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THE KANSAS FARMER.

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Topeka, Kansas.

Weather Laws.—No. 6.

INFLUX AND EFFLUX.

The water, beyond question, is borne to the plains periodically. This influx is greater during some years than others. It is annually greater at some seasons of the year than at others. When the influx has been great, and it has been delayed in its escape so as to prolong the periods of the rains which attend its escape, the rainless period is reduced to its minimum, and when it has been small in amount and its escape has been favored, then the intervals without rain are prolonged and the drought attains its maximum duration, and is attended by its maximum of ill consequences.

A greater than usual prevalence of westerly winds, tends to remove the water out of the plains. A mild, rainless winter favors the escape of water from the plains, and if I am correct in my conclusion that after the water has escaped no more is added to the volume existing in earth and air until the next period of time when the temperature falls below the temperature of the sea, then such a condition tends to prolong the time of summer drouth, and to reduce the summer precipitation to its minimum value.

The condition of the plains as to the ability of its soil to retain water, is a circumstance which greatly affects the degree of atmospheric humidity during this period of efflux, (i. e., when more water is going out than is coming in).

Much has been written about the climatic changes going on upon the plains. All manner of causes, with and without reason, have been assigned for this supposed change. The expulsion of the buffaloes, the expulsion of buffalo grass, the introduction of tame grasses, the keeping down of fires, the planting of trees, the building of railroads and telegraphs, and the erection of lightning rods and other electrical conditions, have each and all been proposed as principal agencies in producing the alleged changes.

In 1874 I published in the FARMER a paper pointing out the influences of settlement in hastening and retarding the efflux of water. In this article attention was called to the fact that in Illinois the total effect of settlement was to produce climatic changes of an unfavorable kind. There, from the flatness of the surface before settlement, the water was held in lakes, swamps, ponds, marshes, and the like. But as the state became settled, railroads and highways were opened through these flats, and ditches cut, through which the water more rapidly escaped to the streams. The swamp lands becoming valuable the swamps were drained and every facility afforded for the most rapid escape of the waters which fell in rains, back to the sea. As a result, their streams rise to higher floods, and fall lower presently afterwards, than they did forty years ago. Brooks and creeks which were rarely fordable forty years ago, now run dry, and intervals of drought are more prevalent now than in the first thirty years of Illinois settlement. The curious results of this may be named in passing. Orchards no longer succeed in Illinois as they did prior to 1855. Quinces and pears have become uncertain, and recent reports indicate that the vast peach orchards of Madison and St. Clair counties are being abandoned as no longer profitable.

In Kansas and Nebraska, the "lay of the land" is different. Here the whole country is inclined to the southwest about four feet to the mile, and in a state of nature, before settlement, shed water with the greatest rapidity. Its surface was covered with a hard crust and a matted turf very slowly pervious to the falling rains or melting snows. Before settlement, upon the hypothesis that the water supply is nearly a constant quantity, that supply fell and rapidly flowed into the streams, and these rapidly rose to extraordinary heights, and when the rains of influx ceased, these waters being quickly gone, there remained no supply to moisten the air, and as a result the drought intervals were frequent and prolonged.

If now, by any influence, upon the assumption that the water borne inland is small in quantity and is laid down periodically, the escape of that water is delayed greatly, then we may expect that by its detention the air and soil will not become so arid as it formerly became. The detained water is evaporated, moistening the air, and presently down comes the water, again wetting up the soil, from which

again a portion is evaporated, and a portion escapes, after each precipitation, to the sea.

Without doubt this process is progressive both as to the incoming water and the outgoing water.

Upon the basin of the Missouri, the annual amount of water received is found to be enough to cover it to the depth of 3.13 inches, if all spread uniformly over it. This computation is easily made by simply measuring for a series of years the amount of water discharged by the Missouri into the Mississippi, and this the government surveyors have done. But the mean precipitation for the eastern half of the Missouri basin would cover the soil to the depth of 36 inches as the mean of the last fifteen years, and there are few places in the western half of that basin where the rainfall is less than 10.50 inches. To give, then, 36 inches of rainfall, our 3 inches of water must be rained down twelve times in the eastern half and not less than three times on the western half of the plains.*

The detention of the water of influx would then tend to augment the amount of reprecipitation. If, therefore, the settlement of the plains has tended in any considerable degree to increase the rainfall it has been by this process rather than by any augmentation of the actual volume of water annually brought in.

The breaking of the turf and the opening of a deep, porous layer of soil for the absorption of water, would unquestionably thus detain the escaping waters somewhat beyond the time they would otherwise escape, and re-evaporation would increase the number of rains and the volume of measured rainfall, without in the slightest diminishing or increasing the volume of water discharged each year by the Missouri river, and not otherwise affecting the flow of that river except to break up its great floods and extreme shallows.

If this reasoning is sound, we may expect to find, when two periods are compared, one before settlement with a period of the same length since settlement, that there will be little change in the rainfall during the period of influx, and a considerable increase in the periods when evaporation and reprecipitation are most active.

Taking the Leavenworth tables and filling up by interpolations a few missing gaps, from the mean of a number of contiguous stations, and we get, from January 1st, 1837, to December 31st, 1855, nineteen years lacking one month, (Nov., 1841), or 227 months of observation. This interval will represent the weather at Leavenworth before the plow had wrought any changes. From January 1st, 1855, to December 31st, 1874, is another interval of 19 years lacking one month (Oct., 1874), or 227 consecutive months since the settlement of Kansas.

For the whole period of 454 months there was measured up 1,261.71 vertical inches of rainfall, or an absolute monthly average of 2.75 inches, and an annual average of 33 inches. For 227 months, from January, 1837, to December 31st, 1855, there was measured up 579.64 inches of rainfall, giving an absolute monthly average of 2.55 inches.

For 227 months, from January 1st, 1856, to December 31st, 1874, there was measured up 682.07 inches of rainfall, giving an absolute monthly average of 3 inches. In the former period the annual rainfall was 30.60 inches, and in the latter 36 inches; difference, 5.40 inches. This shows an increase of 17 per cent. on the old average, an increase too large to be fortuitous, and the period is too long to make it probable it can result from catching the wet and dry parts of a long cycle for comparison. But if this proof is convincing, it becomes overwhelming when we examine the monthly averages during these two periods, and compare them with the absolute monthly mean of the whole period.

The monthly averages for nineteen years before settlement were as follows: January, .63, Feb. 1.01, March 1.62, April 2.77, May 3.74, June 5.66, July 3.32, Aug. 3.51, Sept. 3.22, Oct. 1.82, Nov. 2.12, Dec. 1.16.

For the six months during which the sun is south of the equator, the rainfall is less than the absolute monthly mean, and the total rainfall of these months equals 8.36 inches. For nineteen years since settlement the monthly averages have been as follows: Jan. 1.88, Feb. 1.28, March 1.81, April 2.64, May 3.89, June 4.46, July 5.35, Aug. 4.05, Sept. 3.92, Oct. 2.24, Nov. 2.25, Dec. 2.28. Total for the six cool

*This is upon the assumption that the water is equally distributed over the whole area, which is probably not true. It is this feature of the problem that would make it interesting to know the volume of water discharged by each tributary of the Missouri, and the rainfall of each subordinate basin.

months, 11.74; gain, 3.38. Total for the six warm months, 24.31; gain, 1.91.

So far the appearances are against the beneficial influences of settlement. But if we compare the rainfall of the summer months, we find some very singular results. Before settlement the wet month of the year was June, with 5.66 inches, and July had only 3.32 inches, and August 3.51. In the period since settlement, the rainfall has declined in June from 5.66 to 4.46, and July has risen from 3.32 to 5.35—a gain of two inches at the most critical season of the year. August also rises from 3.51 to 4.05—a gain of half an inch. September also gains half an inch. April and May make no change; October and November make very little. (There is an anomalous increase in December, such as to raise a suspicion of error.)

For the winter months there appears to have been an increase of .04; spring, .21; summer, 1.37; autumn, 1.25. The rainfall of the summer, while increasing but 1.37, has been advanced toward the mid-summer and beyond, so as to give an increase for July and August of 2.57 inches, and for July an increase of 61 per cent.

Thus do figures confirm what deductive reasoning would predict, if we admit the first postulate, namely, that there is an influx of water at a portion of the year and an efflux in other portions, and that holding this influx water will increase the number of reprecipitations.

This would appear far more rational than any hypothesis which ascribes these changes to the planting of particular species of plants. I confess that I can conceive of nothing more absurd than the attempt to ameliorate a climate already too arid for the growth of trees, by planting them.

Trees which have disappeared from these plains and all similarly situated areas, because of a constant or a periodic deficiency of water, are being planted with the hope that they will bring the moisture needed for their own existence!

Straws Denote Wind Currents Better Than Beams, and Dust Better Than Straws.

EDITOR FARMER: In reading your issue of the 28th of April, as is my wont, I read the letters from sundry counties, reporting matters of general interest. There are ten of these useful reports in this issue, and I was struck with the remarkable concurrence in a majority of them relative to "wind" and "dust."

Mr. Evans, of Madison, Lincoln county, says, "Wind has distributed dust freely for the past three days."

L. D. Smith, of Cuba, Republic county, says, "The wind and dust are awful, it has been blowing from the south the hardest it has blown in ten years."

"D. D." of Fenwick, Republic county, says, "On the 14th of March the temperature was three degrees below zero."

"E. M. D." of Parkerville, Morris county, says, "On Sunday the 18th of April was the worst blizzard I ever witnessed anywhere. Dust horrible. For 24 hours the whole heavens was full of dust."

"T. I. T." of Sulphur Springs, Cloud county, says, "High winds, air full of dust, one can hardly hold his farm with a deed. I raked and burned some corn stalks this spring—the wind not only blew away the ashes but the soil that the rake pulverized."

Corroborative of all, I find in your editorial in which you recommend those who desire to make butter, to try S. E. V. this paragraph: "This dairy room is proof against winds and dust, a desideratum ardently longed for by many a tidy dairy-woman in Kansas, within the past month."

A knowledge of the great necessity for S. E. V., or its equivalent, (if there is any) in Kansas, was the incentive that culminated in my making the liberal offer to those who desired to make out on this system in Kansas, which you were kind enough to publish for the benefit of your readers. I knew that your climate was noted for marked and sudden thermal extremes, and for hot winds and dust, which I had learned by reading the FARMER during the spring of '79, and by private correspondence, but it appears to be worse of late than ever before.

I need not tell those who have had experience, and have attempted to make butter in a cellar or apartment without ventilating the room in which the milk is set for creaming, or who have attempted to ventilate such rooms by admitting to them air that is dense with dust and all other floating filth, and that is as low in temperature "on the 14th of March, as 3° below zero, and 70° above, a few days subsequent, for they know as well as I do that good

butter cannot be made under either of the circumstances described—they also know that a proper and a uniform temperature in a dairy is as essential as pure and ever-changing air, but for the benefit of the host who may desire to make butter, and have not had that useful experience, I feel that I cannot give them more profitable counsel than to tell them what thousands have learned through sad discomfiture and heavy loss.

It is this—Do not go to the expense of providing cows, dairy utensils, and other necessary appliances for making butter, with the expectation of making it pay, without first supplying yourselves with a dairy room which you can ventilate at all times, and thoroughly, and in which you can control the temperature so that you can make butter in it as readily and to the same advantage at one season as at another.

I know of but one system by which these indispensable conditions can be secured, and I have been diligently searching for one for a period of over 40 years, and that is, by a judicious use of S. E. V.

To supply all the requisites of the system necessary to assure success, and to make butter making most pleasant and profitable also, there must be some original outlay, but most of it is of a character that it will last many generations without renewal or repair, and when the interest on all is taken into the account, and all expenses attending butter making by the S. E. V. system, it will be found less expensive, more reliable, more pleasant and withal more profitable than any other known to me, and I believe that I am familiar with all systems used by dairymen on both this and the other continent.

If here and there a progressive live man inaugurates butter making by S. E. V. in Kansas, the early future will see it, notwithstanding the naturally existing serious obstacles to dairying, a notable dairy state.

Brooklyn, N. Y.

J. WILKINSON.

Irrigation in Kansas.

The severe drouths that from time to time afflict our state have led to inquiry in regard to whether it is not possible by some artificial means to counteract the evil effects of these severe drouths.

