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THE KANSAS FARMER.

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Topeka, Kansas.

Weather Laws.—No. 5.

THERMAL DISTRIBUTION IN TIME AND PLACE.

If it has not occurred to the reader before, he has probably observed it of the past winter, that while in the middle zone of the United States to a point as far east as Pittsburg, the winter has been one of unusual mildness, at the far north some very cold weather has been experienced, and great storms of snow have swept across the northern part of Dakota and along the Manitoba country. To the south of the Ohio river winter storms have also been quite frequent and snowfall abundant, while in the central area of the Mississippi valley, there has been but few winter storms and very little snow. For the most part, the winter has been as mild and genial as one could wish. In the latitude of 40° this mildness and dryness have been more conspicuous at the west, and I have not much doubt that when the temperatures of the central belt about latitude 40° are compared, it will be found that the winter has been milder at the west end of this middle zone than at the east end. In a few instances some sudden and extreme changes have occurred, but the extraordinary rainfall of last November is the only special feature of the winter to distinguish it from other mild winters. At the west it had a single depression worthy of notice, occurring in the last week of December, whereas I predicted it would come the first week in January. After this cold snap the winter was one of more than average mildness and dryness for the whole plains.

In New England and Canada this ethereal mildness of the winter has not prevailed. Snow storms have repeatedly fallen and several sharp depressions have occurred. The winter there, though not a severe one, has probably not been a mild one in the same latitudes where it has been mild on the plains.

In British Columbia, Washington Territory, and probably to the Arctic Circle, the winter has been severe and the snowfall unprecedented. The "Pacific slope" has experienced cold of unusual degree, and excessive precipitation as far south as San Francisco. The same is true of western Europe.

Since October, 1877, the return trade winds have prevailed in an increasing degree towards the northern limit of the zone of these winds. The central axis of this current, as it ordinarily moves to the northeast along the trough of the Atlantic, has been turned to the eastward, pouring a deluge of water upon Europe to points as far east as Poland. In the summer there has been incessant rain from the latitude of Bordeaux northward, and in winter numerous snowfalls succeeded by depressions of great severity. In the south of France and in Spain and Italy, the distribution has taken the form it assumed on the plains about the latitude of 40°—that is violent storms, torrential rains, great hail storms with long intervals without rain succeeding them.

To the eastward of this area of storms, that is about the Black Sea, the Caspian Sea, and Asia Minor, portions of Persia and the Iran Sappes, these intervals between rains have reached their extreme limit of prolongation, and to the extent of producing a famine drought. Western Europe is in places suffering from the coolness of the summers and the extreme humidity of the air, while in southeastern Europe and the contiguous parts of Asia, it is suffering famine from the arid condition of the air. In the former there has been a vast excess of westerly winds, while in the latter there has been an excess of northeasterly winds; the former having traversed an ocean and the latter a continent. These effects are the same as if the return trade winds are shifted a few degrees north of the average position and turned more nearly along a parallel of latitude, and as if the trade winds were also displaced to the northward a few degrees and flowed more to the west, carrying the Calms of Cancer near the south of Europe. Such a displacement occurring for the whole northern hemisphere, would throw the humid current from the Pacific upon our western coast, turn the humid air of the Gulf of Mexico to the east in an unusual degree, with the effect of giving an excess of rain and snow for points lying east of the average track of these winds.

But in the middle latitude the Rocky Mountains intercept the return trade winds, or, what is about the same thing, raise them to such an elevation as to strip them of humidity. South-

westerly winds, then, for the great plains lying east of the Rocky Mountains, bear out instead of bearing in moisture, and if long prevalent, successively dry up the plains from the foothills to the northeast, in the manner I have shown for the three years—1858, 1859 and 1860. A dry current steadily flowing from the southwest to the northeast, would bring that delightful ethereal mildness which characterizes our "Indian summer," and winters like the winter of 1879-80.

Many other instances of the unequal distribution of heat in different years, might be cited, but none afford the means of examination and comparison offered by those of recent date, for the reason that more than twenty years ago there are not observations enough at widely dispersed stations to indicate with any accuracy the relative temperature of any two belts or zones compared.

From Blodgett's Climatology (pages 144 to 149,) a few cold winters may be cited, in which the cold was limited to one or the other sections of the then settled United States.

1740 was a year of extreme cold at the north and in northern Europe. 1717 was the year of the "great snow" in New England, when it snowed from February 19th to the 24th, and until the snow covered the ground on a level from five to six feet deep. The winter was also one of great cold at the north, though no mention is made of great cold at the south.

1748, 1765-6, 1768 and 1772 were severe southern winters, killing tropical fruits and sugar cane, though not exciting much attention in New England.

In 1780 a polar wave swept down the Atlantic states, freezing the Delaware, Long Island Sound, York rivers in Virginia, and Bayou St. John in Louisiana. This was a winter famous for the "crossings on the ice" effected by Revolutionary troops. The winter was not severe in Labrador, the monthly temperatures being the same as at Hartford, Connecticut, except that in January, 1780, the temperature was higher than the same month in New England, and was 26.5° higher than the mean of the two preceding winters.

The winter of 1783-4 was also cold from Philadelphia to New England, though no mention is made of extreme cold at the south.

In 1788 the south was under a depression; ice forming at Savannah, Georgia, while in New England the temperature was only average—the coldest single reading being 40° at Salem, Mass. In 1790 Canada suffered from extreme cold, though no mention is made of a severe winter in the United States. In 1792 the Mississippi valley got one. "The Ohio was frozen at Wheeling so that heavy carriages crossed on the ice for upwards of forty days."

In 1796-7 a Manitoba wave descended over the Mississippi valley again, and its effects were felt in Virginia, and Charleston, South Carolina, though no mention is made of extreme cold in Canada or New England. In 1800 a cold wave of great severity crossed the Gulf States from Louisiana to South Carolina, but in New England and Canada, and in Ohio, the winter was mild.

In 1814 another cold wave swept across the Gulf states, while the whole settled country north of lat. 36°, appears to have had mild weather. In 1818 a cold spell settled upon the Mississippi valley, killing the saffras and pear trees—a thing that did not occur in Ohio again until the cold group from 1852 to 1856. This wave was not felt in New England, but in the winter following (1818-19) a cold wave struck New England, but, so far as known, neither depression extended south or west. In January, 1820, a northwester struck at Ft. Snelling, and a depression was reached which was not reached again until 1856. The winter of 1825-26 was a cold one in New England though mild at the northwest. In 1830-31 these positions were reversed, and extreme cold prevailed in the northwest while New England had no remarkable cold. In December of 1831 another northwester swept down the valley, freezing the Mississippi to a point 130 miles below Cairo, and filling the river with floating ice to Cairo. This cold was also severe in Canada and Vermont, though south of the Potomac the depression excited no comment if one occurred.

In 1835 a very cold winter was experienced, beginning with December, 1834, in sudden decline of temperature after a rain. This cold has been perpetuated in an exaggeration that cattle and sheep were caught by the feet in mud, which was frozen before they could move. It is certain that in the latitude of St. Louis, children dismissed in a drizzling rain at 4 p. m., needed the help of parents to be rescued from freezing before reaching their homes.

This winter was severe all over the United States, but the cold waves descended upon different parts at different times during that winter.

The summer of 1835 was also remarkable for a series of depressions homologous with those of 1812, 1815 and 1816. In June (on the 4th, I believe,) a frost fell in southern Illinois, and at night there was a freeze that killed the forest leaves and all garden stuff, cabbages, peas, potatoes, etc., and in a few days the air was filled with a stench from decaying herbage.

1837 afforded another cold summer at the west, though neither of these cold summers were experienced in Maine or New Foundland. In 1838 a southern wave passed from west to east across the Gulf states, and as some readings are given, we can see how this cold wave lay, and we almost know that a cold, west wind swept from the plains across the Gulf states in the latitude of Ft. Gibson, vanishing both to the northward and southward. The temperatures in February were as follows: Ft. Gibson, 15°; at St. Augustine, Fla., 8°; at Norfolk, Va., 8°; at New York, 7°; and at Montreal 6° below the February averages. In 1843 another cold winter fell upon the country which was mostly to the eastward of Cincinnati, except for the month of March, when it also struck the west. This wave was southern, and stretched across the country from a little north of west to a little south of east. In Louisiana the temperature for March was 6° below the average for February, and 17.8° below the average for March. At Ft. Kent, Maine, the temperature was one degree above the average in March, and only 9° below the average at Toronto, Canada, and 8° below throughout New England.

In 1845-6 another cold wave crossed the Gulf states from west to east. There was abundance of snow in Mississippi and ice at New Orleans. Along the whole Gulf coast the temperature of the winter months was from 6° to 10° below the average. "It was most severe along the Texas coast." Means were as follows: Tampa Bay, 6.3° below; St. Augustine, 7° below; New Orleans, 10.4° below; Ft. Townson, 6.8° below; St. Louis, 7.8° below; Ft. Snelling, 2.8° below; Toronto, 5° below; New York, 5.3° below winter averages. Obviously this was a tidal wave of cold that swept across the land from west to east, vanishing to the east beyond Florida, and to the northward beyond Ft. Snelling.

Blodgett says: "At other recent dates refrigeration has been partial and confined to smaller areas. In the year 1844 a depression occurred at the northeast and in the lake regions, but not elsewhere. In the same month, in 1847, a like partial cold extreme occurred, falling at the Mississippi and west of it, but not at any part of the country on the east. In 1849, January and February were quite generally below the average temperature, 5° to 10° each, though this extreme disappeared at the Gulf coast where January was three or four degrees above the average at some posts near the 30th parallel. There were some sharp depressions in the central belt from Ft. Snelling and St. Louis to New York. The winter of 1851-2 was from 3° to 8° below the average for each winter month in the eastern states, but not so at the west where it was on the whole warmer than usual."

This wave also had its crest south of the Ohio, as will be seen from the following table:

STATIONS.	Single readings.	Below average monthly temp.
Ft. Brady.....	24	5.6
Ft. Snelling.....	22	5.5
St. Louis.....	14	3.6
Ft. Gibson.....	4	5.3
New Orleans.....	17	8.7
Pensacola.....	19	9.5
Key West.....	49	7.2
Charleston.....	14	5.5
Norfolk.....	7	5.3
Washington.....	7	6.2
New York.....	8	4.8
Toronto.....	15	5.9
Salem, Mass.....	14	1.5
Marietta, Ohio.....	23	8.0

Thus we see that while the single depressions are most severe, and doubtless the monthly readings compared say with 32°, are lower in the north than in the south, the comparisons show that relative to the cold due at the place, it was colder at the south than at the north, and colder at the east than at the west. (Compare Ft. Snelling and Toronto).

The next cold wave cited by Blodgett is that of 1854, which was a northwester.

In 1856 the refrigeration was still more severe in the middle latitudes, the wave sweeping from a little north of west to a little south of east, and from the British boundary to the Gulf of Mexico. Labrador, Hudson's Bay and the Mackenzie lakes, the North Baltic countries, the White Sea and the British Islands, were warmer than usual! In January, 1857, the northwestern wave again swept down the plain

and the whole plains were subjected to unusual refrigeration. On the lower Atlantic coasts the storms were most violent. The harbors of Baltimore and Philadelphia were the most obstructed by ice; New York next, Boston next, and Halifax not at all. Lake Superior and Hudson's Bay, and contiguous lands to Labrador were mild and genial.

From these facts the following conclusions are fairly deduced:

1. That no prediction or conjecture as to the character of a coming season is of any value unless there is an approximate location of the place to be affected.
2. That the temperature of the whole earth being nearly constant year after year, the irregularities observed are in the distribution of the heat and the rate of radiation.
3. That these irregularities arrange themselves in zones or bands more or less corresponding to the course of prevalent arial currents due at the season of excessive depression or elevation.
4. That the positions of these lands appear to oscillate from higher to lower latitudes, and at times to alternate in position as follows: During one period, two cold ridges (high barometers) appear to stretch across the country from west to east (bearing north) with a "trough" or warm valley (low barometer) between, and during an alternating period a cold ridge (high barometer) stretches centrally across the United States from west to east with warm area (low barometer) both to the northward and southward of it.
5. That this reciprocation does not ordinarily occur in the same winter, (that is a ridge does not come to the position of a valley nor a valley to the position of a ridge the same winter).
6. These relations correspond to the displacements of these regular belts of high and low barometer recognized by physical geographers as marking the various zones of arial movements as the "Equatorial Belt of Calms," "Northern Trade Belts," "Calms of Cancer Belt," "Return Trades Belt," and "Arctic Calms."
7. That the periodicities of these cold waves at the same station of observation are the same as those in precipitation.
8. That the cold depressions of extreme duration bear a definite relation to the inland distribution of water for a period of time succeeding them.
9. That since a cold, wet south and a cold, wet north, with a warm, central trough in the middle, must produce storms in the trough, the determination of the mean position of the trough for a month to come will forecast the position of the storm paths for a month to come with the same facility it is now done for twenty-four hours.
10. Since these storms move from west to east, the final resulting effect of them is to remove from the western end of this barometric valley to the eastern end, where it widens into an estuary, the vapors of water more and more, with a final caving in of the barometric ridges at the west, and with the result of finally establishing in its place a barometric ridge with the low barometer on each side.
11. Traces of a period which in length lies between nineteen and twenty-one years, and of multiples and quarters of this interval are discernible in the maxima and minima of the thermal waves.

Tree Experience.—No. 9.

BY B. P. HANAN.

LARCH.

I planted out a few hundred, each, of American and European larch in the spring of 1876. They were three to five feet high. None of them grew. As it was in May when I set them out, I attributed the failure to late planting, and set out one hundred trees of European larch again in the spring of 1877, by way of experiment. They were good trees twelve to fifteen inches high. I got them out early, before the leaves started, and they leaved out and started to growing nicely, but all died but five during the dryer part of summer, and those five died the next summer. The dry, hot winds seemed to dry them up. I have no faith in larch on our sandy soil on the western plains. I have never heard of a tree flourishing on them.

MAPLE.

I have already noticed the ash-leaved maple or box-elder. In the spring of 1876 I set out about one hundred sugar maples, three years old, nursery grown. They went just like the larch I set last, but few of them living till the second year, and then the last one died—dried up. I set

out about one thousand Soft or Silver-Leafed maples in the spring of 1876 in nursery rows, and the next spring planted them permanently on my timber claim, on very sandy soil. They nearly all lived and are still growing and doing well. They do not grow as fast as trees on rich bottom lands, but keep very healthy. The gophers have eaten off some of their roots.

OAK.

In the spring of 1877 I planted one bushel of White oak acorns. They were too much sprouted when I received them, and but few grew, and nearly all of the young trees have since died. They could not stand the dry, hot winds.

I planted a few Bur oak acorns at the same time as the White oak. They came up and have lived well, but grow very slowly. The tallest are not over eighteen inches high.

HICKORY.

Pignut, Small Shellbark and Large hickory nuts planted in the spring of 1877, after being buried the previous winter, came up well, many of them having since burned out, and the rest are but four to six inches high. I am certain that oak and hickory will do but little good on our light, sandy soils.

OSAGE ORANGE.

I have over three miles of osage orange hedge growing. It is from two to four years old. It grows and does fine. I have had no trouble with it except by the gophers cutting off its roots. They have made many gaps in it in the parts farthest from the house. I can master them by trapping or poisoning, but inattention caused me the loss referred to. I have planted out a few acres for timber, as the osage stands drouth well, is a tolerably fast grower and makes a durable timber.

Langdon, Reno Co., Kansas.

Wanted, More Self Respect.

Your article in the FARMER of the 19th, with this heading, hits the nail on the head. As long as farmers pursue the course indicated in that article, just so long will they be the slaves of the dwellers in the cities and towns.

We cannot have a festival, picnic, club meeting, or other social gathering, but up jumps some toad-eater and proposes that we invite some sprig of the law to come out and address us, which he cheerfully does, and tells us that we are the bone and sinew of the country, the happiest and most independent class in the community, and the usual *boah* spoken on such occasions. If any one objects to this arrangement he is at once charged with a desire to be the orator himself.

This spirit of jealousy among the farmers is the main obstacle to their union for prudential and political purposes. Said a prominent politician to the writer a few days ago: "We can always beat you, for you will never unite upon your man." And this is true. W. P. Salina Co., Kan., May 25.

CENTRALIA, Nemaha Co., May 23.—The FARMER, of May 19th, is before me, and I have perused its contents [with much interest. We are having it rather dry up here, (65 miles northwest of Topeka). We need rain but are not suffering yet.

