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The Western School Journal, TOPEKA, KANSAS.

OFFICE STATE SUPT. OF PUBLIC INSTRUCTION, TOPEKA, KAS., January 16, 1889.

To County Superintendents:—I have this day designated the Western School Journal as the official organ of this department, through which medium, by agreement with the editor of the Journal, I shall in each issue reach Superintendents, teachers and many school officers. This designation is complete evidence of my confidence that the Journal can be safely inducted by Superintendents as a paper which should be in the hands of every teacher.

Very respectfully yours, GEO. W. WIMANS, State Supt. Public Instruction.

The Western School Journal publishes monthly all the opinions and decisions of the State Superintendent, Attorney General, and Supreme Court on questions relating to our schools. These opinions and decisions will be worth much more than the cost of the Journal to any school officer. According to an opinion given by the Attorney General, school officers have the power to subscribe for an educational journal and pay for it out of the district funds. Our regular rate is \$1.25 a year, but to district boards, if three copies be taken, we can make the rate \$1.00. Please remit by money order, postal note, or registered district order. Address

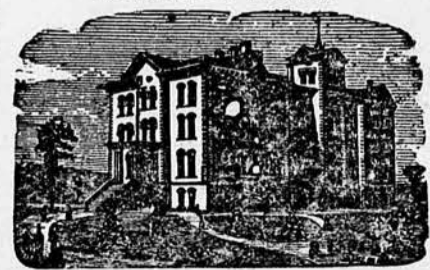
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BLAKE'S ANNUAL OF WEATHER PREDICTIONS FOR 1890,

According to Mathematical Calculations, based on Astronomical Laws, will be ready for mailing in August, 1889. This will be a larger book than any I have heretofore issued. It will contain tables giving the maximum, minimum and mean temperature, in degrees Fahrenheit, for each month in the year. Other tables give the probable amount of precipitation in inches for each month in the year for each State and Territory, all of the large States and part of the Territories being subdivided into districts with a separate calculation for each, making 153 districts. The weather for part of Canada and the principal States in Europe is also given. The main features of my predictions have proved correct for the last fifteen years, though I cannot always make all the details correct. But they are sufficiently so to enable farmers to know what crops to plant, and when so as to insure best results. My advice last year to seed extensively with winter wheat on account of a favorable winter and spring, and because this summer would be too dry for corn, has proved entirely correct. The planetary situation for both this year and next will be such as to produce great extremes, with only short spells of ordinary weather. Neither farmers nor merchants can conduct business successfully without knowing in advance what these extremes will be. To those ordering the book now I send by return mail a confidential letter of two pages, giving the main features of the weather for 1890, as it will take me from two to three months to complete the details for the book; while many wish to know the main points now, so as to know whether or not to prepare for fall seeding and as to what plans for the future it is best to form. In future the weather predictions will be found exclusively in these books, and for that reason the Annual for 1890 will be very full and complete, with advice as to crops and prospects in each State. Price of the Annual for 1890 is \$2 per copy, and price of Weather Tables for 1889 is 50 cents per copy. Address C. C. BLAKE, Topeka, Kansas.

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Agricultural Matters.

WEATHER AND CROP PROSPECTS.

BY C. C. BLAKE.

As the farmers are now cutting the most magnificent crop of wheat ever harvested in Kansas, it is important that they keep the ball rolling so that the wave of prosperity may increase in magnitude as it advances till every home in the State is a smiling Eden. We see no way to do this as well as by planting ninety-day corn with the lister as fast as the wheat and oats are cut. One great advantage in this is that the binder and lister can both be started in the same field the same day, thus getting the corn into the ground at the earliest possible moment. It is true that in the most western counties it will be too dry for corn in July and August, while sorghum, buckwheat and millet would be more likely to make a crop there if seeded as soon as the wheat is cut. But this necessitates plowing all the ground, which in itself is a big tax and takes much more time, so that these second crops cannot be put in the ground near as early as listed corn, while the expense for seed is greater than for corn. We also expect that there will be patches in the eastern two-thirds of Kansas where it will be too dry for corn in July and August; but as we cannot calculate exactly where these patches will be, we conclude that the best way will be to list corn on stubble ground during June in all parts of the State, except in such few spots as may be too dry at the time. The ground is now warm enough so that corn listed deep will grow without doubt, while it is so full of water in nearly all places that it will take a long drouth to check the growth of listed corn. But still the drouth in parts of the State in July and August will be so severe that this second planting will make only fodder, while in two-thirds of the State it will make sound corn. It may not seem right to thus advise listing corn in nearly all parts of the State when we know that part of it will be dried up before maturity. But we thus advise because the expense of thus listing corn is almost nothing, especially when a farmer owns plenty of horses so that he can spare three for the lister. After the corn is large enough to tend, harvest will be over and farmers will

have time to tend this second crop if it looks promising. But if it should be so very dry that tending is useless, the actual loss will be only a little seed and time; while in the loss of a wheat crop the loss for plowing and for seed is very great. If we could figure close enough we would point out the exact townships where it will be too dry; but as we cannot do that, and as we know that the greater part of Kansas will have rain enough, with the large amount already in the ground, to mature this second crop, it would seem to be the safest plan to make the listing of corn general all over the State. We think it will make enough fodder in the extreme west to pay for the labor, even if it does not make good corn. If the farmers in Kansas will do this generally, it will add from 50,000,000 to 100,000,000 bushels to the crop of the State.

If we should undertake to point out the counties where it will be too dry, we would make some mistakes and disappoint the people there. We have always maintained that the value of our weather calculations is not in fine details, but in the broader work which gives the farmer a general view as to whether the season will be a dry or wet one in a certain part of the country. This was illustrated in the recent heavy rains in the Alleghany mountains. We had predicted heavy rains for May in West Virginia and Pennsylvania of from four to five inches, and from ten to twelve inches at the south end of the Appalachian chain. The amount of rain in the most concentrated part of a large State is generally two or three times as much as the predicted average for that State. While the recent rainfall was heavy all along those mountains from the south end to the north end, yet the greatest concentrations was a little farther north than we had calculated. We consider the recent rains there a verification rather than a failure of our prediction, though it shows that our details as to the exact location of the heaviest concentration were only approximately correct. But our prediction of heavy rainfall all along those mountains in May shows that we had correctly calculated the cosmical causes which incited the large precipitation there, and was sufficient to put the people on guard. The same is true as to the great drouth of this summer. Those who take our Weather Tables and expect that the exact number of inches of predicted rainfall are to occur in their township will be more or less disappointed, as was the case in March with the gentleman in St. Louis. We predicted 3.68 inches of rain as an average for the south half of Missouri in February. This gentleman wrote an article in a St. Louis paper in March calling attention to the fact that five inches of rain had fallen in St. Louis and that we had predicted only 3.68 inches. He evidently thought that the city of St. Louis includes the south half of Missouri.

But while the predicted drouth of this summer will not in all places be verified exactly as we have figured it, yet the great general drouth predicted is sufficient to put people on guard so that they can prepare for it. Those who expect a great general drouth will not be disappointed, while those who expect an exact and literal fulfillment of the predictions will be disappointed. We frequently receive letters from parties in various parts of the country calling attention to the fact that there is a little discrepancy between our predicted figures for a State and the actual amount of rainfall in their town, and wanting to know how we explain it. They evidently think we have nothing to do but write long private letters of explanation, which we only do when a

dollar is enclosed to pay for the time spent. If we answered all such letters we should have little time to do anything else. But when we receive orders for our Annual for 1890 we answer by letter such questions as may be asked. In a very large number of the orders recently received for the Annual, the writers, in addition to wanting to know as to the advisability of sowing winter wheat this fall, ask if we advise listing corn this month in their particular county. We write this article to answer these questions as to corn, as we can make a printed answer more full than we can several hundred written ones. We will add that the above advice as to planting corn on stubble ground applies to western Missouri; and while it will be pretty dry in many of the other States for such listed corn, yet we would so list it this month on good soils throughout the winter wheat belt, and let it make what it will. It will generally make fodder; while in many places in said other States there will be streaks of rain during the drouth, which we cannot figure fine enough to locate, but which will bring this listed corn to fair maturity. It should be remembered that on account of the very small cost of thus listing corn the farmer takes hardly any chance to lose, while he has a fair chance to win, and in Kansas the chances to win will average about seven to one. We expect early fall frosts in the North, but not in Kansas.