This question is of absorbing interest as these visitations of dry weather are the greatest drawback that the state of Kansas now labors under. The physical conditions of Kansas are such as to aggravate, if not to induce these seasons of scarcity of rainfall. Much attention has lately been given to the subject of overcoming these unfavorable conditions. The opinion is quite prevalent that a great change has already taken place in the amount of rainfall that annually visits the different parts of the state; the building of railroads, the breaking up of the soil and the growth of trees on the previously treeless portions of the state, are all important factors in producing changes in the meteorological conditions of this state. The records of the past 25 years show that there has been an increased average rainfall, and that that increase has gradually moved westward; but while this is in accordance with our theory on the subject, it is yet too short a time to determine positively that this increase is to be permanent, especially in view of the fact that the past year has seemed to be retrogressive in this respect.

But assuming that the water supply may be influenced by any artificial means the question to be settled is as to what are the best means to be employed for this purpose. Irrigation has been suggested as the means for the accomplishment of this object. It is evident that the deep channels of the most of our streams preclude the possibility of a general system of irrigation by the diversion of the water from the streams by means of canals and ditches. The possible benefits would not justify the large investment that would be required to accomplish this end.

The regular rainfall in nearly all the settled portions of the state is so nearly all that is needed by the growing crops that a resort to any artificial means to supply it would be necessary only occasionally; so that a large investment in any means of artificial supply would be largely dead capital.

Irrigation by wind mills is also advocated by some. Something may be accomplished by this means on a small scale; but for an extended area this is not practicable except on a scale that would cost more than the profits would ever justify. In large portions of the state the soil is of such a porous, absorbent nature that a wind pump would be required every few rods to meet the requirements of the soil. A small garden or yard may be watered in this way, but I don't believe it will ever become common or

profitable to irrigate the fields of Kansas by any such means.

Another method of furnishing a water supply to portions of Kansas that has been suggested is by artesian wells. It is thought that if wells were dug to a great depth in the western portions of the state they would tap seams containing water that had entered on a higher level, and that this water would rise through the well and overflow its mouth. But those who have advocated this theory appear to be unacquainted with the fact that the different strata of rocks that form the geological formation dip to the northwest. That is if a particular layer of rock be followed from the point where it appears at the surface of the ground it will be found to lie deeper and still deeper as you enter the earth in a northwest direction.

From this it appears that water entering the earth, instead of flowing toward the lower part of the country where it can find its way back to the surface through an artesian well flows in the opposite direction entering deeper and deeper into the earth as it recedes from the place of entrance. This at once demonstrates the fallacy of the theory of irrigation by means of artesian wells.

With the topography of our state and the dip of its geological formations these wells are an impossibility. They could not possibly be made to work unless some means could be devised by which water could be made to flow up hill.

It will thus be seen that I do not believe that irrigation will ever cut much of a figure in Kansas agriculture and horticulture. But it by no means follows that I think there is no means in our reach by which we may modify or influence the water supply of our state. But an exposition of my theory must be reserved for a future time.

L. J. TEMPLIN.

How An Agent Took 'Em In.

I am continually adding to my stock of information by reading the farmers' friend, or KANSAS FARMER, as it is usually called, and will now cast in my mite for the benefit of my brother farmers.

I have nine acres of Red May wheat, put in on sod broken last spring, about three acres of which was broken just after a rain, and did not rot well. This I plowed the second time and thoroughly harrowed before drilling. Six acres I only harrowed, and drilled September 11th. The day following a shower of rain fell which brought the wheat up nicely. However, that on the second breaking never looked so well as the six-acre piece. The former will, from all appearances, make from one-third to one-half a crop, while the latter, or the six-acre piece, will make a fair crop.

Our Douglas county brother asks for information in regard to peddlers, which I suppose would include agents. The school board in District No. 80, Shawnee county, made a contract with an agent for school furniture. (The Automatic Self-Foldir-School Desk, manufactured at Battle Creek, Michigan). The contract called for sixteen desks at \$6.25 each, the agent assuring them that the cost of shipping would not exceed 25 cents each. Farmer-like, the school-board thought nothing about the risk of shipping, therefore there was nothing said in the contract as to who should stand the losses, if any.

Now comes the sequel, and as this takes the hard earnings of the fathers and mothers who are endeavoring to educate their children, all should take notice and act accordingly. The desks were shipped to North Topeka, and when called for a bill of \$15.03 was presented for payment—94 cents for each desk save one. Upon examination, three castings were found to be broken. Agent presents a copy of bill shipped at owner's risk. Farmers nonplussed. Everybody interested makes money except the unsuspecting farmer who don't understand the tricks of agents and railroad companies.

Old corn very scarce in this part of the country selling at 30 cents per bushel. Crops look well, except wheat which will not exceed a half crop, and oats very thin on the ground and will doubtless be very light.

J. M. WILKERSON.
North Topeka, Shawnee Co., May 27.

Gypsum.

ED. FARMER: I understand there are large quantities of gypsum in the southern part of this county; but I have not heard of its being used except for plastering for which purpose it does very well.

The county is quite new; and weather dry. We have had some small rains enabling the farmers to do some breaking. E. R. A.
Belle Meade, Meade Co., Kas.

Farm Stock.

Wool Growing in the Walnut Valley.

This branch of business is really in its infancy here as yet, but is increasing very rapidly. Many thousand sheep have come in during the last year or two.

Some who have been here for several years have as fine flocks of sheep and will clip as much wool per head this year as any one, we believe. To the advancement of these interests and to compare notes, a public shearing was appointed at the farm of A. J. Uhl, at Douglass, Butler county, June 1st, to which all wool growers accessible to the place were invited to come and bring their sheep.

There were many growers present, but few of them brought sheep.

The shearing was done in the presence of a large crowd, and each fleece taken off was the growth of 12 months. There were 27 sheep sheared. They were bred from the flock of A. J. Uhl, of Douglass, Kas., with the exception of one Cotswold buck from Kentucky, and one Merino buck from Michigan, both owned by J. W. Snotgrass of Walnut township, this county. The following are the results of the shearing and comparing of notes:

Weight of fleeces of 12 one year old bucks belonging to A. J. Uhl, 24, 22, 25, 28, 26, 25, 24, 22, 24, 18, 23, 22 pounds each.

One buck, 1 year old, fleece 35½ lbs, body after shearing, 108½ lbs.

One buck, 1 year old, fleece 26½ lbs, body after shearing, 100½ lbs.

One buck, 2 years old, fleece 32½ lbs, body after shearing, 125 lbs.

One buck, 4 years old, fleece 40 lbs, body after shearing, 147½ lbs.

One buck, 5 years old, fleece 29½ lbs, body after shearing, 130 lbs.

All belonging to Mr. Uhl.

Mr. Uhl has bred his flock for the past 18 years, having brought his original flock from Michigan. He has increased the yield of wool per head over 12 pounds, and the weight of the carcass nearly one half. The flock only averaged 5½ pounds of wool per head the first year he sheared them, and this year they will average 18 pounds per head through the entire flock. He has 125 ewes that produced 3,000 pounds of wool this clip. These fleeces are all large and look well. When they came out of the press, and were well wrapped with twine, they would fill a bushel basket. They are not black tops.

Mr. E. Copeland, of Richland township, this county, had three bucks sheared as follows:

"Denver," 2 years old, fleece 29½ lbs, body after shearing, 145½ lbs.

"Ben Butler," 3 years old, fleece 33½ lbs, body after shearing, 156½ lbs.

"Beecher," 2 years old, fleece 28 lbs, body after shearing, 114 lbs.

Mr. Copeland has bred his flock for three years, exclusively, to Uhl's stock. He has raised the average of his fleeces about 10 pounds each and the carcass about 20 per cent. His original flock was from Ohio. Present flock, 800 sheep in all—400 ewes and 300 lambs.

J. W. Snotgrass, of Walnut township, had 3 bucks sheared as follows:

One buck, (Uhl's stock) 2 years old, fleece 34½ lbs, body after shearing, 140 lbs.

One buck, (Michigan) 4 years old, fleece 24½ lbs, body after shearing, 108 lbs.

One Cotswold buck, 2 years old, fleece 15½ lbs, body after shearing, 217 lbs.

Length of longest wool 14 inches.

Mr. Snotgrass has 320 sheep in all, 200 of them ewes. His original flock was from Wisconsin and has been bred by him 2 years to Uhl's stock, and has increased the average of his fleece 6½ pounds.

Neil Wilkie, of Douglass had two bucks sheared as follows:

"Woodchuck," 2 years old, fleece 21 lbs, body after shearing, 124 lbs.

"Capt. Jack," 1 year old, fleece 30 lbs, body after shearing, 114½ lbs.

Mr. Wilkie has about 200 head of Cotswolds from Kentucky and is crossing them with Uhl's Merinos from which cross he has some fine lambs. He brought his flock in last fall and they are doing well in this climate.

The above statements and record of the shearing I give just as the actual weights made them and the result in each flock as they are given by the owners.

J. C. ELLIOTT, Sec'y.

An Important Short Wool Breed.

Among medium and short wool sheep that have grown in favor in England and in some sections of the United States and Canada, within the past few years, are the Shropshires. This breed has figured more or less in English farming records for nearly one hundred years, though it is usually referred to as of comparatively recent origin. This is due in part to the fact that the Shropshires of to-day show many changes in appearance to the original stock bearing that name. The breed owes its origin in part to the Cotswold, the other parent being a native breed known as the "Morfe common" sheep, which, by the way, was the original stock upon which crosses, not only of Cotswold, but afterwards of Leicester and Southdown, were made at various periods.

From the somewhat unequal admixture of blood, the Shropshires now vary in character, sometimes possessing the character of a short wool and sometimes that of a medium wool sheep, according as they have been mixed with short or long wool breeds. The original sheep were horned, black or brown faced, and hardy. They averaged from forty to fifty pounds of mutton to a carcass, and a fleece of two pounds

of medium fine wool. With many years' cultivation, the Shropshires are now without horns, and with faces and legs of a dark or spotted gray color. They exhibit many of the qualities of the Downs, but are larger. Much improvement has taken place of late years in symmetry of form. They have not lost their old reputation for hardiness, but thrive well on moderate keep, and produce at two years old from eighty to one hundred pounds of mutton, which is of excellent character and always commanding a good market. It is of no common event to find a flock of Shropshire sheep on good land producing an average of six to seven pounds of fleece longer and glossier in staple than other short wools. The ewes are exceedingly prolific and make good mothers. The close, well set fleece and hardy constitution of the Shropshires render them suitable to a varied range of soils and climates. It ought to be said, however, that they stand moisture better than severe cold. They thrive remarkably well in the moist climate of Ireland, and rank at the present time as an important short wool breed among English growers. The present prominence of this breed is due to an impetus given in 1860 by the Royal agricultural society of England in noting its importance and giving it a separate class. Later on, as its merits were developed, it became the pet of fancy breeders in England and is each year occupying extended areas, of which Shropshire, Birmingham and Stafford are centres.—*American Stockman.*

Stock Raising and the Drouth.

During the prevalence of the drouth now so happily brought to an end, our exchanges generally have urged upon the farmers, with great good sense, the importance of making stock raising, in some form, a prominent part of the work of every farm. They argue that a drouth of moderate duration, but sufficient to ruin a grain crop, has a scarcely perceptible effect upon the prairie grasses; while a severe drouth only moderately diminishes the growth of our wild pastures.

This is good; and we only wish to give the idea a more general application. Stock raising is not only the most profitable branch of husbandry during dry seasons. It pays better for the labor and capital invested than any other branch of farm work, even during the most favorable seasons. The truth is, no country in the world is better adapted, naturally, to stock raising than our own Kansas. Our climate is the most salubrious, our springs and running streams the sweetest and most numerous, and our grasses are the most abundant and nutritious. But who can doubt the thousands of acres of luxuriant grasses that in every county in the state grow up only to furnish feed for the prairie fires of winter and spring, without reflecting on the great loss that the state every year sustains because of the insufficient development of our live stock interests.—*Prof. Shelton.*

Poultry.

Gapes.

