terrific thunder storm immediately after the speaking added excitement, and the crowd was in no sense a dry one at its close. But good nature prevailed and all made the best of it. Some left the grove in a hurry, among them the escort of Brother Jones. Others stayed till the storm was over, of whom your humble servant was one. Result—Brother Jones could not be found till noon next day, when I discovered him at a hotel at Fontana, eight miles distant. It is not necessary to add that the evening meeting at New Lancaster was postponed to some more convenient season when a thunder storm may not interfere.

Our last appointment was at Olathe, where fully a thousand listened in rapt attention to Brother Jones, in this probably his last address to a Kansas audience as an officer of the National Grange. At Olathe, as at all other places, those who had torn themselves from their much-needed farmwork and come to hear Brother Jones felt well repaid for their effort. State Master Westgate spoke for ten or fifteen minutes at each of the meetings, giving an account of Grange work in the State, and condition of the insurance company conducted by members of the order.

A Grange Picnic.

EDITOR KANSAS FARMER:—Passing through Osage County, Kansas, on our way to St. Louis, we heard of a great picnic to be held by the Patrons of Husbandry in a grove north of Scranton. We resolved to stop over and attend. Arriving on the grounds at 11 o'clock, we expected to see a crowd of chin-whiskered farmers with hayseed in their hair and perhaps milk on their boots, and also thought we would see a crowd of tired-looking women and fussy babies. We got left. There were broadcloth suits and "biled" shirts galore; handsome men, beautiful women, and we saw but two babies, and these were rosy-cheeked, fat, crowing little fellows.

As we made our appearance, the "meeting" was in session. A Miss Montgomery was delivering a recitation. She is from Burlingame, a "first grade" school ma'am of Osage County,

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and a leader in the Grange work. As a public reciter she is peerless.

After dinner, Mr. Robison, president of the Stock-Breeders' Association, was introduced, a man of considerable note. He made an excellent speech. There were several songs by Carbondale Grange, and these were well rendered. Their basso would rival Beresford, of Chicago, and their soprano is a real prima donna, and their organist reminded us of a brass band; it was very good playing.

State Master Westgate made a rousing speech and delighted the audience.

National Master Aaron Jones, of Indiana, spoke for an hour or so and captivated all hearts. At the close of his speech the marshals were there, as Mr. Jones was in danger of being "Hobsonized."

The stage was decorated in red, white and blue. These are said to be the Grange colors.

We noticed a man distributing KANSAS FARMERS, and were so fortunate as to secure one. We found it very interesting.

After conclusion of the program there was a ball game, won by a Burlingame team, but we did not witness it.

To make a long story short, that picnic was a "rouser."

Wabaunsee County. HARMON JONES.

WEEKLY WEATHER CROP BULLETIN.

Weekly weather crop bulletin for the Kansas Weather Service, for the week ending August 8, 1904, prepared by T. B. Jennings, Station Director.

GENERAL CONDITIONS.

The temperature has been moderate during the week, though with some very cool nights. Showers have visited nearly all parts

RESULTS.

EASTERN DIVISION.

The early corn is generally well eared and has been laid by; while some of it is weedy, much of it is clean. Late corn is being cultivated and is growing rapidly but is beginning to need rain in some of the central and northern counties. Threshing continues, showing a fair yield of wheat, barley good, oats poor, flax fair and blue-grass good. Hay continues, and a large crop of fine prairie hay is being put up. Tame hay is all up and a good crop. The third crop of alfalfa is growing rapidly and promises a heavy crop. Plowing for fall wheat is becoming general but the ground is getting hard in Atchison, Chase and Lyon Counties. Apples promise a light crop in Johnson County.

Atchison County.—Rain badly needed; sub-soil moist but surface of ground dry and hard; some corn firing; tame hay all in stack and most of prairie hay.

Bourbon.—A heavy crop of prairie hay being harvested; corn in good condition and promises an average crop.

Brown.—Corn late but doing well and shooting on upland in north part, but needs rain in south; harvest all done; wheat a light yield; oats poor.