Many of our patrons ask our opinion about the market. As we were simple enough to print our guesses on the market in the Appendix of the 1889 book it is but proper that we attempt to answer them. As there stated, we can only guess as to market prices, since they are governed by the "Bulls and Bears," "who toil not, neither do they spin, yet Solomon in all his glory was not arrayed like one of these." We do not see but that these bulls and bears will continue to make prices for the farmers so long as a majority of the actual producers prefer to pay heavy tribute to these forestallers rather than pay a dollar or two to help maintain those scientific friends who are disposed to help them help themselves. While those bears have already sold your expected crops many times over, and while we cannot guess as to what they will do next, yet we have a very emphatic opinion that they have "bitten off more than they can chew," and that before the great drouth is over those independent farmers who are not compelled to sell quick will be able to dictate prices, especially as to corn. Though the winter wheat crop is now made, yet it is not unreasonable to suppose that the price of wheat will largely follow that of corn, and the crop of spring wheat is very far from being assured in the Northwest.

About Sweet Potato Culture.

With accommodations for safe storage, the sweet potato becomes one of our most profitable crops. Our location is not such as to afford a market for them in large quantities, yet there is a steady demand at prices varying from 30 cents per bushel in October, to 75 cents to \$1.25 in April. For seed we use potatoes too small for the table. We start the plants in a bed prepared as follows: In the first half of April a sheltered spot is selected, where it can have the full benefit of the sun. The soil is taken out of the desired area and placed in a pile convenient for putting back as wanted. First we put in four or five inches of fresh horse manure, as free as possible from litter. On this we put about an inch of soil, and then another layer of manure, with two inches of soil. On this, pressed in, are placed potatoes as near together as may

be without touching. They are covered from one to two inches deep with fine soil, firmed down. The layers of manure and soil may vary from the above; but when finished the bed should be three inches above the surrounding surface. If favorable weather follows, the first plants will be ready for setting in about six weeks, and we sometimes get four or five crops of plants at intervals of about two weeks. In the meantime we keep the bed free of weeds, the top soil loose, and we water when too dry. Suds from the wash-tub are excellent for the purpose. A light application of fertilizer encourages the growth. An explanation may be in order as to why we make layers of manure and soil. The strong heat of an ordinary hot-bed is not desirable, being liable to cause decay instead of growth, and we think the slight bottom heat comes more gradually and is more lasting for the layer of soil between the two of manure.

But three varieties are grown to any great extent, which, in the order of earliness reversed, are as follows: The Jewel yam, bright yellow, flesh yellow, soft and very sweet when cooked; small and a light yielder; but the most popular with the Southern people. Bahama, light yellow, almost white, flesh the same, not so soft or sweet as the Jewel; large to very large; a rank grower and a heavy cropper. Red-skin, white flesh; drier than either of above; very early; very large, yields wonderfully and sells well before other varieties are in market.

A sandy soil suits best and it can not be made too rich. We plow in March and if manure is plentiful it is best broadcasted just before planting time; but the more common practice is to run furrows with a one horse plow three feet apart, in which we put the manure, the quantity depending on the supply. On this a furrow is thrown from each side, forming a sharp ridge or bed. The plants are set eighteen inches apart in the row, after striking off and firming the hills with a hoe. The cultivation we give is merely keeping the land clean and when the growth of the vines stops further cultivation, we leave the rows well banked up by throwing up the soil from between with the plow. As the vines grow they take root and sometimes form small tubers. This is prevented by lifting them with a pitchfork, though very few growers practice it. As soon as the potatoes are well grown, in September, we commence cutting the vines for soiling. They are excellent both for cattle and hogs, though not so convenient to gather as some other crops.

We aim to harvest on a warm, clear day, before any frost, by plowing a furrow close at one side; returning, the plow runs under the row, which brings nearly all to view. A hoe is used to make sure of getting all. If the vines are cleared away previously, the plowing can be done very much better and more rapidly. We assort as we pick, into three sorts: those suitable for market, the small ones for seed, and, lastly, such as are unfit for either, which are fed out to hogs and cows.

Sweet potatoes are very sensitive to cold and wet, consequently the storage must be warm and dry. On account of the excessive rains last fall, many were obliged to dig in the mud. In such case it is almost impossible to keep them until mid-winter. They have rotted badly. We usually save them until May by storing them in a small log cabin, keeping the temperature not less than 50 deg. by charcoal fires—in small pits dug in the earth floors—when necessary. If kept so warm as to produce sprouts, no harm is done.—M. B. Prince, in Rural New Yorker.

The Stock Interest.

THOROUGHbred STOCK SALES.

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

OCTOBER 8—John Lewis, Short-horns, Miami, Mo.
OCTOBER 9—John Lewis, Poland-Chinas, Miami, Mo.

FEEDING FOR FAT AND LEAN MEAT.

The following is part of Prof. Shelton's recent report of "Experiments in Pig-Feeding," at Kansas Experiment Station:

The object primarily of the experiment hereinafter detailed has been to answer the question whether common stock foods like shorts and bran might be profitably used as a substitute for corn in fattening fully-developed pigs. It was to be expected that a feeding trial of this character would throw light upon the question of the influence of different foods upon the quality of the product. Indeed, it may be said of the experiment under consideration, that as the work progressed efforts were very largely directed toward the elucidation of the latter point. Popular interest in the idea of feeding for a particular meat product, lean or fat, as may be, has in recent months been very markedly shown, largely by reason of experiments in this direction made by Prof. J. W. Sanborn, of Missouri, and Prof. W. A. Henry, of Wisconsin. In the "fat-and-lean" experiments made by these gentlemen (see, for full detail of each experiment made, Bulletins 10, 14 and 19, of the Missouri Agricultural college, and Fourth and Fifth Annual Reports—1887, 1888—of the Wisconsin Experiment Station) young animals—pigs three to four months old—were employed, without exception that I have been able to discover. In each of these feeding trials the pigs were divided into two or more lots, one lot receiving corn meal alone, the other set getting foods rich in nitrogen—shorts, milk and dried blood, variously compounded. Prof. Sanborn sums up the results of his three feeding experiments bearing on the question of fat and lean production as follows: "I am satisfied that 40 to 50 per cent. variation in fat by the food given can be made in the composition of the pig." Prof. Henry concludes from the two sets of experiments made by him, that besides getting a large increase of lean meat by the use of nitrogenous foods, "we can put nearly 4 per cent. of blood in one lot of hogs, with only 3 per cent. in another, and make a difference of one-sixth in the strength of the bones."

The development of fat and lean in the corn-fed pigs and those receiving the nitrogenous diet is exhibited by Prof. Henry by means of photographic illustrations, which show a large proportion of the lean parts of the carcasses of the latter as compared with those fed on corn alone.

It is but fair to say that the conclusions reached by these experimenters have been questioned by such competent critics as Dr. Manly Miles and Mr. Joseph Harris. Dr. Miles's contention is that the difference in the flesh of the animals fed for fat and lean, above referred to, is in appearance only, and that in actual fact there was a smaller percentage of dry substance of lean meat in these pigs getting the nitrogenous diet, than was contained in the carcasses of the corn-fed lot. Mr. Harris thinks the true explanation of Prof. Henry's experiments is found in the fact that "the pigs having milk with their food grew faster than those having water with their food, and consequently produced more lean meat. There is no evidence to show that the amount of nitrogen in the food had anything to do with the result."