This worm (which belongs to the order nematodes) has been carefully studied by naturalists, and its organs, mode of propagation and life history are well known. It is of a reddish color, with a smooth skin. The female becomes three-fourths of an inch long and one-sixteenth in diameter; the male is only about one-eighth of an inch in length, and is usually inseparable from the female. A prodigious quantity of eggs is produced, which pass through the intestines of the fowls, and by warmth and moisture are transformed into small thread-like embryos, with an obtuse head and pointed tail. These are picked up by the chickens and adhere to their windpipes, where they mature and finally suffocate the fowls. As soon as the ducks and pouls are seen to open their mouths wide and gasp for breath, to sneeze and try to swallow, poultry-raisers may be sure the worm is at work. The victim languishes, grows dispirited, and before many days dies. As soon as any symptoms of the disease are observed the sufferers should be removed immediately, and since it is not always practicable to remove the healthy fowls also, the nest-room and roosting-house should have the floors well covered with wood and coal ashes. As the eggs and embryos of the gape-worm are voided by those affected, and picked up by the others, the importance of this precaution is obvious; and for further security against this, as well as other diseases of fowls, the floors should be well cleansed once a week, and a solution of carbolic acid be sprinkled upon them and the roosts as often as twice a month. Another preventive is feeding young chickens twice a week with wheat steeped in a solution of carbolic acid. Have the druggist prepare a mixture, as follows: One grain crystalline carbolic acid; ten drops alcohol; one-half drachm vinegar. A teaspoonful of this mixture to one pint of water will be a proper solution in which to soak the grain. The vessels from which fowls are fed should be frequently cleansed, and they should be supplied with pure water, frequently renewed.

Remedy for Chicken Cholera.

The following has been tried and found efficacious: Blue mass, 1 oz.; cayenne pepper, 1 oz.; gum camphor, 1 oz.; laudanum, 1 teaspoonful. Mix well, and make into pills of ordinary size and give one every hour till purging ceases. Give a teaspoonful of brandy morning and evening. For drink, take carbolic acid 1 drachm, glycerine 1 oz.; mix thoroughly; add 1 quart of water. Of this mixture take two tablespoon-

fuls to a gallon of water, allowing no other drink. We give no brandy, nor any of the mixture for drink, the pills alone proving sufficient.—*American Farmer.*

Apiary.

Hiving Bees.

A word about swarming. I suppose you let your bees swarm when they get ready, and in many cases this is the best way. In the spring cut some bushes—spruce, fir, maple, or any kind you choose—and stick them in the ground in front of the hives, letting them be four or five feet high and trimmed so that no branches are within a foot of the ground. Now, if you can arrange on these anything resembling a cluster of bees, the swarm that issues will very likely pitch them, for you know if two swarms come out together, they generally "jine drives." Some, for a decoy, use dead bees, strung and arranged to resemble a "chain" of bees, and this works well. But you say, "Why are you so particular about this? Why not let them light where they please?" Because their alighting place might not please me when I wanted to hive them, and besides, if they settled on a bush I would prop my hives back from the front by two plank wedges on the bottom board to about three inches, then I would pull up the bush, grasp the top with one hand, the bottom with the other, and with a sudden, sharp shake deposit my swarm on the bottom board, and all I would have to do would be to keep the bees brushed off from the outside of the hive and direct their course toward the interior.

Now a word of caution. Never set a hive over a cluster of bees without stirring them up. They will cling to whatever they pitch on no matter if there be a dozen hives over them, and are just as likely to fly away as though there was no hive within a mile of them. Another thing, see that all the bees enter the hive. You may put every bee except one into a live, and if that one be the queen, you have lost your time and the swarm also. In a hot day, shade the hive with a screen of some sort, and if very warm weather leave the hive propped up about half an inch from the bottom board for a day or so after hiving your bees. Don't discourage your bees by setting them where the sun will melt the comb, for if you do they will most likely leave you, and serve you right, too.

Some people, when bees swarm, beat pans, blow horns, and raise bedlam generally, but this is all folly. A swarm of bees will always pitch, if let alone, and then send out scouts. If you get them hived before the scouts return, you are all right, if not the spies will lead the swarm off to new fields.

When hiving bees, go among them clean and calm, not dirty and in a state of perspiration, nor flurried and afraid. Work coolly, calmly, and slowly, and do not act like an animated wind-mill when the bees are flying around your face, or you will get punctured. Avoid as much as possible the killing of any of the bees; it makes the others cross and more apt to sting.—*A. B. Robins, in the Western Honey Bee.*

To Secure Straight Combs.

After hiving a swarm in an empty hive, elevate the rear end three or four inches. The bees will commence at the highest point of the frame to build comb. After they have the frames about half full, turn each alternate frame end for end, thus throwing the empty end of the frame between two pieces of comb, compelling them to build it straight. Should you find any of the comb out of line or started off to one side bend it back into place, for remember to get the full benefit of the movable frame hive, the comb must be built straight in the frames.

Horticulture.

The Strawberry.

Among the insect enemies of the strawberry, the common white grub is probably one of the most destructive. It is the larva of the May-beetle, June-bug, or Dor-bug—being known by all these names in different parts of the country. There are over fifty distinct species of May-beetles found in this country north of Mexico, but the one here referred to is our most common brown May-beetle, the *Lachnosterna fusca* of Frohlich. These beetles frequent meadows, pastures and uncultivated fields, for the purpose of depositing their eggs in places where their young will be sure of plenty of food, and not likely to be disturbed. The young grubs as soon as hatched commence feeding upon the roots of various plants, those of the strawberry and different kinds of grasses being preferred to the weeds. These grubs live three years before passing through the pupa state and coming forth as beetles. During these three years of constant work upon the roots of plants they may do much damage to whatever kind they may attack. Their injury to strawberry plantations results mainly from bad management and the failure of the growers to use preventive measures. Good old pasture and meadow lands are frequently selected for strawberry plantations, and seed is turned over, and as soon as sufficiently rotted, the plants are set out. In the meantime the grubs that were already in the ground, and perhaps of various ages from a few weeks to a year or two, have been fasting, or making an occasional meal of the half-decayed grass roots. Finding fresh strawberry roots thrust before them, they commence a most vigorous attack upon such tender food: The

planter is astonished to see his strawberries disappear and wonders where all the grubs could have come from in so short a time.

Now in regions where the white grub abounds it is not safe to set out strawberries on freshly inverted sod; but the land should be cultivated at least two seasons in some crop requiring frequent hoeing and plowing, before using it for this purpose. Neither should the strawberry plantation remain or be continued on the same piece of land for more than two or three years, if what is called the matted or bed system of cultivation is pursued, because the parent beetle soon learns that these weedy, little-disturbed plantations are a safe place for her to deposit her eggs.

To avoid injury to strawberry plantations by this insect, use land that has been occupied at least two years in some hoed crop, like corn, potatoes, or beans, and then set out a new one on fresh land as soon as the old plants begin to fail.

As all the May-beetles are nocturnal in habit many may be taken by using tubs of water with a floating light in the center. A few hundred taken every evening during the first few weeks of summer will do something toward diminishing the number of the succeeding generations in a neighborhood, but the birds and domestic fowls are the strawberry grower's most efficient helpers in the way of destroying May-beetles and white grubs.

Among the various other kinds of insects injurious to the strawberry there is perhaps none more destructive than that known as the "strawberry worm." This pest is a small, slender, pale-green worm that attacks the leaves, eating large holes in them. When at all abundant it soon destroys the entire foliage, and of course prevents further growth of the plants. A few years ago this pest almost ruined the plants in my garden, but of late it has not been very abundant, although it has not entirely disappeared. This strawberry worm is the larva of a small black fly (*Empytus maculatus* Norton). Dusting the leaves with lime would probably check the increase of this insect. There is also another worm that attacks the leaves of the strawberry, but this is a leaf-roller and the caterpillar of a small, handsome moth (*Anchylopera fragariae* Walsh and Riley). I have not observed it in my grounds, but it is quite abundant in the western states, also in Canada, where it is occasionally very destructive. In addition to the above there is a small snout-beetle known as the strawberry crown-borer (*Tylosderma fragariae*, Riley), that works in the crowns of the plants, destroying the embryo fruit stalks and leaves. The remedy proposed is to plow up the strawberry plantations soon after gathering the fruit in summer, and while the little grubs are still in the crown of the plants.

Several other species of noxious insects might be added to the above list of those injuring the small fruits, but I think enough have already been named to show that the berry growers do not find the business quite so profitable or free from annoyances as many persons seem to imagine.—*American Entomologist.*

Cause and Prevention of the Apple Rot.

Mr. C. H. Peck, the state botanist, in his recently issued annual report to the regents of the University of the State of New York, says: "While on the way from Summit to Jefferson, in Schoharie county, an apple orchard was observed, on which much of the fruit was discolored, and appeared as if beginning to decay. Some of the passengers remarked that they 'never before knew of apples rotting on the tree.' Some of the fruit was procured and found to be affected by a fungus known to botanists by the name of *Sphaeria malorum*, or 'apple sphaeria.' It has been described as attacking apples lying on the ground in winter. Here was an instance in which the apples were attacked while yet on the tree, and that, too, as early as September. The apples attacked by the fungus are rendered worthless, and experiments recently made indicate that the disease is contagious, and may be communicated from one apple to another. For example, a perfectly sound apple was placed in a drawer with one which was affected by the fungus. In a few days the sound apple began to show signs of decay. Its whole surface had assumed a dull, brown color, as if beginning to rot. Two or three days later small pale spots made their appearance, and in the center of each there was a minute rupture of the epidermis.

An examination of the substance of the apple in these pale spots revealed fungus filaments that had permeated the cells of the apple. In two or three days more numerous minute black pustules or papillae had appeared. They were thickly scattered over nearly the whole surface of the fruit. These constitute the sphaeria. When microscopically examined, each one of these black papillae is found to contain several oblong pale fungus spores, supported on a short stem or foot stalk, from which they soon separate. It would be well, therefore, whenever this fungus rot makes its appearance, to remove the affected apples at once from the presence of the others, whether they are on the tree or not. It is not enough to throw them on the ground by themselves, for this would not prevent the fungus from ripening and scattering its seeds."

Miscellaneous.

Treatment of Melons.

Melon roots run out the exact length of the vine. These should not be disturbed, for they are feeders for the plant. Hills seven feet apart would soon utterly exclude a plow, for the vines

rapidly commingle that distance if in properly prepared ground. Raise the vines gingerly from time to time to keep them from rooting, as you would a sweet potato vine. This rooting habit is not favorable to the fruit, robs it of nourishment. Let three of the most thrifty stand; at all events two. Plow in green oats or other stubble in the fall, deep, and as lumpy as possible. Spread thoroughly rolled manure in the spring, double harrow and roll. Mark off, dig holes a foot deep, cover the bottom with pasty manure, fill in with finely pulverized dirt, hill up a moderate size, plant your seed not very deep, an inch, and pat down the surface,—be sure of that; keep the ground loose and light; exterminate every weed; fight them like grim death; nip back and prune out. There will be useless vines springing from the crown of the plant. They are only thieves, abstracting more than they give. Keep the earth drawn up to the head of the vines. Pull off some fruit when yet very thick. Don't take off the fruit for use until it almost drops off of itself.—*Gardener's Monthly.*

Scab.

The following is from a paper prepared by Mr. W. J. Colvin, to be read before the S. W. Kansas Wool Growers' Association, at a meeting of the Association held at Larned, May 24d:

I consider the subject of scab of very great importance to not only the wool growers of Kansas, but to all those who intend or expect to engage in that business. It is a disease that has always been a pest to the sheep men of the west, and has been the cause of greater loss, I think, than any one disease existing among western sheep, and the least dreaded and the least understood. It is not considered fatal as a disease, but it is very annoying and causes great loss of wool, as well as condition, when it attacks a flock.

I think it highly contagious, and I think it will originate in a herd when allowed to get in a poor condition, where no grain is fed, especially in wet, cold winters, where the herds are exposed to the storms without proper shelter.

When the disease once attacks a flock, they should be immediately thoroughly handled before it has a chance to spread, and before the sheep commence to rub or scratch themselves, so as to scatter the larva on the lying ground, or on the fences or rubbing-posts. I consider that the most fruitful mode of scattering the disease, and I think the larva will remain in the manure for an indefinite length of time, even during the entire winter, and hatch with the warm days of spring, and communicate themselves to the flock by adhering to the wool when the sheep are lying down and the heat of the body so warms the ground as to give the scab insect new life. From long experience I am convinced of this fact.