Corn looks well and is in fine, growing order, that which is up, farmers are beginning to cultivate. Oats and spring wheat look badly and need rain. Wheat and rye are in blossom. Wheat very short and will be a short crop. Fruit still promises fair.

Stock is doing well on the prairie now, which promises an abundance of the best of pasture. Stock shipping is dull, as fat cattle and hogs are nearly sold. I see a few farmers hauling corn to market.

Mr. F. E. Moss, please write again. I like to hear from such men. Your communication of May 3d just hits me. Stick by the new ship. She will get manageable after awhile. I have lived in Kansas twenty years, or nearly all my life, and expect to live here twenty years more, if I live that long. If dry weather comes, I expect to stand it, and if grasshoppers or chinch bugs come, I expect to put up with them. We have seen them all in the last twenty years, and have lived through them, and have come out better by staying right here, and it will be so again. It will not always be so. If we don't get a crop this year we may next, and if we don't get a crop next year, why we will get it sometime if we keep on trying.

Now, Mr. Moss, about that "two hundred dollars' exemption law." I say, "Give the boy a chance." Give all the benefit of it, or more. What is good for one is not bad for another. Just because a man is married should he have the advantage? I should like to see this law repealed or amended so that all might fare alike. I love equality in all things. A. L. SAMS.

Apiary.

Bee Notes for June.

L. C. Root, in the *American Agriculturist*, says the system of management for the present month must be determined by the intentions of the bee-keeper. If box honey is desired, the boxes should now be properly arranged upon the hives. If the extractor is to be used, extra combs should be supplied for this purpose. If increase of swarms is the object, rather than surplus honey, preparations for additional swarms should be made.

In many locations this is the month when natural swarms will issue most freely. In such sections, swarms will now be made artificially with much profit. There are many who allow swarms to issue naturally, but when unrestricted as to number, this is never desirable. Those who permit it should remember that it belongs to the benighted days of box hives and brimstone pits. It would hardly be possible for us to give the different methods of artificial increase in the limits of these notes. They are treated upon at length in every practical work on the subject, and no progressive bee-keeper can afford to do without at least one such good work.

"How much increase is desirable?" This question is often asked. In answer we will say that probably most inexperienced bee-keepers will reach the greatest success by placing boxes upon the hives, as soon as the bees will occupy them, and allowing one swarm to issue from such, as the season induces them to swarm, but never allow more than one. In this way a reasonable amount of increase may be secured, besides probably some surplus honey if the season be favorable. After the warm issues, all of the queen cells should be removed from the combs, except one of the largest and most fully matured; or, what would be better, remove all, and introduce a laying queen. If the motto we have often recommended, viz: "Keep each hive supplied with a laying queen at all times," was observed, the gain of honey throughout the country would be doubled. If those beekeepers who allow their bees to swarm without restraint would study the subject and see what they are losing, they would appreciate the value of this motto. It should be borne in mind that when two or three swarms are allowed to issue, the old colony is without a queen from twenty to twenty-five days. At a low estimate, 1,000 bees would have matured each day from the eggs which, under favorable circumstances, a queen would have deposited during that time. The loss arising from the absence of a queen for twenty days, would amount to 20,000 bees. A colony should not be left queenless for one day, as one cannot afford the loss even of 1,000 bees. If such increase of swarms is desired, have laying queens in readiness, and when a colony is formed, which can best be done artificially, furnish it with a laying queen. Remove the boxes so soon as they are full, and supply their places with empty ones. All boxes and frames used should be supplied with starters, or full sized cards of comb foundation.

Poultry.

Food for Young Chicks.

Far too much corn meal is fed to chicks, and it is to that cause, in a great measure, that there are so many young chicks which die early, often before they have fully feathered up. Like very young stock of any kind, they require something nourishing, though not violent or heating, to induce them to make a good and healthy growth. Many a young colt has been rendered comparatively useless by feeding too much grain while it was growing; and no breeder who has had experience and is gifted with common sense, would think of graining a colt the same as he would a matured animal, which latter, having either road or farm work to do daily, requires strong food to enable him to supply the power required of him. While the loss of a few chicks is not so great as with the larger stock, it is sufficiently great in some quarters to cause breeders to stop and think awhile. The young chicks should not have corn in any form until they are three or four weeks old, unless it be a little scalded or cooked meal, fed occasionally; and the principal food should be stale bread, crumbled fine or moistened with milk, with wheat screenings (when they get old enough to eat it), scalded oat-meal, and cottage cheese (made from sour milk). This is not a very expensive method of feeding, as the chicks, being so small, will not consume much of it daily, while the very best results have invariably followed such a system of feeding and management. It is far better to go to a little extra expense than to stand the chance of losing a number of valuable birds.—*Poultry Yard.*

Horticulture.

How to Protect the Fruit.

ED. FARMER: I have, ever and anon, seen squibs in eastern agricultural papers how to protect apples, pears and peaches from late frosts. Some writers have offered one remedy, and some another. Of late years I have, more than once, seen stress laid upon smoke, but have never known of its real success until quite recently. And as the facts have come to me from undoubted authority, I think I am justified in sending you the information I have recently received.

Less than a week after the last frost, I had, by accident, a young lady guest from Wabau-

see county, and daughter of an old and reliable farmer. I enquired of the fruit prospects in her county, and especially of the orchard of my old and esteemed friend, Col. Lines; and, to my regret, learned that the apples of that region were all killed by the frosts of April 27th and 30th, "but," she added, "one gentleman saved his by sitting up all night and smoking his orchard." On asking his name I learned that it was an old friend of mine, a Mr. H. A. Stiles. I have often met this gentleman at our agricultural institutes at Manhattan, in years passed, when the institutes were a power in the state; and although I knew him not as an horticulturist but as an intelligent sheep raiser and general farmer. I wrote him at once for the facts. In due course of mail I received the following reply:

"Dear Doctor:—Your letter of inquiry is at hand. In reply I will say that on the morning of the 27th of April, I burned old grass on prairie left for that purpose, which carried smoke over my orchard. On the 30th of April I got up at one o'clock a. m., called up all my help and burned old hay, brush and stable manure which I had prepared for such an emergency. I kept the orchard blue with smoke until after sunrise. I also burned a lot of brush which had been accumulating for some time, and which I had piled on the north and west sides of my orchard. No damage was done to the trees. My orchard is not on high ground, and I should have lost nearly or quite all my fruit, as is the case with my neighbors, if I had not taken the precaution I did.

"My grapes and peaches which escaped the previous frozes are also all right, while neighboring vineyards had every green shoot and leaf killed. My brother-in-law living on an adjoining farm saved his in the same way. Most respectfully yours, H. A. STILES."

To withhold such valuable knowledge from the fruit growers of Kansas would be criminal. I hasten therefore, to communicate it, through you, to the thousands of farmers who read your valuable paper. Had this knowledge been generally known and acted upon, a few weeks ago, tens of thousands of trees, having to-day "nothing but leaves," would be bending, as are the trees of Mr. Stiles with luscious pears and health-giving apples. As it is, central and western Kansas must again be dependent upon our eastern counties and the territory east of our state limits, at a great outlay of dollars, for that which might have been saved to us by nothing but smoke and at a very little labor.

Our peach crop, too, as I verily believe, could have been saved by the same process, if it had been adopted earlier in the season, and at all times when the thermometer went down below minus 12° which happened, with us, but once, during the past winter. Indeed, it fell down to zero but three times during the entire winter. On March 13 our prospects for a full peach crop would have been very large, and if the same thing had happened on the 27th and 30th of April, the apple, pear, and grape crops would have been abundant.

The use of smoke to protect the vineyards, on the Rhine, from late frosts, is no novelty. It has been used for decades of years, and why should it not be used by all our fruit growers? That it is philosophic there is no doubt.

The bloom of our fruit was killed by the radiation of heat. Rapid cooling killed it. Now if radiation had been checked by clouds on the 14th of March—when the embryo peach was susceptible of sudden changes, our peach crop would have been very large, and if the same thing had happened on the 27th and 30th of April, the apple, pear, and grape crops would have been abundant.

Mr. Stiles has shown us that smoke will check the radiation of heat equally with clouds. Let fruit growers make a note of this.

Fort Riley, Kas.

Paper Bagging Grapes.

Bennett H. Young highly recommends the practice of protecting grapes by enclosing the bunches in paper bags, and gives his experience in the *Western Rural*. Mr. Young tried netting also, but considers paper bags preferable. He says of the latter method:

"The second method is that of enclosing in paper bags. When Mr. Bateman, of Ohio, first suggested this novel plan, I considered it an absurdity. I could not imagine how a bunch of grapes, shut off from sunlight and air, could properly mature with a good color and flavor. I resolved to give it a fair trial. One fact is worth a great deal more than many theories; and, starting out with prejudice against Mr. Bateman's plan, after a first trial, I must confess myself a convert and its advocate.

This year I put on two thousand paper bags—in many places on the same spur, alternating with the netting and bags. The results were most satisfactory. The grapes ripened evenly with the best of coloring, fully as early as when not enclosed, and with a flavor equal to any grown without the bags. More than this, the bunches came out of the bags with a splendid bloom, and as perfect every way as it is possible for a grape to be. The paper bagging prolonged the season for nearly a month. They are very cheap, and more easily put on than the netting, and the grapes cannot be touched by the birds.

The bag is slipped over the bunch when the grapes are about one-third grown, folded together around the stem, and a pin stuck through the folds. This is all the fastening necessary. Care must be taken, however, to make a small slit in the bottom of the bag, for, unless this is done, when a heavy rain falls, a half pint of water will get into the bag, and, standing around the grapes, will injure them, or by its weight

tear the bag off. Merely pierce the bottom with a blade of a knife.

Grape growers are greatly indebted to Mr. Bateman for this simple but wonderful protection to the fruit. In this part of Kentucky, between curculio and birds, there is little left to the grape-grower. These bags are absolute protection from both. I also found grapes so inclosed, both in the netting and bags, less liable to mildew. Those in paper bags were more favored in this respect than those in the netting.

Those who have not tried either of these plans, cannot imagine the difference in the perfection of fruit secured with their use. Large bunches can be taken out of the bag without a single imperfect berry, and with a bloom upon them that is simply magnificent. Fifty cents' worth of paper bags will be sufficient for an experiment. Putting them on will require but a very short time, and once tried they will never be neglected.

Miscellaneous.

How to Construct Under-Drains, and the Advantages of Such Drains.

EDITOR FARMER: In a recent issue of your journal you published a paper from this pen on SUB-SOIL TILLAGE WITH PROPER SURFACE AND UNDER-DRAINING.

But the latter, for want of space, was not as full in detail as would have been profitable to those inexperienced in the art of draining, and are seeking instruction in it, hence it will be my purpose in this, to give more definite instructions. Draining, especially under-draining, is a kind of land improvement, or reclamation, that, if attempted by a novice in the art, without calling to his aid a draining engineer, is generally so imperfectly executed that it results in an unprofitable investment, but when skillfully engineered and executed, no branch of high farming known to the writer has given so large a return in proportion to the outlay, hence, as a branch of farm practice its study behooves all progressive farmers.

But, say many ignorant cavilers, "I have no land that needs under-draining."

In answer to such, I shall make a sweeping reply—it is this. There are very few of even "quarter section" farms, some portion of which would not be benefited, and made more profitable by judicious draining, and none but a skilled drainer and one who has reduced the varied art of husbandry to a science is competent to point out and specify for the portions of a farm in question.

The circumstances under which land will be benefited by draining, and the character of draining requisite to secure the best results in each respective case, and so varied that to decide on the most judicious method, or *modus operandi*, requires the most careful study by a skilled expert. To verify the premises taken in the above, I admit, without the least humiliation, that although I had made draining a specialty of my profession for a period of over 40 years, east of the Alleghanies, when I was called to the prairies of the N. W. in 1876, and employed to engineer and specify for reclaiming an extensive slough in which there was a fall in the surface of but two and three-tenths inches to the mile, and apparently a bottomless quicksand in portions of the area to be drained, I found that my experience acquired on undulating lands of the east, illly qualified me for the very dissimilar work in hand.

I made the work in my new field satisfactory to my clients, and tolerably so to myself, but during the progress of the first job, I learned by an experiment a method whereby I could have saved 50 per cent of the cost and made a better job if I had only known in the beginning what I learned while the work was in progress. What I refer to was simply this. I found by sinking test pits, that the alluvial stratum of one to eight feet in depth, which I was attempting to drain, rested on an impervious stratum of clay, and that at an average depth of 20 feet below the surface there was a water bearing stratum of gravel, but even in times of high water the soil water would not rise in a well in the clay stratum more than two feet. This satisfied me that I could drain the water in the surface soil and discharge it into covered wells from under-drains, and no visible outlet would be required.

I found that I could thus drain a large area, 40 to 60 acres, into a single well and the drainage water had no sensible effect on the subterranean lake into which it was discharged. This is called "pit draining," and wherever it is practicable, which is more frequently the case than is generally supposed by the unskilled, it is by far the safest place to deposit water from under-drains, as there is no possibility of the outlets of the drains becoming clogged, or being displaced, each of which are common occurrences where under-drains discharge into open drains, or streams.

Surface water may, in conjunction with pit under-drainage, be removed in surface ditches, but it should in no case be discharged into the same pit into which under-drains discharge, as the soil from the surface water will soon accumulate in the bottom of the pit and prevent the water from filtering away into the water bearing stratum. Surface drains, or ditches, should never cross an under-drain, as water from the former is liable to find its way into the latter, through the open, pliable earth which has been returned to a ditch in which an under-drain has been constructed, and will clog the under-drain with silt. The most economical mode of testing to ascertain the feasibility of pit-drainage, is by boring with a post-auger down to the water bearing stratum, and test the rise in the hole thus bored for a few days, and if it rises none,

or but slightly, the system may be safely adopted.

The first thing to be done is to excavate a pit or well down to the water. The size of the pit should be in proportion to the area to be drained into it, and the amount of water to be discharged, though ordinarily a pit three feet in diameter in the clear, after it is walled, will be ample, if the water bearing stratum is a pervious, open gravel; as the under-drains, if properly constructed, will deposit no silt in the pit, but all will be arrested by silt-pits, which will be described.

In case the water discharged into the main receiving pit from the drains should at times of high water be in excess of what will immediately escape by infiltration, water will rise in the pit and as it does so to any considerable extent, the head of water will expedite its escape.

Such pits should be walled and closed at the top with indestructible material, brick, or rubble stone. The wall may be drawn in to form the cover, but the top of it should not be nearer the surface than 18 inches, that it shall be secure from displacement by sub-soil tillage.

SILT-PITS IN UNDER-DRAINS.

Nothing in the detail of under-draining is more essential than a judicious supply of silt-pits in the bottom of under-drains. These are simply portions of the ditch in which a drain is to be constructed, sunk to a greater depth than the balance of the ditch, and filled with rubble up even with the bottom of the ditch, above and below the pit.

The draining material, of whatever variety is used, is to be laid over the pit the same as elsewhere. The silt contained in the water will fall into the pit, and pure un-freighted water will flow on. In pit-draining, having constructed the pit, the main drains which are to discharge into it are to be commenced at the pit and extended to their terminus, and such drains should be well supplied with silt-pits, and in all cases one should be located near the discharge end of each drain so as to prevent the possibility of silt being deposited from the drains into the main pits.

Silt pits should also be located near the discharge end of the lateral under-drains, that they may not deposit their silt into the main drains.

I usually make the silt-pits in under drains, no matter of what material they are constructed, one foot deeper than the balance, and from 10 to 16 feet in length. These safeguards are intended to be perpetual in their action, without care or repairs, hence they should be skillfully and thoroughly constructed.

In case a gravel underdrain is to be constructed over a silt-pit, the surface of the rubble in the pit should be covered with coarse gravel, so that the draining material of a finer texture may not fill the interstitial space in the rubble in the pit to the exclusion of silt.

THE DEPTH OF UNDER-DRAINS

is to be decided by local circumstances. If shallow drains do not intercept veins of water in the soil which deeper ones, of practicable depth would, deep drains should be constructed.

Under no circumstances should the draining material in the trench come nearer the surface than 18 inches, for fear that it may be disturbed by deep sub-soil tillage at some time.

Three feet in depth is ordinarily sufficient, though I have been obliged to lay long lines of drain five feet to six feet in depth. Better too deep than too shallow.

It was my purpose in this connection to give instructions in excavating the trenches, and constructing drains of various materials used, but I shall deserve to be classed with that fashionable host known as "monopolists," if I claim more space at this time.

If I am spared, I will resume the subject at an early day, but I have no hope of living to exhaust it—for even what little I know about draining would take a long time to tell.