Chase.—Ground baking and too hard to plow; corn needs rain badly.

Chautauqua.—Corn improving and promises a good crop; wheat much better than expected two weeks ago; third crop of alfalfa will be heavy; fall plowing in progress.

Coffey.—Corn needs rain; cultivation of late corn continues; a good crop of prairie hay being put up; threshing continues; fall plowing in progress; ground getting dry.

Franklin.—Haying about finished; corn looks well; threshing in progress; oats a poor crop; flax light to fair, and blue-grass light to very good.

Jackson.—A fine week for haying; tame hay all up; corn needs rain.

Jefferson.—Rains the first of week were very much needed and have improved growing crops; oat crop light; cabbage rotting badly.

Johnson.—A good week for farmwork and threshing; oats, wheat, and blue-grass either thrashed or in stack; corn making good growth but generally weedy and late; fall plowing begun; apples very light crop and of poor quality.

Linn.—Good weather for the completion of harvest, and clover and timothy haying; late corn has been cleaned of weeds and is doing well; yield of wheat rather light.

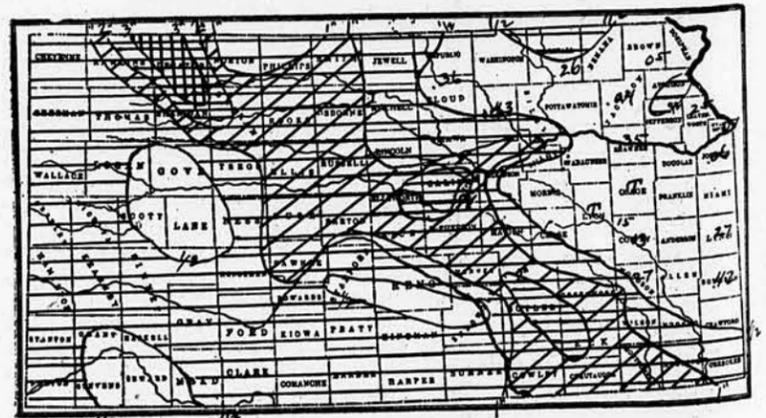
Lyon.—Ground baked very hard; corn needs rain.

Marshall.—Threshing in progress; wheat and oats poor in yield and quality; in south part corn is very backward and needs rain, and plowing is difficult as the ground is baked hard after being wet; in north part conditions are better; a good rain has put the ground in fine condition and growing crops are doing well; pastures good and stock doing well.

Montgomery.—Soil in fine condition for plowing; all crops doing well; rains and heavy dews have delayed haying and threshing.

Osage.—A good week for haying; corn needs rain.

Rainfall for Week Ending August 6, 1904.



SCALE IN INCHES.

Less than 1/4. 1/4 to 1. 1 to 2. 2 to 3. Over 3. T. trace.

of the State, the central and western counties faring better than the eastern. The rainfall was heaviest in Decatur County; it was heavy from Decatur southeastward across the State to Chautauqua and Montgomery Counties. It was least in Pottawatomie in the east and Lane in the west.

Pottawatomie.—All crops doing well; rain would be beneficial now.
Riley.—Corn silking; early corn setting well; crops not suffering for rain; pastures good; Kafir-corn, soy-beans, cow-peas, etc., are doing well; threshing continues with a light yield and poor quality, especially wheat;

KANSAS GOOD ROADS' ASSOCIATION.

(Continued from page 707.)

tunates are used economically and to great advantage in this direction. North Carolina is constructing macadam roads with such labor at a cost of less than \$3,000 per mile, while similar roads constructed with free labor in Northern States are costing from \$5,000 to \$8,000 per mile. The able-bodied convicts in a large number of Northern prisons are leased to contractors at 50 cents per day in the manufacture of boots and shoes, harness, wagons, chairs, binding-twine, etc., thus bringing this labor at a ruinous price into competition with free labor. These convicts are housed, clothed and fed at the expense of the State. It is an iniquity which should be stopped. All who have committed offenses against the State, unless it is the most vicious, should be placed in stone quarries or stockades to prepare material, load it on cars, and place it upon the public roads. The annual arrests in the United States are nearly one million. Criminal expense and charities are increasing. A vast army of tramps and vagrants drift unmolested from State to State; many States have not even provided vagrancy laws for the control of this class. All States should enact such laws, compelling this army of idlers to work upon the highways and kindred public improvements.

