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THE KANSAS FARMER.

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

Weather Laws.—No. 4.

SUCCESSION IN PLACE.

I have considered with fullness the alterations in time, in weather phenomena, the place remaining unchanged, and I now propose to present some conclusions reached from my studies with respect to alterations or successions in place.

My attention was called to this by attempts to plat the limits of a few of our most conspicuous droughts and floods. As examples, I noticed that in 1843 when the rainfall was minimum at Leavenworth, it was also minimum at St. Louis, and below the average north of Leavenworth to Ft. Snelling, Minnesota, and west of Marietta, Ohio. At the south, however, the rainfall was in excess, as it was also at all stations observed east of Pittsburg. Even at Ft. Scott, Kansas, the rainfall was 44.53, on an average of 42.15, and at Ft. Towson it was 55.90, on an average of 51.08, but at Ft. Gibson, a little west of Ft. Scott, it was slightly below the average.

At Natchez, Miss., the rainfall for 1843, was 78.72, av. 53.55; at Vicksburg 60.28, av. 49.30; at Ft. Pike, La., 105.96, av. 65.87; at New Orleans 60.99, av. 51.05; at Mt. Vernon Arsenal, Ala., it was 76.38, av. 64.42; at Barancas, Fla., 64.16, av. 59.20; at Ft. Brooke, 56.28, av. 53.63; at Savannah, Ga., 43.66, av. 48.32; at Oglethorpe Barracks, 48.51, av. 51.33; at Charleston, S. C., 54.72, av.43.63; at Fortress Monroe, Va., the rainfall was average; at Ft. McHenry, Md., it was 48.70, av. 41.10; at Gettysburg, Pa., 47.64, av. 38.89. In New York stations in the east, were above the average, while at most stations from central New York west, there was a decline to average, and in a few to below the average. In Connecticut there were 52.78 inches on an average of 44.67, and at New Bedford, Mass., there was 45.04, on an average of 41.42. At Brunswick, Maine, there fell 66.93 inches, or an average of 44.68. At Marietta, Ohio, there were 41.76 inches, upon an average of 41.48; at Steubenville, 41.04, av. 41.48; at Cincinnati, 51.19, av. 44.87; at Portsmouth, 55.95, av. 38.33; at Springdale, Ky., 48.67, av. 48.58; at Nashville, Tenn., 58.31, av. 52.02. At Detroit, Mich., the rainfall in 1843 was 27.60, av. 30.05; at Ft. Gratoit, Mich., 29.46, av. 32.34; at Ft. Brody, 27.25, av. 30.32. At Ft. Snelling, Minnesota, the rainfall was 23.79, av. 25.11.

Projecting, then, a line of least rainfall through the United States from the point where the rainfall of 1843 began to decline appreciably below the average in the direction in which that decline was greatest, and we see that the point of beginning would be somewhere near Lake Erie, and extend to the southwest in the direction of Ft. Leavenworth, and that drawing about this line the curve representing average precipitation, would pass to the northwest through the great lakes, and to the southwest through southwest Missouri. To the north, east and south of this line the rainfall in 1843 was from average to excess, and within was a triangular area with its base resting upon the plains, (whether to the Rocky Mountains or not cannot be now told for lack of observations), and its apex pointing to the northeast.

In 1844 these conditions with respect to the averages were reversed; at Leavenworth the rainfall was 62.60, average 31.74; at Ft. Townson the rainfall was 46.54; at St. Louis, 45.73; at Athens, Illinois, 48.17; at the Michigan Forts, from 2 to 4 inches above the average; at Natchez, Miss., 45.91; Vicksburg, 37.21; at Ft. Wood, La., 46.84; at Ft. Pike, 44.26; at New Orleans, 49.22; (Alabama, no observations), at Ft. Brooke, Fla., 51.67; Charleston, S. C., 36.39; Ft. Moultrie, (av. 45.51) 33.98; Ft. McHenry, Md., 32.46; Gettysburg, Pa., 31.18; Philadelphia, 40.17. In New York the rainfall of 1844 was from 3 to 6 inches less than the average; Connecticut, 40.29; New Bedford, Mass., 36.21; Amherst, 40.58, av. 43.90; at Ft. Smith, Ark., 32.93; at Washington, Ark., (1843, 63.40, av. 54.50,) for 1844 the rainfall was 45.50, (extreme minimum in 20 years' observation, 41.40, in 1846); at Marietta, Ohio, 1844, gave 36.64; at Shiberville, 38.67; Cincinnati, 41.94; at Nashville, Tenn., 42.27; at Springdale, Ky., 40.40, av. 48.58; at Ft. Snelling, Minn., 30.50; at Milwaukee, Wis., 32.50, av. 30.40; at Ft. Crawford, Wis., 39.06, av. 31.40.

To sum up then: To the northwest of St. Louis, the regions which, in 1843, suffered from drought, received an excess of rainfall in 1844, while regions to the south of Memphis had less than the average, as did all points east of Steubenville, Ohio.

It is as if a water wave swept inland in 1843, covering the Gulf states and Atlantic states with an excessive precipitation, while the regions to the northwest receives that year less than the average supply; but in 1844 this water had been beaten inland to the mountains of the northwest, and there was in that year great excess of rainfall throughout the northwest, while the coast states received only their averages.

The wet wave of 1858 invaded the country from the southeast and did not extend east of Cincinnati, except in the south Atlantic states. In most stations of New England, Pennsylvania and New York, the rainfall was average only, and in many below. At Fortress Monroe the rainfall was ten inches below the average. At Ft. Delaware, on an average of 59.21, the rainfall was only 17.14, and at Georgetown, Delaware, average 46.14, the rainfall was 37.22. In this year the extreme southwest (*i. e.*, Texas and New Mexico,) suffered one of its most distressing drouths, and the decline extended up the plain as far as Ft. Laramie. In 1859 the area of the Texas drouth had expanded, more to the northwest and eastward. Ft. Inge dropped to 18.06; Ft. Clark (av. 22.88) dropped from 19.98 in 1858 to 17.75 in 1859; Ft. Bliss (av. 9.56) fell from 5.00 in 1858, to 4.83 in 1859, and to 2.46 in 1860; Ft. Lancaster, which in 1857 gave 39.58, dropped to 28.21 in 1858, and to 24.89 in 1859, and to 13.37 in 1860. At Washington, Ark., the rainfall (av. 54.50) declined to 46.10 in 1859; at Ft. Laramie, from 7.90 in 1859, there was a decline to 6.26; at Ft. Kearney, Nebraska, the rainfall was, in 1858, 26.14, but in 1859 it was only 16.19; at Omaha, where 48.38 fell in 1858, the decline was to 21.06 in 1859; at Bellvue, Nebraska, from 48.89 in 1858, there was a decline to 21.06; at Milwaukee the precipitation of 1858 (44.86 inches) declined to 28.86 in 1859, and it further declined in 1860 to 24.02. In Illinois the average decline from the rainfall of 1858 was 22.32 inches; at Leavenworth the decline was from 59.65 in 1858 to 38.84 in 1859, which descended to 19.38 in 1860. At St. Louis the decline was from 68.83 in 2850 to 61.38 in 1859, which went down to 29.89 in 1860.

Thus at the west was being prepared that drought which Kansas, at least, will not soon forget. The decline began in 1859 and fell in 1860 to the extrme limits of western droughts. The hot blasts off of the dry southwest withered and scorched all Kansas (exccept the southeast corner) "like the breath of the desert." Now if there was a good deal of southwest wind during those years of decline (1859 and 1860), then would these winds evaporate the waters of 1858 off the plains, and off of Missouri and Illinois, and bear them to points to the northeast of the point of evaporation. However this may have been as to the wind or may be as to the correct explanation, the fact is that the waterfall increased in the east *pro rata* with those declines at the west. Thus at Ft. Ripley, Minn., the order was reversed, and began with a decline in 1858 and rose to a maximum precipitation in 1861 on the following grade: 1858, 19.81; 1859, 27.00; 1860, 30.71; 1862, 32.42. In Michigan there was the same order at the north; Marquette, 38.41 in 1858, 41.25 in 1859, though in 1860 this station dropped to 25.79. At Pocopson, Pa., the series was: 1858, 44.36; 1859, 50.66; 1860, 52.97. At Philadelphia the series was: 1858, 41.06; 1859, 54.77; 1860, 45.40, (av. 44.05). In New Jersey, 1858, 40.42; 1859, 57.07; 1860, 44.27, av. 43.85). In Connecticut, 1858 gave 41.83; 1859, 53.73. In Massachusetts there was an increase in 1859 over the 1858 rainfall, but a decline in 1860. In Maine, at the only station observed for all three of the years, there was an increase in each of the years after 1858 to the end of 1860. But in New Foundland the series rose from 41.90 in 1858, to 66.99 in 1859. In the northern part of the Pacific slope, that is from Ft. Vancouver to Sitka, there was a decline during these same three years. At Sacramento there was an increasing series from 1856 to 1862.

In western Europe the summer of 1860 was cold and rainy, much as the season of 1879 has been and as the season of 1880 will be. In the south Atlantic and Gulf states, there was no decline in precipitation in 1860, and at many stations the rainfall was above the average.

Similar comparisons show that the whole United States east of the Rocky Mountains, is never all under a drouth the same year, nor is it ever all under a flood of water the same year. Wet and dry are distributed across the country in alternating areas, or bands, or at least somewhat approaching to such a distribution. The distribution of water over the whole of the United States, evidently proceeds in a succession that is more or less orderly as to alternation. This, too, is no more than what might be expected if we believe that the sun lifts from the oceans year after year nearly the same quantity of water. If it does this, then beyond all question if some regions do not receive a full average supply, some other region receives more than a full average supply, and a middle one receives average only.

C. W. JOHNSON.

Hiawatha, Brown Co., Kansas.

The Dairy Business.

The investigations of modern science have revealed important facts in the art of butter and cheese making, which in connection with the appliances of inventors for the care and manipulation of milk within a recent period, have elevated the standard of dairy products, which in turn have widened the market for superior articles, while inferior grades have lost caste so rapidly that large quantities of butter manufactured after the primitive style, have no quotable value among dairy products.

Under the new systems of setting milk and constructing dairy rooms, the most intelligent farmers, whose places are adapted to it, are turning their attention to dairying. While the large dairies are in many instances fitting up vaults on Prof. Wilkinson's plan, hundreds of small farmers who, as a part of the time-honored system, keep a few cows, are adopting the Cooley Creamer. The latter has the advantage of immediate application, and can be used without a cellar or even a room of any kind set apart for milk and butter.

Messrs. Layman & Shafer who have headquarters at 263 Kansas Avenue, Topeka, and are agents for the sale of the Cooley Creamer in the state of Kansas, inform us that many farmers who are without suitable buildings for dairy rooms, set their creameries in a shed near the well, and some even set the tank under a tree. Well water is mostly used without ice. When the warm, new milk is placed in the cans they are submerged in fresh water pumped from the well, and in an hour after the water is drawn off and the tank is again filled from the well. Others who have windmill pumps, set the creamery tank in a position that the waste water from the pump is conducted by a pipe through it, and all the water pumped for the stock is led through it on its passage to the watering troughs, which keeps the temperature constantly low. Others, again, fill the tank from the well with fresh water but twice a day—evening and morning.

CUT NUMBER ONE.

Cut No. 1 shows the tank in which the cans are submerged, when the lid is shut down like that of an ordinary ice box.

Cut No. 2 represents a can with a section of the side removed, showing the position of the milk and cream, with the water surrounding and covering all, effectually excluding air, dust and change of temperature, if the water is kept fresh and cool by changing it in the tank. But there is nothing so satisfactory, however, as the actual experience of one who has tested an article or process in use, and to this end we give the following

CUT NUMBER TWO.

EXPERIENCE WITH THE COOLEY CREAMER.

Mrs. E. L. Wires, writing from St. Lawrence Co., N. Y., to the *Country Gentleman*, gives her experience in the use of the Cooley Creamer for two years, in butter making. She says:

"After having used the submerged system for the last two years, I now look back upon the old-fashioned way of setting milk in pans about as we do upon the old-fashioned way of cutting our grass before we had mowing machines, or on the many other antiquated practices that have now passed out of use. I remember exactly how much time it took to skim, empty and wash seventy-five pans, and how tired I was when I got through. But the pleasure of having finished the job was somewhat marred by the recollection that the same thing had to be done every other day through the long, hot summer. But, thanks to Mr. Cooley, I am through with all the drudgery of woman's work in the dairy. I have no skimming to do, and no pans to empty or wash. It takes me less time to take care of my milk from twenty-four cows than it does to take care of my milk pails. When the milk comes it is strained into the cans, and they are set into our Cooley creamer; a little ice is then added to the water already in the creamer; the cover is shut down, and there is nothing more to be done until the next milking. The cans are then taken out; the gauges adjusted at the right point, and the faucets turned. The milk then runs off; the cream remains in the cans, and is turned out, as if out of a pail. The cans are then refilled and reset, and the dairy work for the day is done.

"The cream is all raised in twelve hours, and setting so short a time, and at so low a temperature (45°,) the cans do not get sour, and need washing only about once a week. Even then it is little more work to wash a can than to rinse a milk pail. Furthermore, the quality of our butter is much superior to what it used to be. There are no white caps in it, and none of the old-fashioned dog-days butter that in spite of the most careful management would sometimes put in an appearance, especially if a thunder storm occurred while the milk was in the pans. It makes no difference now how hot the day is; we get just as much and just as good cream in hot days as in cool ones, and just as nice butter. We have tried all ways to work up our milk. We have made butter in small and in large pans; have made cheese for fifteen years, and have carried our milk to a factory for five years. With a horse-power to do our churning, we find we can make butter in a Cooley creamer with less than half the labor required to take the milk to a factory; and it has still another advantage—it pays us much better."

Horse Disease.

Will some person, through the KANSAS FARMER, give a remedy or cure for the Texas itch, or mange, among horses? It first began among the Texas ponies brought in here last summer, and has spread among all classes of horses where they have been exposed to it. It is a fearful disease, and has killed quite a number of horses.

I would say to the farmers that don't know anything about Texas horses, they had better let them alone. They are of no value to a farmer for a team or anything else.

I consider the FARMER indispensable to the farmers of Kansas. I see correspondence and valuable information enough in one issue to pay for the price of the paper. I think it is the medium through which the farmers can keep each other posted. J.

Seapo, Republic Co., Kan., May 20.

There are many kinds of skin diseases caused by the same insect, namely, the acari. The non-professional in animal medication, judging by appearances, will prescribe a dozen different remedies when there is nothing to do but kill the above named insect and regulate the bowels and blood, and for this purpose the following will be found as good treatment as can be employed: Take fine sand and rub all affected parts well for a minute or two, then wash the parts thoroughly with good soap and water and brush, after which dry carefully; then the insects being exposed, or rubbed out of their holes, by the use of the sand, use the following lotion to destroy them: Liver of sulphur, or hepar of sulphur, two to three oz., cold water one quart; bathe the diseased parts lightly, no matter if the disease covers the whole body of the animal. The following alterative should be given internally to regulate the bowels, etc.: Take sulphuret of antimony 3 drachms, sulphur in flower 3 drachms, sulphite of soda ½ oz., mix and give in one dose, repeating every other day for two weeks. Let the horses run out to grass while giving medicine. If the disease breaks out into ugly looking sores, use the following to heal them; carbolic acid ½ oz., water 1 pint, mix. Wash the running sores about three times during the week. The sulphur liniment need not be use but twice a week, rubbing with sand but once.

This kind of itch is contagious; stall posts, harness, mangers, brushes, combs, etc., used about your horses, should be subjected to great heat, either by boiling or steaming. Trees, gates and rubbing posts, in the field, must be washed with water, and then coated with a mixture of lime, sulphur and water.

Report the results of the above treatment, if used, through the FARMER.

A. R. COOK, V. S.

Spring Hill, Kan., May 22.