J. WILKINSON.

Brooklyn, N. Y.

Gardens for Farmers.

Next to the gardener proper, no class of men can more easily supply themselves with fruits and vegetables than the farmer. He has the land and the needed implements, and that his knowledge of farm crops makes it easy for him to learn the details of culture necessary for the garden is apparent from the fact that a majority of the market gardeners of New Jersey and Long Island were originally farmers, and few of them ever enjoyed any special training for the business of gardening. Nevertheless, very few farmers who live at a distance from large cities, cultivate either fruits or vegetables to any extent, and their tables are far less bountifully supplied with these, and especially with the rarer and more delicate varieties, than the day laborer of the city who, out of his dollar a day, supplies himself from the abundance of our markets.

The farmer needs a generous and varied diet, and of course, from every point of view it would pay to devote more labor and attention to the garden; but when his neglect in this particular does not arise from mere carelessness and stolidity, he is often deterred by the notion that the products of the garden require a soil different than that of the farm. This is a delusion. Any soil that will grow good crops of hay, wheat, or potatoes, will grow almost any variety of fruit or vegetables, although in either case the higher the cultivation the more satisfactory will be the crop.

What the extent of a farmer's garden should be must be decided by circumstances, although it may be laid down as a general rule that one-fourth of an acre, or a space 100 feet square, will be ample for the requirements of an ordinary family.

The plough and harrow should always be

used in preparing the ground, not only because the work can be done in this way more cheaply and expeditiously, but because it can be done better than with a spade.

Of the garden space, 6 feet by 30 should be set aside for an asparagus bed, which is now too rarely seen in the country. The original preparation of this bed, with its deep ploughing and subsoiling and thorough enriching, requires some care, and it requires two years from the time of planting before a full crop is yielded. But when once prepared and good, healthy plants are set out it will take good care of itself, if the weeds are kept down, for twenty years. A dozen rhubarb plants, set two feet apart, are also a necessity, and will yield a crop for years without renewal. Of the general crop of vegetables no detailed quantities need be specified.

Of small fruits the grape is most generally appreciated. If the vines are trained to wire or wooden slats six inches from the garden fence so as to admit air, they will take little space, and if trained with a south or southeast aspect they will mature their crops earlier, and be more certain to bear than if not so sheltered. Twelve or fifteen vines of six or eight varieties will give a large supply. As to varieties: Concord, Delaware, Iona and the Rogers Hybrids Nos. 15, 22, 41, and 44 comprise nearly all shades of color, and extend in their period of ripening in the latitude of New York, from the 1st of September through October.]

Strawberries come next in importance, and are also found too rarely at the farmer's home. A bed of the size recommended for asparagus, and requiring nearly the same number of plants, about 300, will yield at a low estimate 100 quarts, or from four to six quarts per day during the bearing season. As to varieties, one would not go far astray who planted "Monarch of the West," "Chas. Downing," "Seth Boyden," "Triomphe de Gand," "Great American," or the whole of them.

Raspberries and blackberries follow strawberries, and about the same area, 50 feet by 6, may be allotted to each, though the distance apart at which they should be planted is wider, namely, 2 feet by 3. The new raspberries, Pride of Hudson, (red), Caroline (yellow), and New Rochelle, (purple), bid fair to supersede the older varieties. Of blackberries, Wilson's Kttatining and Cut-leaved comprise the earliest and latest sorts. Of currants, 25 red, 12 white and 12 black, would be about the proper number. Of gooseberries the only kinds which do well here are American varieties, Downing, and Houghton's Seedling. The gooseberry, which is one of the finest of small fruits in England, will not endure our hot and arid summers any more than our melons and maize will flourish in the cool, moist climate of Yorkshire.

Many farms have their apple orchards, but so common, and yet a dozen or so of each class would be well worth planting.

In nearly all cases where fruit trees are to be purchased the farmer should buy from the nurseryman nearest him in preference to buying of agents, and if the nurseryman is trustworthy it is better to allow him to make selection of varieties.—*Peter Henderson.*

Film on the Eyes of Stock.

Take fresh lard and melt so that it will run easily, and pour a sufficient quantity into the eye to grease the ball thoroughly, once a day.

The most convenient mode of application is by means of a small vial, the neck of which is carefully worked between the eyelids before pouring into the eye. It is entirely painless, but little difficulty is experienced in its application.

In 1865 Vellemin proved, by repeated experiments, that it was possible to produce consumption in previously healthy animals. He found that finely divided tuberculous matter, when introduced under the skin of rabbits and guinea pigs, produced tubercles in three weeks in their lungs, thus proving from these experiments that tuberculosis should be classed as a specific infective disease, capable of being conveyed by inoculation, like small-pox or syphilis. Numerous pathologists have verified Vellemin's experiments. It was also found by Dr. Wilson Fox and Dr. Sanderson, that pneumatic matter, pus, putrid matter, etc., would produce disease in healthy animals, and transmit it through their meat and milk to dogs, cats, hogs, and through milk to young children and animals to whom it had been fed.

Cows living under bad hygienic conditions, as in man, under similar conditions, predispose to tuberculosis in themselves, which renders their milk poisonous to children.

Besides thinning the fruit, we should thin the young branches. Handsome forms are as desirable in fruit as in ornamental trees. No winter fruit will do this exclusively. It may furnish the skeleton—but it is summer pinching which clothes the bones with beauty. A strong shoot soon draws all its nutriment to itself. Never allow one shoot to grow that wants to be bigger than others. Equality must be insisted on. Pinch out always as soon as they appear such as would push too strongly ahead, and keep doing so until the new buds seem no stronger than the others. Thus the food gets equally distributed.

Commissioner LeDuc, in his report for the year 1879, claims that the loss to the farmers of the United States at the present time, reaches from fifteen million to twenty million dollars annually, and that it is not unusual to receive intelligence from some of the large hog growing localities in the west that the losses in single counties will reach the large sum of from \$50,000 to \$80,000, and in some instances as high as \$150,000 in one season, through the devastating operations of hog cholera.

Patrons of Husbandry.

The Leading Topic.

A Washington correspondent of the National Live-Stock Journal, commenting on the customary neglect which the interests of agriculture meet with in congress and all other legislative bodies in the United States, very forcibly illustrates the subject in the following remarks:

"I met to-day an old friend, now serving his first term in the house of representatives—a man of capacity, and in full sympathy with the industrial interests of the country—who informed me that he had expected to get through several measures for the advancement of these interests—that he came here supposing that he would have no difficulty in satisfying the house of the utility of these measures; 'and now,' said he, 'here I have been for three long months striving in vain to get even a hearing upon a single one of these measures?'"

"We want more farmers in congress, and yet do nothing to bring about this desirable result. But something more than this is necessary. The main thing is to have men that have sufficient intelligence to understand our interests, with the honesty and the courage to faithfully represent them. It frequently happens in congress, as well as in our state legislatures, that farmers turn out to be the most timid and inefficient advocates of our interests, while men of other vocations, including the much abused lawyers, properly appreciating the paramount importance of agriculture to the prosperity of their constituents of all classes and vocations, are found to be its most zealous and faithful representatives. We of the country districts must insist that our members of congress and of the assemblies of the states, whoever they may be, shall be representatives of agriculture as the chief and paramount interest committed to their charge. We are to insist upon this pre-eminence of the agricultural interest ourselves, by creating an active public sentiment in its favor.

"It has been said by an earnest and able worker in one of the learned professions, that 'common interests and enlightened sentiment, with frequent meetings and exchange of views, evolve dominant ideas. And ideas rule, not only societies like ours, but the world.'" We have the common interests, with increasing enlightened sentiment, let us hope; but we do not have the frequent meetings and exchange of views to evolve the dominant ideas. Hence it is that our influence is not dominant with our law makers. The popular branch of congress is indeed a representative body, but not of the quiet and order-observing habits of the great rural industry upon which the prosperity of the whole people rests. It is rather the active, persistent, and noisy audacity of the marts of trade, and of the stock exchange that seems to bear sway here, and to render necessary the enactment of arbitrary and despotic restrictions upon the freedom of debate, such as are tolerated in no other deliberative body in the world."

Watered Stock.

This is a term which is as applicable to the plethoric railroads as to the cattle upon the farm. But we wish in this article to show the manner and the purpose of a railroad watering its stock. Take, for instance, the most popular railroad in Iowa, the Chicago, Rock Island and Pacific. Their stock is now quoted at \$1.85 to \$1.90 for one dollar of stock. Why is this? The reason is it pays dividends high enough to justify monied men to invest in its stock at that rate as a profitable investment. About ten days ago it was announced in the telegraphic dispatches from New York that the Chicago, Rock Island and Pacific Road was about to issue \$50,000,000 new stock with which to take up the old stock by giving two dollars of new stock for one of old. The present stock of the company is \$20,000,000; to take this up will require \$40,000,000 of new stock; the other \$10,000,000 they propose to sell for cash, and divide the proceeds as dividends among the stockholders. The trouble is the road is making so much money they dare not declare 20 or 25 per cent. annual dividends, as it will always become known to the public and might have its effect on the people and on legislatures in the future. With that per cent. of dividends they know they could not so well influence legislators in favor of high freights and passenger tariffs. Hence they must water their stock, dilute it so it will not pay such high dividends, and thus appeal to the sympathy of the country not to put down freights and thus starve the poor widows and orphans who own railroad stocks as an investment for their scanty means.

The Chicago, Burlington and Quincy Road is in like position and must do something of the kind soon. Last week it was announced in

the Chicago papers that it had declared a 20 per cent. dividend on its stock. The Northwestern, really owning no road in Iowa according to the version of John J. Blair, is making enormous profits on its Iowa roads, which it leases at mere nominal rental, will be compelled to dilute the stock on the original road, which is owned in Illinois, or it will create a crisis in legislation not favorable to its rich dividends. The panacea for all this is through that cheap clap-track device of watering the stock to deceive the people, and perpetuate their enormous profits off a hard pressed and laborious farming population.—Iowa Grange Visitor.

There is no state in the union that is a better field for profitable railroad enterprise than Kansas. The grades are easy, the road beds firm, and every mile on either side of the road will supply a constant demand upon them for freighting and travel. The dividends on all Kansas railroads in a few years will be enormous, and the same means will have to be resorted to here as in Iowa and Illinois to keep down the per centage, watering the stock. When the watered stock of all the railroads in the country is wiped out as it will be, and the earnings of the roads reduced by an adjustment of freight rates to a reasonable profit on the actual capital invested, there will be an immense saving to the industry of the nation, which is now swallowed up in that bottomless abyss, "watered stock."

The Note Swindle.

A great many farmers have been swindled by "agents" who contracted with them to sell some article on commission. The latest trick of this kind is exposed in a recent number of the Cincinnati Grange Bulletin. The Bulletin says: "The latest under this old plan comes to us from Indiana, and is now being practiced upon the farmers of the northern part of the state. As some may never have seen one of these 'contracts' we insert it here. The swindler signs his name first, then has the farmer sign his, cuts it through where we have placed the A's, and has a first-class note:"

One year after date, I promise to pay to John Smith, or order, One Hundred and Twenty Dollars for value received, at 6 per cent. per annum, payable at _____

(Signed) JOHN JONES, JOHN SMITH, Agent.

The Grange and a Commonwealth.

In a preliminary article it was suggested that in order to call the attention of farmers to the duties of the present, with a cleared up conviction of those duties, and of the importance of qualifying ourselves to set about them now—it is necessary, first of all, to post up the history of our farmers' commonwealth, which they established with hearts of steel, and gave to us to maintain. Do you, citizen farmers, who may, or may not, be members of some farmers' organization, hold yourselves now ready, and therefore qualified, on occasion, to leave your crops and flocks and herds, so skillfully raised, diligently earned, and frugally cared for—to take your position with every other class in the representative bodies, common to all, and to make your voices heard there, as the gravity of the occasion shall demand, followed up manfully, in open convention, with your vocalized vote, individually called (as in congress, and should be everywhere in this union)? Or do you propose, by your modestly retiring habits, to content yourselves with minding your own business, managing and controlling labor and machinery on your farms, diversifying your crops for home consumption, and commercial supply as well, to make to yourselves homes in the free air of heaven, continually purified and counterbalanced by dividing breath-and vitality between vegetable and animal life? Do farmers rightfully and wisely aspire to establish experimental farms, agricultural schools and professorships, farmers' insurance companies and granges, under all requisite care and fostering protection of our legislative bodies, state, when it ought to be, national, when it must be? And you that have organizations, specific, and therefore limiting your councils to branches of business, the advancement and protection you have taken heretofore is wholly at your own control, so far as legislation can affect you, have you found nothing to do in devising "ways and means" whereby we can say to unrestrained commerce, now swiftly absorbing the profits of farm industries, "Thus far shalt thou go, no farther?" You are intelligent men; "men of thought and men of action;" men of business enterprise and spirit; men of will and decision;

men who will not take from the president: of today a refusal, in words at least, to take care of the people's interests and redress their grievances. Then why not organize on a constitutional platform broad enough and strong enough for farmers north and south, east and west, all over this union, to unite their strength, develop character, establish co-operation, systematize methods, protect industry, equalize taxation as far as possible, prohibit special privileges and class legislation, abolish sinecures, prohibit mixing of all shoddy and adulteration in all articles of commerce offered to consumers, regulate state and inter-state commerce, and the carrying and conveyance of persons and commodities on all public highways, strictly in accord with "all rights of all," and equal protection to each and every citizen in person, character and property?—The Husbandman.

A Grange Rampant.

At a recent meeting of Multiflora Grange, of Atchison county, the following resolutions were passed with the request that a copy of the same be sent to your valuable paper for publication:

Resolved, That we subscribe \$1 to any paper published at least weekly while our legislatures are in session, giving the essence of all the bills brought before them and their votes as recorded for or against the same.

Resolved, That we most respectfully but earnestly recommend that organizations be formed in each county to procure subscribers to any paper that will comply with the foregoing resolution.

Resolved, That being deeply impressed with the necessity of having a clear understanding and combined action on the part of those taking an interest in the matter, we recommend an expression of views through the press as to the best means of accomplishing the object.

Resolved, That tenders be called for the publication of any paper that will comply with Resolution No. 1, when warranted by subscription.

JOHN ANDREWS, Master.

E. W. KELLER, Sec'y.

Union, Atchison Co., Kan., May 24th.

If you are unfortunate enough to belong to one of the 'slow' granges, now that such grand revival of interest is taking place, and you and other members look back and talk of the "big meetings" and "good times" of several years ago, when you were first organized, just remember how much more work you were all doing in those days. The night could not be too dark, the roads too muddy, the meetings too often, to keep you at home. "A man of words and not of deeds is like a garden full of weeds."—Grange Bulletin.

Co-operation is a prime necessity in this world of fierce rapacities. A man can get along, after a fashion, by himself, but when his neighbor stands beside him in a common bond they are to each other a tower of strength. Men ought to band together to do what is right, and, if necessary to secure their rights.

It is through co-operation and combination of great monopolies that the evils of railroad oppression have been brought about, and it is only by organization and co-operation that they can be met and corrected.

An Iowa farmer estimates that the profit of raising one two-year-old Short-horn steer for market is equal to that on eighteen scrub steers, which have to be kept three years before they are salable.

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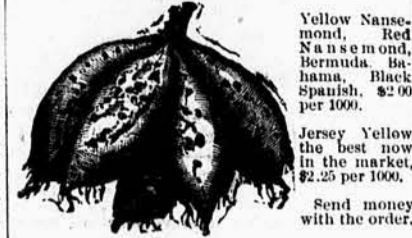
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Breeders' Directory.

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

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MILLER BROS. Junction City, Kansas, Breeders of Record Poland China Swine (of Butler county Ohio, strains); also Plymouth Rock and Brown Leghorn Fowls. Eggs, \$1.50 per 13. Descriptive Circular and Price List free.

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A. H. THOMPSON, D. D. S., Operative and Surgeon, Dentist, No. 189 Kansas Avenue, Topeka, Kansas.

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We offer for sale a few litters of very choice pigs the get of such noted sires as imported Mahomet 1979, GI Bias 2627, a son of Lord Liverpool—and others. "Sattles", "Six Bridges" and "Miss Smiths" in the herd. Pigs ready to ship now. Also

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

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TO SUBSCRIBERS.

Subscribers should very carefully notice the label stamped upon the margin of their papers. All those marked "23" expire with the next issue. The paper is at all ways discontinued at the expiration of the time paid for, and to avoid missing a number renewals should be made at once.

Taxation.