Corrals and walls should be thoroughly washed with lime and tobacco, or some other ingredient fatal to them, and the ground thoroughly scraped or burned off when it is dry.

There is not sufficient interest taken by sheep men to post themselves with regard to the nature of this disease. Although I am thoroughly convinced that it is an insect similar to lice, only very much smaller and far more prolific and tenacious of life, I am also convinced from observation that it affects the system, else why should nearly every sheep in the flock give a slight cough if rising suddenly or lying down quietly, which is certain to be the case where it exists in a flock to any extent.

The scab of itself may not be fatal as a disease, but it is my opinion that it is indirectly the cause of the death of large numbers of sheep in the west. When a flock is attacked with the disease and it gets a strong hold on the sheep, they lose flesh rapidly especially in the winter, and the wool is rubbed off or shed off in great quantities, causing great loss to the owners, and a flock with scab is never in uniform condition except poor condition.

The only time to handle the disease successfully is a few days after shearing while the wool is short and the skin is soft and tender, and susceptible to the application of remedies, of which I think a strong decoction of tobacco and saltpetre, with a liberal allowance of salt, is the safest, surest and cheapest remedy known. The liquor should be made strong, and used as warm as comfortable for the hands of the parties engaged. To insure a cure of the season, a second dipping should be had if it is ten days or two weeks from the first, and again about the first or middle of September.

It is almost impossible to effect a cure in winter when the weather is cold and the wool is long, besides it must be injurious to dip sheep in warm liquor even in pleasant days in winter, as they are quite certain to take cold by getting chilled after the dipping.

I notice when the insects first attack a sheep, they work on the surface and the skin is soft and tender, and is easily cured, but as they penetrate deeper into the skin it thickens and becomes hard, and a hard, dry scurf or scab forms over it that is quite difficult to penetrate without breaking it up, and I have seen sharp cards and curry-combs used, which I consider an excellent plan.

We cannot be too much in earnest about this disease. It is a serious drawback as well as an immense tax to sheep men. Legislation is entirely unnecessary; quarantine measures equally so. Strict and determined vigilance among flock-masters is the only sure remedy, and good feed and shelter, with clean corrals, I think will insure success.

LANE, May 28.—We have had the last ten days too much rain; no plowing corn, too wet; wheat looks fine; straw will be rather short. It still looks as if we should have more rain. Those who were talking drouth three weeks ago have become quite mute. JAS. HANWAY.

Patrons of Husbandry.

The Railroad Serpent.

In the Norse mythology there is an account of a great serpent that winds its enormous coils about the earth and keeps it together. The Thunderer seized it and gave it such a jerk that the whole earth trembled. The network of railroads in the United States is confusing unless the connections of the various routes are understood. If different colored marks are drawn over the roads, (all lines by contract or ownership tributary to some main line being of one color) the maze is simplified into a few systems of roads, belting the continent. The present year has witnessed a consolidation of several of these systems, and the day may not be far distant when an American Thor may sit in his drawing-room in Fifth Avenue, and pull the tail of a great railroad serpent, and make the nation groan within its folds. It is this fear that has set legislative committees at work devising means for regulating inter-state commerce. Several times the railroad kings have beaten their enemies in the war for state management, but each time with less *clat*; and every farmer should be alive to his interests in the premises.

The New York Times says: The Thurman settlement practically makes the Union and Central Pacific roads for the time independent of the power that created them. They have but to set aside the moderate contributions called for by the law, and with the rest of their enormous net receipts—the product of indefensible exactions—they may separately pursue their policy of aggrandizement. The Central will use its means to extend the Southern Pacific to El Paso, and in this manner to establish in a southern latitude a monopoly that shall in itself be profitable, and shall at the same time protect the present transcontinental road. Similar measures characterize the Union Pacific. Its surplus revenues, acquired by the exaction of excessive charges, enable it to spread an iron network in all directions. Northward and southward it extends its control. To make control doubly sure, a Jay Gould combination has virtually taken possession of the Texas Pacific. Mr. Thomas A. Scott is one of the six men who have entered into the contract for extending the road to the Rio Grande, but Jay Gould is master of the party and will have no difficulty in executing his plans.

The Union of the Wabash and Central New York systems effected but a few weeks ago, which puts a line from New York to Omaha (where the Union Pacific begins), under our control, we have previously referred to; and now another combination of smaller roads is proposed, slipping into New York over the Greenwood Lake road, or uniting the Montclair and New Jersey Midland. The way would thus open for another formidable rival to the New York Central, which would be followed by another combination. Every shift in the plans swallows up the smaller roads, and combines the longer, and the coil of the serpent becomes tighter. In the last number of the L. & H. we showed the evil effects of railroad monopolies upon the people, upon agriculture and trade. The only remedy for this evil is the strong arm of the law. The serpent of railroad monopoly is already well grown. Its strength is enormous, and its enemies unorganized, except in little detachments here and there. A desperate battle is being fought, and the serpent will surely win unless the people unite to turn its deadly embraces into a living support of the industries of the country.—*Land and Home.*

Farmers and Politics.

At a meeting of the "Elmira Farmers' Club," N. Y., in discussing the subject of farmers as politicians, a prominent member spoke as follows, which seems to hit the point very forcibly:

"I am reminded of how often I have heard in this city and the surrounding country, politicians in the guise of lawyers or professional men deliver political addresses. They talk to the farmer something like this: 'Why sir, you are the bone and sinew of the country. Your place in life is an honorable one. You are the backbone of the country. Cincinnati was taken from the plow,' and all this and that. They will come to your house, sit down at your table and eat like heathens. They will brag of your wife's cooking, kiss the baby, (laughter) and tell you what a nice set of folks you are, etc. They go off and when election comes you vote for them. You suggest even that we agriculturalists are capable of taking care of ourselves, and how soon they will sneer at you. I never had one of these men at my house, or met him in public, who would not talk himself hoarse, and until you are tired telling you what 'we' will do if you will give us the power. Farmers are somewhat to blame for the acts of congress in ignoring our rights. They were taught it in the old countries from being placed in servitude, and I thank God that in my day the farmers are proposing to relieve themselves from this servitude; that they are coming to stand up for their rights. (Applause). I know pretty well how the machine is run. They will come here and compliment you just as long as they can get your votes, and no longer."

The Grange Intellectually and Morally.

Since the inception of the grange movement farmers have progressed higher and higher intellectually. At its meetings they are entertained in a way that is destined to adapt them for a proper understanding and appreciation of

the important part they are enacting in the drama of life. There they learn to discuss with freedom every subject of paramount interest and importance to them and theirs. Minds are enlarged and hearts are expanded. In the grange they learn by the successes and failures of others how the first may be ultimately attained and the latter always avoided. Not only farm but other questions of equal importance in agricultural progression are presented and discussed—such as finance, taxation, needed and healthy legislation, co-operation for protection, tariff reform, etc.—and who will dare question the fact that all these discussions give farmers clearer ideas of the questions under consideration? These discussions advance them intellectually until they no longer can be duped by those who have always profited by their indifference or ignorance of matters pertaining to their welfare in a life's struggle on the farm.—*Grange Advocate.*

Hard on the Lawyers.

"Kay," in *Coleman's Rural* closes a short article on the present congress in which he says, and truly, that it is composed pretty much of lawyers, with the following sentiment: "It has always been my doctrine that a man should never employ a lawyer for any purpose, unless it is to get villains out of jail. That is his business, and unless a man is in jail, he ought to steer clear of a lawyer."

The grange seems to be enjoying most gratifying prosperity in the section of country known as the Cumberland Valley in Pennsylvania, extending through western Maryland and into western Virginia. This is a fine agricultural region, and the tri-state picnic which is held annually in Pennsylvania has become a very important institution. It might be initiated in other sections of the country with profit. Preparations are already in progress for the annual picnic of 1880. The *Furmer's Friend* in noticing the preliminary arrangements says: "The seventh annual tri-state picnic of the patrons of husbandry and farmers of southern Pennsylvania, western Maryland and West Virginia will be held at Williams' grove on Tuesday, Wednesday, Thursday and Friday, August 24th, 25th, 26th and 27th."

"We are not yet prepared to announce the full programme, but we can assure our readers that the encouragement already received from manufacturers, stock raisers, nurserymen, farmers and patrons of the middle states warrant us in saying that the seventh annual tri-state picnic and exhibition will be more largely attended than any gathering of farmers ever held in this country; while the exhibition of farm products, stock and agricultural implements and machinery will be equal, if not superior, to most of the state fairs."

Farm Letters.

CEDARVALE, Chautauqua Co., May 31.—156 miles SW. of Topeka. It has been some time since I have written from this part. I have been like some of the other correspondents, waiting for rain, which came on the evening of the 26th, and it gave us a good soaking. The ground has been too wet to plow corn until today. This is the first rain of any note since the first day of April, and it began to look rather dubious about raising a crop.

Wheat is very materially injured by the dry weather and innumerable chinch bugs; it will not make one fourth crop. Oats are a complete failure. Millet is not up yet but will come now. Prairie grass had begun to dry up in many places but is starting since the rain. Corn was growing remarkably well notwithstanding it was dry. Some have their corn plowed the third time. What wheat there is being harvested—commenced last week.

We will have an abundance of peaches, if nothing befalls them hereafter. There will not be many apples, but the grape vines are loaded with fruit, also the blackberry bushes. Stock of all kinds doing well.

M. BUMGARDNER.

RUSSELL COUNTY, May 28.—136 miles west of Topeka. I have not written much lately for we have had the blues on account of the dry weather, but we have had three good rains in the last two weeks which has made the corn look splendid. Everything is growing finely now. But the rain came too late to help the wheat much. There will not be much over one third of a crop in this county.

I reported my reports to the state board of agriculture, but the dry weather has done much damage since I sent my reports.

I think many persons that write for the FARMER color their letters too highly. I like to speak well of the county I reside in, but we should not praise it too much, or people will not believe any of it.

There is more corn planted this spring than any year previous. Stock is in good condition and grass growing fast. Garden vegetables are quite backward. Wheat, 95c.; corn, 25c.; potatoes, \$1.25.

T. W. HEY.

OSBORNE, Osborne Co., May 31.—The long looked for rain has come at last; not soon enough to save the wheat crop. The winter wheat on an average will not pay the expenses of harvesting. Some fields of spring wheat are looking well and may make a good crop, while other pieces were so long in coming up that the weeds are higher than the wheat, and will probably stay ahead. A large amount of the winter wheat is being plowed up and planted to corn. A big corn crop is predicted now. Business of all kinds very dull.

Runners for eastern firms claim they are making no sales out here to amount to anything.

A great many are getting the mountain fever, and pulling up stakes and starting for Colorado, Montana and Idaho.

D. W. C. O'NEIL.

SHIBBOLETH, Decatur Co., May 31.—We are having a dry time. It has not rained to amount to anything in the south half of Decatur county since last November. The wheat crop is gone. What old ground we have is planted to corn, but prospects so far are very poor. Pasturage very poor.

Numbers of the settlers are gone, and if we do not have rain soon, others will have to follow. The prospect is not as bright this year as it was last year. If our corn fails the settlers cannot live unless they get aid. There are some now living on corn meal and water. Everything is on a dead stand at present. Everybody waiting for rain. Some still have hopes of raising sod-corn if it rains, but the chances are against us.

D. BOUGHMAN.

NEWTON, Harvey Co., June 5.—There has been a couple of wealthy Englishmen purchasing large tracts of land in this county, recently. One has bought of the A. T. & S. F. R. R. Co. twelve and one-half sections, which he is now employing some of the western sufferers "from the drouth," with breaking. He contemplates building a house on every half section, and rent them under the old English tenant system, I believe.

The other Englishman has purchased Mr. S. T. March's fine residence in Newton, at \$9,000, and also a section of land near Sedgwick, and has a flock of one thousand sheep on the road from Colorado.

We are now having plenty of rain. Crops and everything look prosperous. It is intimated that wheat will yet make about ten bushels per acre. Corn is being cultivated the second time and looks splendidly. GEO. S. FUNK.

LARNED, Pawnee Co., May 22.—The copious, refreshing, long wished-for rains have come at last, and the dreaded cyclone has also given us a call in a mild way, although it was all we desired of such visitors. A few houses were blown down and a few more unroofed. Every one is busy now planting and sowing and grass is making up for the lost time.