Gypsum, Etc.

ED. FARMER: I understand there are immense beds of gypsum in Kansas. Where are they? and is there any of it worked and ground and put on the market, and at what price? Has anybody experimented with it on the different soils, especially on the white-ash soil, and what has been the effect?

Has any one *thoroughly* tried currants, especially in the southern portion of the state?

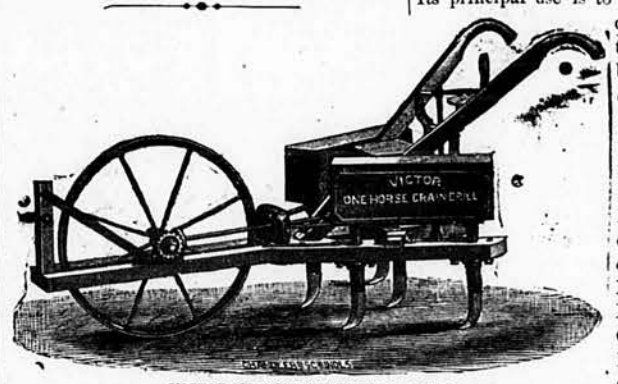
How do quinces do? Do they bear well, and is the fruit nice and large?

A NEW COMER.

There is plenty of gypsum in the state, and all other kinds of limestone.

Victor One Horse Wheat Drills.

On this page we give an illustration of the Victor Five-Hoed Wheat Drill manufactured by Ewald Over, Esq., at Indianapolis, Ind. He also manufactures this drill with three hoes. Its principal use is to sow wheat in standing corn in August and September, but it can also be used for sowing wheat oats, rye and barley in fallow ground. It has the past season proven itself to be the best one horse drill in the market. These drills are extensively sold thro'hout Indiana, Illinois, Missouri, Kansas and Iowa, and, besides Mr. Over, by the Moline Plow Co., at Kansas City, Mo., who are exclusive agents for western Missouri, all of Kansas, Nebraska, and territory west. Mr. Over also manufactures a power Cider Press, which for power, compactness, lightness and easy mode of working he claims is ahead of any press made. This press is suitable also for pressing lard, making wine, etc. Those interested should apply for circular addressing Ewald Over, Indianapolis, Ind.



VICTOR ONE HORSE WHEAT DRILL.

Water for Cows in Pasture.

For milch cows it is very necessary that the water for them is pure, otherwise it taints the milk, and from this neither good butter nor cheese can be made. Where there is not abundance of clear running water in yard or pasture, it should be supplied from wells or cisterns. If drank from standing pools or small ponds, the water is more or less foul, or so stagnant as to be unpalatable, and at times even unhealthful. In order to obtain a full flow of milk cows must have all the water they will naturally drink at morning, noon and night, otherwise they will not give full messes of milk, nor will it be of so good a quality. But a running stream, more especially when at pasture, where they can go and drink at pleasure, is still better than that drawn from wells for them three times per day, at regular intervals. Necessity, however, often compels the latter course. Some dairymen, in order to increase the flow of milk, stimulate their cows to drink an extra quantity of water, by extra salting their food or stirring a small quantity of bran or meal in it. But this is objectionable, inasmuch as it tends to lessen the richness of the milk. This also fills up the stomach so much as to dilute the gastric juice and thus injure digestion, and more or less of the food is consequently voided whole. If there be a gain in milk, then a loss in food follows by stimulating to an excess of drink.—*Rural New Yorker.*

Farm Stock.

The Berkshire Boom.

Of late it seems to be the fashion for all branches of business to have its "boom," or be booming. The iron trade had the most remarkable boom, and from what I see in the commercial papers, it looks as though somebody had or was being pretty badly jammed. I know of no such catastrophes happening to any discreet breeders of good stock. Nothing can exceed the healthy prosperity attending the wool growers and dairymen, and the men who raise good horses and good cattle are in joyous spirits over good times and good prospects. Last, may be, but not least of those who are to feel the inspiriting influences of returning good times—the *boom*, are the plucky individuals who have read through the gloom the signs of the times, held on to their improved swine and quietly bred and fed them better, making them still nearer the desired model and fit subjects for the improvement of the more common herd.

Those who have done this are not of the class who plant their corn, build fence or wean their colts by the "signs" or the moon, but men who subscribe for and read the agricultural papers, and some of them cheerfully give the KANSAS FARMER a goodly share of credit for much that they know. One of these, who is well known to a wide circle of FARMER readers, is Maj. W. P. Popenoe, near Topeka, whose Berkshire advertisement is as modest and honest as the man himself. Mr. Popenoe prides himself on the *quality* rather than the quantity of his stock, and I can scarcely pay it a higher compliment than to say that during a recent visit I selected a boar and three sows that I deemed—well, good enough for anybody, and more of the same sort were left. It is an immense satisfaction to come across a breeder whose stock more than bears out his representations.

The quarterly report just issued by the State Board of Agriculture, quotes letters from between 100 and 200 Kansas hog raisers, half of whom recommend or raise pure Berkshires, and a great majority who raise cross-bred swine advise the use of pure Berkshire boars. These are men who raise swine for the dollars and cents, for the bread and butter they bring, hence these statements are not their guesses, but convictions. This accords with what I have long been convinced of, viz: that the better the Berkshires become known the wider will be the circle of their popularity, and I am more than glad to feel that those who have taken good care of their breeding, feeding and pedigrees, are in a fair way to be rewarded as well as appreciated. Not the least of the important factors to this result has been the publication of the American Berkshire Record by the association of which Mr. Phil. M. Springer, of Springfield, Illinois, is the efficient secretary and editor.

F. D. COBURN.

Pomona, Kansas.

The Holsteins.

A correspondent of the *Country Gentleman* speaks the following praise of this breed of cattle in response to another correspondent:

"For making veal the Holsteins stand without a peer. It is very seldom that a calf will consume the milk that the dam gives. The result is that the calves grow rapidly and fatten quickly. If Mr. Wright could stand on the wharf at Flushing, in Holland, as I have done, and see a steamboat depart for the London market loaded with veal calves, which for size and condition surpassed anything he ever dreamed of, he would conclude that the English people had a better opinion of the Holsteins than he has. And if he will take the trouble to visit a herd of Holsteins, of which I could tell him, in this country, numbering now about one hundred head, he would see a number of cows, each of which will turn the scales at sixteen hundred pounds, and a bull that will do it quickly at three thousand pounds. He will acknowledge that their hides are no insignificant item in their owner's balance sheet, and he will be forced to conclude from manipulation that there is an ample supply of beef and tallow within them. It is of no use to decry the Holsteins, for they are a valuable breed of cattle, and will inevitably make their mark in this country. When a cow will give from twenty to forty quarts of milk daily, and when too old for the dairy, will yield as much beef and tallow as a Short-horn, she is not to be despised.

How Much Wheat Shrinks.

In order to ascertain the shrinkage which wheat undergoes from evaporation, when held in the bin over winter, a very interesting experiment has been tried on the college farm. About six months ago a long sack was prepared and filled with two hundred pounds of winter wheat, accurately weighed. On November 12, 1879, this was placed in a grain bin in the barn; and in order that the grain in the sack might fairly represent the average of that in the bin,—the bin held about one hundred and fifty bushels,—the sack of wheat was sunk into the grain as far as possible,—say to an average depth of about two feet. In this position it has remained six months, or until May 12th, when it was brought forth, and again weighed. This second weighing showed a slight *increase* on that of six months before; the weight being two hundred pounds, plus a fraction of one pound. This result was most unexpected to us; and we can only conclude from it that, during such seasons as those of 1879-80, wheat shrinks by evaporation none at all. The shrinkage so often complained of by millers and others, doubtless comes chiefly from "rattage," leaks in the granary, and other like obvious sources of waste. The slight increase in weight of this sack of grain, is perhaps attributable to a slight variation in the scales used in weighing. It is an interesting fact, that this same sack, when exposed to the rays of the sun at a temperature of 95°, from 11:30 a. m. till 3 p. m. shrunk exactly one-half pound.—*Prof. Shelton.*

Walter Brown & Co.'s Monthly Wool Circular.

The month of April opened with a moderately active demand and well-sustained prices for all classes of wool. Owing to the small stock of domestic, the proportion of sales was largely in favor of foreign wools. The importations from Australia and Montevideo this season have been of exceptionally good character, particularly in the superior condition, and proving by test to yield generally the cheapest clean fine wools, they have drawn the attention of manufacturers almost entirely away from domestic fleeces, for the time being.

After the tenth of the month, the demand dropped off very materially, and up to the present writing, the enquiry for the staple has been small. This change from the previous extreme activity is not altogether unexpected, as a period of quiet is usual at this time of year, when a new clip is approaching, and it is for the interests of everyone connected with the staple, to see the markets free from any excitement, which may cause prices in the interior to be carried above a safe point.

Manufacturers have for some months past been free purchasers, and have anticipated their wants by laying in a supply of wool which would cover the orders they had taken for goods. During the past month but few new contracts have been made for woolens, hence they have hesitated to increase their already ample stocks by additional purchases, and have only bought as necessity required some particular grade, or they found a lot offered sufficiently below previous rates to satisfy them that it was intrinsically cheap.

The effect of the dullness of the past three weeks has been to materially unsettle the market, some holders of wool, either believing that wool has been too high and that a decline is imminent, or with a desire to "bear" the market before the new clip is shorn, have pressed sales of both domestic and foreign wools, at some concession from rates of a month ago. On the other hand, those who are holding any considerable amount of domestic wool, seem to have been indifferent about selling, unless something near their previous expectations could be realized, showing a belief that the supply of wools available during the next few months would not be in excess of the demand, and that any decline at present would be followed by a reaction to the basis of a few months ago.

The second series of auction sales in London began on the 20th ultimo with a large attendance of buyers, and an advance of about ten per cent. on fine wool over the closing rates of the March sales. These wools are now considerably higher than similar grades in this country, and unless a decline should take place in that market, or some improvement in values here, we cannot expect any addition to our supplies from that source.

On the Pacific coast, the first transactions of new spring clip were made at extreme rates, showing a cost in eastern markets considerably above any figures that could be obtained here. But few purchases were made on this basis, and since the early part of April, the market in San Francisco has been very dull and constant-declining. The same may be said of all the sections producing early shorn wools, as Texas, Kentucky, Virginia, etc. Operators have shown little disposition to meet the extreme views of growers which existed a few weeks ago, and from all these points we learn of prices yielding in first hands.

Should this dullness continue some weeks longer, it will probably have a beneficial effect upon the trade of the coming summer, in preventing the undue excitement which so frequently occurs, when the new wools are marketed, and enable both local operators and eastern dealers to purchase wools with a prospect of making a fair profit on their investment.

It is impossible to predict with any certainty the course of the market for the next few months It would seem that with prices so high abroad, with the mills at home running full time, and with very light stocks of domestic wools in the hands of dealers, that prices ought to be fully maintained; nevertheless, during the past month we find the demand for the raw material decidedly checked, transactions comparatively very small and values unsettled, almost diametrically the opposite of what might be expected. It is probably fortunate that such is the case, and that during the next three weeks we may look for wools to find their proper level at a point, where it will be a safe investment for all interested. In the absence of sales of many varieties of wool quotations are necessarily nominal to a certain extent.

Apiary.

Making Swarms.

In *Bee-Keepers Magazine*, G. M. Doolittle, one of the most noted bee-keepers of the state of New York, recommends the following plan of artificial swarming. Another apiarist, Geo. W. House, practices a mode somewhat different from Mr. Doolittle, which he claims is preferable.

"After pursuing various plans, where an increase of one new swarm from each old one is desired, the writer has adopted the following as meeting with the most perfect success, as well as being in accordance with the rules which govern the bees. 'Allow two or three swarms in the yard to swarm naturally so as to get some queen cells of the most perfect type, and in four or five days thereafter make your swarms in the following manner. Get a box or cap to a hive 8 or 10 inches deep, and place it on a sheet, or wide board, a few feet from the hive you wish to make your swarm from, raising the front edge of the box on a block so the bees can run under. Now open the hive you wish to make your swarm from and find the queen and cage her on the combs with one of Betsinger queen cages, or one similar, and replace all the frames back in the hive. If you do not see plenty of unsealed honey, uncap some along the top bars of the frames, and close the hive. Now blow in quite a little smoke at the entrance of the hive, and rap on the sides of the hive as you would in driving bees, at intervals, leaving the entrance open so that the bees returning from the field may enter the hive. In from five to eight minutes open the hive and take out the frames and shake the bees adhering to them, on the sheet or board in front of the box you placed there at the start, thus continuing till you get at least three-fourths of the bees the swarm contained, in the box. When you come to the frame that has the queen on, place her at the entrance of the box, and let her run in with the bees. When you get the desired number of bees you wish in the box, put the frames back in the hive, and close it. If the bees have left the combs, principally during drumming, as they sometimes will, you want to take the frames all out of the hive, and shake those clustered on the sides of the hive in front of the box. In such a case, an empty hive to hang the frames in during the operation is very convenient.' Now we will suppose you have three-fourths of the bees and the queen from your old stock in your box, or cap, and the old hive shut off, you are next to take your box of bees to the shade of some tree and leave the box against the tree in an inclined position, with the open side of your box outward and up, and leave them three-quarters of an hour, at which time you will find them clustered in the upper part of the box as they would be on the limb of a tree, if they had swarmed naturally. During this three-quarters of an hour if you have more to make keep on making from other hives in the same way. At the end of the three-quarters of an hour, hive your bees that are in the box, the same as you would any swarm. Set them on the stand you wish them to occupy, and they will stay and work the same as a natural swarm would. The next day give one of the queen cells from the hives having swarms naturally, to the stock from which the swarm was taken, and the work is done. Thus it will be seen that you have bees of all ages in your new swarm, and by the drumming on the hive these bees are filled with honey the same as they are when swarming naturally. By their being left the three-quarters hour to cluster in the box they mark their location anew the same as a natural swarm. The old stock also is left in full as good shape as if a natural swarm had issued therefrom. If preferred a laying queen can be introduced into the old stock. This plan of swarming pleases me and I trust will all those who try it."

Mr. House's plan:—

"As soon as a swarm has made preparations for swarming by having eggs deposited in the queen cells, we proceed as follows: Remove the old swarm a few feet one side, and on the old location place a new hive, (either empty or the frames filled with foundation), put a small block between the lower front edge of the hive and the bottom board, (to give the bees an easy access to the hive), and place a wide board in front of the new hive, with one edge resting against bottom board while the other edge rests upon the ground, so the bees may run up and into the hive. We now open the old hive and draw a frame a little one side from the center of the hive, and after looking the comb carefully over to ascertain if the queen is thereon, we turn to the new hive and by a little sudden jerk we shake nearly all the adhering bees on the board in front, and they readily enter their new house.

Setting this frame in the shade of a near hive, that we may have easy access to the frames to work, we return to the old hive, and draw the next frame towards the center, looking for the queen and shaking the bees in front of new hive, as we did with the preceeding frame. Replace this frame in its original place, and proceed as with the preceeding frame, until you have two-thirds of the bees from the oid swarms into the new hive. As soon as you find the queen, take her from the comb and place her at the entrance of the new hive and let her run in with the bees. Now close your old hive and contract the entrance, remove it to a new location. By this time you may remove the wide board in front of new hive, so that the old location will not be disfigured, and the working bees will lose no time in entering the new hive. The next day give the old swarm a queen cell that will hatch within forty-eight hours, and the work is done. A laying queen may be introduced, instead of a cell if desired. The first few swarms will furnish us with queen cells of the most perfect type. But we generally make a few swarms about ten days before we wish to use the cells, and claim there is no difference in queens raised from larvæ from two to four days old, and those raised by the queen depositing the egg in the cell. That is during the swarming season.