One of the standing complaints among farmers is unjust taxation. They allege, and with reason, that land bears an undue proportion of the burthens of taxation, because it is always come-at-able by the assessor. Real estate cannot be concealed. The word or opinion of the owner as to the extent or value of such property, need not be consulted. This is not the case with any other kind of property. The assessment and valuation of personal property, depend almost entirely upon the owner's judgment or honesty, and depending on this biased umpire the half is not taxed, if it is judged by the same rigid rules which govern the taxation of real estate. Under the existing system of taxation it is impossible to lay the taxes justly. Personal property cannot be made to pay the same proportion of tax which is drawn from the land. There is a great deal of non-productive property taxed heavily, while a great deal of productive property escapes wholly or with a comparatively light rate of taxation.

A tariff is probably the most equitable system of taxation that can be devised if the schedule of rates is prepared with judgment and justice to the public is kept steadily in view. In the United States this system is only employed by the Federal government, and has never been availed of to raise revenue for local purposes. It has many enemies on account of its protective features to manufacturers, and has incurred severe rather than just criticism on account of politicians having in earlier periods of the government made a party measure of it, and of monopolists and moneyed corporations lobbying in congress for the purpose of diverting it to their personal interests at the expense of the revenue and public justice. Shorn of these abuses, as far as the system of taxation can be applied, it is the most systematic and equal distributor of taxes extant. An impost duty on foreign articles can only serve as a partial tax, but coming out of the consumers' pockets, eventually it touches and taxes all in proportion to their economy or prodigality.

Can the principle by modifications and changes to conform to a changed condition of property, be applied to local taxation? Traders in many states are licensed in proportion to the average stock of goods they carry. This is an application of the principle adapted to circumstances. The merchant adds the percentage to the cost of his goods and the tax is paid by an equal distribution among consumers. The question arises how much further can the system be pushed to the lightening of the cast iron tax at present laid on the land. Whether a year of failure or a year of abundant crops, this intolerable system of taxing and exacts the same from the pockets of farmers. This is unjust and ruinous to agriculture. By a system of taxation which exempted the tax on the land under actual cultivation, including land used for crops, orchards, pastures, etc., and shifting the tax on the produce, the burthens on the real estate might be materially lightened, and agriculture relieved of unjust taxes now placed upon it. Land held for speculative purposes or remaining unproductive should of course continue to be taxed by special assessment.

There is another class of persons who drive a profitable business and pay no tax to the support of government, except what little the assessor and collector can get out of a small, visible portion of household and office furniture. These parties may be included under one general head of professionals, who should all pay a license to the state on their business, and a percentage on their actual receipts. An income tax is advocated and strongly recommended by some, but a tax on incomes is both onerous, uncertain and unjust if the attempt is made to apply the system to all branches of business. Persons receiving fixed salaries can be taxed on income, but in few other cases will the system apply properly.

The licensing of professions and taxing their receipts would doubtless have the effect to snuff out hundreds of briefless lawyers, doctors without patients, and a host of other non-producers who have prefixes and cabalistic letters attached to their names, greatly to the advantage of the general public and morals of society.

We have endeavored to suggest possible changes and improvements in the system of taxation without going into details, in hopes that farmers will be induced to take up the matter, discuss and examine the question in all its bearings in their associations, and especially in the grange. It is all important that they should get relief from the burthens which at present rest on the land, and that non-producing classes should be made to bear a larger share of the taxes.

Before anything of consequence can be done to relieve real estate from its present burthens of taxes, the principles of taxation must be

studied and the agricultural class become thoroughly conversant with the subject and the changes proposed. Nor may they expect them to have their petitions for redress attended to by the representatives of interests and classes antagonistic to themselves. The halls of legislation will have to be filled by the most intelligent and aggressive men of their own class. Then, and not till then, will agriculture find itself bearing only its legitimate share of the burthens of government.

Farm Improvements.

There are needed improvements on every farm which the owner would like to make if he "only had time." The wished-for improvements are many and various. Numbers of them would cost but little more than the "time" which is so precious, and so much of which is next thing to wasted, nevertheless, although apparently so much valued. The way to accomplish the desired improvements is to begin. Make a memorandum of them and study out exactly what you want, even if to arrive at a satisfactory conclusion you have to consult a bright neighbor, who you will always find willing to assist by suggestions, if you can manage to interest him in your project, which is generally not difficult to accomplish. After determining exactly what you want done and how to do it, note it down to keep the details fresh in memory, which can be done by referring to your notes occasionally on stormy or cold days. Watch for spare time which you can devote to the accomplishment of this one particular improvement. Do not allow other projects to turn you aside from the completion of the one thing which you have undertaken. Stick to it until entirely finished, devoting every spare hour that can be profitably employed for the purpose. Never allow a work to stand partially finished longer than possible to avoid it, or hurry up and slight the job. It is waste of time, for a half-done job is usually a failure and total loss.

If the farmer once begins to improve and study up on that subject, the spirit will grow upon him, and he will be tempted to undertake more than he can accomplish, without incurring an expense inadequate to his means, or the advantages of the proposed improvements. Let him stick to one thing at a time until thoroughly completed, and then commence the next and steadily pursue it with the same fixed purpose. If this plan is carried out he will be astonished at the amount of work in the line of adornment and conveniences he has in a few years added to his place, and how much more attractive he has made his home and surroundings to himself, wife, and family, besides increasing the value of his property. A pretty place will always outsell in the market, one unkempt and neglected, although both may be equally valuable for the ordinary purposes of a farm.

This spirit of improvement has a moral effect on the family, while it is accomplishing the desirable change on the outward appearance of the farm in fences, orchards, gardens, buildings, yards, etc. While a man is improving his property he is cultivating a refined taste in his own nature and all who are associated with him. The danger is that this spirit once awakened, is liable to lead its promoter into extravagancies and attempts at illy digested plans which cause the neglect of the staple work on the farm, and produce trifling results which may properly be regarded as systems rather than useful improvements. But a systematic course of improvement directed by judgment, may in a few years add immensely to the value and appearance of any farm and country home.

Beet Root Sugar.

This is the title of a small, neatly printed and bound volume on this present interesting subject of sugar beets. While sorghum, or cane sugar, is in the ascendant among western farmers, the sugar beet industry is monopolizing the attention of eastern cultivators. This little volume gives a history of beet root sugar, cost of the sugar in France, profits, production of sugar in various countries, account of the attempts to manufacture beet sugar in the United States, method of raising sugar beets, preserving the beets, seed, etc. This little volume gives a summary of all the information that the majority of persons will require to determine the question whether sugar beet culture would be advisable for them to engage in. The price of the book is \$1 by mail, post-paid. Sold by T. J. Kellew & Co., Topeka, Kansas.

A Short Lesson in Chemistry.

Vegetable and animal substances, and manures and soils as well, contain water, and two other kinds of material, the organic matter and the mineral matter, or ash. If you keep a wisp of hay or a bone for a time in a hot oven, the water will be driven out. If you put the dried material in the fire, the organic substance will be burned away and escape as gas or smoke, while the mineral matter will be left as ashes.

The organic matter consists chiefly of four chemical elements, carbon, oxygen, hydrogen and nitrogen. We are familiar with carbon in charcoal and lamp-black, which are nearly pure, and in diamond, which is quite pure carbon. Carbon united to oxygen forms carbonic acid. Hydrogen and oxygen, which in their pure state are gases, unite to form water. We need not to trouble ourselves about these in fertilizers, because they are supplied to the plant in abundance by the atmosphere and the soil, through the leaves and through the roots. But the nitrogen is an important ingredient of fertilizers. It is, in its pure state, a gas, and makes up about four-fifths of the air, the other fifth being oxygen. Combined with hydrogen it

forms ammonia. The odor of "spirits of hartshorn" and of "smelling salts" is, due to the ammonia. Nitrogen, combined with oxygen, is known as nitric acid. In these and other combinations it occurs in minute quantities in the atmosphere and in considerable quantities in soils and manures. Plants are unable to make use of the pure nitrogen of the air, though they absorb a very little combined nitrogen, ammonia, nitric acid, etc., from the atmosphere. By far the largest part of the nitrogen of plants is absorbed from the soil through the roots. From the facts that nitrogen is available to plants only in certain combinations, that it is slow to form and easily leaves these compounds, that it readily escapes from the manures and soils into the air and is leached away by water, it is one of the most commonly deficient, and hence the most costly ingredients of the food of plants.

Nitrates are compounds of nitric acid with other materials called bases. This nitric acid united with the base soda forms nitrate of soda, which is one of the most valuable of our fertilizers.

The mineral matter of ash consists of several ingredients, of which the names are potash, soda, lime, magnesia, iron, silica, sulphuric acid, phosphoric acid and chlorine.

Potash.—The basis of this is a very soft, light, silver-colored metal, called potassium. Potassium united with oxygen to form a compound which is known in chemistry as potassium oxide or oxide of potassium: It is also called potassa, or, more familiarly, potash. When wood ashes are leached the potash is dissolved out and is the active ingredient of the lye.

Soda, or sodium oxide, is a compound of oxygen with the metal sodium. What is commonly called soda is carbonate of soda, a compound of soda with carbonic acid. Common salt contains sodium also, but combined with chlorine instead of oxygen. Chlorine, by itself, is a yellowish green gas. As it unites with sodium to make chloride of sodium, or common salt, so with potassium it forms chloride of potassium. Potassium chloride is the chief ingredient of "muriate of potash," one of the most important of the German potash salts.

Lime, calcium oxide, is the basis of limestones, marble, oyster shells and the like. In these it is combined with carbonic acid in the form of carbonate of lime. By heating limestone the carbonic acid is driven off, and lime is left.

Magnesia is the oxide of the metal magnesium. The "calcine magnesia" of the apothecaries is impure magnesia.

Iron is the same element, whether found in plants, manures or soils, in which it invariably occurs in very small proportion, or in the ores from which it is manufactured on a large scale.

Silica.—Quartz, or "rock crystal," is pure silica. Flint is nearly pure silica. Silica, combined with various other elements, makes up the larger part of the rocks of the globe.

Sulphuric Acid.—Sulphur is familiar to every one in the forms of brimstone and flowers of sulphur. Sulphur united with oxygen forms sulphuric oxide, or, as it is often called, sulphuric acid. The ordinary sulphuric acid of commerce, called oil of vitriol, and used in making superphosphates, consists of sulphuric oxide with a small proportion of water.

Sulphates.—If sulphuric acid and lime are mixed together they will unite and form a chemical compound, sulphate of lime. Gypsum or plaster is more or less impure sulphate of lime. Sulphate of potash and magnesia make sulphate of magnesia, which we know as epsom salts, and occurs in some of the German potash salts. So sulphate of soda consists of sulphuric acid and soda. Sulphate of potash, the basis of the best potash salts, consists of the same acid united to potassa. Sulphate of ammonia, which is a valuable fertilizer, consists of ammonia and sulphuric acid.

Phosphoric acid.—Phosphorus is the material which is used for the tips of friction matches, and causes them to shine when rubbed in the dark. It burns very easily, and in so doing unites with the oxygen of the air, and forms phosphoric oxide, or phosphoric acid.

Phosphates.—Just as sulphuric acid combines with lime, potash and other bases to make sulphates, so phosphoric acid unites with the same bases to form phosphates. Phosphate of lime is the most important of the phosphates. It is the basis of bone. When bones are burned the water and organic (animal) matter are driven off, and we have left the bone-ash, which is nearly pure phosphate of lime. The South Carolina, Navassa, Canada and other fossil and mineral phosphates, which are used for fertilizers, contain more or less earthy matters mixed with the phosphate of lime.

Prof. O. A. ATWATER.

The Rains.

Within the last fortnight Kansas has been blessed with copious rains throughout the state. Previous to that time Topeka was the center of a radius of country for thirty miles or more that had been suffering for several weeks from the want of rain, but this section of country has recently had rain in great abundance, and a fine wheat crop on bottom lands will be raised, with a fair prospect of a fine corn and grass crop.

Beef Production in Central Kansas.

At a meeting of the Central Kansas Breeders' Association, held in the college on March 4th, a very interesting discussion was had on the above subject. The attendance was good, though not as large as at some previous meetings; and among those present were some of the largest feeders and most successful stock

raisers of this section. It is eminently creditable to the association that, even at this busy season, it is able to present attractions sufficient to induce busy men to lay aside their work for half a day, in the order to be present at its meetings; and of the meetings in general, it may be truthfully said, that their interest and practical value have steadily increased from month to month. No one doubts that the Association has before it a life of great usefulness.

The discussion was opened by a very able address by Mr. O. W. Bill, on the general subject of cattle feeding. We regret our inability to give more than a few of the points made by the speaker. Mr. Bill contended that, for profitable beef production, we must have animals that mature early. He questioned if beef could be profitably made, here or elsewhere, from steers over three years old. We need animals that will ripen well at two or two and a half years. To get this class of stock, advised the use of well bred short-horn bulls; and gave some suggestions on the proper treatment of these and other breeding animals. He strongly urged that bulls must be fed corn sparingly, if at all; and advised, as a substitute, the feeding of bran, oats, and oil meal. Young store stock must be constantly thriving; no middle course would do: they must be "pushed" continually, from the time they first saw daylight until they came into the butcher's hands. Such animals should be taught to eat grain as early as possible, that their feeding capacity might be early developed. Extracts were read to show the great mistake that was made in feeding wholly during the low temperature of the winter season. A large share of the fattening should be done during the warm season, when there was no waste of feed in maintaining the animal heat.

Rev. Wm. Knipe urged the importance of liberal feeding and pure water. Was inclined to think that in "full feeding" a large amount of good hay feed was not desirable. A certain amount of "roughness" was indispensable; but when the fodder rack was made too attractive, the corn boxes were neglected.

President Fairchild gave his experience in feeding pigs, showing the importance of regularity in feeding, and the constant oversight of the owner.

Mr. C. M. Gifford, a large and very successful feeder, whose three-year-olds—often weighing over 2,000 pounds—have in more than one instance been sent to England, stated very clearly his methods. He commenced feeding early, as soon as the grass began to fail: was satisfied that stock raisers lost immensely by allowing their animals to remain on the range, without grain, until late in the fall. He usually began feeding shock corn about the middle of September, and kept it up until the cattle were taken up. He then fed "snapped corn," then mixed shelled corn and ears, finishing with shelled corn. Gave all the hay the cattle washed, and took pains always to clean out the boxes before feeding. Mr. Gifford places great stress on a variety of feed; and it will be observed that his practice and preaching fully agree. He advises that the animals be taught gradually to become accustomed to the change in feed; and evidently this change is always in the direction of better, more concentrated, and more digestible food.

Mr. Jeff Mails, C. E. Allen, and others, insisted upon the importance of carefully removing all cobs and half eaten ears from the boxes before giving a fresh supply of hay.

Mr. O. W. Bill stated that he had frequently weighed cattle which were kept on the range, without extra feed, during September, and found that full grown animals usually shrink fifty to sixty pounds during the month.

In regard to the amount of corn required per day to "full feed" each head, the difference of opinion was not great. O. W. Bill and C. M. Gifford had found that one-half bushel per day was required by each animal. C. E. Allen had used two-fifths of a bushel; and Jeff Mails had never quite fed one-half bushel. The general opinion seemed to be that about one-half bushel per day was required by each full grown animal.

Mr. John Gifford gave some interesting facts bearing upon the relative feeding value of ground corn and corn in the ear. He had experimented with both, and found that about equal amounts of chop and corn in the ear were used daily; but the herd receiving whole corn would give support to about three hogs to every one kept by the herd receiving ground feed. He was quite positive that ground corn was not a profitable feed, as compared with whole corn.

To judge from the remarks made, cattle feeding in this section of Kansas is a profitable business; but a good animal is required to begin with, and the feeder must not be a botch workman.—Prof. Shelton, in Ag. College Industrialist.

Public Sale of Fine Grade Cattle.

Mr. Albert F. Thayer advertises in the FARMER this week, at Prospect Hill, Wabaunee county, at public sale, 175 head of grade cattle, consisting of cows, heifers, steers and calves, ranging in ages from one to three years. Mr. Thayer claims that they are as fine, if not the finest lot of Short-horn grades to be found in Wabaunee counties. A very high-grade Short-horn bull will also be sold, and as the sale is peremptory and for cash, the opportunity to secure good bargains will be unusually favorable.

Sale Immense.

The Wisconsin, Milwaukee, Wis., adds its testimony and says: The sale of Warner's safe kidney and liver cure, for Bright's disease and other affections of kidneys, and liver, as well as Warner's safe diabetes cure, for diseases of same name, is simply immense.

Angus Cattle.