It was my pleasure to attend an International Good Roads Convention at St. Louis, Mo., May 15 to 21, 1904. While there, I listened to some of the most distinguished road-builders in the world, and I think one of the best speeches I ever heard in my life was made by the Hon. A. W. Campbell, Commissioner of Highways of Toronto, Canada. Nearly all the foreign nations were represented by some distinguished road-builder, also every State and Territory had delegates to the convention. We not only had the pleasure of listening to the foreign gentlemen, but also to some of our Congressmen, United States Senators, Ex-Governors, Governor, and the Secretary of Agriculture, all of whom most heartily endorsed the Government and State aid plan.

The National Good Roads' Association was created by the first National Good Roads' convention, which was held in Chicago in 1900. It has for its object the promotion of the permanent improvement of the public roads of the States and Territories of the United States, by education and demonstration of the science and art of road-building, the character and use of road-making machinery, scientific construction, proper material, drainage, grading, the creation of public sentiment which will demand modern legislation, providing the cooperation of the National, State and county governments for the uniform system of road improvement, thus equalizing the burden by prorating the cost upon all interests benefited, that is the commercial, manufacturing, industrial, and agricultural taxable wealth of the entire country, and in giving scientific and intelligent supervision, which means the securing of a uniform system of substantial public roads and highways. Such is the object of the National Good Roads' Association.

The founders of our Government strongly advocate the necessity of opening up and improving the means of internal communication. The immortal Washington retired from the pomp and circumstance of glorious war to occupy the honorable position of a sovereign citizen, and while conducting the affairs of his plantation, was president of a transportation company. The author of the Declaration of Independence, the founder of one of our great universities, and the eminent statesman who gave to us this vast empire west of the Mississippi, was right when he said: "It is more remunerative, splendid and noble for the people to spend money on canals and roads that will build and promote social intercourse and commercial facilities, than to expend it on armies and navies." He was right again when he said: "I experience great

satisfaction in seeing my country proceed to facilitate inter-communication of several parts by opening rivers, canals and roads."

Our Government has expended more than \$440,000,000 for the improvement of our harbors and waterways. If such expenditures of the National Treasurer have been made in the past for the development of railroads and waterways, is it not now more appropriate that the improvement of our roads should receive National attention and Government aid. The wealth of the Nation comes primarily from the ground. The factory and foundry utilize the products of the soil and mine. As agriculture is our principal industry, so the great mass of our rural people are our main dependence. Their patriotism, their public spirit, their welfare must ever be the salvation and glory of our republic. Therefore, every measure, whether by the National Government, the State, county, or municipal authorities, that can promote the welfare of the people, should be most earnestly advocated. Our greatest strength and strongest safeguards are in the character of our institutions and the sovereignty of our people, and every measure that benefits them and preserves the character and integrity of our institutions, promotes, perpetuates and magnifies the prosperity and glory of our common country.