"Now, let us see what advantages we gain. First, our bees in the swarm are at work one hour before Mr. D.'s are. Secondly, we can make at least three swarms to Mr. Doolittle's one. This we consider a very great point in favor of our plan. In artificial swarming on the above plan, you will notice we secure our new swarms at least a week sooner than we would by allowing them to swarm naturally, and in the old hive we have a laying queen at least five days earlier than we would by allowing them to hatch their own queen, two very great items during the honey season. Swarms having extra quailities we allow to raise their own queen cells, that we may use them in other hives, thus improving the qualities of our bees.

After a few days, I claim there is no one that can discover the difference between such a swarm and one that swarms naturally. We have practiced this mode of swarming for the past fifteen years, and are satisfied there is no plan that surpasses it, where you wish to have one new swarm for each old one."

Dairy.

Sweet and Sour Cream Butter.

The question whether sweet cream or sour cream makes the finest butter has been ardently discussed. Each party is no doubt right in claiming excellence for his process, though perhaps not in condemning the other. The finest "gilt-edge" butter can be made in either way. Being accustomed to the taste and flavor of butter made from sour cream, one is apt to find hardly any flavor with sweet-cream butter, and to pronounce it flat and lacking in strength. On the other hand, those who have a refined taste for sweet-cream butter, would call that produced from heavily soured cream sharp and strong, not appreciating the latter quality. It is not so much the butter-fat that gives flavor to butter, as it is the foreign matter which is mixed with the fat globules permeating the butter. In case of sweet cream, this matter consists of pure and sweet butter-milk, which imparts to the butter a mild, delicious flavor; while in sour-cream butter it has already partly changed, lactic acid and coagulated casein having been formed, the flavor of which covers that of the butter-fat. For this reason any fault that may cling to it is more easily detected in sweet-cream butter than in the other, and, as faultless butter is rare, the sweet-cream butter is likely to get a bad reputation compared with the other kind in which slight faults may be covered by the penetrating flavor of the foreign substances. Therefore, hardly ten per cent. of the former may pass as a first-class product, while perhaps twenty-five per cent. of the latter gets the certificate of number one quality.

The kind of fine butter which dairymen should aim to produce is that which finds the readiest sale at the highest price. The development of the refined taste of the English consumer is in the direction of pure and mild butter. To produce that which commands the highest price in London, the cream can be but slightly acid, while some years ago that made from really sour cream was preferred. The present preference for mild butter without any foreign taste, is also illustrated by the fact that butter not salted is gaining ground in London every day, and commands higher prices than the finest salted article. Butter not salted, however, is as yet out of the question with those producers who must send their goods a considerable distance to market. And further, the majority of English consumers still prefer butter made from slightly sour cream. The same is true, we believe, with the Brazilian, African, and other tropical markets. Why, then, have Danish packers adopted the sweet-cream system? For the following reasons:

1st. Butter made from many different farms from sour cream is likely to be made in as many different ways. To start the souring of the cream and observe the right point of acidity and consistency—then to churn at once—is perhaps the most difficult task in butter-making. It is impossible to instruct a hundred butter-makers so that all will churn the cream at the same point of acidity. By adopting the sweet-cream system the work is reduced to the following simple rule: Churn immediately after skimming the milk. By adding to this rule the free use of ice, of the thermometer and the watch, the whole process is simplified, and the result made more independent of the individual judgment of the butter-maker.

2d. When receiving the butter at the packing establishments, faults are more readily detected in the sweet-cream butter than in the other, and consequently a more perfect grading may be made.

3d. Some packers think that sweet cream butter has a better *keeping quality* than that from sour cream, and with reason. Examining specimens of two kinds under the microscope, Dr. V. Storck, of Copenhagen, found the sweet cream butter the more solid of the two. All butter showed diminutive drops of fluid sprinkled through it. In sweet cream butter these drops were numerous but infinitely small, while in sour cream butter they are much larger, though fewer in number. In sweet butter they contained casein in solution, while sour cream butter coagulated casein was observed, the curdling being effected by the action of the lactic acid in the cream. As a sponge perforated by numerous small holes will appear more solid than another with larger though fewer holes, the sweet cream butter appears more solid than the other. The fluid pervading the butter has a chemical as well as a physical effect. In sweet cream butter it consists of pure and sweet buttermilk, which, in case of quick packing in tins, will keep for a considerable length of time, while in sour cream butter the milk is already in decay, some milk sugar being reduced to lactic acid, some casein coagulated, and all the changes going on which accompany lactic acid fermentation. If thereby butyric acid is developed, it will soon impart to the butter a disagreeable flavor. Though, therefore, there are many reasons why the sweet cream butter may keep the longer of the two, still the facility in discovering faults in it is perhaps the most important. It is certain that really first-class sour cream butter will keep very well when packed in tin cans, and several canners in Denmark are using that kind of butter.

As to the comparative yield from sweet or sour cream, it takes time and experience to get the highest possible yield on either plan. A butter-maker working steadily on the sour cream plan, who for a single day tries to make sweet cream butter, is sure to get less butter than by his usual method, and *vice versa*. By daily observation he has found the best treatment of the cream he is working with; any change will put him back in yield. By treating the sweet cream right, as much butter can be made from it as from sour cream; but the former requires more agitation than the latter. The aim in souring cream is to coagulate into finely distributed particles a portion of the casein, thereby making the fluid thinner in which the butter globules are floating, thus reducing its resistance to the gathering of the flat globules. When the whole of the casein remains in solution in the sweet cream, the milk serum is thicker, and affords more resistance to the fat globules; therefore, more mechanical power and greater speed should be applied in churning sweet cream.—*J. D. Frederiksen, in Land and Home.*

Poultry.

Raising Turkeys.

First, select in the fall of the year the very best young hens you have in your flock—say five or six—and if they will roost outside the hennery during the winter so much the better. Do not be afraid that the cold weather will hurt a full grown turkey, for it will not, provided you feed them all the corn they will eat just before going to roost. Half-grown turkeys are sure to contract roup, whether roosting in-doors or out during the winter, and even full-grown ones frequently do if they are confined with the fowls in the hennery. I advise selecting young hens, for the reason that they are not as prone to hide their nests as old ones, and consequently you avoid a great deal of perplexity, if not loss, for skunks, foxes and crows are great foragers of eggs. Place in the corner of the fences and the yards where the turkeys frequent, a few old pieces of boards set on end, and put a little straw or leaves behind, with an egg half secreted among the leaves, or in the straw. By so doing you will surely decoy your turkeys into laying in the nests and places you have thus prepared for them. You will get from twelve to thirteen eggs each from your turkeys before they will manifest any inclination for hatching, and as soon as they remain on their nest over night, catch and lock them in a coop in the yard, where the remainder of the flock frequents, and about the fourth day you may let them out to roam at pleasure, and in about five or six days after they receive their liberty they will commence laying again.

All the first lot of eggs I receive I place under hens for hatching, and will find that the turkeys have finished their second laying a few days before the hens have finished hatching. I then take the eggs from the hens and give them to the turkeys and sometimes the turkey has only to sit a few days before she has her young. If I am compelled to leave some of the eggs with the fowls to bring out, I deem it an indispensable requisite to see to it that the hen is perfectly free from lice, using pulverized sulphur, etc., freely. I regard it as next to impossible for hens to raise young turkeys, for turkeys are exceedingly tender when young, and above all things they must be kept free from the parasites that infest the common fowl. They must not even be allowed to remain over night in the same building where the common chickens are kept. Do not be afraid of putting as many as forty or fifty young turkeys with the old mother turkey, but keep them in a dry, warm place, especially over night.

The feed must consist of boiled eggs, cut up very fine and mixed with bread crumbs and sweet milk—for a few days at least, gradually withdrawing the eggs and substituting therefor sour-milk cheese, with plenty of stale bread crumbs—finally substituting wheat bran and corn meal, well scalded, with the cheese. Under no circumstances give raw corn meal.

Turkey eggs that cannot be hatched before July 1st should rather be eaten than to attempt to hatch and rear young turkeys therefrom. In this climate such late chicks will not pay for the trouble. But in case a hen steals her nest, and brings out a brood at this season, do not feed them at all; they will get all the insects necessary, and in nine cases out of ten she will raise more from the brood by roaming at large than in any other way. By adopting the above method, the different mother turkeys will be acquainted with one another, and there will be no fighting among the old hens, thereby tramping and killing the young unintentionally. Then again they will all associate and run in one drove, so that when brought up at night (as they must be) you will have no trouble in hunting up as many lots as you have mother turkeys. In no case allow your young turkeys to remain out in a thunder and rain storm, but it must be some person's business to see that they are all under cover before the storm begins. If there should be a cold rain storm, lasting for a day or two, be sure and mix with your feed some black or cayenne pepper.

I would not advise confining the young, except for a day or two, until they become strong, then let them roam in a lot of two or three acres, in a nice, sunny place if possible, and be sure and feed regularly and frequently at first. For fattening give your turkeys boiled potatoes and corn meal, mashed together, until about ten days before you intend killing, then substitute boiled carrots for the potatoes, mixed with the meal, and my word for it you will have as fine looking a lot of turkeys as you may wish to see.—*Country Gentleman.*

Patrons of Husbandry.

A Farmer's Party.

Agriculture is the basis of life. Why not, then, take a hand in the structure of its conditions, first among which are society and government? How else do we practically recognize and confirm the nobility of labor? Is there no harvest field of results, for this class, to reward the labor of a lifetime? Where are life's elastic joys to him who knows no freedom from partisan servitude and the grievous burden laid upon productive labor by the task-masters? Where to him is the innocent satisfaction that is to be derived only from the relations of equality that ought to be spontaneous. Must farmers have no opinions, aims, interests or sympathies, peculiar to themselves, that they may proclaim; no principles but renunciation and sacrifice of personal to partisan weal? Such thralldom and the weariness it brings is the curse that brutifies humanity.

It is a principle of the patrons of husbandry to build a higher manhood and higher womanhood among farmers, and one of the earnest demands of the national grange is, "That governments be administered in a cheaper and simpler manner, consonant with the conditions of the people." These are matters upon which there can be no division and consequently no issue, among farmers, as with religious or political questions that have two sides. Whenever the patrons of husbandry decide to present a candidate for any public position outside of politics, on a farmers' platform, they will be acting in accordance with the declared purposes of the order. The producing classes hold the remedy for the ills of which they complain, in their own hand, and when farmers start, all other laboring classes will gladly join them, and a reform will be effected that will result in pecuniary benefits that are a condition of enlightenment, enlightenment a condition of liberty, liberty a condition of progress and progress a condition of the higher manhood we seek. Let the farmers' banner be flung to the breeze and every son of soil and toil take his stand.

The above advice is from that sterling grange paper the *Dirigo Rural*. It is rash and dangerous advice. Farmers are not prepared to organize and lead such a revolution. They lack discipline and political education. It was such advice followed by such attempts which shattered and almost wrecked the order in the first years of its existence. Such a rash measure is not necessary. Let farmers control the existing political parties by filling the important elective offices with the best, and strongest men of their own class. This will make no farmers' party for other interests to antagonize and fight, but all the parties in power will be farmers' parties with no organized enemy in uncontrolled possession of party machinery to oppose them. Farmers cannot win by making new parties but by capturing and controlling existing parties. All farmers have to do is to put their own best men forward and elect them, and they are at once masters of the situation without a conflict or a jar. If they are not competent to do this, neither are they competent to form and sustain a new party.

The Grange Socially.

Viewed from a social standpoint it cannot be questioned that the organization of patrons of husbandry is in advance of all other organizations instituted for the mutual benefit of its members. Within the gates of the grange, woman is placed on an equal sphere with the husbandman. This much granted, who can be deluded as to the social advantages of the grange? As a class farmers have not by far the advantages of social pleasures that some other classes of society enjoy, and until the grange was breathed into life there was comparatively little social intercourse among them. Except to transact the usual routine of everyday business life, they seldom were brought into contact with one another, but since the institution of the grange their meetings have become the bright spot in the lives of our farmers. In the grange meetings heart meets heart the fraternal grasp is given, time passes pleasantly, the friendly intercourse ends only too soon, and regretfully they utter their good-byes; yet, as they separate, they have the sweet assurance in their minds that soon there will be another reunion, where cordiality and sociability will again reign and more firmly cement the bonds of fraternity.

In the grange meetings many valuable acquaintances have been formed about whom we would otherwise have known nothing. Here gather noble men and women from all parts of the county to enjoy a season of rest from the weary labors of the farm to interchange opinions upon matters that are for the mutual advantage of all. Resting under the broad seal of the grange they know that they are making for themselves a history that is ennobling and worthy of emulation by their posterity.

But to the farmers' wives and daughters come the greatest blessings in the social feature of the order. They ever keep in mind the times of regular and special meetings, and they know just how to plan for prompt attendance, and unless sickness and the raging elements disarrange their plans they never fail to join in the rare social enjoyments of these meetings. After weeks of wearying toil in the domestic duties of their homes, how it does still and rest the throbbing nerves to go to the grange meetings, hear the hearty greetings and have kind words of sympathy spoken when some unspeakable trouble is weighing upon the spirits. What happiness, then, to hear the quick repartee of some light-hearted brother or sister that sends the blood tingling through the veins, and for a time, at least, all dull care takes flight. For these and other innumerable joys, the social feature of our order has well repaid for all labor and cost spent in perfecting.—*Farmer's Friend.*

The Thinking Farmer.

When the politician wants to use the farmer he begins by praising his intelligence, his industry and his good sense. And when the farmer can be of no further service, he is very unceremoniously and contemptuously laid aside and yet so adroitly cheated that he is well pleased with the belief that he is doing his full part in upholding his own and his country's interests, when he is only blindly following the behests of partisan leaders who are never moved by any higher considerations than their own selfish purposes. The difficulty lies in the fact that the great mass of farmers seem never to think for themselves, except "what shall we eat and what shall we drink?" And this, other classes do not object to, provided they work for it and ask for nothing more. It is true that with only a spade, a hoe and a sickle, a robust man may, perhaps, on good land, raise grain, roots and fruit enough to feed himself and family, but shall this be the full measure of the ambition of an American farmer, who should be a ruler because farmers own the land of this country, which makes them fixtures, and especially interested in the preservation of law, order, religion and all the social blessings? Whether farmers ever learn this truth or not, they have greater inducements to think and act for themselves than any other class. The professional classes have comparatively little at stake. Commerce shifts like the breezes that fill her sails, and politicians always flourish in times of war and the disruptions of society, and the havoc that is made must be repaired by the agriculture of the land.

Spirit of the Order.

Let it be remembered by every patron that co-operation means to positively abandon contention and discord, lay strife and selfishness away, and work together harmoniously to educate and elevate ourselves as a class, and build up our own organization to more permanent and lasting prosperity, which leads to the advancement of our own interest and the prosperity and elevation of our own families, the importance, then, of thoroughly understanding and the necessity of strict co-operation in all our work for success in every enterprise and effort.—*Worthy National Lecturer Eshbaugh.*

In the subordinate granges we must seize every opportunity of gaining instruction possible. Members must stimulate each other to cultivate more earnestness and skill in reading and thinking; and endeavor, by continual effort and application, to master the letter and spirit of the ritual, to become persevering and comprehensive readers of the grange journals, and by every intelligent means gain that knowledge which will place them side by side with their compeers in the professions. Then, as they still advance, they can co-operate in buying and selling without fear of failure; they can have an influence in regulating the laws of our country in their own behalf; they will be able to manipulate the markets by their boards of trade, and finally through a sufficiency of sound intelligence and thorough judgment they will hold their liberties gained so honorably, and face the world of "Exchanges" theoretically, practically and intelligently. Then, and only then, will we have attained the high standard of the grange organization, and co-operate with success in meeting together, teaching together, learning together, acting together, buying together, selling together, and in all things working together for the general good of the entire membership.