The idea—that we can by the use of

particular foods make fat or lean pork as is desired—if true, will be chiefly valuable in its practical application to the use of fattening animals. In the experiments above referred to, young and immature animals were used in every instance, I believe; and the feeding was not a "fattening" but rather a period of growth and general development. The purpose has been in this feeding experiment, so far as it involves the question of making "the type of meat that we will eat:"

1. To feed, during a limited "fattening" or forcing period, a lot of fully matured, thin pigs, having as nearly as possible uniform individual characteristics and hereditary tendencies; and
2. To feed the pigs in two equal sets, giving to one all they would eat without waste, of such carbonaceous foods as are commonly used by farmers, and to the other, in like manner, a similar class of nitrogenous foods.

To the farmers of Kansas there is but one common, easily accessible carbonaceous food, Indian corn, while his choice of nitrogenous foods is necessarily limited to two, bran and shorts. It is futile to talk to Kansas farmers of peas or even milk as general pig feed; the one is not generally grown and will not be, and the other could not be had in quantities sufficient to even moisten the corn fed to our swine.

CONDITIONS OF THE EXPERIMENT.

The pigs, ten in number, used in our experiment, were purely-bred Berkshires of two different litters, one farrowed August 26, 1887, the other September 7, 1887. Both litters were by the same sire, from closely related dams. On account of the loss of their ear tags, I am unable to identify particular pigs with either litter—an unimportant matter in view of the close relationship existing between the two litters. Up to the commencement of the feeding, all the pigs had been kept as store pigs generally are cared for. They had the range of large yards or stubble fields from the first, and a small daily feed of grain was given them regularly. When the lot was put up, they were full grown, in perfect health, somewhat thin, with well-developed muscular systems, and boundless appetites. A more perfect lot of animals for the purposes of the experiment could hardly have been found.

Pens Nos. 1, 2 and 3, (fed shorts-bran), and 7, 8 and 9, (fed corn alone), were sows, of which Nos. 3 and 7 had each raised a litter of pigs, weaned a few days before the experiment began.

Pens Nos. 4 and 5, (fed shorts-bran), and 6 and 10, (fed corn alone), were barrows.

The pigs were taken up ten days before the experiment was actually begun, for the purpose of allowing them to become accustomed to their new quarters; and during this time they were fed moderately of the feed used in the course of the experiment. A single pig occupied each pen. For convenience, each pig will hereafter be spoken of as pen so-and-so.

THE FEED USED.

Pens 1 to 5 inclusive were fed a mixture consisting of two parts of shorts, middlings or ship-stuff, as this feed is variously called, to one of bran. Pens 6 to 10 inclusive, received corn meal rather coarsely ground. In the case of both sets, the feed was given in the condition of a thick slop. All had in addition to the liquid supplied with the food, water *ad libitum*. Feeding was done twice daily—at 8 o'clock in the morning and 5 o'clock in the evening, and every pig was weighed at the end of each week, midway between the times of feeding of that day. A box containing a mixture of wood ashes, lime and salt, was kept in each pen;

this mixture, with the charcoal furnished as needed, was freely used by the pigs. At the first the shorts-bran-fed lot ate with apparent reluctance the feed supplied them, while the corn-fed pigs ate greedily from the very first. This difference in the apparent appetites of the two sets was not maintained. After the first two weeks both sets ate seemingly with equal relish.

There was a noticeable difference in the amount of water drunk by the two series, although I am unable to present accurate facts bearing on this point. The shorts-bran-fed lot drank an excessive amount of water from the first. The gutter from the pens containing these pigs was almost constantly flowing, while that from the corn-fed series rarely flowed.

The composition of the food stuffs used in this experiment, given below, is taken from the Annual Report of the Connecticut Experiment Station for 1888. The corn, shorts and bran of the table are certain not to differ materially from those used in our feeding.

| | Albuminoids or Crude Protein. | | Nitrogen. | | Fiber. | Ash. |
|-------------|-------------------------------|--------------|--------------|--------------|--------|------|
| | Total dry matter. | fat extract. | fat extract. | fat extract. | | |
| Corn..... | 89.90 | 8.80 | 3.70 | 68.00 | 1.75 | 1.30 |
| Shorts..... | 87.26 | 13.88 | 4.14 | 57.69 | 7.48 | 4.25 |
| Bran..... | 87.62 | 15.36 | 8.83 | 63.50 | 9.34 | 5.59 |

We here see that the shorts-bran-fed hogs got nearly twice as much of the albuminoids and proteins and almost four times as much mineral matter as was consumed by the corn-fed lot in eating an equal amount of food. On account of the near likeness of the shorts and bran in composition, it plainly will not tend to ambiguity if hereafter we speak of the composite feed, shorts-bran, as a simple substance, and treat it as such.

Here follow a number of tables showing details of the experiment.

Prof. Shelton concludes:

1. The shorts-bran-fed pigs required for full ripening nearly or quite 25 per cent. more of time than was needed by the corn-fed series; but even when the feeding of the corn-fed lot was prolonged—to their great disadvantage—to a period equal to that occupied by the shorts-bran-fed series it cost to make a hundred weight of gain from shorts-bran 25 cents more than was needed to make a like gain with corn meal alone.

2. The corn diet, as compared with shorts-bran, had no unfavorable influence upon the vital organs, so-called, with the exception of the kidneys. The testimony upon this latter point, however, is far from conclusive.

3. The corn-fed pigs had stronger bones than those fed shorts-bran, and the quality of the bone tissue was distinctly tougher and more fibrous.

4. The meat of the pigs fed corn was fatter than that made from shorts and bran, a fact fully explained by their excess of gain, (ninety-eight pounds) but the advantage of either series in respect to the amount of lean meat, or in its distribution with the fat (marbling) was not distinguishable by the senses.

5. The quality of the meat, as a whole, of the corn-fed pigs was clearly better than that of the shorts-bran series, for cooking by boiling; the results obtained from roasting lean meat give occasion for a difference of opinion as to superiority in the quality of the meat of the two sets, while frying failed to show any advantage for either.

Sour Swill for Hogs.

EDITOR KANSAS FARMER:—As the men that feed sweet swill to hogs have occupied a good deal of space in your columns the last six months, I thought a few lines on sour swill and the practical results thereof might help some poor fellow like myself. That is, if he should happen to have a pig and some sour milk, instead of throwing it away, he

would feed it to his pig. Now for practical results. I had one sow that dropped ten pigs the 27th day of September, 1887, and saved five. One of the hogs at thirteen months and twenty-three days old weighed 525 pounds. Sold the five as follows:

| | |
|-----------------------------|---------|
| (1) March 14, 1888..... | \$10.00 |
| (2) April 20, 1888..... | 10.00 |
| (3) September 15, 1888..... | 16.47 |
| (4) November 14, 1888..... | 26.25 |
| (5) December 24, 1888..... | 20.64 |
| Total..... | \$83.36 |

The mother of those pigs weighed 600 pounds. Those pigs had the range of one-eighth of an acre of rough ground, with plenty of water, with sour swill, weeds and grass; no corn after the 1st of May until corn was fit to feed in the fall.

I make swill for hogs this way: Have a barrel, put in one-half bushel shorts and one-half bushel oats when I have them; boil one bushel potatoes and mash them; let stand twelve hours; fill up with water, put in one-half pint salt, and feed, and repeat the process every three, four or five days.

J. S. JUSTICE.

Morrill, Brown Co., Kas.

Money in Mutton.