When we wish to use descriptive adjectives to characterize great empires, and the men who made those empires great, invariably one of the adjectives used is to signify that they built roads. When we speak of the Romans we speak of them as rulers, as conquerors, as administrators, as road-builders. There were empires that rose over night and fell over night, empires whose influence was absolutely evanescent, who passed away without leaving a trace of their former existence. But wherever the Roman established his rule, the traces of that rule remain deep to-day, stamped on the language and customs of the people, stamped in tangible form upon the soil itself. Passing through Britain more than fifteen centuries after the domain of Rome passed away, we can see that the Roman roads still remain. The faculty, the art, the habit of road-building makes in a nation those solid, stable qualities which tell for permanent greatness. From the standpoint of historical analogy, we should have a right to ask that this people which has tamed a continent, which has built up a nation with a continent for its base, which itself, with truth, is the mightiest republic the world has ever seen, and which we firmly believe will in the century now opening rise to a place of leadership such as no other nation has yet attained—merely from historical analogy, I say, we should have a right to demand that such a nation build good roads, much more have we the right to demand it from a practical standpoint. The great difference between the semi-barbarism of the middle ages and the civilization which succeeded it, was the difference between poor and good means of communication. And we to whom space is less of an obstacle than ever before in the history of any nation, we who have spanned a continent, who have thrust our borders westward in the course of a century and a quarter from the Atlantic over the Alleghanies, down into the valley of the Mississippi, across the great plains, over the Rockies, to where the Golden Gate lets through the long, heaving waters of the Pacific, and finally to Alaska and the islands of the Orient, we, who take so little account of mere space, must see to it that the best means of nullifying the existence of space are at our command. Of course, during the last century, there has been altogether phenomenal growth in one kind of road, wholly unknown to the people of old, the railroad. The railway is of course something purely modern.

Now a great many excellent people have proceeded upon the assumption that having good railways was a substitute for having good highways; a more untenable position can not be imagined. What the railway does is

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C. E. STYLES, A. G. P. A., Kansas City, Mo.

F. E. NIPPS, Ticket Agent, Topeka, Kans.

to develop the country, and of course this development implies the need of more and better roads. A few years ago it was a matter, I am tempted to say, of National humiliation, that there should be so little attention paid to our roads, that there should be a willingness, not merely to refrain from making good roads, but to let the roads that were in existence become worse.

The extraordinary, wholly unheard of rate of our industrial development during the past seventy-five years, with the good phases, has also had some evil phases. It is a fine thing to see our cities build up, but not at the expense of the country district. The proper thing is to see both country and city go hand in hand. We can not expect the ablest, the most eager, the most ambitious young men to stay on the farm, unless they have certain advantages. Farm life is in too many cases a life of isolation, of mental poverty, a life in which it is a matter of great and real difficulty for one man to communicate with his neighbor. It is a good thing to encourage in every way any movement which will tend to check an unhealthy flow from the country to the city. There are several such movements in evidence at present. The growth of electricity as applied to transportation tends, to a certain degree, to exercise a centrifugal force to offset the centripetal force of steam. Exactly as the use of steam has tended to gather men into masses, so now electricity as applied to transportation tends to scatter them again. The trolley lines that go out through the country are doing a great deal to render it possible to live in the country, and yet not lose wholly the advantages of the town. The telephone

and rural free delivery are playing their part along the same lines, but one thing can do so much to offset the tendency toward an unhealthy drain from the country into the city as making and keeping good roads. They are needed for the sake of the effect upon the industrial conditions of the country districts, if winter means to the average farmer the existence of a long line of liquid morasses, through which he has to move his goods, bent on business, or wade or swim bent on pleasure. If an ordinary means that the farmer's girl and boy can not use their buggy or bicycle, a little heavy weather means the stoppage of all communication, not only with the industrial centers, but with the neighbors, then we must expect that there will be a great many young people of both sexes who will not find farm life attractive. The expenditure of money for the permanent improvement of the common roads can be defended, first, as a matter of justice to the people who do not live in the country; second, as a matter of advantage to the people who do not live in the country; third, on the ground that the welfare of the Nation demands that the comforts of the country life should, as far as possible, keep pace with the comforts of city life.