Why should the grange be sustained? Because it is the only organized effort ever made in the interest of the farmers; because it has for its object the development of an industry standing at the foundation of all interests; because it has for its object the development of sociability and friendship among its members and farmers generally; because it develops intellect, and affords a school for the training of the mind, producing a desire for mental cultivation, a thirst for knowledge and an opportunity to gain it; it inspires the mind with feelings of pride in that noble calling which stands alone in the magnificent promise, "While the earth remaineth seed time and harvest shall not fail." Because it inspires a hope, and forms a medium by which farmers' sons can attain to positions of honor in the country in the gifts of the people, as a result of cultivated intellect.—*Canada Farmer.*

The Patent Laws.

The legislation asked for in so many petitions from agriculturists and others, exempting from prosecution for infringement innocent purchasers and users of patented articles, and directing suit to be brought in all cases of infringement against the maker or vender of the article, has been incorporated by the house committee on patents in the bill now pending in their committee, amending the patent laws in various particulars. Besides the above provision, it contains others restricting application for re-issues to within eight years from the original grant, fixing an equitable measure of damages in case of suit for infringement, and reducing somewhat various patent office fees. It is thought that the bill will be passed, although the patent lawyers are greatly opposed to it.

IMPORTANT AND INTERESTING STATEMENTS.

Read, Mark and Inwardly Digest—Something for Everybody.

PURITY OF FAMILY MEDICINES.

Among the many specifics introduced to the public for the cure of dyspepsia, indigestion, derangements of various kinds, and a general weakness of the human system, within a few years, decoctions of vegetable bitters have held a considerable place. Some of these have for a time had a considerable sale, but with doubtfully good effects and much injury. Such should never be taken into the human body. Often bitters have been made highly popular for a time by being largely charged with whisky and other spirits, thus ministering to a depraved appetite. In this way the medicinal purpose for which they were avowedly offered to the public has been missed, and sale to which they attained before their true character was thoroughly known has completely fallen away. The writer in his visit to Rochester has had the pleasure of meeting with "Hop Bitters," an entirely different compound from those alluded to. It is five years since their merits were brought before the public, and they have steadily gained in favor until they are, without question, the most popular and valuable medicine known The exceeding intrinsic value of their leading components is in no way destroyed or lessened by the deleterious quality of any other ingredient. They contain, along with the purest hops, buchu, mandrake and dandelion, other medicines recognized as possessing the most effective curative properties. They are specially beneficial to clergymen, lawyers, literary men and all those subjected to the strain of mental labor. They cure almost every disease of the stomach, liver, kidneys and urinary organs. For nervousness and all its attendant ailments they are a never-failing remedy, giving tone to all the organs where formerly there was feebleness and an all-prevailing feeling of weakness. They have attained to an immense sale, which is the surest proof of their successfully meeting the wants of the people. We have seen letters from old established chemists testifying to this, and others from private individuals, stating that after they had had the services of the most distinguished medical men without any benefit, they had experienced perfect relief from their complaints by the use of these invaluable bitters. They discharge their curative powers without any of the evil effects of other bitters. —*N. Y. Merhantile Review.*

A Voice From the Press.

I take this opportunity to bear testimony to the efficacy of your "Hop Bitters." Expecting to find them nauseous and bitter and composed of bad whisky, we were agreeably surprised at their mild taste just like a cup of tea. A Mrs. Cresswell and a Mrs. Connor, friends, have likewise tried, and pronounce them the best medicine they have ever taken for building up strength and toning up the system. I was troubled with costiveness, headache and want of appetite. The two former ailments are gone, and the latter greatly improved. I have a yearly contract with a doctor to look after the health of myself and family, but I need him not now

S. GILLILAND, *Peoples' Advocate,*
July 25, 1878. Pittsburg, Pa.

Bay City, Mich., Feb. 3, 1880.

Hop Bitters Company: I think it my duty to send you a recommend for the benefit of any person wishing to know whether hop bitters are good or not. I know they are good for general debility and indigestion; strengthen the nervous system and make new life. I recommend my patients to use them.

DR. A. PRATT,
Treater of Chronic Diseases.

Superior, Wis., Jan. 1880.

I heard in my neighborhood that your hop bitters was doing such a great deal of good among the sick and afflicted with most every kind of disease, and as I had been troubled for fifteen years with neuralgia and all kinds of rheumatic complaints and kidney trouble, I took one bottle according to directions. It at once did me a great deal of good, and I used another bottle. I am an old man, but am now as well as I can wish: There are seven or eight families in our place using hop bitters as their family medicine, and are so well satisfied with it that they will not use any other. One lady here had been bedridden for years, is well and doing her work from the use of three bottles. LEONARD WHITBECK.

Battle Creek, Mich., Jan. 31, 1879.

Hop Bitters Co.: Gentlemen—Having been afflicted for a number of years with indigestion and general debility, by the advice of my doctor I used hop bitters, and must say they afforded me almost instant relief. I am glad to be able to testify in their behalf.

THOS. G. KNOX.

Ludington, Mich., Feb. 2, 1880.

I have sold hop bitters for four years, and there is no medicine that surpasses them for bilious attacks, kidney complaints and many diseases incident to this malarial climate.

H. T. ALEXANDER.

Paulding, Ohio, Jan. 2, 1880.

Hop Bitters Company: I have used your bitters, and must say they helped me materially. JOHN FIELD, Infirmary Director.

THE KANSAS FARMER.

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

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The Dry Seasons of the Interior of the Continent.

C. W. Johnson is discussing this meteorological question in the columns of the KANSAS FARMER, on a broader scientific scope, so to speak, than it has ever before been treated, and his reasoning supported by data and natural laws, will not fail to strike the scientific mind with much force. That the tendency, from the overruling influence of natural laws is to experience dry periods as well as wet ones, in the interior of the country, of greater intensity or magnitude than the same influences effect the coast countries, we think will be acknowledged by all who study the question, and the series of articles which Mr. Johnson is publishing on the subject of Weather Laws will greatly assist in understanding the subject better than it has ever before been understood.

What degree of modification in the extremes of drought may be wrought by the cultivation and settlement of the country cannot be forecast; but the data which has been furnished indicates that this will have a very material influence on the distribution of the rain fall; bnt that recurring periods of drouth of more or less intensity will continue to be the meteorological condition of the interior regions, we believe will be verrified by future experience. If this theory becomes an established fact, and the periods of returning drought are susceptible of being accurately foretold, as the movements of the tides and planets are, man will not be taken at so great a disadvantage as now.

The present year is set down as one of the very dryest periods that is likely to occur in twenty years, and the indications are that the theory may be accepted, for the present at least, as correct. That the crops of Kansas will be very light this year seems to be beyond the most hopeful to doubt. Next year, if the theory is correct or approximately so, there will be sufficient rain to produce fair crops, and the following year still more bountiful showers and overflowing granaries.

Within the last ten days there have been refreshing rains in many sections of the State; in some places they were quite heavy, wetting the ground several inches, but they may all be classed as local showers, which may or may not be repeated. There are no indications of a general rain, reaching hundreds of miles in extent, covering a large region of country. But our people should not be utterly cast down; the same weather laws which tell us this is a period when we must submit to a severe drouth, promise a fair supply of water next season and an abundance for several succeeding years, then our pioneers will push their plows to the western border of the state, and bursting up the hard-trodden sod make reservoirs to store up and retain the bounteous rains to be gradually evaporated, this supplying a continuous, grateful moisture to the dry atmosphere, to curb the careering winds and feed vegetation when the clouds withhold their wonted showers.

Our Natural Outlet.

That the great rivers which drain the interior of the United States constitute the most ample and the most economical outlet to the Ocean, for the interior portions of the country, every one who takes up the subject and examines it carefully will have to admit. They are capable of affording a medium all sufficient, while on the score of economy they offer inducements that no other means can even approach. The Eads jetties have demonstrated a great principle and pointed a way by which the principal rivers of the interior can be utilized and made safe for commerce. The Mississippi is the great central artery, which will at all seasons afford ample facilities for floating the commerce of the world. All that is required is the skill of the engineer to direct the river's own immense hydraulic force. It will do its own dredging if its wild waters are brought under control and directed by science. That this can be accomplished, the south pass improvement has clearly demonstrated. It will cost some millions of dollars to accomplish so great a work, but when done it will return to the industry of the west many times the millions in saving on the cost of transportation, all that the work may cost. It is estimated that the jetties by partially improving the channel at the mouth of the river, saved the country during the year ending September 1, 1878, by a reduction on freights on bottom alone $1,600,000. The railroads have it within their power at almost any time to tax the industry of the west a million a month over and above a fair, legitimate profit on freights. They not only have it in their power to do so, but they frequently exercise that power.

The rivers, without further improvement, can be utilized to a much greater extent than they have been. The question of establishing a barge line from Kansas City is again being discussed, and if good business ability is brought to aid the project, we doubt not that it can be accomplished with profit. The Missouri should be improved from Kansas City to its mouth to make it serviceable in times of low water. At such seasons its tortuous channel and the numerous bars present a great obstacle to towing barges, which defect should be remedied. But a line of barges in stages of low water could be withdrawn and used to transport produce between St. Louis or Cairo and New Orleans. This would keep the boats employed and aid to strengthen and increase the transportation business by the rivers. As the business increases the want of better accommodation and increased facilities will be more strongly felt, and the pressure for perfecting river navigation will become one of such vast importance to the west that the government will bo compelled to put her great highways to the ocean in complete order.

By deepening the channel of the Mississippi, enough waste land on its banks, and which is submerged by annual floods, could be redeemed to pay the whole expense. If capital had not so many calls in this vast undeveloped country, it would doubtless invest in this enterprise. Such an opportunity in Holland would be speedily embraced.

The river system established, the produce of the west could be shipped to all parts of the world, and the embargo laid upon industry by railroad transportation would be lightened, the roads which defy single states now because their lines are continuous through several states, would have their principal freight terminus on the river bordering the state, and could be brought under control of state law in making their schedules of freight rates.

Kansas is particularly favored in her geographical position to control her railroad system, with the river system of transportation perfected. Kansas City is the key to all of this vast region of country embraced by the state of Kansas and Colorado. Her great railroad system, which is yet in its infancy, not only embraces the state, but reaches into the mineral fields of Colorado, New Mexico and Arizon; and the busy, adventurous engineer is pushing his lines toward the pacific. Soon the iron track will draw from southern California and all the intermediate country, the wealth of the mines and the wealth of the farm to be emptied into the great receiving lap of Kansas City. At that point water carriage should be prepared to save the industry, which lays toward the settiug sun, from the exactions and tribute which those great eastern railroad monopolies stand prepared to levy.

Kansas and Colorado can enforce just and reasonable rates for freight and passenger carriage on their railroads, when the commercial terminus of their system of roads is on the eastern border of the former state. They cannot control rates if that termini as now continues to be at the Atlantic cities. Without an outlet by the rivers, the great eastern trunk lines must continue to be a part of the system of our roads, and thus lengthened and strengthened, they are placed beyond the power of those states to control.

The question of opening a capable water way to the ocean should be made a western question, and a leading one in our political "platforms," and enforced by its constant agitation till the whole country from the foot of the Alleghanies to the base of the Rocky mountains becomes a unit on it. Agriculture has the greatest stake in this question, and agricultural alliances, associations and granges, should make it a prominent one till it is thoroughly understood in all its important bearings upon our farm industry,

Sub-Earth Ventilation.

A DESCRIPTION IN DETAIL OF THE REQUISITES IN SUB-EARTH VENTILTION, BY THE INVENTOR AND PATENTEE OF THE SYSTEM.

So much has been published during the past five years descriptive of sub-earth ventilation, that I inferred that the principles involved and the requisite appliances were generally understood, but from sundry letters of inquiry that I have received from farmers in Kansas, who say that they desire to embark in dairying, and, as they have neither ice nor cold water, they are disposed to adopt sub-earth ventilation. I find it impossible for me to answer all my correspondents, and as much of the information sought is similar in each case, I believe that I can supply what will be an anticipatory answer to what many have, and others desire to ask.

Sub-earth ventilation—What is it?

Sub-earth ventilation consists of a method of tempering, drying and purifying air to be used for ventilating buildings of various descriptions, and for various purposes, but especially for dairying, by transmitting the air through a duct, or flue, constructed in a trench or ditch in the ground, which duct is to be placed below the influence of both sun and frost, and where the temperature of the earth is uniform.

The duct in the earth is preferable when it has a slight fall in its bottom towards the building to be ventilated. If, however, the soil in which the duct is laid, is sand or gravel, or any other variety, through which water will rapidly leach, the bottom of the duct may be level, or may have a fall in it either way, (to or from the building), and it may even have a fall of three to four feet per hundred linear feet either way, though a fall, much or little, towards the building is preferable, and for this reason. In hot weather when the earth is cooler than the air, heat in the air in the duct is absorbed by the cooler earth, and as the air in the duct is thus cooled, it becomes heavier than the outside air, and will, by its increased weight, or by gravity, flow into the building, and up out of it, if the ingress, or supply end of the duct, is higher than the discharge end. Both ends of the duct are to be open continually, which insures a constant supply of air to the building, and a constant change of it, which constitutes *ventilation*, and the air having been conducted beneath the earth it is *sub-earth ventilation*.

How is the duct air dried?

All have observed that a vessel of cold water will condense the vapor in air surrounding it, and that it will form a dew on the vessel. Now, the walls of the air-duct being perpetually cooled by the earth in contact with them, act the same as the walls of the vessel of cold water. They condense the water in the air, in the form of vapor, and as water forms on the walls of the duct, it flows down and is absorbed by the earth bottom of the duct, and the air thus dried passes on to the building to be ventilated.

How is the duct air purified?

The drying process just described moistens the walls of the receiving end of the air-duct, and any dust or floating matter the air may contain as it comes in contact with the moist surface of the duct, is arrested, and the air passes on purified.

The influence of the earth on the air transmitted by the duct has proved to have the marvelous effect of removing from the air offensive odors in it, and it is believed by numerous medical practitioners who have investigated the system, to possess the power of removing malarial gases from the atmosphere. This effect, although probable, is not established, but another is, which is of equal importance.

One of the components of healthful, normal atmospheric air is ozone. There are times, and they occur alike in low and high, and intermediate latitudes, when there is an insufficiency of this ingredient in the air, and that state of the air is positively known to increase the virulence of cholera and similar diseases. It is also known that the absence of a due proportion of ozone in the atmosphere precipitates and promotes acidification and fermentation in fermentable substances, like milk, malt, yeast and the like. All experienced dairymen have had indelibly impressed on their memories the ill effects of a dearth of ozone in the air, as it has often occasioned the premature souring of their milk set for creaming, and coagulated and rendered it so thick that it mechanically prevented the cream from rising, often occasioning a loss of thirty to fifty per cent. of the cream.

Some dairymen assert that they have known this faulty condition of the air to obtain ten to fifteen times in a season, but that it was always suddenly corrected by violent thunder storms, and that the effect of the abnormal condition of the air was always most marked just before such storms.

An erroneous opinion prevails, however, that the sudden souring of milk described, is the effect of electrical discharges, while the facts are that the absence of ozone in the air culminating to the maximum just before lightning is produced, is the cause, and that electrical discharges supply the deficit and give to the air its normal quality of ozone. It is an established fact that air so wanting in ozone that milk, in ordinary milk-houses will sour in it in twelve to eighteen hours, will stand its wonted period, *i. e.*, thirty-six to forty-eight hours, in a room sub-earth ventilated, without souring, provided the room is well insulated, which will be duly explained.

The unsanitary effect of air wanting in ozone, is now considered so momentous that ozone generators, a small apparatus costing ten to fifteen dollars, are now an article of commerce, and are used in hospitals, asylums, and also in private houses and schools.

As it will be of special interest to denizens of Kansas, I will, before dismissing the consideration of ozone, insert an extract from a "Treatise on Hygiene," by Dr. Hammond, Surgeon General of the U. S. Army, retired. He says:

"During my service at Fort Riley, in Kansas, cholera prevailed at that post on two occasions to a very great extent;" and adds: "While it continued the air was dry and contained no ozone. At least the ozonometric paper, or test, failed to show the presence of it, and exhibited no change in forty-eight hours. The occurrence of a severe thunder storm put an end to the epidemic in both instances, and ozone at once appeared in the atmosphere."