This is a black polled breed of cattle, peculiar to Scotland; and its improvement from stolen crosses of Short-horn bulls on the females, has increased their size, refined their points, and enabled them to mature at almost as early an age as Short-horns. Taking a remote cross thus, and then breeding strictly back, has not struck off a single shade of pure glossy black color of the Angus, or lowered the quality of its beef, which has ever borne the highest price of any sort in the British market except that of the Highlanders.

Being extra hardy and thrifty, it is a matter of congratulation that a few Angus bulls were imported into Kansas in 1873, by the late Mr. George Grant, to help stock his Victoria settlement there. Mr. Clark, who was associated with Mr. Grant in stock breeding, took four of these Angus bulls for himself, and crossed them on the poor native cows of the state, called Cherokee. The half-bred produce of these was a wonderful improvement, about two-thirds of the calves coming black, and growing up hornless. The steers are of extra quiet disposition, hardy, thrifty, and fatten easily and kindly. When brought to the Kansas City market they brought a higher price than any other cattle, and a greater demand immediately sprang up for them from the butchers than Mr. Clark has been able to supply.

Mr. Clark is now going to import both bulls and heifers from Scotland, for the purpose of breeding the pure stock in Kansas hereafter. He will, doubtless, be able to dispose of their calves as soon as fit to be weaned, at high prices, and thus make the importation not only profitable to himself, but highly advantageous to the country.

The late Mr. Wm. McCombie, of Aberdeen, Scotland, was the greatest improver of Angus cattle, and took first prizes wherever he exhibited his animals, not only in Scotland and England, but also in France. On one occasion, at the Falkirk market, his father exhibited about 1,500 head of black polled cattle, but he was a cattle dealer rather than a breeder, and these were then of the unimproved sort. The son, of whom we have spoken above, usually kept 100 head of choice animals for his own breeding stock, and when Queen Victoria made him a visit, he had 460, gathered from his own and neighboring herds, brought together for Her Majesty to look over, which she did with the greatest admiration. When will our cattle breeders exert themselves in the same way to gratify the bovine taste of their fair countrywomen?

We regret to see that a prejudice is entertained against these superior animals in New Mexico, and some parts of Texas, simply because scrub Mexican black, hornless bulls and cows of Spanish descent, have been long bred there. This causes the ranchmen to think the Scotch the same as their own natives. But if they would only consider their much greater size, superior form, and finer points, their prejudices against them would immediately give way. We fear, however, they are too ignorant to do this, and in consequence of it will deprive themselves of the means of making a great and rapid improvement in their herds, unless they resort to Short-horn bulls, which, of course, would improve the native stock still faster, except in the matter of leaving more or less of horn upon their progeny.—Rural New-Yorker.

A Cheap Clod Crusher.

It is so dry ink will not run; you see I am obliged to write with a pencil. It is hot, too, with a high, southwest wind. Rain is the subject most discussed by farmers, as it is what is just now most desired. The southwestern part of the county had rain last Thursday night, but it did not reach us.

Corn ground which has been well handled is still moist, and corn growing finely. I prepared my ground for planting this year by running a clod crusher over it after plowing. The clod crusher I made after the following plan: I took four straight elm poles ten feet long and about four inches in diameter, laying them on the ground six inches apart. I pinned a cross piece to the poles at each end, letting them project forward enough to fasten a clevis to each. Hitch by a chain to the clevises, and hitch the team to the center of the chain. Cross pieces should be put on at the same angle at which the chain will draw. This is better than a tight plank clod crusher or rubber, as no dirt will stick to it and it does better work. After planting I harrowed and rolled thoroughly, and I never had corn ground in finer order nor saw corn grow better. EDWIN SNYDER. Oskaloosa, Kansas, May 23d.

Mr. James J. H. Gregory, Marblehead, Mass., writes to the Rural New-Yorker that he has raised chufas for a dozen years; that on his warm, light soil they ripen every season, and can be grazed for green fodder, and used for pigs, and that they are also very nice nuts for children to cultivate.

THE FLUKE.—An insidious worm called the fluke is causing losses among the sheep in Great Britain. In some parts of England, chiefly the southwestern provinces, whole flocks have perished, and not a sheep is sound.

"Don't Know Half Their Value."

"They cured me of ague, biliousness and kidney complaint, as recommended. I had a half bottle left which I used for my two little girls, who the doctors and neighbors said could not be cured. I would have lost both of them one night if I had not given them hop bitters. They did them so much good I continued their use until they were cured. That is why I say you do not know half the value of hop bitters, and do not recommend them high enough."—B., Rochester, N. Y. See other column.

Mr. Carmel, Crawford Co., Kas., May 10.—Farmers have been very busy planting corn and castor beans for the past two or three weeks. Some corn large enough to cultivate.

One of those long looked for blessings has come at last—rain. It came down for half an hour in good earnest Saturday afternoon, and now all nature seems to rejoice. It had not rained, only in streaks up and down the creek for four or five weeks. Who will doubt now the propriety of planting timber; let us try and replenish what man has destroyed by allotting a few acres to the grove, for what is nicer than a fine grove of trees. There is on my place a fine grove of soft maple, cottonwood and black walnut, and the birds, you ought to see them!

When I first came to Kansas, in 1872, few birds were to be seen; but now how changed. There is the blue jay, cat bird, red bird, wren, black bird, red head wood pecker and grey thrush, beside many singing birds. I did not intend to write up an article on "ornithology" but I like to see the birds and have them stop with us. The quail and prairie chicken should be guarded and kept as a sacred emblem of usefulness to the farmer. How much better it would be if we had laws to protect them from all harm. They are nature's complete scavenger, death to Mr. Chinchbug and thousands of other noxious insects too numerous to mention.

Our crops—wheat, flax and oats are short on account of dry weather. Corn, beans and potatoes will make it now. There is quite a large acreage of corn put in, not so large a crop of castor beans and flax as last year. More attention is paid to stock raising, as corn will not pay at 20 or 25 cents when it can be doubled or even quadrupled by feeding it to sheep, hogs, mules and cattle.

Fruit is all right here and bids fair for a good crop. Peaches will be a good half or two-thirds crop. Apples are full and our young apple orchards are going to more than redeem themselves this year. Grapes and cherries, good; blackberries, raspberries and strawberries no doubt will be full, as they are full of bloom.

The farmer comes regularly, and is my choice from some three or four. Long live the KANSAS FARMER to help us on. E. B. COOK.

Baby Prizes, \$600.
An eminent banker's wife of N. Y., has induced the proprietors of that great medicine, Hop Bitters, to offer \$600 in prizes to the youngest child that says Hop Bitters plainly, in any language, between May 1, 1880, and July 4, 1881. This is a liberal and interesting offer, and everybody and his wife should send a two cent stamp to the Hop Bitters Mfg. Co., Rochester, N. Y., U. S. A., for circular, giving full particulars, and begin at once to teach the children to say hop bitters and secure the prize.

Kidney Complaints
of all descriptions are relieved at once, and speedily cured by kidney wort. It seems intended by nature for the cure of all diseases of the kidneys caused by weakness and debility. Its great tonic powers are especially directed to the removal of this class of diseases. Try it to-day.

The remarkable proposition of Marchal & Smith, in this week's issue, cannot fail to attract the attention of an interested in that beautiful instrument which they offer. The terms upon which they are willing to supply the public are complete satisfaction. They give you the instrument on trial, and, if in every respect it does not please, they remove it without cost. Messrs. Marchal & Smith have had an experience of twenty years as organ manufacturers, and they have customers in every part of the country. Thousands of commendations tell of the superiority of their organs, and their success in making a musical combination superior to anything ever before produced.

Distance all Competitors.
The dairyman who uses gilt edge butter maker will increase his product 6 per cent, improve its quality 20 per cent, and distance all competitors who do not use it. 25 cents' worth of the powder will increase product and market value of same \$3.00. Can you make a better investment? Sold by grocers, druggists and general storekeepers. Send stamp for "Hints to Butter Makers." Address, Butter Improvement Co., Buffalo, N. Y.

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.

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.

Mr. T. K. McElhenny of Topeka, has made arrangements to have his horses, Royal George, an English draft horse, and Kincapoo 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.

Guard Against Disease.
If you find yourself getting bilious, head heavy, mouth foul, eyes yellow, kidneys disordered, symptoms of piles tormenting you, take at once a few doses of kidney wort. It is nature's great assistant. Use it as an advance guard—don't wait to get down sick.

BARTHOLOMEW & CO.

Are selling all best Calicos, such as Merimac, Cacheco, Sprague, and all Standard Brands, at 6 1/2 cents, or 16 yards for \$1.00. Lonsdale Muslin, 9 1/2 cents. Best Pacific Lawns, 9 1/2 cents.

LOT No. 1—A LARGE LOT OF ENGLISH HOSIERY, ALL SIZES, ONLY 25c. A PAIR; many of them worth 40c. to 50c. LOT No. 2—A large Lot at TWO PAIR for 25 cents, assorted sizes. These are a GREAT BARGAIN.

PARASOLS very Cheap. Gloves very Cheap. Table Linens, Towels and Napkins, very Cheap. Laces and Embroideries, Handkerchiefs, Buttons, Fans, Ribbons, Ties, Combs, Veils, Ruching, Corsets, etc., at Lowest Prices.

We Always Quote Lowest Prices, and will not be Undersold,

—AT THE—
CHEAP CASH STORE,
177 Kansas Avenue.

Low Prices for Butter.
The New York Tribune in its market report explained why some butter is sold for such low prices. In speaking of butter it said "Light colored goods are very hard to dispose of and several lots were thought well sold at 8 to 10 cents." If butter makers would get the top price, they should use the Perfected Butter Cook, made by Wells, Richardson & Co., Burlington, Vt. It gives a pure dandelion color and never turns red, or rancid, but tends to improve and preserve the butter.

Coughs.—"Brown's Bronchial Troches" will allay irritation which induces coughing, giving oftentimes immediate relief in bronchitis, influenza, hoarseness, and consumptive and Asthmatic complaints.

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.

Markets by Telegraph, June 1.
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 1/4. MONEY—4 to 5 per cent, closing at 5 to 6. PRIME MERCANTILE PAPER—3 to 6 per cent. STERLING EXCHANGE—B. B. firm; 60 days, \$4 80; sight, \$4 80 1/2.
COUPONS OF 1881.....107
New 5's.....108 1/2
New 4's (registered).....108 1/2 to 108 3/4
Consols.....109 1/2 to 110
New 4's (reg.).....107 1/2 to 107 3/4
Coupons.....107 1/2
SECURITIES.
PACIFIC SIXES—95; new 125. MISSOURI SIXES—\$110. ST. JOE—\$100. CHICAGO—\$112 1/2. U. P. Bonds—firsts, \$1 13 1/2. LAND GRANTS—\$1 11. SINKING FUNDS—\$1 15 1/2 offered.

Kansas City Produce Market.
WHEAT—Receipts, 3,706 bushels; shipments, 3,706 bushels; in store, 153,558 bushels; market weak and lower; No. 2, 95c bid June; No. 3, 87 1/2c; No. 4, 79c. CORN—Receipts, 6,197 bushels; shipments, 4,471 bushels; in store, 140,474 bushels; market weak and lower; No. 2 mixed, 47c; No. 3 white mixed 27 1/2c. OATS—No. 2, 26c. RYE—No. 2, 65c bid. BARLEY—Nominal. EGGS—Market steady at 9 1/2c and 10c per dozen. BUTTER—Steady and unchanged.

Kansas City Live Stock Market.
CATTLE—Receipts for 48 hours, 757; shipments, 381; market a trifle stronger but quotably unchanged. HOGS—Receipts for 48 hours, 1,566; shipments 686; market firmer and 5c higher; sales ranged \$3 65 to \$3 82 1/2; bulk at \$3 70 to \$3 77 1/2. SHEEP—Receipts for 48 hours, 84; shipments, none; market steady; natives averaging 97 pounds sold at \$3 25.

St. Louis Live Stock Market.
HOGS—Active; Yorkers and Baltimores, \$4 00 to 4 10 packing; \$1 10 to 4 20; heavy shipping, \$4 15 to 4 20; receipts, 7,400; shipments, 1,000. CATTLE—Fairly active for good 1,000 to 1,400 lb steers, heavy steers, heavy and slow shippers and calves leading the buyers; choice heavy shipping steers \$4 30 to 4 50; good to prime, of 1,100 to 1,300 lbs \$4 00 to 4 30; common to medium, \$3 00 to 3 80, grass Texans, \$2 25 to 3 00; wintered, \$2 25 to 3 50; stockers and feeders, dull; ranging \$3 40 to 3 75 for feeders and \$2 75 to 3 25 for stockers, receipts, 1,700; shipments, 200. SHEEP—Slow, ranging at \$3 00 to 4 00; receipts, 1,700; shipments, none.

St. Louis Produce Market.
FLOUR—Dull and unchanged. WHEAT—Opened lower and unchanged, but generally unsettled; No. 2 red, \$1 05 1/2 to 1 06 1/2; cash; \$1 06 to 1 06 1/2; May; \$1 00 1/2 to 1 00 to 1 00 1/2; June; \$1 04 to 9 1/2 to 9 1/2; July; 90c; August; No. 3, 90c, 91 to 94 1/2; No. 4, 81c, 81c asked. CORN—Lower and active; 35 to 35 1/2; cash; 35 1/2; May 48 to 49c; June; 36 to 34 to 34 1/2; August. OATS—Active and lower; \$1 13 1/2 to 1 14 May; \$1 02 to 1 04 June; 97 1/2 to 98 July; No. 3 spring, 87c. RYE—Dull and lower; No. 2, 75c cash and May; 78c bid June. BARLEY—Steady, No. 2 spring, 76c. POKE—Steady; fair demand; \$10 05 to 10 10 cash and May; \$10 05 to 10 07 1/2; June; \$10 17 1/2 to 10 26 July; \$10 27 1/2 to 10 30 August. MEAT—Active and lower; \$6 65 to 6 67 1/2 cash and May; 6 45 to 4 7 1/2; \$6 50 to 6 52 1/2 August. BULK MEATS—Shoulders, \$4 25; short rib, \$6 30; short clear, \$6 50.

Chicago Produce Market.
FLOUR—Dull and nominal. WHEAT—Active, but lower and unsettled; No. 2 red, \$1 13 to 1 14 cash; \$1 13 1/2 to 1 14 May; \$1 02 to 1 04 June; 97 1/2 to 98 July; No. 3 spring, 87c. CORN—Fair demand, lower and unsettled; No. 2, 37 1/2c cash and May; 35 1/2 bid June; 35 1/2c bid July; 38 bid August, rejected 35 1/2c. OATS—Good demand, lower and unsettled; No. 2, 33 1/2 to 33 3/4 cash; 35c May; 30 1/2c June; 28 1/2c July. RYE—Dull and lower; No. 2, 75c cash and May; 78c bid June. BARLEY—Steady, No. 2 spring, 76c. POKE—Steady; fair demand; \$10 05 to 10 10 cash and May; \$10 05 to 10 07 1/2; June; \$10 17 1/2 to 10 26 July; \$10 27 1/2 to 10 30 August. MEAT—Active and lower; \$6 65 to 6 67 1/2 cash and May; 6 45 to 4 7 1/2; \$6 50 to 6 52 1/2 August. BULK MEATS—Shoulders, \$4 25; short rib, \$6 30; short clear, \$6 50.

Liverpool Market.
BREADSTUFFS—Market unchanged. FLOUR—10s to 12s 6d. WHEAT—Winter, 10s to 10s 6d; spring 10 9s to 10s. CORN—New, 5 1/2s to 5s 1d. CHEESE—Cash, 10s to 10s 6d. OATS—6s 8d to 6s 6d. POKE—61s. BEAN—69s. BACON—Long clear middles, 3s 3d; short clear, 3s 5s. LARD—Cwt, 36s.

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 0; chiefly, 4 00 to 4 10; choice heavy, 4 10 to 4 30; light, 4 00 to 4 15. CATTLE—Receipts, 5,000; shipments, 1,000; 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, 300; weak but active; clipped, \$4 40 to 4 25; woolled, \$5 25.

Denver Market.
FLOUR, GRAIN AND HAY.
May—Upland, 20 to 22; second bottom, 19 to 20; bottom hay, 17 to 19. FLOUR—Colorado, 3 80 to 3 50; Graham, 3 00 to 3 25. MEAL—Bolted corn meal, 2 00. WHEAT—2 00 to 2 20 1/2 cwt. CORN—1 15 to 1 25 1/2 cwt. OATS—Colorado, 2 00 to 2 25 state, 1 85 to 2 00 1/2 cwt. BARLEY—1 75 to 1 85 1/2 cwt.