The improvement of the country roads can be justified also on the ground that the farmer, the first and most important of the producers of wealth, ought to be in a position to hold his crop and market it, at the most favorable opportunity, while present he is virtually under compulsion to sell it as soon as it is marketable because the roads may become impassable at any time in the fall, winter, or spring. Instead of being

own warehouse man, the farmer is compelled to employ middlemen and share with them the profits upon his labor. I believe as a matter of justice to the farmer he ought to have roads that will enable him to keep his crop and take it to market at the best time, and not to place him in a position where they can run down the price of what he has to sell during the months he must sell, and then, when he has disposed of it run the price up and give the speculator what the farmer ought to have. The farmer has a right to insist upon roads that will enable him to go to town, to church, to the schoolhouse, and to the homes of his neighbors as occasion may require, and, with the extension of rural mail delivery, he has additional needs for good roads in order that he may be kept in communication with the outside world, for the mail routes follow the good roads. The people most directly interested in the movement for better roads are those engaged in tilling the soil, constituting more than one-third of our population. There is no controverting the statement that the advancement of our agricultural interests should be the prime concern of every statesman and every patriot.

The farmers of the country have by energy and industry placed upon the market of the world such volume of the products of the soil as to affect the balance of trade with foreign countries, making us a selling instead of a buying nation. They have responded nobly to every call issued in the name of their State or Nation. When military or naval forces have need of recruits the farmers have sent to the ranks their most vigorous sons, many of whom fell in bloody conflict upon the battlefield. They have contributed their full share to the National Government in its adjustment of claims resulting from war, in its liberal policy for the development of the country, and have contributed to its enormous surplus in the National Treasury that almost staggers those responsible for its management. They, through their influence and support, aided improvements for the development for the various industries within the States. They never fail to regard their State and Nation with feelings of patriotism and love of country unexcelled among professional and industrial people. In view of these and other facts that might be stated, they now ask in the name of justice, that the road upon which they and we travel shall be improved before the surplus now held by the National Government is distributed to National Banks, without interest, or to the erection of expensive Government buildings in cities which has become a fixed policy of the Government. The 30,000,000 people of the country engaged in rural pursuits demand a recognition of their rights in the improvements of highways by National and State patronage.

While States are engaged in the erection of costly buildings for the various objects of charity and expensive penal institutions, made necessary by crime, largely the result of existing conditions in populous cities, the residents of rural communities should appeal to Congress and to the Legislature of their respective States for the adoption of the liberal policy in opening up the arteries leading to and from those great cities to the growth of which they have so liberally contributed. The call is unanimous from every farm home in the land, and is as sure to receive favorable response as night is sure to be succeeded by day. When claims are intelligently and vigorously presented and a comprehensive survey made of existing conditions by those in authority, there will be no effective opposition to them. Whatever can be done to hasten this result is a patriotic duty which we owe to our country, our State, and mankind.

Good Roads in Wilson County.

EDITOR KANSAS FARMER:—Thinking that our success in good-road building in Center Township, Wilson County, might interest readers of your valuable paper, I will write you a short account of what has been accomplished. In this township there are about sev-

enty miles of road, which, prior to May, 1903, had been under the supervision of seven road-overseers, none of whom had money or work enough in his district to much more than keep the culverts in repair, and what little work was done was poorly managed and of a very inferior quality, each overseer usually doing the work at or near his farm.

On May 1, 1903, our township board appointed an experienced road-builder as township supervisor, displacing the seven overseers. This man was instructed to hire men and teams and put certain roads in good repair and condition. He went to work with characteristic energy and graded eighteen miles of road at an average cost of \$85 per mile, paying men with teams \$2.50 per day and single hands one-half as much. The poll tax was reduced to \$2.

The method employed was to plow several furrows on each side of the road and with slips put the dirt about fourteen feet wide in the center of the road; this was gone over with the grader, and the road when completed was about eight feet wide on top, with a gentle slope to carry the water into the ditches.

Many serious objections were made to the roads; as, they were too steep; they were too narrow; some called them sweet-potato ridges and some kicked on doing a good day's work. These roads to the extent of some twenty-five miles have been sufficiently tested this wet year to prove their good qualities and superiority in many ways. In a few hours after a heavy rain a good load may be hauled over them, whereas it takes more than a week for the flat roads to dry sufficiently for heavy travel. When dry a much heavier load may be hauled over the new road than the old, thus lessening the cost of marketing farm produce. It is also a greater pleasure to travel to town over a good rather than a bad road.