How long should the sub-earth duct be?

For the latitude of Kansas, the duct should not be less than 300 feet in length, nor less than 13 feet in depth.

What size and form should the duct be?

The size should vary according to the size or cubic measurement of the room to be tempered, and the amount of warm milk to be set in it, twice in twenty-four hours. For a dairy for setting the milk of 10 to 35 cows, the area of the cross section of the air supply duct should not be less than 100 square inches. For one for 35 to 70 cows, the duct should not be less than 300 square inches.

As to the form, that of course will depend on the material used in the construction of the duct. If of brick, or cobble stone, the bottom will be of earth, and level crosswise, the walls plumb and the top arched, a half circle arch usually. Four-inch brick side walls and arch is heavy enough for largest duct required for a dairy for Kansas, (probably). It the duct is built of boulders, or cobble quarry stone, stones 8 inches in length will be long enough for the side walls and arch for the largest duct mentioned.

Where flags, or flat stones of suitable strength, size and thickness are obtainable at moderate cost, I prefer them as material of which to construct ducts of any size that I have named.

The duct of this material is formed by setting two lines of suitable length on end, resting the lower end of each row in the angle formed by the bottom and sides of the trench for the duct, then each stone is to be leaned over, so that they rest against each other over the center of the bottom of the trench, thus forming a triangular duct—the two oblique sides of stone and the bottom of earth. It matters not if one of each pair of stones used to form a section of this style of duct is 2, 4, 6, 8, or even 12 inches longer than the opposite one, or the longer one may project above the shorter one, and they need not be dressed to equal lengths, unless the stones are of a nature that they can be safely cut, or hammered to the desired length, without danger of fracturing the main body of the stone, which should be carefully avoided, as an invisible fracture might crush it by the weight of the incumbent earth, which would be serious.

In case the margins of the flags used in the construction of a triangular duct are irregular, and to that extent that the joints shall be so open that earth filled in over the duct will fall through them into it, such open joints may be closed by simply laying small, thin flags over them, and returning the earth on them. No mortar will be required in the construction of this style of duct. The essential feature in its construction is that the stones shall be strong and free from fractures.

When stratified limestones are used, stones 11 to 14 inches in length should not be less than 2 inches in thickness; stones 16 to 20 inches in length should not be less than 3 inches in thickness; 20 to 26 inches long should be 3½ to 5 inches thick. For a ten to 35-can dairy, the flags need be but 16 inches in length and 2½ to 3 inches in thickness. The trench for such a duct should be 22 inches in width at the bottom, and in ordinary soil 30 inches wide at the top and 13 feet in depth.

This trench will contain one cubic yard of earth to the linear foot, total 300 yards, which, of ordinary soil, can be moved for 16 cents per cubic yard, making the excavation of a trench 300 feet in length. Cost, $48.

The earth is to be handled but once, after the first section of 12 feet in lenth is dug, as the duct is built in sections and the earth cast back on the duct, instead of being thrown out on the bank to be reshoveled. In excavating the trench for a duct the forward end of each section dug and cast back on the duct should be "stepped," that is it is to be so dug that it will represent steps in the earth in the end of the four sections of trench, as the steps make the next excavation more convenient. Soil that will "cave in" badly when the trench is excavated by throwing the earth out on the bank, partially owing to the weight of the excavated earth on the bank, will not cave when dug in short sections and cast back on to the duct.

How are the ingress and egress ends of the duct constructed?

The excavation should commmence in the cellar of the building to be ventilated, and should extend down to a point level with the proposed bottom of the duct, thence under the foundation wall to its outer face, supporting the wall on temporary props. Then the outside excavation should be commenced by throwing or hoisting the earth out and depositing it on the bank well back from the trench. The section of trench thus excavated should be 12 feet in length at the surface of the ground, and five feet in length at the bottom. The earth steps should each have a rise of two feet, except the top one which should have three feet rise. The tread of each step should be 13 inches wide.

If the duct is to be built of flags set up obliquely, as described, the trench should extend at the bottom of it two feet within the inner face of the foundation wall, and the duct should be walled up at the end and each side, plumb, a length that will give a bearing for the foot of a sheet iron pipe to rest on the side walls and the end wall, the other end of course to be open into the duct, at which point the duct will commence, no matter of what material it is constructed.

The perpendicular sheet iron pipe which is to form the discharge end of the duct, should be of galvanized iron, No. 20 iron. The area of a section of said pipe should be equal to that of the duct.

If the duct is to be built of flags, there should be a section of it extending from the discharge end to the outer face of the foundation wall, arched with brick or stone, and the space between the top of the arch and the bottom of the foundation wall should be built up with stone or brick, that the wall may not settle and crush the duct. The sheet iron discharge pipe should extend to six inches above the cellar floor. It need have no damper or valve in it, as the flow of air may be regulated by laying a board over a portion of the pipe.

The ground floor of the cellar into which the duct air is discharged, should be cemented, and if a first-class job is desired, a good wooden floor should be laid over it. The joists of said floor may be 2x4, but they should rest on bricks, or bricks placed two feet apart, that the duct air may be circulated under the floor.

The space under the floor is to be supplied with duct air by putting on the side of the main supply pipe a four-inch branch, so placed that it will discharge between the floors. The branch pipe requires no valve, as there is to be a valve in the exhaust pipe of some size, which is to extend from the under side of the wooden floor up to near the ceiling, where it should connect with the main exhaust pipe, leading from the ceiling of the ventilated apartment to the exhaust shaft, or chimney. The main exhaust pipe may extend horizontally, or obliquely, or perpendicularly, any distance before it connects with the chimney, as it will operate equally well long or short, if it is only tight, and it is quite as large as the supply duct.

I have attained very satisfactory results in a case where the dairy was in a portion of a cellar, and the exhaust pipe extended from near the ceiling of it horizontally under the principal floor of the house, under which there was no cellar, until it reached a point under the kitchen floor near the cook stove, where it extended perpendicularly through the floor near the stove, and entered the kitchen smoke flue in the chimney by the side of or above the stove smoke-pipe, and near the center of the ceiling of the kitchen, where it was closely mortared in. The heat of the cook stove so heated the exhaust pipe before it entered the chimney that it greatly increased the draught and but slightly effected the draught of the stove. This, however, is not as good as discharging the air from the exhaust pipe into a portion of the cellar so remote from the dairy that a fire in the bottom of a chimney enclosed by the small room, will not heat the dairy. The chimney should extend down to the cellar floor. The fire should be in a small stove in the base of the chimney, which should have an opening like a small fire-place in which the stove should stand, aud there should be a space all around the fire-door end of the stove, that air escaping from the small air chamber into the chimney will make contact with the stove.

Can we ventilate other apartments besides the dairy with the same duct?

Certainly, any number, but the size of the duct must be proportionate. We cannot warm a house with a stove that is only large enough to heat a room, neither can we cool and ventilate a house of 10,000 cubic feet with a duct that was designed to temper the air of and ventilate a room of 1,000 cubic feet.

There should be no objection to exhausting the air from a dairy-room through a room in a higher portion of the building, letting the air from a dairy in a cellar escape into the higher room, ventilating and tempering it, and even thence to other apartments, if the rooms ventilated were *close* and the exhaust air from them finally entered a heated flue.

Thus arranged the rooms ventilated by air after it left the dairy, would simply be an enlargement in the exhaust flue or pipe. But if windows or doors were opened in the rooms so ventilated, it would destroy the draft, and the ventilation by way of the sub-earth duct.

In warm weather air would be more rapidly supplied to the upper rooms by way of an open window than from the duct, as the air outside is warmer and lighter, and will enter with less draught than the cold, heavy air from the duct.

How is the air admitted to the duct?

The air enters the duct through a perpendicular pipe connected with the duct in the same manner as that describing the connection of the discharge pipe with it, beneath the dairy or cellar floor. The ingress, or air-receiving pipe, should be quite as large as the duct, and should extend one foot above grade around it, that the surface may be raised around the pipe to shed off rain. The ingress pipe of No. 29 iron is to be surmounted by a galvanized sheet-iron injecting cowl, drawings for which will be furnished, and full specifications for its construction and use. The object of said cowl is to avail of wind from any direction, to force air through the duct, through the building and out of it, and to operate conjunctively with the heated flue.

Must the duct be straight?

No, not necessarily. It will not materially detract from its efficiency, even if it is semi-circular in diameter. It should not, however, have short bends in it unless the duct is greatly enlarged at the bend. I often curve the duct to keep a desired grade in it. Hot winds and dust may be defied with sub-earth ventilation, properly arranged.

I have in the past recommended sub-earth ventilation on the scale of economy, to cool in summer and to warm in winter, obtaining the agency for both from the same spontaneous source, but with the system properly applied to a dwelling, located in a climate where either heat or cold obtains to a degree that greatly discomfits the denizens, it is capable of supplying a degree of salubrity and luxury that once enjoyed would be relinquished with great reluctance.

J. WILKINSON.

Brooklyn, N. Y.

The members of Capital Grange No. 16 will hold a basket picnic on the first Saturday in June, at the Fair grounds. The picnic is for the benefit of the members of Capital grange and their invited guests.

GEO. E. FLANDERS, Sec'y.

Numerous Questions.

As I am a new comer I do not write to give my experience, but for information. What is the elevation of this state above the sea level? Of different points—especially the northeast—the highest, lowest, etc.

Please name the counties that do *not* have herd law. Before coming to Kansas, I supposed "herd" law was *the* thing, but the more I see of it the less I like it, especially where outside range and stock water are almost unlimited, as in this county (Nemaha).

What is the game and fish law here?

I would like to know more about ensilage, lately mentioned in the FARMER. How is the pit constructed, and how is green feed kept from moulding?

But for fear of wearying your patience with this my first letter, I will not ask any more questions this time. I can say that I like my new home, except the high winds. We have had plenty of rain so far to keep everything in growing condition. What surprises me most here is the way in which this soil retains its moisture and then deals it out so prudently to the very best advantage to the growing plant.

I have seen only a few copies of the FARMER as yet, but I can say that I like it the best of any agricultural paper I ever saw. From this on, I shall, through the kindness of a neighbor, become a constant reader.

N. U. KUMMER.

Wetmore, Nemaha Co., Kansas.

It may be kind in your neighbor to loan you his copy of the FARMER, but sometimes he wants to refer to the paper to refresh his memory on some subject, and he cannot lay his hand on the KANSAS FARMER; it has been loaned to neighbor K. Don't you think he is tempted to say "*consarn* it! I wish neighbor K. would subscribe for a copy of the FARMER; it costs next thing to nothing and is better than a gold mine to us Kansas farmers; besides I don't believe it is exactly fair to jew the publisher down till he lets us have his paper at a mere nominal price, and then practice our first lesson in co-operation on him, after he has manifested so much interest in our behalf, in demonstrating the many advantages farmers might derive by conducting much of their business on this principle." Hey, ho! the editor must stand it all; like the man who invented the guillotine. They tried it first on the inventor's neck, to see how it would work.

We do not know the counties which have or have not adopted the herd law. The law is provided for all of the counties, if the county commissioners deem it best to have its provisions applied to their county.

The elevation of the state of Kansas at Kansas City, the eastern border, is 707 feet above ocean level; at Topeka, 904 feet; at Manhattan, Riley county, 1,100 feet; Salina, 1,243; Ellsworth, 1,583; Russell, 1,850; Ellis, 2,000; Wallace county, on the western border, 3,792 feet. These elevations are on the Kansas Pacific railroad. The above data is taken from a map of elevations, compiled by Henry Garnett for V. H. Hayden, U. S. Geologist.

All that is known of the system of ensilaging green fodder, has been published in the FARMER at various times. The silos are pits dug about eight to twelve feet deep, and as wide and long as desired. The silo is walled with brick or stone and cemented on bottom and sides. The green corn or grass is cut with a machine in short pieces and tramped firmly in the ptts. When full, or nearly so, the ensilage is covered with a few inches of cut straw, on which is laid plank fitting close at the joints. On this cover several tons of rocks are piled. This presses the mass of green stuff firmly, excluding the air, and it will not mould. The pit must be protected from wet.

The most valuable feature of the game law is a fine of $5 for killing any insectivorous bird.

Some of the Weeds We Fight.

Weeds are a great nuisance to the farmer or gardener. Much of his time and efforts are expended in attempts to subdue these vegetable intruders. There are several circumstances that make this contest in Kansas quite discouraging, among which may be mentioned the strong winds that carry the seeds of many kinds of weeds a long distance and scatter them over the cleanest cultivated fields. Also our very long seasons give late weeds such a long time to mature their seeds after the cultivation for the season is done. Still another trouble is that our dry seasons doubtless permit many seeds to lie dormant for a series of years, if buried quite deeply in the soil, which under favorable conditions will spring up and produce a crop just when the cultivator vainly hopes he has succeeded in subduing them.

As to the first of these difficulties it will largely disappear when all our farms are surrounded by a good hedge, as the most of these wandering seeds are carried either on or near the surface of the ground, they will generally be stopped by a close hedge.

For the other evils mentioned, I know of nothing better than careful culture continued so frequently and so long that no weeds can ripen their seeds until frost has destroyed their vitality. And it should be remembered that some plants if pulled when in flower and thrown on the ground or in piles, will mature their seeds sufficiently to grow. They should therefore be destroyed before they bloom, or else be buried while green or burned. But it should be remembered that this course must be persisted in for a series of years before any decided success can be achieved. A very important preparation for this conflict is to study well the character of the weeds with which war is to be waged.

One of the worst, if not *the* worst weed with which we have to contend in this part of the state is the sand-bur, (*cenchrus tribuloides*). During the early part of its life this is a very innocent looking grass, and as some offset to its bad character later in the season, it is more relished by live stock of all kinds than any other native grass in this region. But later in the season when it has literally clothed itself in burs, with their long, sharp spines standing out at every angle, it becomes simply horrid, and is as its specific name indicates, indeed a tribulation to every man who has to deal with it. It was probably introduced to this valley from Texas by herds passing through for shipment on the Kansas Pacific railroad. It has gained a foothold on most farms in this region, and that means that it has come to stay. A single seed dropped in a light, sandy soil this year is equivalent to a thousand next, and that means a half acre well seeded the second year, and so on *ad infinitem*. If any man knows how to get rid of this pest when it has become fully intrenched in a congenial soil, he has not yet been found by the people of this valley, though he "has been sought for carefully and (perhaps) with tears." The great trouble is that this grass will spring up and ripen its seed after the cultivation for the season is done, or even after harvest, if the stubble is permitted to remain unstirred. If left alone and the straw not burned nor otherwise destroyed, it will soon become so thick that it cannot thrive, and will make but a feeble growth, but I have never yet heard of a case where it went to such length as to actually commit suicide. It is not that kind of a grass.

I think probably the surest plan to destroy this abomination is to cultivate the ground in small spring grain, oats, barley, millet, etc., and cultivate thoroughly immediately after harvest and again at time for early sowing of fall grain. This course, if faithfully followed up for a few successive years, will, I think, eradicate them from the ground, no difference how badly infested. Of course all hedge rows and adjoining grounds should be kept entirely free from their presence.

While I think the above method will prove effectual in stamping out the sand-bur, I cannot speak confidently for I have never seen it eradicated from a farm where it had secured a good lodgment, neither have I ever seen a persistent, well sustained effort put forth for the accomplishment of this purpose. But as prevention is better than cure, I would say to those who are still free from them, stamp them out with determined vigor on their first appearance, or the day is not distant when you will repent your leniency toward them.

The mention of other weeds must be deferred to a future time. L. J. TEMPLIN.

Hutchinson, Kansas.