When first visiting England in 1841 and partaking of Southdown mutton at all the hotels where I stopped, I became convinced of its superiority and thought it would be a great blessing to America to have it bountifully produced by our farmers, and supersede in a measure the almost universal consumption of pork, as it is more healthy and nutritious. I then purchased and imported a few Southdown sheep, wrote articles in their favor for the agricultural papers and have continued to do this up to the present. I recommended their being brought over in large flocks—as was the case early in the century with Merinos from Spain. They could then be bred freely and cheaply and spread rapidly over the country. But instead of this they have been coming in small numbers, and at high prices for very choice, till recently they begin to be imported by the hundreds, selecting good breeding, serviceable animals at moderate prices, such as the English farmers rear for their mutton market. One Canadian agricultural company imported nearly 1,000 such the past summer, and others in the United States have followed this example, though not in quite so large numbers at a single time. I am gratified to observe that mutton is taking the place of pork to a greater extent than formerly, and we have only to supply such as is of a superior quality to insure a still further increase of consumption. I have long advised our breeders of fine-wooled sheep, like the Merinos, to rid their bodies of odious wrinkles and grease as fast as possible, and improve their forms to the shape of Southdowns. In this way they can obtain a fair quality of mutton, for which they could get a sufficiently increased price in market to compensate them for any lower rate on wool. Adopt the principle of the British flock-masters, who regard choice mutton as the first requisite in their sheep and the wool only as secondary. Some of the Merino breeders in Washington county, Pennsylvania, have done this, and have got rid of wrinkles and grease, increased the size and improved the shape of their animals, making the business of rearing them quite profitable. To distinguish them from other Merinos they are given the name of "Black Tops," which does not strike me as a favorable one. Apropos of this subject, the London *Agricultural Gazette* says: "It is an extraordinary thing that in the United States, with their vast area of sheep-grazing land the flock-masters should not feel strong

enough to defy the competition of the world. In spite of the protection they have received, however (meaning by this the duties on wool), the number of sheep in the country has latterly decreased. Probably if they paid more attention to mutton and less to wool, they would find their business more profitable. The Americans are not a mutton-eating people; but they might acquire a taste for that meat if it were as good as their beef is."

There is another point which may be added to those made in our editorial last week and those set down in the foregoing. It is that compared with the business of sheep-raising in England, we in the United States have comparatively no diseases to contend with. We have the pest of dogs and wolves which they know little or nothing about; but then they have those fatal diseases "fluke," or liver-rot, foot-rot, scab, louping ill, braxy, red-water and other troubles which, outside of ranges, are little known in this country. Dogs, wolves and prejudice may be got rid of here, but the diseases mentioned will always seriously affect the sheep-breeding business of Great Britain. Let us combine against the three evils in our sheep business; pay more attention to the production of high-class mutton and the cultivation of a taste and market for it; give less attention to the production of wool at the expense of meat, and there should be a more profitable field of work before our farmers. The subject is one of great moment at the present time.—A. B. Allen, in N. Y. Tribune.

In the Dairy.

Does Heating Milk Affect the Quantity or Quality of Milk?

Below we give extracts from Bulletin No. 4, New York Experiment Station:

It is generally conceded that for best results in butter-making, where the milk is set in deep cans, the milk should be placed in the creamer as nearly as possible at the temperature at which it is drawn from the cow; there being a considerable loss of fat in skim-milk if the milk is allowed to cool to any great extent before being set.

Of late there has been considerable controversy as to whether it is advisable under any conditions to warm the milk before setting, and the limit of temperature beyond which it is not safe to go.

Mr. E. W. Stewart, in the *Country Gentleman* of February 14, 1889, in answer to a correspondent in regard to milk from thoroughbred and high-grade Jersey cows that had been in milk for a long time, and from which only a pound of butter was secured from 28 pounds of milk, says:

"It is highly probable that not more than two-thirds of the fat is obtained from this milk. If this milk were heated in a water bath to 135 deg., immediately after milking, and set in shallow pans in a temperature of about 60 deg., the amount of cream and butter would be largely increased, and the cream would churn in the same time as from fresh milk cows, and probably it would not take more than 17 to 20 pounds of milk to a pound of butter. But if the cream be raised by cold deep-setting, then it should be set directly from the cow, and the cream may be heated to 130 deg. when skimmed, and after ripening will churn much better for it and make more butter."

On the other hand we have the following report from a firm of extensive and very successful dairymen:

"We took some milk from the vat just after milking, and after stirring it

thoroughly we took two samples of exactly the same amount. One sample was scalded at 120 deg., the other without scalding, and both stood for twenty-four hours in ice water at 40 deg.; they were then both closely creamed, the cream ripened and the two samples churned, worked, and in every way except the scalding treated exactly the same. The scalded milk produced 6 pounds 11 ounces and the other 5 pounds 15½ ounces. The former was white and pasty and could not be worked into butter; it was impossible to get the buttermilk and curd out of it; the latter made a good product of marketable butter.

"We then took two samples, each of the same amount exactly, heated one to 120 deg. and left the other normal and put both in ice water the same as before for twenty hours. They were then ripened without skimming and treated exactly the same, churned the same and worked the same and in every way treated alike except the heating. The scalded milk produced 4 pounds 5 ounces and the other 2 pounds 1½ ounces. That from the scalded milk had the appearance of Dutch cheese and could not be worked into butter; it was impossible to get rid of the curd and buttermilk. The other was a very handsome sample of well-colored marketable butter. These tests were both made with the utmost care in every particular. The test of the scalded milk made without skimming showed more curd than when skimmed, and hence the large proportionate product."

We have made the following experiments intended to throw light on this important point:

February 17, 1889. The mixed evening milk of six grade Jersey cows was used. Three of the cows had dropped calves in January, 1889, two in August, 1888, and one in May, 1888. The milk was divided into four parcels of 14 pounds each and treated as follows:

No. 1 set direct from the cow without treatment at a temperature of 93 deg.

No. 2 cooled to 60 deg. with more or less stirring, strained into another can and set.

No. 3 cooled to 60 deg., as No. 2, then warmed to 93 deg. in a water bath and set.

No. 4 cooled to 60 deg., as No. 2, then warmed to 135 deg. in a water bath and set.

All were set in the same Cooley creamer with water at 40 deg. and were skimmed after setting twenty-two hours. Ten pounds of skim-milk were taken from each can. There was no perceptible difference in the bulk of cream.

The different lots of cream were then ripened and on February 21 were churned all at the same time in the same test churn.

The butter was washed in the granular state, allowed to drain thoroughly, and weighed without working or salting. The results were as follows:

No. 1, 1.03125 pounds.

No. 2, 1.1875 pounds.

No. 3, .9375 pound.

No. 4, .9375 pound.

The butter so far as we were able to judge was very uniform in quality from all the lots of cream. These results gave no confirmation to either theory. We had no pasty, cheesy butter, and the difference in weight, as we afterwards learned, was in all probability due to a varying percentage of water in the different samples of butter.

Thinking that a larger quantity of cream churned in an ordinary churn might give us results more comparable with actual practice, the experiment was repeated as follows:

No. 1, February 26, 1889, the mixed evening milk from two Jersey

cows used before. Forty-eight pounds set without treatment at 90 deg.

No. 2, February 27, 1889. Same amount of the evening milk from the same cows. First cooled to 60 deg. by pouring from can to can, then warmed to 135 deg. and set.

No. 3, February 28, 1889. The mixed evening milk of five grade Holstein cows. Three had dropped calves in September, one in August, and one in October, 1888. Forty-eight pounds of milk set without treatment at 88 deg.

No. 4, March 1, 1889. Same amount of milk from the same cows as No. 3 set in the same manner as No. 2.

In this trial all the milk was skimmed after setting twelve hours, ripened, and churned in an ordinary barrel churn. The results of the churning were as follows:

No. 1, Jersey cows, untreated, 2.15625 pounds.

No. 2, Jersey cows, warmed to 135 deg., 3.25 pounds.

No. 3, Holstein cows, untreated, 2.0625 pounds.