PRODUCE, POULTRY & VEGETABLES.
EGGS—Per dozen, ranch 15 to 18c; state, 12 to 14c. BUTTER—Ranch, 1/2 lb, 25 to 35c; creamery, 30 to 35c; poor, 8 to 15c. ONIONS—5c to 6c; B. eastern, 2 00 to 2 50 1/2 cwt. CATTLE—One-half higher. SHEEP—Firmer.

London Market.
A cable to the Chicago Journal says: CATTLE—One-half higher. SHEEP—Firmer.

Marchal & Smith. "NEW" UNIVERSITY ORGAN.

NO AGENTS!
Solid Walnut—5 Octaves—9 Stops, Two Knee-Swells.



THE ONLY HOUSE IN AMERICA
That offers a Society Organ, a set of Reeds, Sub-Bass and Coupler for \$65.00. Send with your order the guarantee of your bank or some responsible business man that the Organ will be promptly paid for or returned to us, and we will immediately ship the instrument to you for \$27. If the Organ is returned, we pay freight both ways. We send with the organ a STool, Music and INSTRUCTION BOOK, Making a Complete Musical Outfit for \$65. TWENTY YEARS WITHOUT ONE DISSATISFIED PURCHASER. A MOMENT'S CONSIDERATION will show the certainty of securing a superior instrument from us. Dealers can trust to their own shrewdness and the ignorance of purchasers to conceal defects in the instrument they sell. We can not know who will test ours, and must send instruments of a quality so superior that their merits can not be hidden. Order direct from this advertisement. You take no responsibility.
MARCHAL & SMITH, No. 8 West Eleventh St., New York, N. Y.

CATTE ROOTS. TABLE TURNIPS.

Bloomsdale Swede or Ruta Baga, Yellow Aberdeen, Pomeranian Globe, Red and White Eliat Turnips. We invite CATTE BREEDERS, SHEEP BREEDERS, DAIRYMEN, HORSEMEN, GARDENERS, to apply for BERTAL PRICE AND DESCRIPTIVE LIST. Address postal card to D. LANDRETH & SONS, Philadelphia.

Chicago Wool Market.
Tub washed bright 50 to 55c per lb; do dingy and coarse 45 to 48c; fleece washed medium 48 to 50c; do fine 43 to 45c; do coarse 40 to 45c; unwashed medium 30 to 35c; do coarse 28 to 30c; do fine bright 25 to 28c; do heavy 20 to 25c; bucks' fleece 18 to 20c. Consignments from western Iowa, Nebraska and Kansas sell at about 2c per lb less than this range, and burry and poor conditioned lots at 3 to 5 cents less. Colorado wool (unsorted) is quoted at 28 to 32c per lb for medium to fine; at 25 to 27c for coarse to medium; at 25 to 26c for black; and at 22 to 24 for coarse carpet stock.

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 43c; black 40c, medium 40 1/2 to 48 1/2; choice 48 to 50c. Unwashed—black and burry 25 to 28c; burry and slightly do 23 1/2 to 25 to 30c; hard burry 16 1/2 to 17 1/2; coarse 26 to 28c; good to choice medium 30 to 31c to 32 to 33 1/2, combing 3 1/2.

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.

GREAT PUBLIC SALE OF SHORT-HORN CATTLE,
At Plattsburg, Mo., Friday, June 18, '80.

The breeders of Clinton and Clay counties will hold a grand Public Sale of Short-horn Cattle, about seventy-five head forty cows and heifers and thirty-five bulls, consisting of the following popular families: Young Marys, White and Red Roses, Dalys, Miss Severs, Mrs. Motts and other good families. Also the grand Young Mary Bull, Marquis of Bourlon Park, 3027; Louisa Virginia, 1788, (a very fine bull); Poppy's 24 Duke, 6846, S. H. R., (a pure Rose of Sharon); and quite a number of other choice young bulls. Sale will be positive regardless of weather at 1 o'clock p. m. Terms—Cash, or 6 months credit with 10 per cent. Interest with approved note. Chicago, Rock Island and Pacific, and Wabash, St. Louis and Pacific Railway trains arrive in time for sale. Catalogues will be ready by May 25th, and sent on application. James M. Clay, Pres't, Plattsburg, Mo.; S. C. Duncan, Sec'y, Smithville, Mo.; Col. L. P. Muir, Auctioneer.

THE AMERICAN FRUIT EVAPORATOR.
Cheap, Portable, Practical. Catalogue free. AMERICAN DRIET CO., Chambersburg, Pa.

Rectangular and CHURNS
Square BOX CHEAPERS AND BEST. No inside fixtures, and always reliable, six sizes of each kind made. Three sizes of the Lever Butter Worker made. Best material used, and every Churn and Butter Worker warranted exactly as represented. One Churn at wholesale where we have no agent. Send Postal Card for Circulars. Agent wanted. CORNISH & CURTIS, Fort Atkinson, Wis.

Strayed or Stolen.
From the premises of the subscriber, three miles north of Topeka, an Indian Creek first milch cow, 3 years old, white face, with hind feet, and collar marks, years old. Ten dollars reward will be paid for information leading to recovery of the horse.

WANTED.
By a Scotchman (Married) a situation as Farm Manager. Good references. Address FARMER, Leavenworth, Kansas.

FOR SALE.
2 FULL BLOODED DURHAM BULLS and one full blooded JERSEY BULL CALF, at the residence of Mrs. John M. We t, Lincoln street, between 6th and 7th streets, Topeka, Kas.

Concordia CROWN Nursery
C. C. HUNTER, Proprietor, Florist, Seedsman and Market Gardener.
HOUSE PLANTS A SPECIALTY.
Corner 3d and State streets, Concordia, Cloud Co., Kas.

DEATH TO RATS.
For sale, SCOTCH TERRIER PUPS, \$10 each at six weeks old. Also, ONE BITCH, three years old, a good ratler. Also,
TWO NEWFOUNDLAND
Bitches, splendid watch dogs. Address W. T. IRWIN, Topeka, Kas.

MASON AND HAMLIN ORGANS
Rent paid two-and-a-quarter years buy one. BEST CABINET OR PIANO ORGANS IN THE WORLD; winners of highest distinction at EVERY WORLD'S FAIR FOR THIRTY YEARS. Prices, \$15.75, \$26, \$48, to \$500 and upward. Also for easy payments, \$5 a month, or \$6.38 a quarter and upward. Catalogue free. Mason & Hamlin Organ Co., 154 Tremont St., Boston, Mass.; East 14th St., (Union Square), New York; 140 Wabash Avenue, Chicago.

A Good Champion Reaper
FOR SALE CHEAP. NEW LAST YEAR.
Apply at Mrs. A. H. KING'S, on Tenth Avenue between Polk and Tyler streets, Topeka, Kas.

DAY'S Kidney PAD
A CURE for the most prevalent and fatal diseases that afflict mankind FOUND AT LAST. Internal medicines never did nor ever can cure KIDNEY DISEASE. STOP IT NOW! Get Day's Kidney Pad AT ONCE, and be cured of all affections of the Kidneys, Bladder and Urinary Organs. It is the only treatment that will cure NERVOUS and PHYSICAL DEBILITY, and that distressing complaint, "BACKACHE." It will annually save many times its cost in medicines and plasters, which at best give but temporary relief. Sold by Druggists or sent by mail on receipt of price, 62c. Our book, "How a Life Was Saved," giving a history of this new discovery and a large record of most remarkable cures, sent free. Write for it. DAY KIDNEY PAD CO., Toledo, O.

CATTLE SALE.
The co-partnership in cattle heretofore existing between George B. Sylvester and Albert F. Thayer having expired by mutual consent, said cattle will be sold at
Public Auction for Cash on Thursday, June 17th, 1880,
at the farm of Albert F. Thayer, at Maple Hill, Wabunese county, Kansas, situated 9 miles south of St. Marys, and two miles north of "Buffalo Mound," said cattle comprise 175 head of choice cattle, consisting of:
65 three year old cows, 19 two year old heifers, 21 one year old heifers, 3 three old steers, 18 two year old steers, 15 one year old steers, and 34 steer and heifer spring calves.

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

Literary and Domestic

Motherhood.

BY C. S. CAVERLEY.

She laid it where the sunbeams fall
I'meaned upon the broken wall.
Without a tear, without a groan.

Fashions.

Among the most popular goods for spring and
early summer we still note Indian cashmere,
ever a favorite with many ladies, because it is
softer, lighter, and more durable than any other,

All these shades also exist in toile-de-laine, a
material lighter than cashmere, of the same
width and less expensive, and also in muslin-
de-laine, a still thinner fabric, very suitable for
summer toilets, either employed by itself or
combined with silk.

In fancy goods we have, woolen moire, to
which combined with plain cashmere or toile-
de-laine, makes up very stylish walking cos-
tumes: woolen damasse and woolen brocade al-
so for the same purpose. Indian cashmeres in
shawl patterns are still very fashionable for the
trimmings and accessories of both walking and
indoor costumes.

We are told the mantelet is to be worn in the
summer again; but at present the favorite man-
tle seems to be the paletot, or rather a new
modification of the paletot, neither very long
nor very short, with rather wide sleeves, and of
a tissue different from that of the dress; very
often in fancy fabrics, such as figured Indian
cashmere brocade silk, and damasse wool and
silk stuffs. They are trimmed with crimped
fringe, feather borders, or embroidered galleons.

The pretty Pompadour and Watteau patterns
fashionable in silk fabrics are also copied in
woolen battiste, and will be still more so in
summer in washing materials, such as cambrie,
percale, organdy and printed muslin.

Most of the new walking costumes are made

with the long wai-ted, tight fitting jacket bodice,
the basque of which is round, pointed, or
square, according to taste, frequently also it ter-
minates in coat lappets behind.

It is easy this season to modernize last year's
dresses so as to make them look fashionable
again. I will give a few hints on this subject,
which may prove useful to some of my fair
readers:—

Suppose you have one of the long princess
shaped polonaises so fashionable at the com-
mencement of last summer. It can be made to
look quite new and stylish by being open at the
back instead of front, and fastened with satin
bows to match. A princess dress can be fresh-
ened up nicely by having plastron and tabier of
figured material added to them.

If the bodice of any dress is worn out or no
longer fashionable, nothing is easier than to
have a jacket or coat bodice made of some other
material. If your dress be a plain silk,
have some brocade ditto and have bias bands
of the same for trimming the skirt. If it be of
figured silk, take plain satin of the same shade,
or of the color of the grounding, if it be multi-
colored, for the bodice and trimmings. Unless
the dress is very elegant and as good as new,
satinette will be quite sufficient for making it
up. For a dress of cashmere, or any other
plain woolen tissue, wool and silk brocade, or
Turkish cashmere in subdued shades of color
will look well for the trimmings, and figured
cashmere may be combined with plain silk or
cashmere.

Spring jackets for young ladies are made of
fancy cloth in different shades of beige, gray,
brown and cream color. They are made tailor
fashion, with no trimmings beyond stitchings and
fancy buttons.

The shapes of hats are more fanciful than
ever this spring, some being turned up at the
side, some in front, and some at the back, Leg-
horn or rice-straw appear to be the favorites,
and are lined with satin in rich, dark shades of
blue, violet and crimson, with large birds and
feathers on the outside.

The new straw bonnets are large in shape,
with a wide brim protruding in front, but with
little or no curtain.

The boundary line between the hat and bon-
net is very difficult to find out, as some bonnets
look quite as flaunting as hats, and turned up
quite as jauntily, many having no strings even
to distinguish them from the former.

Many ladies however still prefer to such fan-
ciful shapes the white, trimmed capote, the
strings of which are now made of very wide
ribbon, frequently brocade or floriated, and
tied in a large bow on one side.

Egyptian Glass-Workers.

On the walls of the Beni-Hassan tombs the
figures of glass-blowers with blow-pipes, mar-
vers, crucible and furnace, still show as freshly
as when placed there by the artists of Osiraton I.,
some 3,500 years before the Christian era;
and among the countless other relics, such as
vases, bottles, cups and bugles found in the
valley of the Nile, a necklace bead, discovered at
Thebes, bears the name of Queen Ramake, wife
of Thotmes II, who resigned about the date of
the Jewish exodus. In the sacred colliques of
Thebes and Memphis the systematic pursuit of
science and constant investigation of the myste-
ries of nature are objects of the closest atten-
tion. The colossal works of architecture and
sculpture with which the country is studded,
could only have been executed by a people
among whom the mechanical arts were highly
advanced; and though the frigidty of glass
renders it especially liable to utter destruction,
there exists ample evidence in the specimens
now enshrined in our museums that its man-
ufacture was carried out to a degree of perfec-
tion that modern science has hitherto vainly
sought to rival. The glass works of Alexandria
were especially renowned for their vases with
blue and white grounds and festoons of colored
glass, and their products were exported to Rome
down to the days of Aurelian. Classic authors
inform us that the Egyptians were famous for
imitating gems in colored glass, and bracelets,
earrings and trinkets of the purest gold set
with these paste gems have been forthcoming
to confirm this statement. Other specimens
show that they could not only gold and engrave
glass and fuse it into colored mosaics, but that
they possessed the art of fusing gold in glass so
as to unite—an art until now looked upon as be-
ing utterly lost as that of tempering copper to
the hardness of the finest steel, which the Egyp-
tians also practiced. Hence glass thus in-
studded with granulated gold has been hitherto
regarded as one of the rarest and most curious
relics of antiquity.—The University Magazine.

Bathing and Clothing the Baby.

In view of the extraordinary mortality
among infants and young children, recently,
extraordinary care should be given them.
The following hints from the Massachusetts
Board of Health will be found useful:

It is better to put a baby into a bath of water
than to bathe it in the lap; and the water
should, if possible, be deep enough to cover it
up to the neck. When no bath tub is to be
had, the best thing to use is the ordinary tin
wash-bowl. The best way to avoid a chill
after the bath is to wrap the child at once in a
warm cotton sheet or towel, placed on a warm
blanket.

The best clothing is that which is warm, and
at the same time light. Flannel is the best ma-
terial for all seasons of the year, especially in
the cold weather following the heat of August.
Infants are very susceptible to the influence of
cold, and at that time they should be looked
after with particular care. It is better that the
bands of pinning blankets and skirts should be

of flannel rather than cotton. Loose blankets
and shawls that easily change their position on
the body, or get forgotten occasionally, are un-
desirable garments. The shoulders, arms and
legs should be covered in cold weather, espe-
cially during the first four months; the stomach
and bowels should be always protected from cold.
Keeping it cool in summer as warm in winter.
Overheating is a common source of sickness.—
The Housekeeper.

Time is Money.—Health is Wealth.

Nothing so valuable is so undervalued as
health, even by communities and individuals
professing to have attained the highest standard
of civilization.

Adults of both sexes are too much occupied
with what they have been educated to consider
of paramount value as compared with sanitary
and social science.

If this is true, and it cannot be denied, what
is the most practicable method of educating the
masses in these all-essential sciences? There is
but one method by which it can be accom-
plished, which is by providing the pupils in
all our public schools with reading books de-
voted to these subjects, adapting them to any
grade, and making the use of these readers
compulsory in every public school in the land.

The average teacher is now little more intel-
ligent on these subjects than the average pupil
who has reached his or her teens. The course
recommended will educate them as well as the
pupils, and with its enforcement it will, in the
early future, inaugurate such a change that the
qualification of a teacher to intelligently and
intelligently teach the sciences in question, will
head the list in examinations.

J. WILKINSON.

Brooklyn, New York.

Say What You Mean.

Let your friends know that you love them.
Do not keep the alabaster boxes of your love
and tenderness sealed up until your friends are
dead. Fill their lives with sweetness. Speak
approving, cheering words while their hearts
can hear them, and while their hearts can be
thrilled by them. The things you mean to say
when they are gone say before they go. The
flowers you mean to send for their coffins, send
to brighten and sweeten their homes before they
leave them. If my friends have any alabaster
boxes laid away, full of perfumes of sympathy
and affection, which they intend to break over
my dead body, I would rather they would bring
them in my weary hours and open them, that I
may be refreshed and cheered by them while I
need them. I would rather have a bare coffin
without a flower, or a funeral without an eul-
ogy, than a life without the sweetness of love
and sympathy. Let us learn to anoint our
friends beforehand for their burial. Post-mor-
tem kindness does not cheer the burdened
spirit. Flowers on the coffin cast no fragrance
backward over the weary days of our lives.

Recipes.