Dr. Charles P. Lyman of Springfield, Mass., presidtnt of the U. S. Veterinary Medical Association, and one of the ablest veterinarians, has been investigating the extent of contagious pleuro-pneumonia, or lung-plague among cattle, under the direction of the Department of Agriculture. His report has just been submitted to Congress by Commissioner Le Duc, and will probably be followed by recommendations for remedial legislation. He sums up as follows: "As a result of my investigations thus far, I find this ruinous foreign plague actually existing among the cattle of the following states: Connecticut, in Fairfield county; New York, in New York, Westchester, Putnam, Kings and Queens counties; New Jersey, in Atlantic, Gloucester, Camden, Burlington, Ocean, Mercer, Monmouth, Middlesex, Hunterdon, Morris, Essex, Union, Bergen and Hudson counties; Pennsylvania, in Philadelphia, Chester, Montgomery, Bucks, Lehigh, Cumberland, York, Delaware, Lancaster and Adams counties; Maryland, in Carroll, Baltimore Harford and Cecil counties. The middle and southern portions of these states have not yet been visited. No examination has as yet been made in the District of Columbia or the infected territory in Virginia; but as the plague prevailed quite extensively in both of these localities last season, it will no douht be found still in existence when the investigation takes place." The West is free from the disease, as the movement of cattle is chiefly eastward; but it may at any time appear on the prairie through thoroughbred stock introduced from infected states for the improvement of the native cattle. Only the promptest means for stamping out the disease in its present comparatively incipient condition will suffice to save the vast herds of the West.

Important to Book Agents.

Dr. Manning's long looked for object teaching Stock Doctor and Live-Stock Encyclopedia, with 1,000 pages, 400 illustrations and two charts, is announced by N. D. Thompson & Co., publishers, at St. Louis, Mo. It covers the subjects of Horses, Cattle, Sheep, Swine and Poultry, in health and disease, and is a work of such practical character and value as to be in great demand. A rare chance for agents.

"I Don't Want a Plaster,"

said a sick man to a druggist, "can't you give me something to cure?" His symptoms were a lame back and disordered urine, and were a sure indication of kidney disease. The druggist told him to use kidney wort and in a short time it effected a complete cure. Have you these symptoms? Then get a box to-day—before you become incurable. It is the cure; safe and sure.

Our readers will do well to notice the advertisement of Hermon W. Ladd. XX Cot, in our paper this week. Here is a good bed for a little money, and it is appreciated, as the enormous sales of the past year fully prove.

Bogus Certificates.

It is no vile drugged stuff, pretending to be made of wonderful foreign roots, barks, &c., and puffed up by long bogus certificates of pretended miraculous cures, but a simple, pure, effective medicine, made of well known valuable romedies, that furnishes its own certificates by its cures. We refer to Hop Bitters, the purest and best of medicines.—[Exchange. See another column.

Prize Butter at the N. Y. Fair.

There was a very fine display of extra choice butter at the great international dairy fair. The packages that took the prizes were splendid samples of what gilt edge butter ought to be, perfect in quality and color. Many of them were colored to a perfect June tint with Wells, Richardson & Co.'s perfected butter color, the use of which was universally recommended both by the makers and the butter buyers.

For an irritated throat, cough or cold, Browns Bronchial Troches are offered with the fullest confidence in their efficacy. They maintain the good reputation they have justly acquired.

H. Griffith, Topeka, Kas., will sell Jerusalem Artichokes at $1.00 per bushel.

Greater than Gold.

"I value Marsh's Golden Balsam far greater than gold. It has cured me of incipient consumption, and my child of a terrible cough."—[Mrs. Emma Allen, St. Joseph, Mo.

"For several years I suffered with a cough and an affection of the throat and lungs. I used many medicines, none of which did me much good. I was discouraged. Finally I tried Marsh's Golden Balsam, and this great remedy cured me. I hold it in high esteem."—[C. H. Jones, Lawrence, Kans.

Marsh's Golden Balsam is for sale by all prominent druggists. Large bottles 50 cents and $1.00. Sample bottle free.

All Endorse It.

The "Recorder," Americus, Ga., says: "Clerks senators, representatives, doctors, lawyers, citizens, in public and private life, are testifying by the thousands, and over their own signatures that a remedy has been found for Bright's disease of the kidneys and for diabettes; these are respectively known as Warner's safe kidney, and liver cure and Warner's safe diabettes cure.

Mr. T. K. McGlathery of Topeka, has made arrangements to have his horses, Royal George, an English draft horse, and Kicapoo Ranger, at Silver Lake, Kas., the present season on the first three days of each week.

The McKay Bros. are going to start a large fish, oyster game, poultry, butter and egg depot in Denver, Colorado, early this fall. The farmers in and around the vicinity of Topeka will find a cash market for all kinds of poultry, game, butter, eggs, &c., at McKay Bros. fish, oyster, game and poultry depots, No. 249 Kansas Avenue, near 8th avenue, South Topeka, and No. 90, Kansas Avenue, near Laurent street, North Topeka, for which the highest cash price will be paid as they will depend principally upon Topeka to furnish their Denver market with poultry, butter, eggs, &c.—*North Topeka Times.*

The sale of lands during the month of March, by the Kansas Division of the Union Pacific Railway company, formerly Kansas Pacific Railway, were 16,474 acres.

Go to Skinner, the "Old Reliable" Shoe Dealer of Topeka, 212 Kan. Ave.

A Good Piano.

Frank Leslie's Illustrated Newspaper says: A good piano at a fair price is one of the wants of the times. An instrument that is durable, that is substantially made, and has all those qualities of tone which make a first-class piano, can be had from the Mendelssohn Piano Co., New York, from $150 to $400. For over thirty-eight years their factory has been producing pianos, and adopting every new invention which has proved itself to be valuable. They can be compared by an expert with the instruments of the highest name and fancy price, and the result is surprisingly satisfactory. The piano is warranted for five years, and no purchaser has ever made a complaint. From personal knowledge and critical examination we can recommend any one to send for a catalogue to the above mentioned manufacturers.

8 and 9

Eight and nine per cent. interest on farm loans in Shawnee county.
Ten per cent. on city property.
All good bonds bought at sight.
For ready money and low interest, call on
A. PRESCOTT & Co.

PRESCRIPTION FREE

For the speedy cure of Seminal Weakness, Loss of Manhood, and all disordeas brought on by indiscretion or excess. Any Druggist has the ingredients. Address DAVIDSON & CO., 78 Nassau St., N. Y.

Markets.

TOPEKA MARKETS.

Produce.

Grocers retail price list, corrected weekly by J. A. Lee
Country produce quoted at buying prices.

LETTUCE—per doz bunches	.40
ONIONS— " "	.40
ASPARAGUS— " "	.50
SPINACH—per bushel	.60
BUTTER—Per lb—Choice	.12@.15
" Medium	.10
CHEESE—Per lb	12@15
EGGS—Per doz—Fresh	.10
BEANS—Per bu—White Navy	1.90
" Medium	1.75
" Common	1.50
E. R. POTATOES—Per bu	.60
P. B. POTATOES—Per bu	.75

Poultry and Game.

Corrected weekly by McKay Bro's., 294 and 92 Kansas Avenue.

CHICKENS—Live, per doz	2.00@2.75@3.00
" Dressed, per lb.	.08
TURKEYS—Live, per lb	.08
DUCKS—per doz	2.00@2.50

Retail Grain.

Wholesale cash prices by dealers, corrected weekly by Edson & Beck.

WHEAT—Per bu. No. 2	1.00
" Fall No 3	.95
" Fall No 4	.90
CORN—White	.28
" Yellow	.28
OATS—Per bu	.30
RYE—Per bu	.55
BARLEY—Per bu	.50
FLOUR—Per 100 lbs	3.10
" No 2	2.85
" No 3	2.50
" Rye	3.00
CORN MEAL	.90
CORN CHOP	.70
RYE CHOP	1.25
CORN & OATS	1.00
BRAN	.65
SHORTS	.70

Butchers' Retail.

BEEF—Sirloin Steak per lb	12½
" Round " " "	10
" Roasts " " "	10
" Fore Quarter Dressed, per lb	6
" Hind " " "	7
" By the carcass " " "	6½
MUTTON—Chops per lb	10
" Roast " "	10@12½
PORK	8@10
VEAL	12½@15

Hide and Tallow.

Corrected weekly by H. D. Clark, 135 Kansas Ave.

HIDES—Green	.06
Green, calf	.07
Bull and stag	.04
Dry flint prime	.12
Dry Salted, prime	.10
Dry damaged	5@7
TALLOW	.05
SHEEP SKINS	.25@1 50

St. Louis Wool Market.

Tub washed has declined slightly, and ruled dull; unwashed of desirable quality has no difficulty of finding buyers, while off lots were slow to move. Tub washed—low at 40 to 43½c, black 40c, medium 46½ to 48½c, choice 49 to 50½c. Unwashed—black and burry 25 to 28c, burry and slightly do 22¾ to 26 to 30c, hard burry 16¼ to 17½c, coarse 26 to 28c, good to choice medium 30 to 31c to 32 to 33¼, combing 31½

Chicago Wool Market.

Tub-washed, good medium, 45 to 50c; tub-washed, coarse and dingy, 40 to 48c; washed fleece, medium, 40 to 47c; washed fleece, fine, 30 to 43c; washed fleece, coarse 35 to 38c; Unwashed, fine 19 to 25c; unwashed, fine heavy, 15 to 20c; unwashed medium 27 to 30c; unwashed coarse, 25 to 28c.

Markets by Telegraph, May 26.

New York Money Market.

GOVERNMENTS—Steady and higher.
RAILROAD BONDS—Active, irregular, and generally lower, with a heavy decline in some issues.
STATE SECURITIES—Dull.
BAR SILVER—$1 14¼.
MONEY—4 to 5 per cent. closing at 5 to 6.
PRIME MERCANTILE PAPER—5 to 6 per cent.
STERLING EXCHANGE—B. B., firm; 60 days, $4 86½; sight, $4 89½.

GOVERNMENT BONDS.

Coupons of 1881	107
New 5's	103¼
New 4½'s (registered)	108⅛ to 108⅜
Coupons	109⅛ to 110
New 4's (registered)	107¾ to 107¾
Coupons	107¾

SECURITIES.

PACIFIC SIXES—95; new 126.
MISSOURI SIXES—$110.
ST. JOE—$106½.
C. P. BONDS—$1 12⅞.
U. P. Bonds—firsts, $1 12⅞.
LAND GRANTS—$1 11.
SINKING FUNDS—$1 15½ offered.

St. Louis Produce Market.

FLOUR—Dull; fancy, $5 20 asked; choice, $5 02½ cash; $4 60 June; family, $4 75.
WHEAT—Lower and unsettled; No. 2 red, $1 09½ to 1 09¾ cash; $1 09⅞ to 1 09¾ May; $1 01⅞ to 1 02½ June; 92¾ to 93½ to 93⅝c; July No. 3 do, 93½c; No. 4 do, 97c.
CORN—Lower; 35¾ to 35c cash; 35¼ to 34⅞c May; 34½c June; 34¼ July; 34⅞ to 34½c August.
OATS—Lower; 31½c cash; 33⅜ bid June.
RYE—Lower to sell; 87c bid.
BARLEY—No market.
PORK—Lower; $10 25 cash; $10 30 bid June.

St. Louis Live Stock Market.

HOGS—Easier and slow; Yorkers and Baltimores, $4 00 to 4 10; heavy shipping, $4 10 to 4 20; packing, $4 00 to 4 15; receipts, 9,400; shipments, 6,400.
CATTLE—Offering large for the first day of the week, and buyers asked for some concession in prices, but failed to get them; the tone was easier however, choice to fancy heavy shipping steers $4 60 to 4 75; good to prime, of 1,100 to 1,500 pounds, $4 00 to 4 55; cows and heifers, $2 60 to 3 50; stockers, $3 00 to 3 40; feeders, $3 75 to 4 00; receipts, 2,100; shipments, 300.
SHEEP—Demand urgent for clipped, $3 00 to 4 25; receipts, 300; shipments, 350.

Liverpool Market.

BREADSTUFFS—Market unchanged.
FLOUR—10s to 12s 6d.
WHEAT—Winter, 10s to 10s 6d; spring do 9s to 10s.
CORN—New, 5½s to 5s 1d.
CHEESE—69s.
OATS—6s 3d to 6s 6d.
PORK—61s.
BEEF—69s.
BACON—Long clear middles, 34s 3d; short clear, 35s 3d.
LARD—Cwt. 36s.

Chicago Produce Market.

FLOUR—Dull and drooping.
WHEAT—Unsettled and lower, very weak, fluctuating; No. 2 spring $1 13 to 1 13¼ cash and May; $1 05½ to 1 05¾ June; $1 00⅝ bid July; 89¼ August; sales $1 04¼ to 1 07¾ June; 99½c to $1 02¾ July.
CORN—Active and a shade lower; 37¼ to 37⅜c cash and May; 35¾ to 35⅞c June; 36 to 36⅛c July; 36⅜ to 36⅛c August.
OATS—Fair demand and lower; 31c bid cash; 30½c June; 28½c July.
RYE—Steady; 85c.
TIMOTHY—$2 20.
FLAX—$1 28 to 1 30.
BARLEY—Steady, 78c.
PORK—Dull, weak and lower; 9 95 cash and June; $10 05 to 10 07½ July; $10 15 to 10 17½ August.
LARD—Dull and lower; 6 60 to 6 62½ cash; 6 62½ to 6 65 June; 6 65 to 6 67½ July; 5 67½ to 6 70 August.
BULK MEATS—Dull, weak and lower; shoulders, $4 15 to 4 65; short clear, $6 40.

Chicago Live Stock Market.

HOGS—Receipts, 30,000; shipments, 5,000; large receipts, depressed, market 5 to 10c lower; mixed packing 3 75 to 4 00; chiefly, 4 00 to 4 10; choice heavy, 4 10 to 4 30; light, 4 00 to 4 15.
CATTLE—Receipts, 5,000; shipments, 4,000; common to good natives $4 00 to 4 55; western corn fed 4 00 to 4 45; grass Texans, 2 65 to 2 85; native butchers, 4 00 to 4 45.
SHEEP—Receipts, 3,200; shipments, 360; weak but active; clipped, $4 40 to 4 25; wooled, $5 25.

Kansas City Produce Market.

WHEAT—Receipts, 12 7-0 bushels; shipments, 12,848 bushels; in store, 121,094 bushels; market weak and lower; No. 2, $1 00 bid; No. 3, 90c; No. 4, 71½c bid.
CORN—Receipts, 10,367 bushels; shipments, 12,624 bushels; in store, 140,474 bushels; market weak and lower; No. 2 mixed, 27½c; No. 2 white mixed 28.
OATS—No. 2, 26¼c.
RYE—69c bid.
BARLEY—Nominal.
EGGS—Plenty and dull at 9½c per dozen.
BUTTER—Quiet and unchanged.

Kansas City Live Stock Market.

CATTLE—Receipts for 48 hours, 103; shipments, 209; market weak and full; chiefly inactive.
HOGS—Receipts for 48 hours, 1,382; shipments 128; market weak and 10c lower; sales averaging 3 50 to 3 65; bulk at 3 55 to 3 60.
SHEEP—Receipts for 48 hours, none; shipments, 45; market quiet.

London Market.

A cable to the Chicago Journal says:
CATTLE—Dull; 15½ to 16¼. American cattle dull.
SHEEP—Firmer; 15 to 18c.

Denver Market.

FLOUR, GRAIN AND HAY.

HAY—Upland, 20 to 22; second bottom, 19 to 20; bottom hay, 17 to 19.
FLOUR—Colorado, 3 30 to 3 50; Graham, 3 00 to 3 25.
MEAL—Bolted corn meal, 2 00.
WHEAT—2 00 to 2 20 ₱ cwt.
CORN—1 15 to 1 25 ₱ cwt.
OATS—Colorado, 2 00 to 2 25; state, 1 85 to 2 00 ₱ cwt
BARLEY—1 75 to 1 85 ₱ cwt

PRODUCE, POULTRY VEGETABLES.