No. 4, Holstein cows, warmed to 135 deg., 2.25 pounds.

These results as far as they showed anything indicated the accuracy of our former work, but otherwise left us in much the same position as before. We therefore determined to go over the whole ground again, if possible, more thoroughly and more carefully than before, and to make analyses of skim-milk and the butter from the various kinds of treatment. In this trial the data were as follows: In all cases the mixed milk of five cows was used. The cows of the two breeds were the same as had been used in the previous experiments. The milk was set in Cooley creamer in which the temperature of the water was 40 deg. The cream was churned in an ordinary barrel churn. The butter was washed in granular form, drained dry as possible, and weighed without working or salting.

Then follow details of the experiment, with tables. The Bulletin concludes:

SUMMARY.

We may conclude as the result of these investigations, first, that there is a loss of butter when the milk is allowed to cool much below the normal heat of the cow before being put in the creamer; second, that while there may not be any very great increase of butter when the milk is heated there is no risk of injuring the quality of the butter by incorporating an excess of casein even when the milk is heated as high as 135 deg.

Abortion in Cows.

A correspondent of the *Live Stock Indicator* (Kansas City) gives the following in comment upon cases presented by a Mr. Benedict:

Causes.—Too much dry and indigestible food, and not free access to water when the cattle wanted to drink. It is a great mistake to suppose that cattle, if they don't drink at one time, they will at another, or whenever the herder has time to attend to them. Cattle should have water just when they go to where they expect to find it, and in cold weather they should be driven to water. If you had to drive your stock to water, were they driven in *cow-boy style*, supposing the herd to be a mixed lot of steers, old cows and heifers, great injury should result to the younger cows from such driving. You say that you "took them out as soon as they lost their calves." Just where you made your mistake. You should have removed the *others* from the inclosure where the abortion took place. I know of no cause that is likely to work greater injury, or dispose cows to abort, than the smell of the—as I may call it—unripe placenta. It causes a kind of sympathetic excitement amongst the cattle, under which they inflict great injuries on one another. An abortion

does not take place always immediately after the injury is received. Hence, it can be easily seen that several cows could be, by wrong treatment, or excitement, pre-disposed to abort at one time, or from one cause.

Prevention.—If you are compelled to pasture dry corn fields, feed your cows once or twice a week on bran. No better feed was ever given for all kinds of stock that are fed on dry corn stalks than wheat bran. But, Mr. Benedict, if you want to save your crop of calves, in earnest, have your corn cut and put up before the frost, and feed it out every day during the winter. If you do, you will, in a few years, bless this year which taught you such a lesson. Should it not be suitable to you to cut your corn, the next best plan, and a very good one it is, is to sow broadcast at least one bushel of rye per acre through the corn. This can be done from the last of August to the first of October. It don't need to be covered. Without any doubt it will give a good pasture, and act as a laxative as well as food for the cattle. It is no trouble for one man and a team to sow from sixty to seventy acres in one day. Driving over the corn at that time will cause no injury to it, as it is about ripe.

Finally, Mr. Benedict, before and after all things, have a faithful man taking care of your stock. Take my word for it, that the loss sustained by stock-raisers and farmers from *faithless, ignorant and bad tempered* employes, is incalculable. Pay a good hand well and he will pay you in return.

Shocking Accident.

So read the headlines of many a newspaper column, and we peruse with palpitating interest the details of the catastrophe, and are deeply impressed by the sacrifice of human lives involved. Yet thousands of men and women are falling victims every year to that terrible disease, consumption (scrofula of the lungs), and they and their friends are satisfied to believe the malady incurable. Now there could be no greater mistake. No earthly power, of course, can restore a lung that is entirely wasted, but Dr. Pierce's Golden Medical Discovery will rapidly and surely arrest the ravages of consumption if taken in time. Do not, therefore, despair, until you have tried this wonderful remedy.

California Excursions.

Are you going to California? If so, read the following, and find out how much it will cost you, and what you can get for your money: The *Santa Fe Route* runs weekly excursions (every Friday) from Kansas City and points west to San Francisco, Los Angeles, San Diego and other Pacific-Coast points. The ticket rates are the regular second-class rates—\$35—from the Missouri River the principal California points. Pullman Tourist Sleeping-Cars are furnished. These cars run through, without change, from Kansas City to destination. The charge for berths is remarkably low, being \$3.00 for a double berth from Kansas City to California. The Pullman Company furnish mattresses, bedding, curtains and all sleeping-car accessories, including the services of a porter with each car. The parties are personally conducted by experienced excursion managers, who give every attention to passengers, insuring their comfort and convenience. For more complete information regarding these excursions, rates, tickets, sleeping-car accommodations, dates, etc., address

GEO. T. NICHOLSON, G. P. & T. A.,

A. T. & S. F. R. R.,

Topeka, Kansas.

Moran, the great artist, despaired when he saw the Great Shoshone Falls—it was so far beyond his pencil's cunning. So there are wonderful dreams of beauty in the tempestuous loveliness of the grand "American Alps" in Colorado, which are at once the aspiration and the despair of painter and poet. Splendid beyond comparison is the superb scenery along the South Park Division of the Union Pacific in Colorado.

Correspondence.

Western Kansas.

[This is the letter of Mr. Secretary Mohler, referred to last week, the beginning of which was then quoted.]

EDITOR KANSAS FARMER:—As we pass beyond Great Bend the country lacks those finishing touches which characterize it further east, its topography is less varied, and in consequence its beauty less striking. There is, however, a grandeur approaching even to sublimity in those boundless stretches of prairie reaching out to the uttermost parts of the earth with gently gliding slopes—a picture unmarred except by an occasional homesteader of heroic blood who has planted himself there for the salvation of the country.

Such a spectacle greets our eyes as we go west of Rush county, passing through Ness, Lane and Scott, before reaching Wichita county, where an unbroken plain adorned with a brilliant robe of green lies boundless—a fair sample, I am told, of western Kansas generally. Here in this beautiful country where but a few years ago no civilized being found a lodgement, after a fierce contest in which blood flowed freely, Leoti, the county seat of Wichita county, is located.

Two well-attended sessions of the Institute were held—in the afternoon and evening. A number of leading farmers were present, the meetings were interesting and I trust profitable. In the afternoon Prof. Shelton addressed the meeting on "Silos and Ensilage," making in addition valuable suggestions in answer to the numerous questions asked. The writer gave a talk on the necessity of adopting farming operations to the character of the soil and climate where a farmer locates, and of holding on firmly to the homestead.

The evening was devoted chiefly to holding an agricultural class meeting, in which farmers related their experiences in farming in Wichita county. It was a matter of surprise to us to hear farmers with such a degree of assurance speak of the success of that county with the right kind of farming. In this the farmers all agree, that sorghum cane can be successfully grown the dryest years and that it is excellent feed for horses, cattle, hogs and sheep. The same is true of Kaffir corn, rice corn, etc. Two farmers informed me that they succeeded well in fattening hogs on sorghum, making pork fit for any market.

On the next morning we were favored with a drive into the country north of town, where we saw indications of thrift and industry, and of excellent farming not surpassed anywhere. On an examination of the soil to the depth of over two feet, we pronounced it of excellent quality—a good wheat soil, and with sufficient moisture it will be found unsurpassed for growing all crops usually grown in this latitude. Sufficient corn and more was grown last year to meet the demands for home consumption.

The point of greatest interest between Leoti and Great Bend at present is Ness City. At this place the largest sugar factory in the State is in process of erection. The mill is to have a capacity of 300 tons of cane per day and will cost \$150,000. A creamery is also located here and is in successful operation. From 600 to 800 pounds of butter are made daily. The cream is gathered for a distance of over twenty miles. Another creamery is located east of this point, at Bazine, which it is claimed is also a success. If these creameries succeed in maintaining themselves on a paying basis, they will be important factors in the solution of the agricultural problem in western Kansas. In my opinion the dairy industry, if properly conducted, is the most important, will do more to help out the average farmer in Kansas than any other industry in the State.