POTATO SALAD.—To one pint mashed pota-
toes, (those left over from dinner are just right),
add the smoothly rubbed yolks of three hard
boiled eggs, garnish the whites cut in trans-
verse slices to garnish the dish; slice one cu-
cumber pickle, one teaspoonful ground must-
ard, pepper and salt to taste, heat one teacup
good vinegar, dissolving in it a lump of butter
the size of a walnut; pour the vinegar over the
pickle and seasoning and add the mashed po-
tato by degrees, rubbing and incorporating
thoroughly. I think you will find it an agree-
able addition to the table.

Another recipe for the same dish: Boil some
Irish potatoes, when done mash, season with
salt, pepper and butter; mince a large onion
and three hard boiled eggs and mix thoroughly
through the potatoes, add a half-cup of vinegar
and one teaspoonful mustard.

TO PICKLE RIPE CUCUMBERS.—Cut them in
slices, lay them in weak salt and water over
night, then rinse in cold water and boil in a
syrup of a quart of vinegar, three pounds of
brown sugar, and spices; boil until clear.

CHOW CHOW.—(Very nice).—Two quarts of
cucumbers, two quarts of onions, one quart of
green tomatoes sliced, two quarts of small to-
matoes, six large green peppers, two quarts of
cauliflower. Boil in salt and water until they
begin to get tender, then drain.

STUFFED BEEF.—Take the thin flabby pieces
on the fore quarter. Make a stuffing the same
as for turkey, spread it on and roll tightly.
Boil in salted water until nearly tender, and the
water nearly boiled away, then add a little but-
ter and stew down; to be sliced and eaten cold
without unrolling. This can be roasted in-
stead of boiled, if preferred.

HOW TO MAKE A SOFA PILLOW.—A hand-
some cushion-cover or sofa-pillow can be made
of bed-ticking. Get narrow braid of different
colors, sew them on each stripe, or work them
with worsted on the white stripes in different
stitches. Ties made in this way are very
pretty.

Mr. Seth Green says that one morning when
he was watching a spider's nest, a mud-wasp
sighted within an inch or two of the nest, on
the side opposite the opening. Creeping noise-
lessly around toward the entrance of the nest,
the wasp stopped a little short of it, and for a
moment remained perfectly quiet. Then reach-
ing out one of his antennae, he wriggled it be-
fore the opening, and withdrew it. This over-
ture had the desired effect; for the boss of the
nest, as large a spider as one generally sees,
came out to see what was wrong, and set it to
rights. No sooner had the spider emerged to
that point at which he was at the worst disad-

vantage, than the wasp, with a quick move-
ment, thrust his sting into the body of his foe,
killing him easily and almost instantly. The
experiment was repeated, on the part of the
wasp, and when there was no response from the
inside, he became satisfied, probably, that he
held the fort. At all events, he proceeded to
enter the nest and slaughter the young spiders,
which were afterwards lugged off one at a
time.—Grange Bulletin.

May Beetles.

These are the perfect insects of the white
grub, so destructive to lawns and sometimes to
meadows. A French plan for destroying, or
rather catching, the cockchafer, a very similar
insect, is to place in the center of the orchard,
after sunset, an old barrel, the inside of which
has been previously tarred. At the bottom of
the barrel is placed a lighted lamp, and the in-
sects, circling around to get at the light, strike
their wings and legs against the tarred sides of
the barrel, and either get fast or are rendered
so helpless that they fall to the bottom. Ten
gallons of beetles have been captured in this
way in a single night.

A French soldier of the name of Hensis, who
was a blacksmith by trade, married at Lem-
burgh, in Poland, a young woman, who cau-
tiously concealed from him her name and fam-
ily. She accompanied him to France, where
they lived happily, but in poverty, for some
years; when she received a letter, which she
said, required that she should leave her husband
for a few days. She had, by the death of a re-
lation, become heiress to a large fortune, con-
sisting of several estates—two castles, two mar-
ket towns, and seven villages, with their de-
pendencies; as well as to the title of baroness
of the empire. Uncontaminated by such a
change of fortune, the lady returned to her
husband and young family, to share with them
the blessings of ease and plenty.

A Novel Hedge.

Gussie Thomas says in answer to a "Farmer's
Wife," in Country Gentleman:
"An old farmer who likes a good garden,
and has no patience with the practice of letting
the fowls make their own choice of fruits, has
told me that when his garden lacked a suitable
fence, he planted a close hedge of sunflowers
all around it. The seeds were put in an inch or
two apart, and after the plants attained a height
of 18 inches or two feet, there was little danger
of fowls finding their way into the garden."

Advertisements.

In answering an advertisement found in these
columns, our readers will confer on us a favor by
stating that they saw the advertisement in the
Kansas Farmer.

ANCHOR LINE.

UNITED STATES MAIL STEAMERS
Sails every Saturday
NEW YORK TO GLASGOW.
CABINS, \$35 to \$65. STEERAGE, \$25.
These Steamers do not carry cattle, sheep or pigs.
And every Saturday
NEW YORK TO LONDON DIRECT.
CABINS, \$35 to \$65. Excursion at Reduced Rates.
Passenger accommodations are unsurpassed.
All Stations on Main Deck.
Passengers booked at lowest rates to or from any Railroad
Drafts at lowest rates, payable (free of charge) throughout
England, Scotland and Ireland.
For books of information, plans, etc., apply to
HENDERSON BROTHERS, 96 Washington St., Chicago, or to
ROWLEY BROTHERS, or A. F. BENSON, Topeka.

THE

FAIRMOUNT NURSERY COM'Y.

The well known Fairmount Nursery Company first
established at Bendersville, Pa., in 1830, removed to
Troy, Ohio, in 1865, has organized a

Branch at Topeka, Kansas.

The association have already grown millions of
trees, etc., and have this spring alone transplanted
nearly fifty acres. A general variety of Nursery stock
at Topeka. We have a large supply on hand and are
prepared to furnish the people of Kansas and the
west with such varieties as are best adapted to the
western climate, such as fruit and ornamental trees,
etc. All communications address

Geo. PETERS, SON & TAYLORS, Pr's

Topeka, Kansas.

XX COT (not painted, White Duck) \$2.



Makes a perfect bed. No mattress or pillows re-
quired. Better than a hamock, as it fits the body
as pleasantly and lies straight. Folded or opened
instantly. Self-fastening. It is just the thing for ho-
tels, offices, cottages, camp-meetings, sportsmen, etc.
Good for the lawn, piazza, or "coolest place in the
house." Splendid for invalids or children. Sent on
receipt of price, or C. O. D. For 50 cts extra, with
order, I will prepay expressage to any railroad sta-
tion east of Mississippi River and north of Mason
and Dixon's country, and harness makers gener-
ally. For 70 cents, in Minnesota, Mis-
souri and Iowa.

HERMON W. LADD, 108 Fulton St., Boston; 237 Canal St., New York; 105 North Second St., Phila-
delphia; 94 Market St., Chicago, Ill. Send for Cir-
culars.

Attention, Owners of Horses!

The Zinc Collar Pad

is the only permanent and
reliable pad for sore-necked
horses or mules that has ever
been produced, and has been
greatly improved since Jan.
1, 1880. The new pad, of proper sizes, with iron loops
is made of smooth metal, they do not wear the mane, and
always dispense, when needed, their medicinal
virtues. There are over a million and a half of them in
use throughout the country, and harness makers gener-
ally have any curative properties whatever, and soon
become worthless by abrasion in cleaning them.
The Zinc Pads are sold by leading Saddlery Houses
throughout the country, and harness makers gener-
ally. Ask your horse maker for them. Manufactured
by ZINC COLLAR PAD CO., Buchanan, Mich.

BERRY Crates and Baskets. Best, Cheapest made.

Free Circular. N. B. Batterson, Buffalo, N.Y.

62 Golden Chromo, Crystal, Rose, Damask, Navy, etc.
Name in gold and jet locs. Winslow & Co., Merriden, Ct.

\$777 A Year and expenses to agents. Outfit Free.
Address P. O. VICKERY, Augusta, Maine.

\$77 a Month and expenses guaranteed to Agent
Outfit free. Shaw & Co., Augusta, Maine.

50 Pin-a-4, Chromo, Lily, Lace, Marble, etc., Cards.
In case, 10c. GLOBE CARD CO., Northford, Ct.

50 Perfumed cards, best assortment ever offered, 10c.
Agis Outfit, 10c. CONN CARD CO., Northford, Ct.

50 Chromo, Glass, Scroll, Wreath and Lace cards, 10c.
177 us. CHROMO CARD CO., Northford, Ct.

18 Elite, Gold Bow, Bevel Edge cards 25c. or 20
Chinese Chromo, 10c. J. B. HUSTED, Nassau, N.Y.

20 Gold and Silver Chromo Cards, with name, 10c.
post paid. G. I. REED & Co., Nassau, N.Y.

ELEGANT AUTOGRAPH Album, gift covers, 48 pages.
Illustrated with birds, scrolls, etc. In color, and
47 Select Quotations, 15c. Agent's outfit for cards,
(over 60 samples), 10c. Davids & Co., Northford, Ct.

SALESMEN \$125 A Month and Expenses

WANTED TO SELL THE BEST FAMILY KNITTING MACHINE EVER INVENTED.

50 Chromo, Tortoise Shell, Cupid, Motto, Floral cards,
10c; outfit 10c. Hall Bros., Northford, Ct.

50 Gold, Chromo, Tortoise Shell, Marble and Bow
CARDS, 10c. SEAVY BROS., Northford, Ct.

50 Gold, crystal, lace, perfumed & chromo cards,
25c. Name in gold & jet 10c. Clinton Bros., Clintonville, Ct.

AGENTS WANTED Everywhere, to sell the
best Family Knitting Machine ever invented.
Will knit a pair of stockings, with HEEL and
TOE complete, in 20 minutes. It will also knit a
great variety of fancy work for which there is always
a ready market. Send for circular and terms to The
Tombly Knitting Machine Co., 409 Washington St.
Boston, Mass.

AGENTS WANTED for the richly
illustrated and complete history of the great town of

GRANT AROUND THE WORLD

It describes Royal Palaces, Rare Curiosities, Wealth
and wonders of the Indies, China, Japan, etc. A
million people want it. This is the best chance of
your life to make money. Beware of "catch-penny"
imitations. Send for circulars and extra terms to
agents. Address NATIONAL PUBLISHING CO.,
St. Louis, Mo.

\$55.66 Agents Profit per Week. Will
prove it for forty days. \$4. Outfit free.
E. G. RIDEOUT & CO., 215 Fulton St., N.Y.

Pasture for Horses.

80 acres pasture to let for horses, 3 miles west of
Auburn, Shawnee county, Kan. Water and salt in
the pasture. Address F. O. BLAKE, Auburn.

A KEY THAT AND NOT
WILL WIN WEAR OUT.
SOLD BY WATCHMEN, by mail, 50 cts. Circulars
FREE. J. B. BIRCH & CO., 33 Bay St., N.Y.

A. PRESCOTT & CO.,

TOPEKA, KANSAS,

Have on hand

\$100,000 TO LOAN

In Shawnee and adjoining Counties on
good Farm security

At 8 and 9 per cent.,

Per Annum.

BARNES FOOT POWER MA-

CHINERY.

FIFTEEN

different machines with which
Builders, Cabinet Makers, Wagon
Makers, and Jobbers in Miscella-
neous work can compete as to
Quality and Price with steam
power manufacturing; also ampa-
turers' supplies, saw blades, designs for Wall Brackets
and Builders' scroll work.

Machines Sent on Trial.

Say where you read this and send for catalogue
and prices. W. F. & JOHN BARNES,
Rockford, Winnebago Co., Ill.

WANTED.

To contract for 600 Ewes, two years old, seven
eighths Merino, to be delivered at Kinsley, Edwards
county, Kansas, between September 1st and October
1st, 1880. JAMES HOLLINGSWORTH,
210, LaSalle street, Chicago, Ill.

Washburn College



The Fall Term Opens on

Wednesday, Sept. 14, 1880.

Four courses of study optional—Business, Scientific,
Classical, Preparatory and Collegiate.
Excellent rooms for young men in the College Hall
at from 25 to 50 cents per week. Good table board at
\$2.00 per week.

The Hartford Cottage for young ladies is now com-
pleted. Rooms furnished for the most part at from
20 to 50 cents per week. The domestic arrangement
is on the Mount Holyoke plan. Each young lady aids
in household work to the extent of about an hour a
day, under the personal supervision of the matron.

In quality of instruction, in breadth and com-
fortable facilities for room and board at extremely
low rates, and in increasing appliances of Library,
Gymnasium and Apparatus, the College now offers un-
usual inducements to youth of both sexes desirous of
securing a thorough education. Address,

PETER McVICAR, President,

Topeka, Kansas.

120 Acres in Cultivation.

George Acheis.

West Chester, Pa.
Sells Crab Apple Trees and other Fruit trees. Ever-
greens and other ornamental Trees; Shrubs, Vines,
etc. Prices reasonable. Correspondence solicited.

THE STRAY LIST.

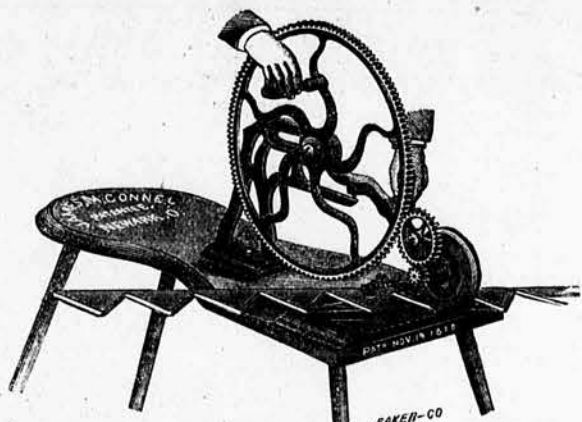
Strays for the week ending June 2. Butler county—C. P. Strong, clerk. FILLEY—Taken up May 11, 1880, by John B. Smith, Chirford tp, one dark bay filley, two years old, both hind feet white, valued at \$25.

Strays for the week ending May 26. Anderson county—Thos. W. Foster, clerk. MARE—Taken up by Patrick Agnew, Reeder tp, April 28, 1880, one light grey mare, 4 years old, plain harness marks, medium size, no brands visible.

Dompham 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, white flecks, valued at \$25.

Woodson county—H. S. Trueblood, Clerk. HORSE—Taken up by Wm. Ossel, 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.

TOPEKA Carbonated Stone and Pipe Works, Manufacturer Wholesale and Retail Dealer in PAVEMENTS CEMENTS, LIME, PLASTER and HAIR. Factory and Office on Kansas Ave. between 7d and 3d Streets. M. A. Spear, P.O. Box 170



CORNELL'S SICKLE GRINDER.

It requires but one to operate it, and grinds a true bevel with speed and ease for the operator. It also has an EXTRA WHEEL for Sharpening and Polishing CULTIVATOR SHOVELS, PLOW SHARES, etc.

E. A. GOODELL, Topeka, Shawnee Co., Kas., General Agent.

Golden Medical Discovery

Pierce's Golden Medical Discovery cures all tumors, from the worst Scrofula to a common Blotch, Pimple, or Eruption. Erysipelas, Salt-Rheum, Fever Sores, Scaly or Purifying, and invigorating medicine.

Pierce's Pleasant Urgeative Pellets. No use of taking the large, repulsive, nauseous pills. These Pellets—Little Pills—are scarcely larger than mustard seeds.

ADVERTISERS Can learn the exact cost of any proposed line of Advertising in American Papers by addressing Geo. P. Rowell & Co's Newspaper Adv'g Bureau, 10 Spruce St., N. Y.

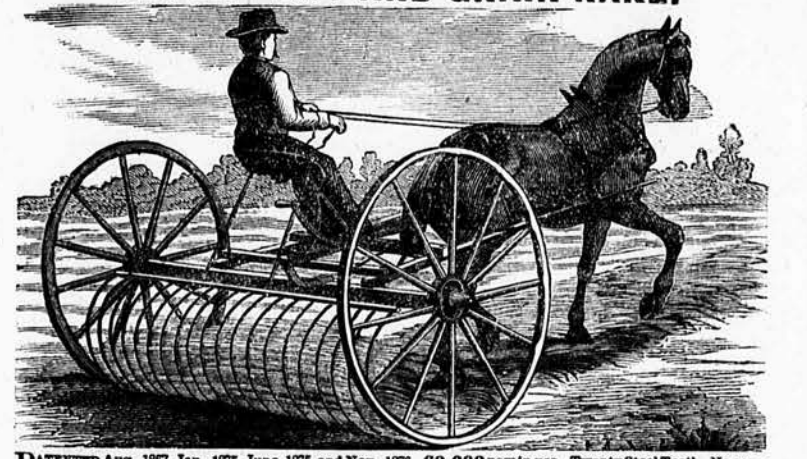
AGENTS WANTED to sell the NEW BOOK, FARMING FOR PROFIT. TELLS HOW TO Cultivate all the Farm Crops in the Best Manner.