EGGS—Per dozen, ranch 15 to 18c; state, 12 to 14c.
BUTTER—Ranch, ₱ lb, 25 to 35c; creamery, 30 to 38; poor, 8 to 15c.
ONIONS—4½ to 5c ₱ lb; eastern, 2 00 to 2 50 ₱ cwt.
TURKEYS—Dressed, 16 to 18c ₱ lb.
CHICKENS—Dressed, 15 to 16c ₱ lb; ₱ doz 4 00 to 5 00.

New Advertisements.

Our readers, in replying to advertisements in the Farmer, will do us a favor if they will state in their letters to advertisers that they saw the advertisement in the Kansas Farmer.

Literary and Domesic

Creeping Up the Stairs.

In the softly falling twilight
Of a weary, weary day,
With a quiet step I entered
Where the children were at play;
I was brooding o'er some trouble
That had met me unawares,
When a little voice came ringing,
"Me is creeping up a stairs."

Ah! it touched the tenderest heart-string
With a breath and force divine,
And such melodies awakened
As words can ne'er define;
And I turned to see our darling,
All forgetful of my cares
When I saw the little creature
Slowly creeping up the stairs.

Step by step she bravely clambered
On her little hands and knees,
Keeping up a constant chattering
Like a magpie in the trees.
Till at last she reached the topmost,
When o'er her world's affairs
She delighted stood a victor,
After creeping up the stairs.

Fainting heart, behold an image
Of man's brief and struggling life,
Whose best prizes must be captured
With noble, earnest strife;
Onward, upward reaching ever,
Bending to the weight of cares,
Hoping, fearing; still expecting,
We go creeping up the stairs.

On their steps may be no carpet,
By their side may be no rail,
Hands and knees may often pain us,
And the heart may almost fail;
Still above there is the glory
Which the sinfulness impairs,
With its rest and joy forever,
After creeping up the stairs.

Literary Items.—No. 89.

Since the commencement of the great temperance reformation, the practice of drinking healths has lost much of its universal application in the every-day transactions of life. It would be interesting to know the origin of this custom. It is very old, however, for we read of the Greeks that at their festivals they drank to the health of those they held in high esteem. In Rome they drank to the victories of Augustus, etc. The moderns have borrowed this custom, like many others, from the ancients.

In some countries they deem it a mark of indecorum to drink to the health of those held as superiors, in their presence. In the United States and England this practice is not observed. At our banquets we toast the invited guests, and by this means we draw forth a speech, which forms the most interesting portion of the meeting.

Many volumes have been written against the old custom of drinking healths chiefly on acconnt of its supposed profanity. They refer to the text, "Drink this in remembrance of me." A witty writer, commenting on the modern custom of drinking healths, says it is a very absurd custom, since we may drink four bottles of wine without doing our guest the least good.

MARRIAGE.

A short time since the parties were anxiously waiting for a clergyman to unite them in the bonds of matrimony. The hour appointed for the ceremony came, but no clergyman. The shades of evening were fast approaching. It had rained the night before, and the creeks were pronounced impassable. The clerygymen lived on the other side of the stream. What can be done to remedy the disappointment? Why, send for a justice of the peace. "No," said the fair bride, "I do not think it is right for magistrates to marry people. I should never forgive myself if I were to consent to be married by any other person than a clergyman of good standing." This remark pierced the heart of the young man. He looked mournful, but said nothing. The company, of course, were anxious to witness the ceremony, but considering it a fixed fact that they would not be gratified that day; but the ceremony of the many good things for the festival might be carried out. Just as the table was laden with these good appendages of a marriage feast, and the party was seated, a cry was heard afar off, "Here he comes! Here he comes!" True, the reverend gentleman had come to perform his duty. He had traveled many miles off his line of travel to cross the foaming river. The parties, in a few minutes, were united, and they sat down to the table as man and wife.

As old as I am, I cannot help sympathizing with young people in such cases as the one I have related. As there is an honest difference of opinion on the subject of who ought to perform the marriage ceremony, I will say to "all whom it may concern," that marriage is considered by the statutes of Kansas a civil contract, to which the consent of the parties is essential. It is, therefore, strictly within the province of the magistrate to perform the ceremony of marriage, but it has been the custom in all countries to accompany this ceremony by a religious form of worship. The law, therefore, gives the power to clergymen or licensed preachers of the gospel. In Catholic countries the church claims the prerogative, and considers it as a religious or sacramental ceremony. The revenue derived from fees, no doubt, is one important consideration why the church should claim exclusive rights in this matter. Marriage, being a civil contract, exists independently of religious ceremony; but as the state has given the power to clergymen to recognize the contract of the parties, it is, therefore, a religious as well as a civil ceremony.

COUPLE-BEGGAR.

Perhaps there may be some of my readers who have never before heard of such a term as couple-beggar. By referring to Webster's Dictionary you will find that this singular expression means "one who couples beggars." This definition is vague and indefinite. A couple-beggar is one who has lost his position in the Roman church by misbehavior, or some other reason deemed by the ecclesiastical authority of the church as sufficient cause to deprive him of his priestly office.

The marriage relation is considered by that church not a civil but an ecclesiastical matter, and they claim the prerogative to unite man and wife in the bonds of matrimony. Now it is well known (for example take the city of Dublin, Ireland), that the population is divided—Protestants and Catholics, and it is no uncommon occurrence, and a very natural one, by-the-by, that a youth of Protestant birth will fall in love with a Catholic girl. Knowing full well that the old folks are extremely conservative, and unwilling to give their consent in favor of a family union of this kind, they fly to a couple-beggar, and are married. To reconcile matters and render the matter more respectable, the parties are re-united by a licensed Protestant clergyman, and also by a Catholic priest in good standing. I do not know that there exists in the United States the order of couple-beggars; if so, they must be confined to our large cities. There is certainly no need of such an order, as the impediments are few, the law making it a civil contract.

GRETNA GREEN.

In this connection a few words about Gretna Green is in order. Many a tale, a moral, or romance, has found material to embellish its pages by incidents connected with this well known place. Gretna Green is geographically located between England and Scotland, on the river Stark; a kind of neutral ground, "a fifty-four, forty," where runaway matches resort for the purpose of uniting themselves by pledges of fidelity to live and love one another as man and wife. Many years since the individual who attended to this office was a blacksmith. Of late years the British parliament has put a stop to this elopement business by establishing law within the limits of Gretna Green. The place, doubtless, will be for many years a historical resort for visitors, for many of these elopements have a vast fund of romance connected with them. JAS. HANWAY.

Lane, Kansas.

Jelly Making.

I have promised a number of your readers, to give them, the chemistry of jelly making, at the jelly making time. It would not interest the non-scientific to enter into a dissertation on the science that lies about the chemical substances, *pectine, pectose, pectic acid, metopectic,* and *porapectic acids.* Suffice it to say that there exists in the cellular tissues of fruits, and in many vegetables, a substance analogous to starch, and like starch insoluble in cold water, though soluble in hot water, and when concentrated forming a gelatinous solution, on cooling, under high heat or long boiling this substance is transformed into the *meto* and *poro* compounds which do not form the gelatinous compounds.

Let it be also observed that sugar, by high heat or by long boiling, and especially in the presence of acids, is also transformed into, uncrystallizable syrup, and black compounds, of unpleasant taste, and the housekeeper will understand enough of the chemistry of jelly making to understand the empirical rules below given, and also why she has spoiled so much sugar and fruit juice without making jelly, but obtained rather a tarry mass of gum, uncrystallizable sugar blackened by *caromel* and rendered inky by particles of *poropectic acid.*

1. Cook the fruit until it is done soft and pulpy.

2. Strain away the juice from the pulp on a seive.

3. Strain the juice through thin muslin, but do not be too eager to get the last drop and thereby force the pulp through.

4. If your fruit is of a very juicy kind evaporate out a portion of the water. This is best done, in a crock or dish, or granite ware vessel set in the oven.

5. Never use an old tin vessel, as the iron will form ink in your jelly, and of course avoid iron vessels and iron spoons, and iron jelly pans.

6. Never add your sugar to the fruit pulp.

7. Never boil down after you have added your sugar.

The sugar raises the boiling point, and thus forms the *pectine* into black stuff and gum while the acids and boiling transforms the sugar into watery syrup and dark colored bitter stuffs of which *caromel* is one, and the longer it is afterwards boiled the worse the stuff becomes.

8. Never use anything but the best white sugar, "loaf" and "crushed" being best, though "coffee A" or granulated sugars will do.

If your jelly is too hard and gritty, you have added too much sugar.

If it is too fluid but is clear, and trembles when cold, you have not added enough sugar.

In the former case, add some more fruit juice; in the latter, some more sugar, warming up the jelly in either case.

"We" (that is, wife does, and I furnish chemical observations) test "our" juice a little at a time. If a tablespoonful of juice thickens when a tablespoonful of sugar is added in a sauce dish; "we" consider the signs and science favorable and make jelly of the whole.

Common cherries are very difficult to handle and the best way to make cherry jelly is to take two parts of cherries and three parts of last years' apples,—(or, if the apples are gone, can the cherries till the apples come). Peaches often refuse to "jell" if fully ripened. But both may be made to "jell" if taken when first turning while yet firm. Dark grapes should have the pulp pressed out from the skins, and this pulp used only, or else pluck the grapes green.

Mixed fruits may be used to excellent advantage. Thus currants, gooseberries, pears, apples and cranberries may be advantageously used to afford the "jell," and such fruits as quinces, pineapples, apricots, peaches, oranges, lemons, strawberries, raspberries, bananas, etc., used to give color and flavor. The juice of the flavoring fruit should be added after the jelly stuff is nearly cold. If delicate like strawberries, pour the jelly stuff on when boiling hot and filter from the pulp rapidly and then add the sugar. C. W. J.

A Fancy Egg Basket.

Godey's Lady's Book for June gives a design for an odd little basket in which to put eggs. A round, card-board box about twenty-two inches in circumference is used for the foundation; it is lined with moss-green cashmere. The caves for the outside is composed of a band of looped knitting worked with shaded moss and bright green wool, as follows: Cast on twenty-four stitches, knit the first row; 2d row—insert the right hand pin into the first loop of next row, turn the wool three times over the pin and round the forefinger, draw all three loops through in the ordinary way, knit one, repeat to the end of the row; 2d row—knit plain, taking the three loops of last row as one stitch, the second and third rows are repeated until you have worked twenty-two inches, when cast off, join round and sew neatly to the outside of the box. The inside of the box must be half filled with wadding before putting in the lining.

For the moss which fills the inside, take single Berlin wool of the same shades, cast on twenty stitches, and knit in stripes of plain knitting; steam the stripes over boiling water, then dry thoroughly, cut off the stitches along one side, and unravel the work to within about three stitches of the other side; sew this mossy fringe in bunches along the sides and at the bottom.

This will form a useful addition to the breakfast table, as it will keep eggs warm for sometime if well covered with the moss.

CUTTING HOT BREAD.

Here are a couple of good hints taken from the *American Agriculturist:* When obliged to cut hot bread heat the knife that you are to cut it with, and instead of sending it to the table on a cold plate, lay a napkin on the bottom to prevent its coming in contact with the cold plate.

The second hint: Take sound fruit or vegetable cans and melt off the top; bend a hickory withe for a handle and fasten it with wire or rivets. You will find them very useful.

BRAMBLEBUSH.

A bad workman generally quarrels with his tools.

No one is ever fatigued over the exercise of forbearance.

No house is big enough for two wits to live together.

A house without books is like a room without windows.

The wild oats of youth are briers in manhood.

That civility is best which excludes all superfluous formality.

Kindness is the golden chain by which society is bound together.

Mortal things fade, immortal things spring more freshly with every step to the tomb.

Mrs. Livermore contends that if mothers would train their girls as housekeepers, at the youthful period when girls would be delighted to learn, they would then take to housekeeping as naturally as ducks take to water. She does not recommend, however, that instruction should be confined mainly to domestic duties, or that marriage should be considered the principal aim of the fair sex, but advocates a system of broad and liberal tuition, which will fit women for any of the probable contingencies of life, render them self-dependent, and fully develop their varied faculties.

The way to grow old is to be economical of life. If it be carelessly squandered in any way it cannot last so long as it otherwise might. Overwork kills a few. Overworry kills more, because it is more depressing and exhausting. The indulgence of the appetites and passions is still more fatal. Men who eat more than they need, drink more than is good for them, and indulge in other kinds of riotous living, spend life as they spend money.

Farm Letters.

DOUGLAS, Butler Co., May 3.—In the issue of the FARMER of April 28th, L. D. Smith gave some reasons for sowing wheat late, which I think are not sound. The gentleman stated as a reason and an only reason, the volunteer wheat came up and it all died. Now it is a self evident fact that wheat can be sown too early, say from the 1st to the 15th of August, provided you do not turn on sheep or cattle to feed it down, if wheat is sown early enough so it will joint, it is bound to not survive winter frosts, as the freezing injures the joint, and it consequently cannot make a crop.

I have lived in Butler county about nine years, and we have the second best wheat county in the state, provided we can rely on statistical reports. I have raised 45 bushels to the acre, and we can furnish the proof that 62 bushels and upwards have been raised to the acre. I always plow my ground, or the most of it, in July, which gives the shattered seed a chance to come up, and I generally commence sowing about the 20th day of August, and as soon as my wheat is big enough to turn my stock on, I do so. The volunteer wheat being the largest, the stock, as a matter of course, will feed it off first, which rich pasture affords us plenty of milk and butter, and at that season of the year when grass is failing. The people here pasture their wheat extensively. The wheat that has been pastured the most looks the best in this locality. I would not advise the pasturing of wheat when the ground is filled with water, but at any other time as soon as the wheat is large enough to cover the ground, up to the first of April. I have pastured my wheat more than any other man in this part of the county until the last year or two, and have sowed less seed per acre, excepting one, and have invariably raised as much or a little more than any of them, on the same quality of land. If the weather is very dry pasturing wheat is a benefit both spring and fall, as the ground becomes too bear, especially after undergoing the winter frosts. I have taken from $50 to $75 in butter from a 40-acre field, which is quite an item to me, then threshed as much wheat per acre as my neighbors, on the same quality of soil.

It would be natural to suppose, the gentleman living in Dickinson county, who had his soil and oats blown into the hedge, rolled his ground, or pulverized the surface when it was dry, and consequently like the chaff on the threshing floor, it blew away. Never pulverize ground in the spring of the year when dry. Roll after a sprinkle of rain, then you can form a crust and the wind will not disturb the surface. I have seen the soil blown off of corn ground here in the spring after corn was planted and lodged in the grass six inches deep, on account of rolling when the surface was dry, and it taught the farmer a lesson he will long remember.

We have had some heavy winds here this spring. On the west portion of this county and on the east and southeast, they have had plenty of rain, and in this locality, twenty-five miles south and four miles west of Eldorado, the county seat, we have had only two small showers. Wheat in this part of the county looks moderately well, but is in need of more rain. Wheat selling at 85c to 90c: corn, 20c; butter, 15c to 20c; potatoes, $1 to $1.25, according to quality.

I have lately become a reader of the KANSAS FARMER, and I consider it a valuable paper, as it is devoted to the interests of the farmers, its articles on farming being written by some of our ablest farmers.

Fruit has been badly damaged on high locations and those facing west and north. There is promise of a good crop of peaches. Some apple orchards that have been bearing small quantities of apples for the first and second years, have set a good deal of young fruit. Cherries have stood the frosts best.

HENRY BUTLER.

GARFIELD, Pawnee Co., Kas., May 7.—It has been some time since I have written to the FARMER, but there has not been anything of interest to write; it has been and is so dry that there is nothing growing; have not had a rain to do us any good since last November. We had a light shower of rain the 29th of April but hardly enough to lay the dust. I have not seen as many sand storms since I have been in the state (seven years) as there have been this spring.