M. MOHLER.

From Brown County.

EDITOR KANSAS FARMER:—This spring has been early and dry in these parts. April was too dry for oats and spring wheat, which will cause the crop to be short in straw. May began with three light dry frosts, on 1st, 2d and 3d. This was followed by very strong winds and then fine rains. The first soaking rains came on the night of 16th, followed by some light showers. In several places hail did some damage. Yesterday, the 28th, we had another soak-

ing rain, over two inches fell, and thermometer came down to 44 degrees to-night. We never had a better stand of corn than this year. Prospects for fruit are also good, both apples and peaches.

The farmers of Brown county have organized a Farmers' Mutual Fire Insurance Company, believing that we can save a large per cent. of insurance cost. It took a great deal of labor to get it started. The difficulties were chiefly these: First—Many farmers had their buildings insured in Eastern companies. Second—So many farmers are suspicious, and others indifferent, or selfish, and unwilling to make any sacrifices for the success of a good enterprise. They preferred to see others successfully start it, then they would come in. The agents of the Eastern companies worked against us. The few enterprising and persevering farmers that pushed it along have finally succeeded in bringing it so far that we expect to issue policies in a few days.

In the farmer's meetings during the last year I noticed there is manifested more of a spirit of sympathy and a disposition to stick together, yet it is not near what it ought to be to insure success and equal rights to farmers. H. F. M.

Hlawatha, Brown Co., Kas.

Protection--Does it Benefit the Farmer?

EDITOR KANSAS FARMER:—In the issue of the KANSAS FARMER of May 23, you say why short crops has nothing to do with the farmers' situation is not clear, especially when the effects of the tariff is to be considered, from which I take it that you believe that protection benefits the farmer. The only way in which the tariff would affect the farmer would be if we had such short crops that we would have to import about all our grain which we would use. In such case I suppose the tariff would protect the farmer, wouldn't it? For the tariff is no tax on the farmer, but is paid by the foreign producer, so that the more goods are shipped in the less will be the amount that the people of this country will pay in taxes, so it is a benefit to have imports as well as exports. But in such a state of affairs if we had bad crops protectionists would be in favor of abolishing the tariff on wheat, corn, oats, rye, etc., as well as free traders. At present the farmer pays a tax on everything he buys. He finds that despite the great inventions in farming machinery, by which the cost of production has been greatly lowered, that he does not make as much as he did eight or even five years ago. Not only that, but he makes less year by year. A writer says we have the priceless boon of liberty. Is it liberty to pay big prices for all he wants and to sell his crops for less and less every year? Liberty to pay high prices for machinery, help, clothing, and everything else, and then to ride ten miles to town on a cold day with the remains of an assassinated hog, and then to be told that pork has gone down to 4 cents. Oh, Liberty! Oh, Protection! I have before me a document issued by the Republican committee last fall which contains the startling head-lines, "A stupendous aggregate, or a prodigious showing for the farmers." Farmers made last year by the tariff \$1,203,954,994. Oh, Lord! Do any of you farmers believe it? This would be about 33½ per cent., as the products of the farm are valued at about \$3,600,000,000 annually. Instead of crops bringing a better price, they are all the way from 20 to 100 per cent. lower than they were five years ago. Farmers are told that these low prices result from overproduction. I don't believe it. I don't believe that the Creator would ever allow overproduction, was it possible. It is just because we have shut our markets up to European goods and they to ours, under the insane idea that they were protecting themselves. There are plenty of persons in foreign countries in need of our crops and would be glad to get our surplus.

Another reason for low prices is that there is not money enough in circulation. There is now only about \$7 per capita to \$38 or \$40 twenty or twenty-five years ago. In 1886, Commissioner of Labor F. H. Betton said in a letter: "I am satisfied that 62½ per cent. is under rather than above the average rate of interest. How can farmers thrive in such a state of affairs? The farmer is told that if the tariff on cereals is not maintained foreign nations will step in and take away his home market, as they pay a lower rate of wages and consequently

there is a lower cost of production, conveying the impression that it is necessary to have a low rate of wages to have a low cost of production. In 1886, \$483,884,128 of agricultural products were exported, or 73 per cent. of the total amount of exports; in 1887, \$520,820,758, or 74 per cent.; in 1888, \$500,840,086, or 73 23 per cent. Our imports of the same articles amounted to only about \$50,000,000. How, then, could foreigners come in and take our markets when we produce much more than we consume and ship this stupendous amount abroad every year to lower wage paying countries? Is there 1,000 of you farmers who made as much clear profit as protected Andrew Carnegie did last year—\$1,600,000? Protectionist, who gets monopolies, trusts and bond-holders? In 1880, 7,670,493, or 44 per cent., were engaged in agriculture to 15.7 in manufacturing. Between 1850 and 1860, with a low revenue tariff, the gain in farming lands and personal property of the same was 60 to 66 per cent.; from 1860 to '70, high protective tariff, 11 52 per cent.; 1870 to '80, protective tariff, 36 per cent.

Through all protectionist arguments runs the assumption that pauperism is the natural condition of labor to which it must everywhere fall unless benevolently upheld by protection, and labor is falling under protection. To admit that labor needs protection is to acknowledge its inferiority; it is to acquiesce in an assumption that degrades the workingman to the position of a dependent. There is something in the very word protection that ought to make workingmen cautious when accepting anything presented to them under it. What is labor that it so needs protection? Is not labor the creator of capital, the producer of all wealth? Is it not the men who labor that clothe and feed all others? Is it not true that the three great orders of society are workingmen, beggars and thieves? How, then, does the workingman alone need protection? Instead of accepting protection, what labor should demand is freedom. Can the road to the industrial emancipation of the masses be by any other than that of freedom? Osage City, Kas. J. E. BREWER.

What Ails the Farmers?

EDITOR KANSAS FARMER:—I have just found out what has caused the hard times that are now prevailing all over the United States. Mr. Cunningham, of Larned, told me a few days ago, and I think he must know as he is a merchant and has lived here in Larned a number of years. He says it is all owing to the extravagance of the farmers and I think it must be so. He says that if a farmer has a shovel plow and goes to put out a field of corn he goes right off and buys a cultivator and has both on hand, and if he has a crop of grain to harvest and twine comes up he will go and buy a header, even if he has a self-blinder. And another man says yes, and the farmers must have buggies and spring wagons to ride to town and to church, and such extravagance would bankrupt any community.

Now, farmers of Kansas, we will admit Mr. Cunningham's reasoning to be correct, because he is from old Kentucky, and what they do not know is hardly worth finding out. But my opinion is that it is just about as thin as the supply and demand argument that we hear on the street. First, they say we have nothing to sell, and the next breath to the next door man is over supply. If all this is true we Kansas men will have a great deal to answer for in the next world for bringing such a calamity on the people of these United States. But my humble opinion is, although these men do know a great deal (in their opinion), that what they do not know would make a larger book than what they do know and would be far more interesting to read. We have nothing to sell, so say the wise men. Wagon loads of corn pass my place daily, from six to ten loads a day, and sells at 25 cents. Wheat, I am told to-day, is 40 to 50 cents. Hogs (fat) are bringing 3½ cents, fat cattle are selling at 2 to 3 cents for the best, mutton sheep 2½ cents per pound. Butter is 8 cents and eggs the same. No sale for hay, except on trust, because it is consumed in the town. Cows and work stock cannot be sold at any price for cash. Smoked meat is said to be worth 12½ cents in trade or trust. I managed to trust out some the other day. Now these wise men say, if the farmers can only get a good crop. Well, what then? If we cannot sell a poor crop, what will be-

come of a good crop? Why certainly it will bring a boom and a new emigration—of tenderfeet to be fleeced by these same suckers.