WARNER'S SAFE BITTERS. In eliminating the impurities of the blood, the natural and necessary result is the cure of Scrofula, Erysipelas, Weakness of the Stomach, Constipation, Bile, General Debility, etc.

HOW TO BE YOUR OWN LAWYER. For Business Men, Farmers, Mechanics, Workmen, Property Owners, Tenants, Everybody, every business. Selling fast. Low price.

Yellow Fever. The engineers of the Central Railroad of Georgia. Though exposed to the worst miasmatic influence by going in and coming out of Savannah at different hours of the night and nights in a spending entire days in the city during the prevalence of the Yellow Fever epidemic of 1878.

COATES' "INDEPENDENT TOOTH, LOCK LEVER" HAY AND GRAIN RAKE.



PATENTED Aug. 1867, Jan. 1875, June, 1875, and Nov., 1875. 60,000 now in use. Twenty Steel Teeth. No complicated ratchet wheels, ratchet bands, nor other horse machinery needed to operate it.

H. D. CLARK, Dealer in

LEATHER AND SHOE FINDINGS, Hides, Sheep Pelts, Furs and Tallow, And Manufacturer and Dealer in

SADDLES, HARNESS, Whips, Fly Nets, Horse Collars, &c.

135 KANSAS AVENUE, TOPEKA, KANSAS. TERMS, STRICTLY CASH.

VICTOR ONE HORSE WHEAT DRILL.



Moline Plow Co., Exclusive Agents, Kansas City, Mo.

NICHOLS, SHEPARD & CO. Battle Creek, Mich. Established 1844 ORIGINAL AND ONLY GENUINE



SORGO Machinery.

Give your orders early. Do not wait until the season for making is here. On account of the great interest created by the introduction of

The Early Amber

Which has been planted in great quantities the demand for machinery will be immense, and it stands those in hand who wish to make a success at molasses and sugar making to procure their MACHINERY before the rush comes on. BUY ONLY THE BEST that can be procured.

THE SORGO HANDBOOK

A Treatise on Sorgo and Imphee Canes, and the Minnesota Early Amber Sugar Cane. The EDITION FOR 1880 is now ready, and will be sent free on application.

1,300 HEAD OF SHEEP FOR SALE.

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

500 Stock Sheep near Chetopa

Labelle county, Kas. A. HAMILTON, Everett, P. O., Woodson Co., Kas.

AMBER SUGAR CANE SQUAD.

35 cents per pound postage paid. 10 lb or bushel lots at reduced price.

Climax Reapers & Mowers. CANTON CULTIVATORS.

McCormick Harvester and Binder. S. H. DOWNS' Seed House and Farm Machinery. Opposite Shawnee Mill, Topeka, Kansas.

14-STOP ORGANS

Steel, book and music, boxed and shipped only \$85.00. New Piano \$150 to \$1,000. Before you buy an instrument be sure to see this Midsummer offer. Address, Daniel F. Beatty, Washington, N. J.

Farm Letters.

OSBORNE, Osborne Co., May 24.—I think your article last week advising us to raise white beans, misleading. Because white beans are a leading crop in Niagara county, New York, is no sign that they will do well here. The reason that Kansas does not raise white beans enough to supply the demand, seems to me very simple: It is because we can buy them cheaper than we can raise them, or, in other words, the time we would devote to raising a bushel of white beans, we can raise something else that we can trade for two bushels of beans. This is a fact. I pay five cents a pound for beans at the grocery, and at the same grocery sell peanuts at six cents a pound, and I can raise two bushels (yes, five) of peanuts here with less labor than one bushel of white beans.

Oranges are a leading crop in Florida, but who advises raising them in Maine? Peaches do well in New Jersey, but who advises the people in Minnesota to raise their own peaches because they have to pay a higher price for them? I am in favor of a diversity of crops, but think it poor policy, at least, to urge the cultivation of such crops as have been clearly found can be raised only at a loss.

A man may plant a bushel of beans here, and plant the entire crop that he raises every year for five years, and I am confident that at the end of the five years he will not have as many as he started with. I make this assertion only as to white beans. Some of the asserted varieties do quite well here.

There has been quite a little rain the past week, and some pieces of winter wheat may go five bushels to the acre, but it is generally a failure. D. W. C. O'NEIL.

Our correspondent's wheat crop need not appear to be more prosperous than his beans, and if logical he will give it up. And we do not know but that he would be the wiser in the end by applying this theory to the wheat. His reasoning is not very sound, however. Oranges are a tropical crop, but peaches and peaches belong to the temperate zone, and because oranges will not grow on the fortieth parallel, and Minnesota is too far north for peaches, will not apply to the cultivation of white beans in Kansas. It is not the latitude which militates against beans in Kansas. The policy of farmers believing that they can buy such articles of everyday use as beans, potatoes, and other vegetables common to this region, cheaper than they can raise them, or that they can raise something else in the same time which will sell for more than the rejected crop will cost, is a very great delusion. Farmers should not be found trading peanuts at the grocery for beans, but rather trading beans and peanuts for sugar, coffee, and other necessities which they cannot produce. The sugar, though, there seems to be a fair prospect of producing at home.

But why cannot white beans be grown in Kansas? Will a true Kansan admit that the soil of Kansas will not produce any crop native to the temperate zone? Unless our correspondent is the man, we have never yet been able to find him.

MICHIGAN VALLEY, Osage Co., (35 miles southeast of Topeka,) May 17.—Dry weather continues. No rain to soak the ground since the 26th of March. Farmers plowed their ground and planted all their corn without rain. The early planted (from the 10th to the 25th of April, is mostly cultivated once, and some the second time. Late planted will not come up and make a good stand unless we get rain soon to moisten the ground. We never saw corn do so well that was planted early, as this spring. The farmers are rolling their corn and doing everything to prevent the ground from drying out. The acreage is increased fifty per cent over last year.

We often heard it remarked by many farmers who sold their corn so close the spring of 1874, that after that year they would keep enough old corn over to do them another year. Now we don't predict a failure, such as that year; we believe we will have plenty of rain when it comes. But one thing is sure, a majority of the farmers are not any better prepared for a failure, or short crop, than they were that year. Every day we see farmers and persons just come to the state, wanting to buy corn to feed. Some farmers sold their corn off so close this spring that they tried to buy some of the same corn.

Our wheat prospect is unfavorable. The wheat has commenced to head out very short. The early sown is the best, but cannot make more than half a crop; late sown is scarcely pay to harvest. The chinch bugs are hatching out in some localities. Oats and flax are short and need rain badly.

Our prospect for fruit is extra good, except cherries; fully half the crop was killed by the frost. All apple trees large enough to bear are very full.

The grass is short, but cattle are getting fat. Hogs are sold close on account of the scarcity of corn. Yearling steers selling from \$15 to \$18 per head; young calves selling readily at \$5 per head. No demand, at present, for two and three-year-old steers. Corn, 25c to 28c; wheat, 95c. Real estate changing hands. Farmers having any prairie to break are breaking from five to sixty acres; price paid, \$2 per acre.

I am well pleased in reading the FARMER, and very much interested in reading letters written by the different correspondents.

I am planting a grove of forest trees around my orchard, buildings and stable, lots, etc., for wind-breaks, and want to raise my firewood in a few years. I have now about 5,000 soft maples growing; planted the seed two years ago. They are from three to six feet high. They

are planted about six inches apart in the row, and the rows four feet apart. I thinned out some by transplanting on other ground. I planted 3,000 cuttings of cottonwood and lost three-fourths of them. My walnuts did very well; I planted about one-half bushel. Some of my Lombardy poplars, planted six years ago, died last year. I have planted a few of the thornless Honey Locust. They are doing well and are one of my favorite trees for valuable timber. I planted one on my father's farm, nine years ago, that I found in the timber. It was about two inches in diameter at the ground, and will now make a large gate post. They are scarce in the timber here. I have 1,000 box elders growing that measure from three to five feet; seed planted two years ago. I have planted one peck of seed this spring, but fear they are not going to grow. Two-thirds of my evergreens died. I expect to plant some trees every year until I have my ground filled up.

I have been in favor of letting my hedge grow without trimming until this spring. The cornstalks and trash of all kinds nearly filled it to the top; the fire got into part of it and completely cleaned it out. I have nearly one-half mile laid down. I cut off a stalk about three feet high, one in every four feet, and then trim up the rest to the top, cut it half off at the ground and lay it down between the stump left standing. It has made a good fence. Stand hedge ten feet high is disagreeable in hot weather, but good protection to the growing crops. B.

SPRING HILL, JOHNSON CO., May 18.—Johnson county is one of the oldest as well as most productive counties in Kansas. Every thing the farming community is interested in producing seems to be thriving. What little oats and flax were blown out and damaged or killed by the high winds was re-sown and the damage repaired. The farmers of this county are beginning to see the benefit of hedge and stone fences during such wind storms as visited us a short time ago.

The prospect for fruit in this county is good. Trees that have not borne fruit for years are now heavily loaded with young fruit.

Some farms are selling here at \$25 to \$30 per acre.

We have a new business enterprise started at Olathe, the county seat, in the form of a first class iron foundry and machine manufacturing establishment. Just what the farmers much needed to have their implements and castings made at home and save the expense of middle men, high transportation rates, etc.

I notice a disposition on the part of farmers generally towards putting up barb wire fences around yards inside, division fences, etc. It is a good thing—a long stride in the right direction. Barb wire makes the boss fence, but all the farmers who have put up fence of this kind yet have made a sad mistake—committed a great blunder in its construction. The bars on the wire prevent the possibility of tightening or loosening the wire. We have all found, or ought to, that a wire fence will expand, become loose, in summer and contract in winter, and needs tightening up, say about once in three years. Now to save expense of time and breakage of staples, etc., in place of putting up fence in the usual way, use twice the number of staples, drive two into the post close together, one above the other, when the wire can be passed between them and fastened by using a small nail, which should pass through the two staples downwards, leaving the wire between the nail and the post, the post holding the nail and the nail holding the wire in its place. If you make fence on this plan you will have no trouble to loosen the wire when you want to take out a post or change your fence in any way.

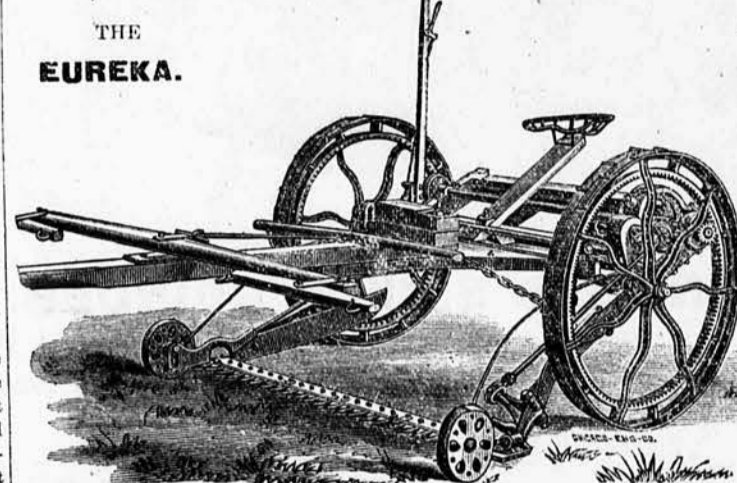
Our markets are very good. Eggs 4 cents; butter 10 cents; potatoes 75 cents; corn 26 cents; wheat 90 cents; hogs \$3.50; chickens \$2. Some little garden sauce, home grown, selling in the market. B. B.

The Best.

The News, Danbury, Conn., says: Warner's safe nerve is the best remedy for nervous affections the world ever saw.

KIDNEY-WORT. PERMANENTLY CURES KIDNEY DISEASES, LIVER COMPLAINTS, Constipation and Piles. DR. R. H. CLARK, South Hero, Vt., says, "In cases of KIDNEY TROUBLES it has acted like a charm. It has cured many very bad cases of PILES, and has never failed to act efficiently." NELSON HARCHILD, of St. Albans, Vt., says, "It is of priceless value. After sixteen years of great suffering from Piles and Constipation it completely cured me." C. S. HOGABON, of Ferrisburgh, says, "One package has done wonders for me in completely curing a severe Liver and Kidney Complaint."

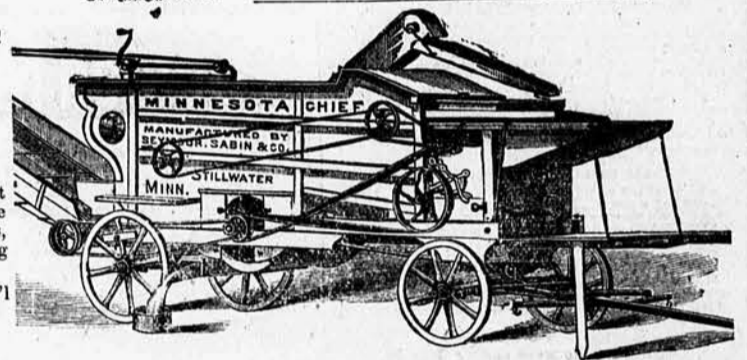
MOSELEY, BELL & CO., KANSAS CITY, MO. FARM MACHINERY FORWARDING AGENTS AND SEEDSMEN. GENERAL Agents for the sale of the EUREKA MOWER and BAKER GRAIN DRILL. Wholesale Dealers in all kinds of GARDEN and FINE SEEDS. Catalogues by mail on application. Prompt attention to small orders as well as large ones. Descriptive Pamphlets and prices of Mower and Drill furnished both Dealer and Farmer in answer to inquiries. Eastern Manufacturers wishing to reship machines at KANSAS CITY, will please address us at 1194 UNION AVENUE.



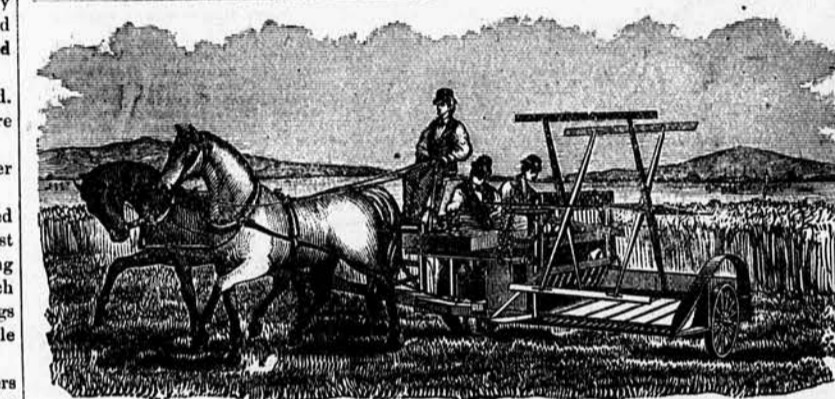
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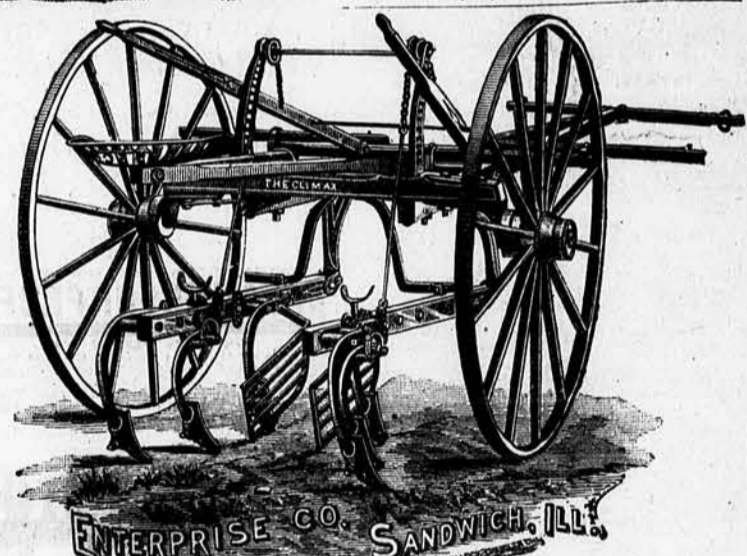


Minneapolis Harvester Works. are manufacturers of the Dewey Harvester.



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