This matter may be summed up about as follows: With the improved system, more good roads are made with the funds available; fewer culverts are necessary because the ditches along the grade carry the water a greater distance and to better outlets, thus reducing cost of maintaining roads; the cost of hauling and damage to wagons and buggies is lessened; there is light draft on terms; it shortens the time of a trip to market; increases value of adjacent lands; pleases the mail carrier and promotes the peace, harmony, and prosperity of the township. This method is giving entire satisfaction to our people and we would recommend it to others. I. N. GARDINER, Secretary, Wilson County Good-Roads Ass'n.

Over on page 797 will be found a new announcement by the Ratekin Seed House of Shenandoah, Iowa. This house has long been known as a reliable one from which to buy seeds, and their new announcement in regard to seed-wheat is particularly interesting. They have a new Malakoff wheat which has been especially raised for seed and which is cleaned of all impurities and for which they claim a yield of from 10 to 20 bushels more than common wheat, with a requirement of less seed per acre. The accompanying cut will give some idea of its appearance. Read their advertisement carefully and write them for their special seed-wheat catalogue, mentioning the Kansas Farmer.

World's Fair Visitors.

The pavilion erected by the Frisco-Rock Island Systems at Main Entrance of the World's Fair is surely a place of no little interest, in fact, it is one of the many attractions. Visitors to the World's Fair are cordially invited to inspect the Frisco-Rock Island System building. Here will be found a place of rest, courteous attention, besides, there will be distributed, free of cost, souvenirs and descriptive literature of the Great Southwest. The reader will, undoubtedly, overlook a very important attraction in case of a failure to visit the Frisco-Rock Island System pavilion. Remember, Main Entrance World's Fair.

National Encampment G. A. R., Boston, Mass., August 15-20.

The Chicago Great Western Railway will on August 11 to 13, sell round-trip tickets to Boston at very low rates. It will pay you to write or inquire of any Great Western Agent or J. P. Elmer, G. P. A., Chicago, for full information.

Tourist Rates.

The Frisco System will issue, during the summer months, Tourist round-trip tickets to various resorts and locations—the Mountains, Lakes and Seashore, at greatly reduced rates, with ample return limit. Call on nearest agent, or address Passenger Traffic Department, St. Louis.

\$45.00 to California and Return.

Lowest Rate in years!
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You have been waiting for just such an opportunity as this. Take advantage of it and join the army that will invade California this fall.

The Rock Island offers the most comprehensive system of through cars of any line crossing the continent. Go via Colorado; return via El Paso. For \$11 additional you can come back by way of Portland and Seattle. Folder giving full information free on request.



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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.

REGISTERED DUROC-JERSEYS Choice young stock for sale. Prices reasonable. Can ship on Santa Fe, M. K. & T., and Mo. Pacific. R. H. BRITTON, R. F. D. Lebo, Kans.

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

DUROC-JERSEY SWINE Also B. P. R. and R. C. B. Leghorn chickens. Stock for sale. Get our prices. MITCHELL BROS., BUXTON, WILSON COUNTY, KANS.

DUROC-JERSEY SWINE Prize-winning strains. Bred gilts all sold. A few fall pigs, choice ones, for sale. F. L. McClelland, R. 1, Berryton, Kans.

FAIRVIEW HERD DUROC-JERSEYS Now numbers 150; all head for our two sales, October 25, 1904, and January 31, 1905. J. B. DAVIS, Fairview, Brown Co., Kans.

Rose Lawn Herd Duroc-Jerseys Size and quality my specialty. Boars ready for service. Gilts bred or open. Spring pigs that are top-notchers. Prices reasonable for quick sales. L. L. Vrooman, Hope, Dickinson Co., Kans.

DUROC-JERSEYS We have a large number of excellent fall pigs sired by Red Duke 18663, the best son of Ohio King; and all are out of recorded sows. BUCHANAN STOCK FARM, Sedalia, Mo.