Sheep-shearing is in full blast, and we are proud to say that the world cannot, never has, nor never can, beat the sheep of Pawnee county in heavy fleeces, probably because we have better grass and more loose sand than any other section. We mourn the loss of one of Mr. Wadsworth's fine blood rams that grew such an unparalleled weight of wool that he could not rise from the ground, and died in consequence, so I am informed by one of Mr. Wadsworth's friends, who gave Mr. W. as his authority. The famous ram of Darbey can take a back seat as he was evidently a Cotswold, and ours are from Hammond's best. I am badly worried myself but don't feel disgraced by the defeat. My best sheared 35 pounds tolerably clean wool, less than one year's growth. The ram was sired by Silver Horn. Another fleece, 10 1/2 months' growth, weighed 31 1/2 pounds; another fleece, 11 months' growth, weighed 34 pounds; my lightest, out of 150 head, weighed 17 pounds. If I had to shear again, I think I could do better. I had thought some of having depositions taken, but I think it is not necessary now.

Wool seems to have taken a fearful tumble, as I am told 15c and 18c is offered at Dodge City for Mexican grades. We will ship to Kinsey, Jones & Co., Chicago.

W. J. COLVIN.

NORTH CEDAR, Jackson Co., (22 miles north of Topeka), May 28.—The recent heavy rains gladden the hearts of farmers, although we have not suffered badly for rain here this spring. Wheat will average half stand, and will be well filled. Potatoes, oats, flax, sorghum and corn never looked better at this time of year. Some have plowed their corn twice, and throughout it is a good stand. Apples, cherries, peaches, plums, and grapes, are sticking well, and all promise a fair yield. Small fruits and vegetables are appearing plentifully on our dining-room tables, so everything is very encouraging here this spring. Newly-set fruit and ornamental trees are doing well. The same can be said of cuttings.

About one-third of the land here is not fenced and is what we call the "commons," free to every one to let their stock run on. Hogs have to be kept up. Cattle are fat and sleek, and will thrive on the grass until November.

Short-horn cattle have interested farmers here of late, and quite a number here have commenced in that profitable business.

W. A. DODSON.

FOREST HILL, Russell Co., June 7.—Last night we had a splendid rain, the best rain of the season. Everything is lovely and everybody is feeling good. The prospects for crops are pretty good. Corn looks well, and what has been well cultivated is growing very fast. The wheat crop is rather light, the straw being short, but it is well filled, the berry being good. Harvest has just commenced. The header is all the go here. Most of the harvesters will have to lay idle this season, on account of the wheat being so very short.

We have some flax in this part of the county, which looks well. There are also some castor beans. We are experimenting slightly in both flax and beans, and think they will be a good crop for farmers to raise in this part of the state. I agree with Mr. Mitchell in regard to a variety of crops. My plan of farming is—some wheat, corn, oats, flax, and a small portion to castor beans, and then do just as much work towards harvesting the crop myself as I can, and hire as little as possible.

Potatoes are generally looking well. I think

flax sown thinly among the potatoes is good to keep the bugs from eating them. I planted mine where I had potatoes last year, and I know there was plenty of bugs in the ground this spring to have eaten the potatoes, but my potatoes are all right yet, while a great many are having serious trouble with the little pests.

A. S. DICKSON.

NICODEMUS, Graham Co., June 8.—I have seen no report from this section of country in your valuable paper. I suppose everybody is waiting for rain to have some good news to write about. I must say it looks rather discouraging on the frontier at present. The wheat crop is an entire failure here this season and corn looks very poorly. There is quite a large amount of rice corn planted here. This will be a good year for testing that crop.

A great many people are getting the blues. Some are gone to see their wife's relations, and more are talking of going. For my part, I will try it here at least one year more before I go.

Stock of all kinds looking well. I think our farmers want to raise more stock and plant a variety of crops, and we will come out right.

YOUNG FARMER.

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The Zinc Collar Pad
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Breeders' Directory.

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HALL BROS., Ann Arbor, Mich., make a specialty of breeding the choicest strains of Poland-China, Suffolk, Essex and Berkshire Pigs. Present prices less than last card rates. Satisfaction guaranteed. A few splendid pigs, jills and boars now ready.

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FOR SALE. Scotch and black & tan ratter pups, \$10 each; shepherd pups, \$15 to \$25; also pointers and setters. These are lowest prices. All imported stock. A. C. WADDELL, Topeka.

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MIAMI COUNTY NURSERIES, 11th year, large stock, good assortment; stock first class, orange hedge plants and Apple trees at lowest rates by car load. Wholesale and retail price lists sent free on application. E. F. CADWALLADER, Lounsbury, Ks.

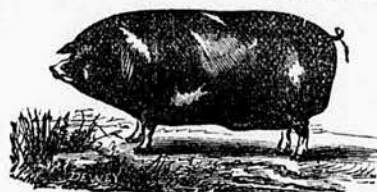
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Thoroughbred Short-Horn Cattle and Berkshire Pigs, bred and for sale. Only first-class animals allowed to leave the farm. Address G. W. GLICK, Atchison, Kansas.

CATTLE SALE.

The co-partnership in cattle heretofore existing between George B. Sylvester and Albert F. Thayer having expired by mutual consent, said cattle will be sold at

Public Auction for Cash on Thursday, June 17th, 1880,

at the farm of Albert F. Thayer, at Maple Hill, Wabash county, Kansas, situated 9 miles south of St. Marys, and two miles north of "Bully Mount." Said cattle comprise 175 head of choice cattle, consisting of

65 three year old cows, 19 two year old heifers, 21 one year old heifers, 3 three old steers, 18 two year old steers, 15 one year old steers, and 34 steer and heifer spring calves.

Also one high grade Durham (short-horn) Bull, of the famous Duke of Alford stock, 4 1/2 years old, said to be, and undoubtedly is the finest grade bull in Wabash county. The sale will commence promptly at 10 o'clock a. m. A substantial lunch will be served at noon. All persons desiring to purchase choice stock are here given an opportunity seldom offered. Remember Thursday, June 17th, and at 10 o'clock a. m. GEORGE B. SYLVESTER, ALBERT F. THAYER, A. J. HUNGATE, Auctioneer.

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1,300 HEAD OF SHEEP FOR SALE.

I have 500 Ewes, 200 Lambs, and 100 MUTTON SHEEP for sale on my farm in Woodson county, Ks., near Neosho Falls, and

500 Stock Sheep near Chetopa

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(Monthly) and THE AMERICAN POULTRY YARD,

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An English Veterinary Surgeon and Chemist, now traveling in this country, says that most of the Horses and Cattle Fowling sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and of immense value. Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose: one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Bangor, Me.

THE KANSAS FARMER.

E. E. EWING, Editor and Proprietor,
Topeka, Kansas.

TERMS: CASH IN ADVANCE.

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One Copy, Weekly, for three months, .50

The greatest care is used to prevent swindling humbugs securing space in these advertising columns. Advertisements of lotteries, whisky, accept, and quack doctors are not received. We accept advertisements only for cash, cannot give space and take pay in trade of any kind. This is business, and it is a just and equitable rule adhered to in the publication of THE FARMER.

TO SUBSCRIBERS.

Subscribers should very carefully notice the label stamped upon the margin of their papers. All those marked "25" expire with the next issue. The paper is at all ways discontinued at the expiration of the time paid for, and to avoid missing a number renewals should be made at once.

Post Office Addresses.

When parties write to the FARMER on any subject whatever, they should give the county and post office both. Some of the new post offices are not put down in the post office directory, and when the county is not mentioned, the post office clerks do not know where to send papers or letters.

The Presidential Candidate.

After a stormy session of several days and nights duration, the Republican National Convention, held at Chicago, nominated Gen. James A. Garfield for president. A triumvirate of party leaders made a hard struggle to break through and set aside the traditional custom which declares ineligible to the high office of President of the United States, whoever has filled that office two times. This is a precedent given the nation at its birth by Washington, and it is well that it be preserved. One term is enough for a good president, and three terms are too many for any man, for many reasons which we will not stop to state here. The Chicago convention demonstrated that the public conscience was against changing the traditional usage of the country in regard to increasing the terms of office of a chief magistrate. The late convention also emphasized the fact that it is almost impossible for a great party leader to be selected by a convention of this kind as a presidential candidate, owing mainly to the jealousy of his aspiring associates or rather rivals in the same party. This was undoubtedly the chief obstacle to Blaine's receiving the nomination. Above all rises the sublime fact that the people are greater than any one man, and can dispense with the services of any one. This fact is worth more than it costs to keep it fresh in the minds of the people. But out of the late prostration of ambitious leaders, let us see what has come forth.

James A. Garfield received the honors well as the responsibility of being presented to the people of the United States as a candidate for president for the next four years after March 4th, 1881. He was born on November 19th, 1831, in the township of Orange, Cuyahoga county, Ohio, about fifteen miles southeast of Cleveland. He comes of plain New England country stock. His father, Abraham Garfield, was a farmer in very moderate circumstances, who died in 1833, leaving a family of four children, of whom James was the youngest. His mother, a woman of unusual strength of character, is still living. By her exertions she managed to keep the family together until the boys were old enough to earn their own living. The land in Orange is poor, and the little Garfield farm afforded only a scanty subsistence to the family. James got a few months of district school tuition winters, and the rest of the year worked upon the farm or helped in a carpenter's shop. He had an absorbing ambition to get a good education, which at an early age gave his character its bent, and shaped his future course in life. The Ohio and Erie canal ran not far from his mother's house, and finding that the men employed upon it got better wages than he could earn at the carpenter's bench, he hired out as a driver when he was seventeen years old, and soon rose to the position of boatman. Hard work and exposure brought on a fever in the fall of 1848, which lasted three months and put an end to a scheme for shipping as a sailor on the lakes.

In the spring of 1849, the boy's mother gave him a few dollars which he had saved for the purpose by pinching economy, and told him he could now realize his ambition of learning something more than the district school could teach. He went to Geauga Academy, an obscure institution in a country village not far from Orange, and being too poor to pay the \$1.50 a week which was the price asked for board, he took a few cooking utensils and a stock of provisions, and, hiring a room in an old unpainted farm-house, boarded himself. From the day he left home for the Academy he never had a dollar which he did not earn. He soon found employment with the carpenters of the village, and by working mornings and evenings and Saturdays he earned enough to pay his way. The summer vacation enabled him to save something toward the fall term, and in the ensuing winter he taught a district school. Thus he kept on for several years, teaching in the winter, working at the bench in summers, and attending the Academy during the fall and spring terms. He was a tall, muscular, fair-haired country lad in those days, looking a good deal like a German in spite of his pure Yankee blood. Healthy in mind and body, genial in temperament, a good wrestler and ball player as well as a good student, he was a great favorite with his comrades and teachers.

To give the story of his college life, his life and services in the army, and his career in congress, would make too long a chapter for our

columns if the most of our readers were not already more or less familiar with these facts, and those who are not will be apt to learn of them whether they will or not, before November. We have given a sketch of his early life, and will close with a glance at his present home life:

Three years ago he bought a farm in Mentor, in the same county, lying on both sides of the Lake Shore & Michigan Southern railroad. Here his family spend all the time when he is free from his duties in Washington. The original farm-house was a low, old-fashioned, story-and-a-half building, and its limited accommodations were supplemented by numerous out-buildings, one of which General Garfield uses for office and library purposes. Last spring he had the house enlarged and remodeled, so that it now has a handsome modern look. The farm contains about 120 acres of excellent land in high state of cultivation, and the congressman finds a recreation, of which he never tires, in directing the field work and making improvements in the buildings, fences and orchards. Cleveland is only twenty-five miles away; there is a post-office and a railway station within half a mile, and the pretty country town of Painesville is but five miles distant. One of the pleasures of summer life on the Garfield farm is a drive of two miles through the woods to the lake shore and a bath in the breakers. Visitors who come unannounced, often find the General working in the hay-field with his boys, with his broad, genial face sheltered from the sun under a big hat and his trousers tucked in a pair of cowhide boots. He is a thorough countryman by instinct. The smell of the good brown earth, the lowing of cattle, the perfume of the new-cut grass, and all the sights and sounds of farm life are dear to him from early associations.