Brother farmers, would it not be a better way to quit raising anything except what we want to eat and wear, until this surplus gets worked off, or until we get a little more money in circulation? But then they say there is as much money as ever, and we ask where is it? Oh, they say, in the national bank at 2 and 3 per cent. per month if you can put up good collateral. But then, here is more news. There is in the county adjoining a small organization of farmers who have combined and sent to Chicago for their goods, and after paying freight and expenses their goods cost them 51 cents on the dollar as purchased here. That is quite a saving, and these men can soon buy another cultivator. But the thing will have a bad influence. Don't you think they ought to patronize their home merchants, so they can ride in buggies and the farmers use the shovel plow and bull tongue, and ride in the cart? W. J. COLVIN.

Larned, Pawnee Co., Kas.

Shall We Raise Our Own Sugar in the West?

EDITOR KANSAS FARMER:—One of your old correspondents comes claiming a recognition for Auld Lang Sine. I have been for years a contributor to your columns, but for some time past I have not seen the face of my old friend, and I have neglected it, for your paper I have always considered the best, most faithful and truest friend of the farmers, not only of Kansas but for the whole West. There are not many of the agricultural papers that have stood up so boldly and manfully for the rights of the Western farmer. May God give you strength and grace to persevere to the end.

But I wish to address the farmer readers of your paper on a subject of vital interest to them. Can we raise our own sugar and supply the home demand? Yes, we can. Then, why don't we do it? It depends on the manhood and independence of the farmers themselves. For over twenty-five years we have been raising the sorghum or Chinese sugar cane, and in your State it has been a given-up fact that you can raise more sugar to a ton of cane and a larger yield of sorghum juice than they can obtain from the sugar cane raised and manufactured in Louisiana. Now, many who don't investigate this question properly accept the conclusions set down by a hireling pup that sugar-making won't pay so far north. But this has been proved erroneous, as it paid well to make molasses of an inferior character when only 45 per cent. of juice could be obtained from the old-fashioned roller mills; but now that 95 per cent. is obtained through the diffusion process and the seed alone is sufficient to pay for the cultivation and the leaves all saved for fodder, it is the best and most profitable crop that the farmers can raise. The beauty of it is, the farmers hold the market, as it will take long years to supply the home demand. No boards of trade can corner it, no transportation companies absorb all the profits. But in respect to the profit of raising sugar from the sorghum, you are far better posted than I am, only I feel it is one of the coming industries. Beet-root sugar can be made all over the West if the farmers had only the manhood and independence to combine and produce it. Just reflect; there is over 56 pounds of sugar consumed by every man, woman and child in a year in this country, and we are importing and paying to sugar trusts four times what that sugar costs when manufactured in Germany and France. Is it any wonder that we are the heaviest-taxed and worst-represented element in our nation? We are fast drifting into serfdom and bondage, and the farmers, that ought to be the most independent class in the nation, are at the mercy of the monopolists and money-lenders. Rings, trusts and syndicates rule the nation and not a single farmer to be found in the Cabinet, Senate or House of Representatives. I would here propose a few important changes in our form of government. No Electoral College, the President to be elected by a majority of the voters, no American House of Lords, the Senate ought to be abolished as coeval with the old stage coach, the abolition of the grand jury—it did very well in the days of King John, when a commoner dare not access of a crime except secretly, reform in

our courts and a majority verdict by the jury, courts of conciliation where gasey lawyers could not occupy the time and clog the wheels of Justice.

But I am afraid you will condemn this if I make it too long, so shall conclude with best wishes for your paper as a truly independent journal devoted to the best interests of the farmers. There are a great number of farm journals, but few of them take the same independent course you do, and the farmers ought to understand their best interest lies in supporting you. From your old correspondent.

SAMUEL SINNET.

Muscataine, Iowa.

Oppression of the Farmer.

EDITOR KANSAS FARMER:—In your editorial "Why Farmers are Poor," you say—

"Farmers are doing quite as well as other persons who are no better situated. There has not been much money-making anywhere or by any class of people the last five years. Farmers have been systematically bled by corporations and gamblers, but they are no worse off in that respect than working people of all classes. Prices of articles in common use as coal, sugar, coffee, oil, etc., affect all classes of consumers alike, whether they raise wheat or build houses.

You say farmers are doing as well as other persons no better situated. This is true, but farmers should be situated better. As you imply the tendency of society for a number of years has been to degrade farmers and the science of agriculture. To reduce the tillers of the soil to the level of the peasantry of Europe, and the ordinary laboring classes of this country. True the distinction between the occupant of a farm mortgaged to an eastern capitalist for about all it is worth and the ordinary farm tenant of England exists chiefly in name. In both cases the aristocratic (!) classes absorb the largest share of his products. But the American farmer, if properly compensated for his labor would occupy a position equal to that of persons engaged in mercantile life. "There has not been much money-making anywhere or by any class of people the last five years." It is evident that you have not heard from the east recently—of the millions of dollars that have flowed into Boston in the form of interest money and dividends on stock in copper mines, etc., until money is so plenty the owners do not know how to invest it; or of the enormous fortunes which the merchants of New York and eastern cities have made; of the unprecedented increase in the value of certain real estates. The fact is, there has never been anything like the money made in any previous years as has been made by the eastern manufacturers, merchants and capitalists during the last five years. I have an uncle who has made \$12,000,000 in the manufacture of wollen goods since 1884. The wealthy manufacturer or the mechanic who get \$5.00 per day or \$1500 for building houses use very few more of the necessities of life than the farmer who frequently does not get over \$500 per year for his labor. In the one case the price of coal, sugar, coffee or oil make no great difference, because such items are an insignificant part of the family expenses, while in the case of the farmers the increased price of these necessities amount to a tax which absorbs about all his profits. The wealthy classes of the east are constantly worrying as how to invest their surplus millions, while hundreds of millions of dollars lie idle in the treasury, yet farmers everywhere are being ground down to the level of the laboring classes.

If any one doubts that the present system is enriching the few at the expense of the many they need only visit some of the larger hotels of our cities and then go out among the farmers and note the contrast in the style of living. One of the worst features about it is the contempt which the aristocratic (?) classes have for the ordinary farmers. Even the mechanics and factory hands join in the hue and cry against "old hay seed." It is time to call a halt and make a settlement. The farmers have rights as well as the manufacturers.

Pearsalls, N. Y. J. H. GRIFFITH.

Notes from Western Kansas.

EDITOR KANSAS FARMER:—There is so much misrepresentation and exaggeration being made about the climate and agricultural possibilities of western Kansas, that I think it is about time for some one to rise and endeavor to correct all the false reports in circulation, not by mere talk, which would have no weight with the prejudiced

reader, but by substantial and palpable proofs. Only a few days ago, I read a long article in which that part of Kansas west of the 100th meridian was included in the arid regions of the United States. As a resident of Greeley county I wish to strongly protest against such an assertion. This is the fourth summer I have resided in Greeley county, and the only crops that failed thus far were those that were not sown.

I send you specimens of rye, wheat, lettuce, red clover and alfalfa, the two last named being from seed sown last year. I could send you samples of almost all known vegetables or field plants, but I think those will suffice to show you what this county can do. Potatoes do here most exceedingly well. The trouble with the farmers out here is that they want to cover too much ground. A man with a team talks of putting in not less than eighty acres of crop. Of course, he can plant that much, but when the time comes for him to give to his crops proper cultivation, he soon sees that he has undertaken beyond his power, and most of the crops receive no attention. If we add to this that the country is almost entirely new, only half tamed, you will be surprised at the result.

A friend of mine, living in Cowley county, who was here last week on a visit, exclaimed: "Why, we folks of Cowley county, where we claim to have the best land, the best climate and the best atmospheric conditions for agriculture, we could not raise beans with so little care as farmers use here."