OSAGE VALLEY HERD **DUROC-JERSEYS** 100 spring pig out of three noted sires. Am ready for orders now. Write for description and price. A. G. DORR, Route 5, Osage City, Kans.

Rose Hill Herd of Duroc-Jersey Hogs I have for sale a choice lot of boars ready for service; gilts bred or open, and a fine lot of early spring pigs, all out of large, prolific sows and sired by well-developed boars. Special prices for next 30 days. S. Y. THORNTON, Blackwater, Cooper Co., Mo.

SOLOMON VALLEY HERD **Duroc - Jersey Swine.** No sows nor gilts for sale, males only. Visitors always welcome. Write me. W. F. GARRETT, Box 210, Forts, Kans.

POLAND-CHINA SWINE.

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

SHADY NOOK HERD Poland-Chinas, Up-to-date breeding. Correspondence solicited. Inspection invited. Wm. Plummer, Barclay, Kans.

Pure Bred Poland-Chinas of the Chief Tecumseh 2d, Black U. S., Wilkes, Free Trade, Cerwin and Short Stop strains. Address E. E. WAIT, Altoona, Wilson County, Kans.

Kansas Herd of Poland-Chinas has some fine January and March boars and one yearling Sunshine boar; also Rose Cigno White Leghorn chicks. F. P. MAQUIRE, HUTCHINSON, KANSAS.

Pecan Herd of Poland-Chinas Mode Tecumseh 64133, American Royal (S) 30783, and Best Perfection 81807 at head of herd. Write us your wants. J. N. WOODS & SON, Route 1, Ottawa, Kans.

RICHLAND Poland-China Herd—Headed by Prince Henry 86966 and Black Chief Perfection 26687; dams, Big Bone Beauty 178492, Richland J. F. Best 178498 and others of the Patchen-Perfection-I-Knew strains of best Poland-China blood; my hogs have been bred for good length and size, with extra good bone, yet true to best Poland-China type; a few bred sows and gilts for sale. Write D. C. Van Nice, Richland, Kan.

Clear Creek Herd Choice Poland-Chinas Sows of Missouri's Black Chief, Ideal Sunshine, Perfection, Wilkes, and Hadley Jr. blood. Herd headed by Tecumseh Skylight 29337, Hanna's Style 30773, Sherman's Corrector 30760, and Ideal Tecumseh 32185. Five very choice serviceable boars for sale cheap. Phone at farm. E. P. Sherman, Wilder, Ks.

HIGHLAND FARM HERD OF PEDIGREED POLAND-CHINAS Ten extra good fall boars weighing from 150 to 200 lbs. sired by Black Perfection 27132, dams sired by Corwin I. Know, Proud Tecumseh, Henry's Perfection, Spring Pigs by six of the best boars in the West. Seven and one-half miles northwest of Leavenworth. (I ship from Leavenworth. Eight railroads.) One mile west of Kickapoo on main line of Mo. Pacific. JOHN BOLLIN, Route 5, Leavenworth, Kans.

POLAND-CHINA SWINE.

Mains' Herd of Poland-Chinas Up-to-date breeding. Will sell one Chief Perfection 2d herd-boar. After Dec. 1 will sell a few herd-sows and a fine lot of fall pigs. Write for what you want. JAMES MAINS, Oskaloosa, Jefferson Co., Kans.

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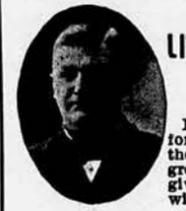
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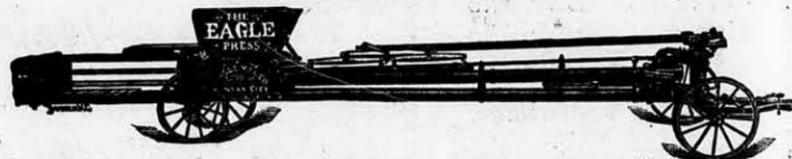
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