General Garfield has five children living, and has lost two, who died in infancy. The two older boys, Harry and James, are now at school in New Hampshire. Mary, or Molly, as everybody calls her, is a handsome, rosy-cheeked girl of about twelve. The two younger boys are named Irwin and Abram. The General's mother is still living, and has long been a member of his family. She is an intelligent, energetic old lady with a clear head and a strong will, who keeps well posted in the news of the day, and is very proud of her son's career, though more liberal of criticism than of praise. General Garfield's property may amount to \$20,000. It consists exclusively of his farm in Ohio and his house in Washington, and every dollar of it has been earned by his own exertions. He has saved a little every year from his salary, and this, with an occasional legal fee, has made up the bulk of his estate. When he entered congress he owned a little house in Hiram, worth, perhaps, \$1,500.

Care of Calves.

At this season of the year many calves are being raised, and it is of the utmost importance that they should have the best of care, neither overfed or placed on too scanty a diet. It is not good for the cow as a profitable milker, to allow the calf to run with her; nor is it for the calf to be taken from its mother and partially neglected. The calf need not have all the milk, including cream, in order to keep it growing and in the best condition. Neither will it thrive well on skim milk alone. It is much more profitable, however, to feed the whole milk to calves than to spoil the cream in warm weather by attempting to make butter without the best dairy appliances, in this climate, and sell the product at the village store for five to eight cents a pound; and tons of it are dear even at these low prices, to the purchasers.

But we will suppose that the proper dairy fixtures have been secured for preserving and converting the cream into butter. We will then have the skim milk sweet for the calves. The young animal needs such food as will form bone and muscle, but not much fat-producing elements in the warm weather. Oil meal and middlings, that is the coarse wheat flour containing a portion of fine bran, are among the best articles for feed for young stock. But oil meal is expensive and not easily obtained by most farmers living away out on the prairies. Flax seed will make a better substitute for the oil meal than the meal itself.

Take the calf from the cow when three or four days old, or a week old at most. The cow's milk is then at its best. Teach it to eat and feed it on skim milk, to which add a little flax seed boiled to a jelly, a spoonful of the jelly at each feed. Add a little middlings to the milk when the calf is two week old and gradually increase the boiled flax seed and middlings as the calf increases in age. At six weeks old the calf may be fed daily half a pint of the boiled flax seed and twice or three times that quantity of middlings, with as much sweet, tender grass as it will eat, and fresh, cool water always accessible. Until the calf has learned to eat well it should not be permitted the free use of water, as it will often drink more than it should and refuse to take food freely.

By pursuing this practice in feeding calves, all of the cream may be used in butter or cheese making, and the skim milk and whey fed to the calves. Keep the calves always growing and looking sleek and healthy as they do when running with the cow. By far the largest amount of profit is made in the steady, rapid growth of young animals which suffer from no set-back.

Aid to Frontier Settlers.

We publish this week the call of an aid committee whose organization is for the purpose of securing food and other necessities of life for settlers who have been caught in the extreme drouth which has prevailed in that region for

the greater part of two years, no rain having fallen till recently since last November, and but a scant supply through the previous season. The heavy rain which fell in that section of country two or three weeks since did but little towards reviving vegetation, which needs a succession of rains. Settlers who went there without means other than what was necessary to invest, have been unable to raise food on account of the long drouth and are now, in a starving condition as the committee states, and must be assisted.

Notwithstanding this fact there are some mercenary wretches—and some of them are publishers of newspapers too—who persist in reiterating the statement that there is little or no suffering in all that burnt up region. These men have property which they wish to dispose of and other jobs for the profitable completion of which, it is necessary to conceal the truth, and they denounce everybody who attempts to make a true statement of the suffering known to exist in that part of the country.

Governor St. John has visited the burnt up region, and stated that the people were suffering from extreme want, and he has been denounced by these speculating cormorants who would, it seems, rather see gaunt famine cut off every man, woman and child, than have the fact published that these people need food, lest a knowledge of their pressing necessities should interfere with their speculating schemes.

Many of the settlers in the extreme western counties of the state are literally starving to death and must be fed, and those parties who are trying to conceal the fact to aid their selfish purposes are worse than Bedouins. From the centre of the state east there has been plenty of rain and the condition of the crops is reported favorable, and business of all kinds active and flourishing, but on the western border want prevails.

Ehrich's Fashion Quarterly.

The summer number of this Magazine is on our table full of pleasant things for the ladies. The magazine contains a handsome chromo lithograph which its publishers claim is not a fancy sketch but an exact production of actual costumes. The Quarterly is published by Ehrich Brothers, 287 to 295 Eighth avenue, New York, at 50 cents per year, or 15 cents per copy.

Address of the Kansas State Aid Committee.

To the people of Kansas:

At a meeting of citizens held in Topeka, May 31, we, the undersigned, were organized as the Kansas State Aid Committee. In execution of the purpose of our appointment, we issue the following address to the people of the older portions of the state.

It is well known that for several months past a severe drouth has prevailed in the region lying immediately east of the Rocky mountains, and that it has extended into the western part of this state. As the result of this drouth, in some twelve or fifteen of the extreme western counties, the wheat crop has been mainly or entirely cut off, and it has been found impossible to put in spring crops. The settlement of these counties is of very recent date. In some cases, the counties are not yet regularly organized. The settlers have exhausted their means in the cultivation and improvement of their lands. During the prevalence of the drouth, they have toiled with industry and patience, frequently going far from home in search of work by which they might maintain their families. The ordinary privations of frontier life they have borne without a murmur. Under their present extraordinary distress they have exhibited the steady courage and the quick fertility of resource that might have been expected from their intelligence and character, and that challenge our respect and admiration. The men have done all that brave men can do—and the women, by their cheerfulness and heroism, have shown themselves to be fit wives and daughters of such husbands and fathers.

We have in our possession positive and reliable information that many families are barely maintaining life by the use of coarse and insufficient food; and that in some instances there is actual suffering and sickness from lack of food. The recent abundant rains that have visited the drouth area have greatly improved the prospects of the people, bringing up the grass and putting the fertile soil in order for the planting of corn and other spring crops. But the people need to be supplied with food until something can be raised by them—and they need seed with which to plant their fields.

Our suffering people should have help, and that help should be rendered cheerfully, liberally, and at once. In their behalf, therefore, we appeal to you, the citizens of the older and wealthier portions of the state. We know the appeal will receive a prompt and generous answer. The statement of the case is its own argument. The settlers on our frontier are in great and pressing need; they have a right to turn to us for sympathy and assistance; every consideration of sound policy and genuine humanity impels us to open our hearts and hands to them. Thanks to a bountiful Providence, Kansas is able to take care of her own citizens who may be the victims of local and temporary misfortunes. Our action ought to be so prompt and liberal that solicitors of aid shall have neither reason nor pretext for going outside the limits of the state.

It is intended that the Kansas State Aid Committee shall be the channel of communication between the frontier counties and the central and eastern portions of the state—and shall furnish a responsible agency through which contributions may be sent to the needy—and

shall direct and oversee the forwarding of such contributions with a view to speed, economy, and proper distribution. We urge the people in the destitute region at once to forward to the secretary of this committee, through the regular county authorities, or through special organizations, accurate and authentic statements of their condition and wants. We also earnestly urge the people of the central and eastern portions of the state immediately to form aid organizations, and to gather contributions of money and supplies, and to report the same to the secretary of this committee. We specially request all city and county officers, and the ministers of the various churches, to bring this subject before the people—and we solicit the active co-operation of the press throughout the state in our effort to secure the success of this movement.

In order that contributions may be fairly and judiciously distributed, and may reach those who are most needy, it is recommended that they be forwarded on information and suggestions furnished by this committee. No doubt the railroads of the state, consistently with the liberal policy thus far pursued by them in this matter, will forward supplies for the destitute without charge. Circulars giving particular information as to the nature of the supplies needed, etc., will be at once sent out by the secretary. (Signed)

WM. SIMS, President.

F. S. McCABE, Vice President.

WM. WELLS, Treasurer.

P. I. BONERAKE.

JOHN MARTIN.

JOAB MCKAY.

G. W. VEALE.

R. H. HILTON.

W. P. POPEOE.

T. L. STRINGHAM, Secretary.

The Kansas State Aid Committee has my full endorsement, both as to its plans in aid of the suffering, and the high character of its members.—JOHN P. ST. JOHN, Governor.
Topeka, June 5th, 1880.

Feeding Pigs.

Pigs dropped this spring that are to be marketed this year should be pushed hard from the beginning, in order to insure the largest percentage of profit. They cannot be permitted to go back, or even to stand still, in the accumulation of flesh for a day, without loss. The utmost skill of the feeder is often taxed with the little fellows when they are about a month old; for at that period the milk of the dam ceases to be sufficient to meet the wants of the growing pigs; and if they have not been permitted to learn to eat before that time, and if abundance of highly nutritious food, in liquid or semi-liquid form is not furnished from this time on, it will be impossible to keep up the rapid growth that has been attained by simply feeding the sows properly up to that period. Ground oats and corn mixed, or ground corn with wheat middlings, will make a good sloop for the pigs; soaked corn will be highly relished, and will be found well adapted to keeping the pigs in high flesh; but as soon as the new corn is fairly in milk, that will be found the best of all fattening foods. "Make hay while the sun shines," is the embodiment of sound doctrine in that department of husbandry; but the injunction "Make pork before cold weather comes," is equally as sound a maxim for the government of swine raisers.

But if the pigs are to be kept over the winter, and fed off for the next spring or autumn markets, we should recommend less of the forcing process; less of the stimulating, fattening grain diet, and would urge the importance of clover and grass as a means of keeping the pigs in a good growing condition, and at the same time of keeping them healthy. Pigs cannot long stand up under the forcing system—the high-pressure plan of feeding that produces the enormous weights sometimes attained at six to nine months—and while this is perhaps, after all, the most profitable method to the breeder and feeder, we very much doubt whether it is the course that produces the best quality of bacon and hams. In these extra-heavy pigs the weight is largely made up of fat—there is no corresponding growth of bone and muscle, and the pork is soft and oily. On the contrary, when pigs are given the run of the clover field during their first summer, with only a small allowance of grain, the bone and muscle is developed by the food and exercise; and when they come to be fattened off for market, there will be found a much greater proportion of "lean meat" than in the earlier matured pigs.

We regard the latter method—this reliance largely upon pasture during the first summer—as an essential in raising healthy breeding stock, whether males or females; and we would never buy one of those forced, exceptionally heavy, and fat show pigs for breeding purposes, no matter what might be his recommendations otherwise. Our breeders have done too much of this thing in the past. It has shown itself all over the country in a loss of constitution and a lack of vitality which has made our stock an easy prey to disease, and we are glad that there are indications of a reform in this particular.—Nat. Live-Stock Journal.

Protect Vines from Bugs.

A "Farmer's Wife" protects her cucumber and other vines from bugs by old screen cloth, (that which has done duty for window and door screens is as good as any). Cut it into squares large enough to cover the space where the seeds are planted. Let it lie very loosely on the hill, so as to give room for the plants to grow, then lay stones or earth upon the corners

and sides, and it is the best protection that I have ever tried. It admits air, sunshine and dew to the plants and keeps out all the bugs.

Another good way is to take a tin dish and press the earth down on the top of the hill, so as to make a cavity of an inch and a half or two inches; then plant the seeds and cover lightly with earth, lay your screen or cloth over, or if you prefer, a light of glass. Either will keep the insects off.

A solution of hen manure in water is the best fertilizer for vines of all kinds, that I have ever tried, and it is not agreeable to bugs.

Feed the Good Milkers.

The following very necessary piece of advice we find in the *Live-Stock Journal*, and though self-evident and known to every intelligent farmer and dairyman, is too often neglected. A mention may assist some such farmers to remember a duty too often neglected to their own disadvantage.

"The best milkers use all the food they can get to make milk, and suffer in their own flesh in consequence. The dairyman should carefully examine each cow in his herd, and see that their wants are provided for. He is sometimes very ungrateful to his best cows, those that pay a fine profit, and he allows them to draw even on their own flesh to increase their yield of milk. A practiced eye detects the wants of such cows in a moment. They are striving to do their best for their owner, and want a little extra food to keep up their own flesh while they are yielding a large return for the food consumed. Prof. Horsfall gave about 2 lbs of bean meal to each of such cows per day. Bean meal is very rich in muscle forming food. We cannot use this here, because of its expense, but we can use what is equally as good—oats and corn ground together, mixed with an equal weight of wheat bran or middlings. Give 2 lbs. of this mixture with 1 lb. of oil meal to each good milker. This will cost about 3 cents per day, and will well repay it in the condition of the cow, besides the increase in milk. It is the good milkers that pay for feeding. As they deal generously with you, do ye even so with them. Poor milkers do not even pay for their keeping. They should be fed well only to fit them for the butcher. Let them be used for what they were intended—meat."