There are a few pieces of wheat that are green, but it will never amount to anything it is so late, was but very little spring wheat sown and but a small portion of it came up and that has all died. No oats sown in this township, but if it rains inside of a week a few would sow yet. The most of the farmers are going to plant their wheat fields to Egyptian corn and sow to millet.

A great many are leaving; a few for good, but the most are going east and west to work and earn their living. They do not want to give up this part of the country yet. All that can are buying stock, some sheep and some cattle.

Grass is growing very slowly, the Buffalo grass has not started yet. Stock is well considering the dry feed that they are having.

The Arkansas river is dry again and has been so for some time. V. DIRLAM.

Advertisements.

THE STRAY LIST.

Strays for the week ending May 26.

Anderson county—Thos. W. Fester, clerk.

MARE—Taken up by Patrick Agnew, Reeder tp, April 26, 1880, one light grey mare, 4 years old, plain harness marks, medium size, no brands visible.

Bourbon County—L. B. Welch, Clerk.

MARE—Taken up by Miriam Noble, Walnut tp, April 30, 1880, one roan mare supposed to be 9 years old, about 14 hands high, right hind foot white also a little white spot on the nose, no brands perceivable, valued at $25.

HORSE—Taken up by Geo W Jones, Pawnee tp, one dark bay horse pony about 8 years old, 14 hands high, branded OY with some Spanish brands on the left hip and the left jaw, valued at $25.

FILLEY—Taken up by E H Imley, Osage tp, one sorrel filley, star in forehead, stripe on nose, hind feet white, 14 hands high, 3 years old, valued at $25.

COLT—Also, by the same, one light bay stud colt, black mane and tail, 13½ hands high, three years old this spring, valued at $25.

Crawford county—A. S. Johnson, clerk.

GELDING—Taken up April 25, 1880, by Joseph Wolf, Sheridan tp, one 3 year old gelding, color brown, white face, both left feet white, valued at $30.

MARE—Also, by the same, one light dun colored mare, 2 years old, valued at $15.

HORSE—Also by the same, one black horse, white face, both front feet white, 3 years old, valued at $15.

HORSE—Taken up May 1st, 1880, by W C Bricker, Washington tp, one bay horse, 4 years old, black mane and tail, left hind foot white, about 14½ hands high.

MARE—Also by the same one sorrel mare about 2 years old, light mane and tail, blaze in face, pony built. The two above strays valued at $45.

Davis county—P. V. Trovinger, Clerk.

MARE—Taken up by Joel Eubank, Liberty tp, (Moss Springs P O) one light roan mare about 4 years old, two white spots on right hip, blaze in face, dim marks on left hind leg, about 14 hands high, valued at $30.

Decatur county—N. G. Addleman. clerk.

MULE—Taken up April 23, 1880, by Henry Claar, Bassettville tp, one bay mare mule about 12 years old, letter M on left hip, had on a leather halter with rope attached, valued at $60.

Doniphan County.—D. W. Morse, Clerk.

MARE—Taken up by Michael Green, May 8th, 1880, Wolf River tp, one dark brown mare, 3 years old, about 15 hands high, white stripe down the face, three white feet, 3 white fetlocks, valued at $50.

COLT—Also by the same, one large yearling colt, light brown color, valued at $25.

MULE—Taken up by Wm Jenicke, May 14 1880, Wolf River tp, one mare mule about 2 years old, light bay, no marks or brands, valued at $25.

COLT—Also by the same one horse colt one year old, light bay, stripe on white in forehead, brand on the right shoulder has the appearance of a reversed letter G, valued ne $15,

Elk county.—Geo. Thompson, clerk.

HORSE—Taken up April 26, 1880, by Y W Dawson, Wild Cat tp, (Moline P O) one bay pony horse, branded F on left shoulder, white hind feet, 4 years old, valued at $30.

PONY—Taken up April 26, 1880, by S K Amerine, Wild Cat tp, (Moline P O) one pony mare, sorrel, white strip in face, left hind foot white, branded on left shoulder F, four years old, valued at $25.

COLT—Also by the same one brown yearling colt, 1 year colt, branded F, valued at $15.

Franklin county—A. H. Sellers, clerk.

HORSE—Taken up by Thos Squiers, April 22, 1880, one roan horse supposed to be 12 years old, white stripe around nose supposed to be made by halter, no brands perceivable, valued at $35.

Kingman county—Charles Rickman, clerk.

PONY—Taken up by Fred W Gee, Belmont tp, April 17, 1880, one sorrel mare pony, 3 years old, hind feet white, spot on the nose, tail cropped.

PONY—Also by the same, one iron gray mare pony about 2 years old, tail cropped, valued at $35.

MARE—Taken up by J B Carter, Evan tp, May 1, 1880, a bay mare, about nine years old, fourteen hands high, blind in right eye, few white hairs in forehead, scar on right leg below the gambol, branded on left hip, valued at $15.

Miami county.—B. J. Sheridan, clerk.

MARE—Taken up by Eugene Inman, Osage tp, April 7, 1880, one brown mare 3 years old, star in forehead, left hind foot white, valued at $40.

STALLION—Also by the same one bay stallion, two years old, star in forehead, valued at $20.

Neosho county—A. Gibson, clerk.

FILLEY—Taken up May 3, 1880, by T B Treadway, Walnut Grove tp, one black filley, 2 years old, about 13½ hands high, left hind foot white, valued at $30.

Sedgwick county—E. A. Dorsey, cler .

HORSE—Taken up by Eugene Wight, Kechi tp, May 1, 1880, one chestnut sorrel horse, white stripe in face, hind feet white, 8 years old, valued at $25

Wilson County—J. C. Tuttle, Clerk.

HORSE—Taken up in the city of Neodesha, by P Barton, April 23, 1880, one bay horse, both hind feet white, and slip in forehead, nine years old, valued at $30.

HORSE—Also by the same one sorrel horse, both hind feet white and slip in forehead, about 12 years old, valued at $20.

Woodson County—H. S. Truebiood, Clerk.

HORSE—Taken up by Wm Oneil, Center tp, May 1, 1880, one bay horse, supposed to be 14 years old star in forehead, little white on right hind foot, valued at $15,

HORSE—Also by the same one dun horse, supposed to be 11 years old, both hind feet white, blaze in forehead, valued at $20.

Strays for the week ending May 19.

Butler county—C. B. Strong. clerk.

PONY—Taken up by John T Cody, Spring tp, April 9th, 1880, one roan horse pony 7 years old, no marks or brands, valued at $20.

HORSE—Taken up by Miles McIlvaine, Augusta tp, May 4, 1880, one bay horse 12 or 13 years old with brand of J J I on left shoulder, valued at $20.

Cowley county—J. S. Hunt, clerk.

MARE—Taken up by Aaron M Treadway, Sheridan tp, one black pony mare, about 13½ hands high, 7 years old, shod all round, harness marked, small white spot on left side where the tug works, branded M B on left hip and M E on right shoulder, had leather halter on, valued at $30.

Greenwood county—J. W. Kenner, clerk.

STEER—Taken up by C Chadwell, Quincy tp, one red steer 3 years old, star in forehead, some white under belly, bush of tail white and a little white on shoulders, marked with under half crop right ear, blind in left eye, and valued at $15.

Linn county—J. H. Martin, clerk.

MULE—Taken up by John Baugh, Potosi tp, April 15th, 1880, one black horse mule 4 years old, 14½ hands high, harness marks, small white spot on each side of back bone, hair of mane and tail cut off, valued at $65.

Marion County.—W. H. Hamilton, Clerk.

COLT—Taken up by J C Eggen, Summit tp, April 27, 1880 one dark iron grey colt 2 years old, 14 hands 3 inches high.

COLT—Also, by the same, one dark bay horse colt, 1 year old, white hind feet, 11 hands high.

Miami County—B. J. Sheridan Clerk.

HEIFER—Taken up by A Brown, Osage tp, April 5, 1880; one red heifer 2 years old, some white on belly and in forehead, bush of tail white, valued at $12.

Sedgwick County.—E A. Dorsey, Clerk.

HORSE—Taken up April 13, 1880, by W T Patten, Salem tp, one roan horse, 16 hands high, 9 years old, left hind foot white, and white spot in face, valued at $40.

Shawnee County.

MARE—Taken up by Charles Mellor, 3 miles north of Topeka, May 13, 1880, one dark bay mare 3 or four years old; hind feet white, white spot in forehead, had on leather head halter, 15½ hands high, dark main and tail, and valued at $75.

Communications.

Breeding Short-horns.

In the FARMER of May 12th, Mr. A. A. Stuart made quie a fierce attack on the Short-horn breeders, and especially M. Waltmire, by making several statements, but proving nothing. Anybody can make statements, but they are of no use unless they are proven.

In the first place he charges us with dishonesty simply because we breed what our customers demand. Is this dishonesty? Certainly not. If a man comes to a manufacturer and orders a certain thing, have you not the right to supply him? Certainly you have. Then have we not the right to breed red cattle? as that seems to be his entire hobby. I think we have. He says millions of dollars are invested in Short-horns. So there are, but who invests this money? Why, the men that own them, consequently they are our own property. Then he winds up by saying that, "When a man chooses a dark-red Short-horn instead of a yellow-red or a roan, he is either ignorant of what he wants or he is dishonest." I will ask the readers of the FARMER, is it not just as dishonest to breed all roans or yellow-reds as dark-red, (when the demand is for dark-reds,) as Mr. Stuart wishes us to do?

Are we all to be called dishonest just because I simply intimated that I think they overestimated the red color. I have been raised among Short-horns all my life, and I fail to find that there is so much difference in color as some seem to think. We are apt to run to extremes too much on any subject. I have been amused while attending the fairs to see the exhibitors praise up their kind of stock, whatever kind it might be, more especially of late years. The exhibitors of Berkshire and Poland China hogs—how enthusiastic each one would be over his kind of hogs!

But to show that it is not the breeders of Short-horn cattle, but the customers that are so crazed over the color of Short-horns that when the rage began for the red color, the breeders, when in convention, passed a resolution that there should be no distinction made in regard to color, but in spite of this we see that roans are selling away below the reds. Even Mr. Pickerell, of Illinois, the greatest advocate of the resolution, was offering a white yearling bull for sale, of as fine form, and pedigree of the highest type, a little over a year ago, for about one-fourth what he would have brought if he had been a dark-red.

Mr. Stuart need not be alarmed, for he can get all the roans he wants for some time yet, because it is a Short-horn color. It has been but a few years since a great majority of them were roans, consequently it is easy to account for the roans receiving more premiums than the reds. But how is it of late years? We hardly ever see a roan receive a premium. Where is there a better roan than the 6th Duke of Richmond? or Kissinger's Breastplate, 18th Duke of Airdrie, Mr. Spear's General Grant, or imp. Bruers Booth?

As far as milk is concerned, my experience is that the reds are better than the roans, although practically speaking, I think there is but little difference in the real individual merit in regard to color. It seems to be more fancy than anything else. Therefore I think Mr. Stuart had better breed for real merit than his favorite color, because this color mania causes some inferior animals to be used as I stated in my article in the FARMER of April 28th.

M. WALTMIRE.

Carbondale, Kansas.

GREAT BEND, Barton Co., May 14.—I see no report lately from this dry region, and have concluded that others are like myself—*waiting for rain*. The present prospect for crops is very poor, for want of rain. We had a small shower yesterday, (about the first since last November,) but by noon to-day the hot, south wind had dried it all up, with very little prospect for more.

This part of the state is feeling the effects of this continued dry weather rather keenly, for the main reason that our people have got *wheat on the brain*, and now, after two successive failures, we begin to see the folly of launching out in wheat raising, and going in debt for *wheat farming machinery* while there was a great variety of other crops that could have been raised with more certainty, at less expense for seed, labor and machinery. These light wheat crops (for we had some wheat in this county last year, and may have this year,) are going to make us change to farming more variety of crops, which if managed right, will likely be to our advantage. Now some of us who have been here six or eight years, think we may have some rain yet the present season in time for some of our summer crops, while others who have not been here so long, and have not seen such favorable seasons and good crops of all kinds as we had three or four years ago, are very much discouraged and are going back east. Perhaps you have seen some of them by this time.

There is one thing I think of more importance than anything else, and that is most neglected—*tree planting*. I say, in all candor, that if ever this portion of the state of Kansas is saved from going back to a sandy desert, it must be done by tree planting. Stop breaking those sandy knolls and ridges that will blow and drift as soon as the sand is rotten, and stop those awful prairie fires.

We need fences, but are completely defeated by the gopher and kangaroo rat. I think poisoning is the only chance to get rid of these pests, but as the country is so new it will take a long time and a *united* effort to destroy them. And while we are doing this, we need something to start for live hedge fences. I see the honey locust highly spoken of. I have not tried it as a hedge, but have some hundreds of trees growing, and have never found one cut by gophers, while other timber, such as box elder cottonwood, walnut, etc., have been badly destroyed on the same ground. I would like to know if the honey locust tree is proof against those gophers, moles, rats, etc. If any one knows, please answer, and you will confer a great favor on this portion of the Great American Desert.

Some think trees will not grow here, but in this they are sadly mistaken, for if they will visit my place, seven miles southwest of Great Bend, Barton county, I will show them forty acres of about all the native forest trees, growing nicely *now*, after this long continued dronth.

Our folks are going into stock raising, which is undoubtedly a change in the right direction. All kinds of stock seem to do well here, except horses brought here from the east. Those raised here seem to do well.

Send us a *rain* and I will give you a *rest*.

S. H. MITCHELL.

BULLS CITY, OSBORNE CO., May 18.—The principal conversation by all is, are we going to have rain, or is it going to continue dry? If the latter what shall we all do? Here we are and haven't had enough rain to wet the earth two inches deep since last November. Have had two very nice little showers the past two weeks; if there had been any moisture in the ground it would have done well. We have all signs of rain every few days, but are generally disappointed.

Some pieces of wheat look quite well, but will not be one-fourth of a crop if we have any. Farmers are busy planting corn. Potatoes are coming up and look very well. There has been a large acreage planted. They average high here, have been all winter from 85 cents to $1 per bu. Wheat from 85 cents to $1, corn 25 cents, butter 20 cents, eggs 8 cents, Hogs $3 and $3.50.

Business of all kinds is getting rather dull. Some are getting dissatisfied and want to sell out, some getting extensions on their homesteads and going east. There has been a large immigration through here all winter, but now it is emmigrating. Some farmers here offer their claims very reasonably, but for my part I will stay a while longer.

Peaches are nearly all killed by the freezing in April—did not seem to hurt wild fruit as much. Stock of all kind looks well. A very few horses have had what is called the Texas itch, but have heard of none loosing any with it. We like the FARMER, think every farmer should have it. It gives ideas of all classes of farming, both profitable and failures.

H. S. W.

RAY, PAWNEE CO., May 15.—I have been waiting for a long time for it to rain, hoping that I might be able to give you a better report of the condition of crops in Pawnee county. On the night of the 11th a heavy shower passed over us, but little rain fell, enough perhaps to purify the air and wet the ground to the depth of one inch, but not enough to do the suffering wheat much good. There are but few pieces of wheat left standing in the whole county. The severe freeze in February killed one-half and the extreme dry weather has annihilated nearly all that was left. It is a settled fact that no wheat will be harvested in Pawnee county this year. And just at this period it looks as tho' no other crop could be raised—not even grass, unless we have rain. We have had but very little rain since last August, and only about two inches of snow.

Grass has started but very little, and will not until it rains. Stock is looking gaunt and getting lean, and were it not for the spears of wheat that have struggled up and on through the drouth, stock here would fare hard; still farmers are hopeful that rain will come in season to give us a crop of corn, sorghum and Egyptian. Some of our farmers have left temporarily for work, others that remain are planting all the corn, both Indian and Egyptian, that they can; and notwithstanding the drouth and discouraging outlook, the most are hopeful and are determined to test the country to the bottom dollar.

F. F. DOWNS.