Hog Pasture.

If good healthy hogs at minimum cost is desired, they must be provided through the hot season with plenty of suitable pasture. The following suggestions we find in one of our exchanges, contains some valuable hints which may be utilized to advantage by farmers having a number of hogs which they desire to summer-feed cheaply:

"A pasture surrounded by a strong, tight fence is essential for keeping hogs that are to rely on green food during the summer season. They cannot be herded like cattle or sheep, and it is not well to keep them in an enclosure with other kinds of stock. An acre should be allowed for every five hogs and pigs. Red clover, the common or mammoth variety, furnishes the most and the best kinds of food. The ground should be seeded the year before it is to be used for a pasture. An old sod of white clover furnishes a large amount of food for hogs, but it may be used to better advantage by other kinds of stock. Orchard grass furnishes excellent food for hogs; and, as it will stand frequent cropping without injury, it is well adapted to sowing on land intended for a hog pasture. When young it is tender, sweet and nutritious.

"A hog pasture should contain some shade. Hogs enjoy lying in the shade of trees and bushes, and some protection from the heat of the sun is necessary to their well being. If the land selected and prepared for a hog pasture contains no trees or bushes, a shelter from the sun should be made from some cheap material. A roof may be made by nailing saplings to common posts, and a covering formed of bushes and straw or brush. A hog pasture should contain a liberal supply of pure water. A spring or brook is most invaluable in a pasture for hogs. It may be made to supply water in a trough for drinking purposes, and also to fill a small pond in which the hogs can wade and refresh themselves when they are warm. If practicable the bottom of the pond should be covered with gravel or flat stones."

If every one attempted the same thing there could be no proportional success; but happily agriculture is well diversified, and there are so many distinct occupations that there is a choice for all. In all of these some persons will be more successful than others; but there are general principles for the guidance of all, and one is to consume as much as possible the produce of the farm upon the farm. All of the wheat produced cannot be so consumed, neither can all of the corn. Large quantities must be sold, but do not sell corn and neglect stock; keep corn sufficient to fatten the steers; keep some to make into butter, and some for the production of wool and mutton. Diversify your products so that if one fails you may have success with others.

Almost Young Again.

"My mother was afflicted a long time with neuralgia and a dull, heavy inactive condition of the whole system; headache, nervous prostration, and was almost helpless. No physicians or medicines did her any good. Three months ago she began to use hop bitters, with such good effect that she seems and feels young again, although over 70 years old. We think there is no other medicine fit to use in the family."—A lady, in Providence, R. I.

Does Its Work.

The "Sunday Tribune," Rochester, N. Y., says: "No medicine now known purifies the blood so effectually as does that named as Warner's safe bitters."

Another class of people inhabiting the mountains of Singar, between Morden and Mous, pay homage to the Devil as being a servant of the Most High. They argue that the good spirit will not hurt them, but the evil spirit may if not appeased. This belief doubtless received its origin from the ancient Persians, they worshipped God under the name of O

fore probably of earlier birth, this planet might be expected to have reached a much later stage of development, an inference well substantiated by the facts observed of the telescope supports. The moon a still smaller planet, and certainly

the same way as hemp, the fiber came out much soft as silk and as strong as linen; and this being regarded as encouraging, a large plantation of nettles has been made to produce materials for experiments on a larger scale.

There are quite a good many grapes, plu
and small fruits. T. J. MERCE

Ivory Card Dominoes, Price 10 cents.
Union Card Co., Box 773 Worcester, Mass.

THE STRAY LIST.

Strays for the week ending June 16.

Bourbon county—L. B. Welch, clerk.
HORSE—Taken up by T. J. Charles, Franklin tp, one bay horse, about 14 hands high, supposed to be 5 years old, harness and saddle marks, a scar on left hind foot, three inches long, was shot in front when taken up, valued at \$25.
COLT—Taken up by Levi W. Brown, Marmaton tp, one bay stallion 2 years old, 14 hands high, a little white on each hind foot on back part, black mane and tail, no marks or brands, valued at \$20.

Chase county—S. A. Breese, clerk.
HORSE—Taken up by Barney Houser, Hazara tp, (Matfield Green P. O.) May 21, 1880, one brown horse, right hind foot white, white ring on left fore foot, white spot in forehead, work and collar mark, 17 hands high, about 16 years old, valued at \$25.

Doniphan county—D. W. Morse, clerk.
PONY—Taken up by W. D. Hancock, Wolf River tp, May 21, 1880, one bay horse pony about 13 hands high, 5 years old, star in forehead, shod on front feet, no marks or brands, valued at \$25.

COLT—Also by the same one bay stud colt 2 years old, common size, hind feet white, no marks on brands, valued at \$20.
HORSE—Taken up by C. J. Ellis, Centre tp, May 31, 1880, one dark bay or brown horse, small star in forehead, front feet shod, leather head stall, 15 hands high, no marks or brands, 9 years old, valued at \$20.
HORSE—Also by the same one grey pony horse, saddle marks, 10 years old, 13 hands high, no marks or brands, valued at \$20.

HORSE—Taken up by Frederick Dubach, Washington tp, May 8, 1880, one brown horse, 15 hands high, 8 years old, marked with a sore under left hind heel like it had been burned with a rope, branded on left shoulder with letter C, valued at \$20.

Douglas county—N. O. Stevens, clerk.
COW—Taken up May 17, 1880, by G. S. Boyd, Clinton tp, 1 red cow, star in forehead, branded B on right hip half way between knee and hip joint, valued at \$20.
HIP—Also by the same one red steer, star in forehead, branded B on right hip, 2 years old, valued at \$15.
STEER—Taken up by James Halbert, Clinton tp, May 23, 1880, one chestnut sorrel horse, 15 hands high, white face, hind feet white to pastern joint, 11 years old, collar marks, no brands, valued at \$25.
HORSE—Also by the same one black horse, 16 hands high, star in forehead, 7 years old, collar marks, valued at \$20.

Franklin county—A. H. Sellers, clerk.
MARE—Taken up by S. V. Parkinson, June 15, 1879, one sorrel mare, black mane and tail, white face, white spot on collar mark, medium sized, 10 years old, valued at \$20.

Kingman county—Charles Rickman, clerk.
HORSE—Taken up by A. J. Mogle, Ryan tp, May 24, 1880, one black horse, 8 years old, 14 hands high, good pacer, valued at \$15.
MARE—Also by the same one brown mare 8 years old, white nose, 15 hands high, no other marks or brands visible, valued at \$20.

Strays for the week ending June 2.

Cowley county—J. S. Hunt, clerk.
PONY—Taken up by Robert White, May 20, 1880, one bay mare pony, about 5 years old, branded S on left flank, one hind foot white and star in forehead, valued at \$15.
MARE—Taken up by Jacob Coleman, Harvey tp, April 15, 1880, one black mare, right hind foot white, about 16 hands high, about 7 years old, gear marks.
MARE—Also by the same one light bay mare, about 16 hands high, 4 years old.
MARE—Also by the same one brown mare about 16 hands high, 3 years old, scar on neck.
COLT—Also by the same one yearling colt, light bay, with running rose on neck.

Marshall county—W. H. Armstrong, clerk.
COLT—Taken up by D. C. Calhoun, May 8, 1880, Blue Hap- tip, (Tyring P. O.) one sorrel colt, about 2 years old, white stripe in face, white on right hind foot, branded on right shoulder indistinguishable, valued at \$20.
MARE—Taken up by Daniel Smith, Clear Forks tp, May 10, 1880, one dark bay mare supposed to be 2 years old, branded W on the left shoulder, valued at \$25.
MARE—Taken up by O. S. Brown, Clear Forks tp, May 1, 1880, one bay mare supposed to be 2 years old, both hind feet white and small star in forehead, valued at \$20.
COLT—Also by the same one dark chestnut horse colt one year old both hind feet white, small star in forehead, valued at \$20.

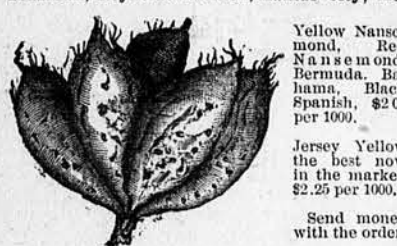
Marion county—W. H. Hamilton, clerk.
MARE—Taken up by Louis DePrigle, Doyle tp, P. O. Florence, one yellow colored mare, 4 feet 10 inches high, branded on left shoulder with the letters S N, 2 years old, valued at \$20.
McPherson county—A. A. Fleisher, clerk.
MARE—Taken up by L. N. Holmberg, Smoky Hill tp, (Lindsborg P. O.) May 4, one sorrel mare about 15 hands high supposed to be 10 years old, white star in face, valued at \$10.

Miami county—B. J. Sheridan, clerk.
HORSE—Taken up by D. W. Lee, Wexa tp, one bright bay horse about 10 years old, 14 hands high, small star in forehead, little white on left hind foot and scars supposed to be from stallion, branded A on left shoulder, valued at \$20.
HORSE—Also by the same one bright bay horse about 10 years old, 14 hands high, branded H on left shoulder, valued at \$20.
MARE—Taken up by J. L. Wright, Valley tp, Paola, P. O., one bright bay mare with collar and saddle marks and three hind feet, supposed to be 10 years old, valued at \$25.
COLT—Also by the same one iron gray horse colt about 2 years old, white stripe in face, valued at \$25.

Wabash county—T. N. Watts, clerk.
HORSE—Taken up by John Auer, Mission Creek tp, P. O. Keene, May 8, 1880, one black horse 12 hands, saddle marks on back, 2 white spots on neck, valued at \$25.
Woodson county—H. S. Trueblood, clerk.
MARE—Taken up by W. L. Fralich, Perry tp, May 3, one bay pony mare, white stripe in face, white hind feet, blind in left eye, branded on left shoulder and side with letter S, supposed to be 9 years old, valued at \$20.

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 Send money with the order.

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 Topeka, Kansas.

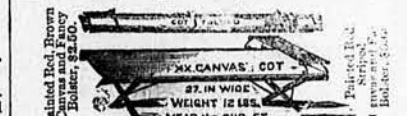
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 207 Canal St., New York; 165 North Second St., Philadelphia; 94 Market St., Chicago, Ill. Send for Circulars.

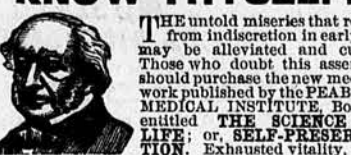
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No use of taking the large, repulsive, nauseous pills. These Pellets (Little Pills) are scarcely larger than mustard seeds. Being entirely vegetable, no particular care is required while using them. They operate without disturbance to the system, diet, or occupation. For Jaundice, Headache, Constipation, Impure Blood, Pain in the Shoulder, Tightness of Chest, Dizziness, Sore Eruptions from Stomach, and Bloat for Mouth, Bilious attacks, Pain in region of Kidneys, Internal Fever, Bloating feeling about Stomach, Cases of Eczema to Crust, take Dr. Pierce's Pleasant Purgative Pellets, sold by druggists. WORLD'S DISPENSARY MEDICAL ASSOCIATION, Proprietors, Buffalo, N. Y.

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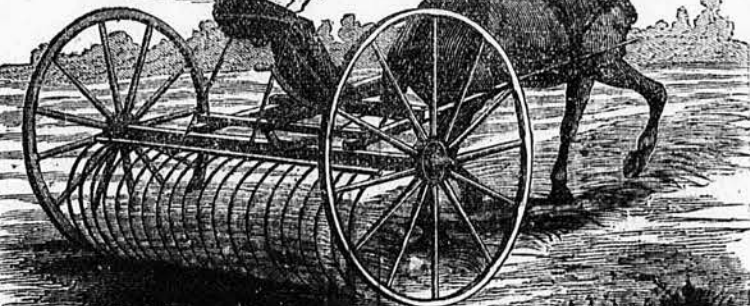
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D. LANDRETH & SONS, Philadelphia.

Farm Letters.

CENTRALIA, Nemaha Co., June 8.—Since last I wrote we have had plenty of rain, and farmers complain no more of dry weather; and I perceive by the FARMER of June 23, that we are not the only ones that have cause to rejoice, as it bears tidings of heavy rains nearly all over the state. Although small grain suffered from dry weather, yet the rain came in time for the corn. The ground is thoroughly soaked now and we are getting a good shower every few days.

Fruit (apples and peaches) are pretty badly blown off. I saw, in my travels, some fall wheat which I thought, from appearance, would make about two-thirds of a crop; the straw is very short, and although the heads are rather short they are well filled. Oats, which were supposed to be beyond recovery, are coming out since the rains, and will yet make a fair crop. But the corn—well, I cannot express what I have seen. It seems to me that the farmers have been vying with each other in the amount planted and the time of planting, and now to see whose shall look the cleanest and in the best condition. I saw but one piece which I could call weedy, and I must say that in the twenty years which I have spent in Kansas, I never saw the corn so large and in so fine condition at this season.

Stock looks well; no disease; fat enough for beef.

Old corn still going to market at 20c to 22c; butter down to 8c and 10c, and still falling; pork, 8c to 10c; eggs, 7c; flour, spring, \$2.25 to \$2.75, fall, \$3; corn meal, white, bolted, \$1; work, especially job, plenty and wages good; spring chickens large enough to fry, \$2 per dozen. Plenty of spring vegetables, currants and strawberries.

Success to the FARMER with all its interests.
A. L. SAMS.

GLEN GROUSE, Cowley Co., June 5.—The prospect for corn here is good. Wheat poor. Fruit medium, but the high winds keep whipping the peaches off. Blew hard all day, turned to the north, and mercury fell from 88° at 2 p. m., to 66° at 7 p. m. Frost here on the 23d of May.

I took a trip to Wichita on the 27th. Wheat will average one-half crop in this Butler county. Some in Sedgwick will make twenty bushels per acre. Grain is good. Corn, some good, some poor. Plenty of rain. Fruit, some orchards full, others none. Stock looks well. Farmers cutting wheat and looking happy, with their nice groves and neat houses.

Quite a scare on Rock creek on the 16th of May. A whirlwind passed over the creek but did no damage. Then one passed from west to east. One passed on to the south of me six miles, turned one house bottom side up, and killed a few sheep.

As a general thing, times are pretty good. Corn is worth here 30c; hogs, 2½c; good cows, \$30; horses, \$25 to \$80. Sheep is all the go here at present. Success to the FARMER.
J. B. MCCREARY.

HAMPTON, Rush Co.—As this part of the country ought to have its name in the paper, if only for its dryness and high winds, I have concluded to report it. Wheat is almost a total failure. Corn is coming up nicely and will make us a good crop. A large acreage of millet is being sown.

Farmers, generally, have a large stock of hope, notwithstanding in order to live here they have to go east or west to work. It is surprising how cheerfully *patrifundis* goes off and earns provisions, hoping big things in the near future.

The FARMER is a "fount of knowledge," and if we had read it years ago there would have been one family more "in the land of plenty." But as we are here we mean to stay until this land is "furnished," if possible.

I would like to take a few sheep on shares, for awhile. If any of the readers of the FARMER have any sheep they would trust to the wilds, I would like to hear from them. I could warrant good care, pasture, and water.

Will some one tell me how to make cheap training harness for colts, or yearlings, or if they are beneficial?

Like S. H. Mitchell, I would like to hear something more about the Honey locust.
MATE STILES.

HARVEYVILLE, Wabunsee Co., June 7.—Everything just booming since the rains. Some pieces of wheat will do to cut in a few days. Yield will be small but grain good. Oats rather short and thin, but coming out amazingly since the rains. Corn looks well; some pieces on late plowing poor stand. Farmers are busy plowing corn.

Things are lively around Harveyville lately. The track of the M. & A. B. railroad was laid as far as Harveyville station Saturday noon, and Saturday evening the dining-cars were switched off there. The track-layers have been detained by the rains some, but in good weather lay about 1½ miles per day.

Everybody is looking forward to the Fourth of July, as there will be a free excursion on the new railroad to Alnna.

Temperance organizations are in good working order here.

Corn is worth 30c; wheat, \$1; oats, 30c; hogs, \$3.25; fat steers, \$3½ to \$4; stock cattle high; cows, \$20 to \$35; two-year-old steers, \$25 to \$30; one-year-old, \$15 to \$18.
GEO. A. WOODS.

HUSTON, Smith Co., June 6.—We have had a very dry season so far in the south part of the county, and as a matter of course crops are not extra good. Winter wheat will yield three to

twelve bushels to the acre. Spring wheat will not amount to much; a great deal of it is being plowed up and planted to corn. Oats, owing to the dryness of the ground, came up very slow and uneven, giving the weeds a chance to get the start of them. Corn was slow making its appearance, and grows slow after it gets up. Some are still planting and if we get rain later in the season, we may get a good crop of corn yet. It is worth 25c to 30c per bushel here now; wheat 90c to \$1; fat hogs \$3 per hundred and mostly sold; cattle in good order, none for sale.

I would like to inquire, through the FARMER, where I can get some seed of the thornless honey locust, and when and how to plant them, as I am a new beginner.
S. C.

MARYVILLE, Cloud Co., June 7.—I have been waiting for something to write about. We have had no storms, no dry weather, chintz bugs, grasshoppers, or anything of that sort, and so I have to report crops good. Wheat that was thought to be almost a failure, is far better than last year. This neighborhood is remarkably healthy. Our peaches were all killed. Small fruits are plenty.

Harvest will commence here this week, with the prospect of continuing three weeks at least. Wheat short strawed but well filled with good grain and over an average yield. Early potatoes nearly ready for table.

UNCLE GEORGE.

FENWICK, Republic Co., (95 miles west and 38 north from Topeka), June 6.—A small cyclone passed through this vicinity April 25th, and completely demolished a school house four miles west of us, and slightly damaged a farm dwelling of a widow lady. Fortunately no lives were lost as school had been closed and the scholars en route for home an hour before the cyclone's visit.

The past April and May has been the two most disagreeable months I ever saw in the state, the wind blowing almost continuously and carrying a thick cloud of dust.

The weather for some time has been quite dry and the wheat crop is much damaged; many pieces have been plowed up and planted to corn. I notice a few pieces of wheat that will make, perhaps, ten bushels per acre. The acreage of corn is considerably increased over last year and is doing well. We have had plenty of rain for the past two weeks. Peach crop was killed in the bud. There will be a few apples here; however, the number of bearing trees is small. Currants, gooseberries, grapes, raspberries and blackberries seem to be doing well, and will, I think, bear a fair average crop of fruit.

Windy weather is at times disagreeable. I have been here since the fall of 1868; I have never seen such weather anywhere as we have had; but my conclusion is let winds blow high or low, Kansas is my home. The health of the country, in general, is good. Farmers in good cheer. Immigrants still dropping in.
D. DORAN.

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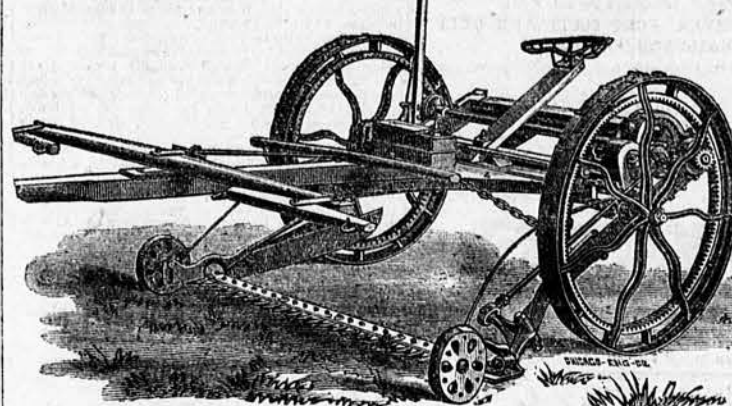
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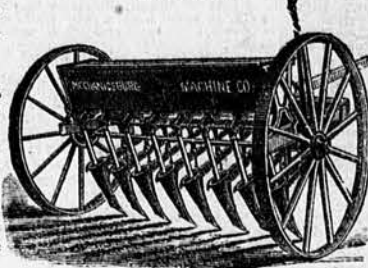
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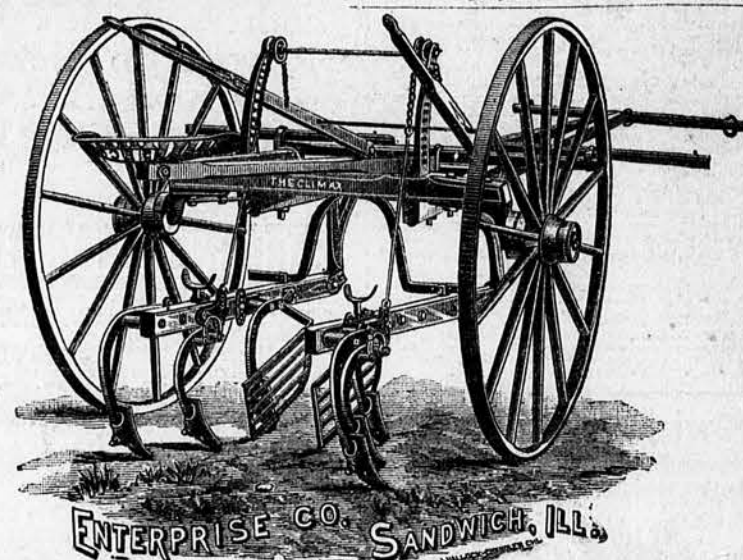
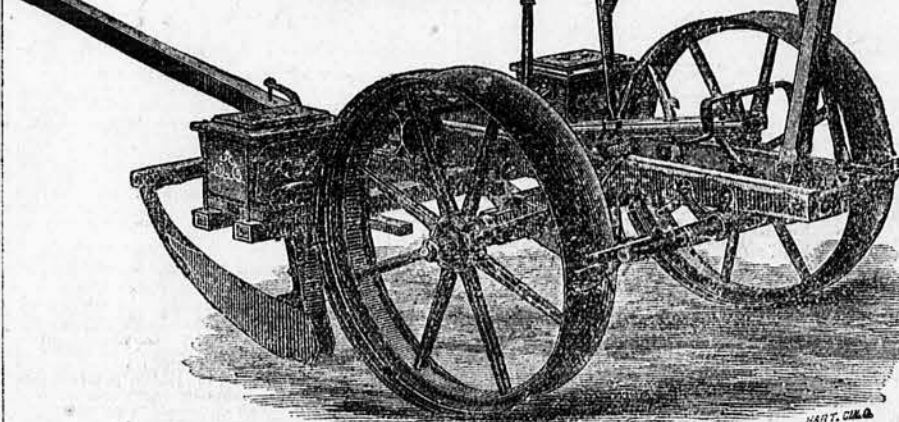
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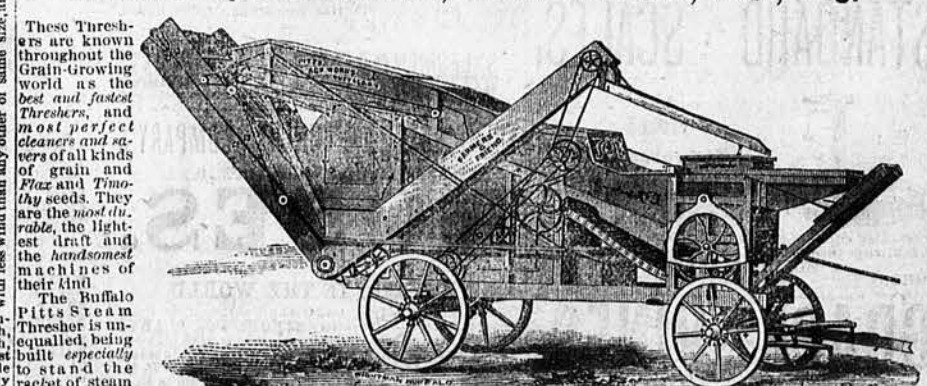
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