It is true we do not have floods and other aquatic casualties, but the composition of our soil is so perfect and so well adapted to the climate that crops planted in deeply plowed fields with good cultivation show no signs of withering even after a lack of rain for 100 days. The surface may be dry, but the ground is always damp and moist.

EUGENE TILLEN.

Belgica, Greeley Co., Kas.

[The specimens arrived safely. The rye is over three feet tall, the wheat two and a half feet, both well headed. The alfalfa is ten inches tall with tap root fifteen inches. The lettuce is very fine. The clover is nicely headed.—EDITOR.]

From Wichita County.

EDITOR KANSAS FARMER:—I am a homesteader here in western Kansas; have been here about three years, and I and my family are still determined to receive the full benefits of the homestead law and make this our future home. Thus far our expectations have been quite fully realized. I am not one of those who have enough of this world's goods to make life an idle one, but yet there are as many days in a year for me as any one else, and I am endeavoring to make good use of them. I am cropping about 100 acres to a mixed crop of many kinds. Have only one team, and thus far have not had the aid of a single day's hire. If a man will only go to work when he gets up in the morning he may accomplish much.

Our soil was in excellent condition this winter, and thus far we have been exceedingly well blessed with rains, and during the past two weeks have had very heavy rains, which have not caused the destruction that some Eastern papers report, although during the rain last Thursday afternoon some destruction to wheat and rye was caused by hail in the vicinity of the Hackberry along the northern boundary of the county. The Beaver is another stream of untold advantage to us, and the Fish Commissioner has offered to supply it with different varieties of fish which will surpass those already in the stream.

Major Sims, ex President, and M. Mohler, Secretary, State Board of Agriculture, and Prof. E. M. Shelton, of the State Agricultural college, made a tour through this part of Kansas last week, stopping off at Leoti, and accepting a drive over our beautiful country.

Farmers in this county are wide-awake to the best interests of the people and are at work with a determination to accomplish good. The alliance is at work with zeal. The Plowman's Brotherhood is an organization lately organized and has a good work to do separate from the alliance. We also have a Farmers' Institute that meets monthly, and although it is only a few months old yet it has accomplished much by the reading of papers and general discussion

upon the different agricultural pursuits, thereby associating the different ideas of experienced ones. Occasionally we find a farmer who looks upon such meetings as a waste of time, etc. He who is of such opinion ought to become as a little child and receive another training; for in order to demand and get our rights, educate and protect ourselves, we must intermingle and associate together in organization.

Many times since I have been taking your valuable paper, which is such an indispensable factor to the successful farmer, I have remarked that I never took a paper that I felt so well pleased with as I did with the KANSAS FARMER, and it was while reading the correspondence in it that I was prompted to write the above, so grabbing my pen I went at it thinking possibly it might interest the FARMER readers. It is a fact, fellow readers, that I cannot and never can tell just how great an advantage the FARMER has been to me.

SUBSCRIBER.

Leoti, Wichita Co., Kas.

A Good Time.

EDITOR KANSAS FARMER:—After the corn and potatoes are laid by, the wheat, oats and hay all harvested and stored away, the principal work to be done is the preparing of soil for fall seeding of wheat and grass. There ought under ordinary circumstances to be some time at least that needed improvements can be made. It is often the case that with a little work in this way will add not only to the appearance but often to the convenience of the farm. There is no better time to dig wells or cisterns, to put in tiles for draining, to dig cellars, to clean out fence corners or waste places, cut off sprouts, erect buildings that may be needed, or do many other items of improving that need not cost a large amount of outlay but at the same time can be made profitable. In many cases whatever can be added to the farm in the way of improvements or conveniences can be looked upon as money laid up, as it is adding that much to the value of the farm. Even when it is desired to sell out and make a change it will pay as much as possible to keep everything about the farm neat and in good order, and a little time spent in work of this kind can be made very profitable. In a great many cases it is those who are dissatisfied with farming, that complain that it does not pay, that it is a continual round of work with no opportunities for enjoyments, that are the least careful in keeping up the farm as it should be done. Often a comparatively small matter if attended to at once will be easily repaired, but if left soon grows to be a considerable item of work, and often farmers will go without wells, cisterns or cellars for years, and then if they get one will wonder how they managed to get along so long without. And the probabilities are that in many cases they could have had them nearly or quite as readily at first as at last and had the benefit all this time. Fence corners are allowed to grow up in weeds, presenting an unsightly appearance and increasing the work of giving clean cultivation to the growing crops, when a little work would have cleaned up and seeded to grass, making them present a neat appearance and being at least no expense if not a profit. While it is of course possible to go to an extreme and spend more for improvements than is good economy, at the same time on many farms there is considerable room for improvement that can in many cases be done at a small expense.

N. J. SHEPHERD.

Eldon, Miller Co., Mo.

Gossip About Stock.

In the article, "Feeding Pigs—108 Pounds at 100 Days of Age," in our issue of May 30, the amount should have been 101 pounds.

N. H. Gentry, of Berkshire fame, Sedalia, Mo., writes that he sold by telegraph the Berkshire boar, Model Duke 18397, to Andrew Smith, San Francisco, for \$750.

Mrs. Viola W. Griblin, Virgil, Kas., who has been running a Breeder's Card in this paper, writes, asking us to discontinue it, as "it brings more orders than I can fill now, but hope next season to be able to keep it in your paper the entire season. We have had more rain this season than for eight years, the streams rising so as to carry off fences, hogs, etc. One man lost thirty-five hogs."

The dairy industry in Kansas is moving forward rapidly and considerable activity is manifested in the sales of Holstein-Friesian

and Jersey cattle. We should like to receive during the next two weeks a list of breeders of dairy stock as well as a complete list of creameries and cheese factories in every county in Kansas. Will our correspondents and readers favor us with this information at once?

G. W. Berry, Barryton, Shawnee county, writes: "The demand for my Berkshires is now better than ever before, and many of my sales have been to parties who read the 'old reliable' KANSAS FARMER. Queen Betsy XV., the largest sow of any breed exhibited at the Kansas State Fair last year, is due to farrow June 7. She is bred to Volunteer, a pig of the famous boar Longfellow. Queen Betsy XV., weight 800 pounds, is perhaps the largest brood sow in the West and she is a very fine show animal."

Hundreds of carloads of horses have been shipped from Kansas to the East during the winter and spring and are still in good demand. It costs no more to raise a good horse than it does the "plug," and the former is always in demand at the top of the market. It pays to breed to a good stallion, even if it costs more. If there is no suitable stallion in your neighborhood, co-operate with a few neighbors and then go personally to some reliable breeder or importer and select one. Life is too short to waste time and money in breeding to inferior stallions.

A Neat Machine.

The cut on the first page of this issue of the FARMER fully illustrates the subject of this article—the Lightning hay press, made by the Kansas City Hay Press Co., Kansas City, Mo. After years of experience and hard study this company has succeeded in perfecting a machine whose excellence is seldom equaled and never excelled. Where the metal part of the machine was formerly made of cast-iron, plate steel is now used in all cases, which not only serves to strengthen that part of the press most subject to strain, but reduces the weight very perceptibly.

A new tucker has been adapted which laps or folds the hay down in front, making a smooth, solid bale, adding much to the appearance of the bale, which is not only pleasing to the eye, satisfactory to the baler, but at the same time increases the market value of the hay so baled. Hundreds of first-class testimonials are pouring in from all parts of the country testifying to the superior qualities of the Lightning hay press. Not from Kansas and Missouri alone do these voluntary tributes come; California, Oregon, Washington, Montana, Wyoming, Colorado, Utah, New Mexico, Texas and Dakota have added their mite, while Illinois, Wisconsin and Michigan for the East, and Alabama, Louisiana and Mississippi for the South, have not failed to evince their appreciation of this triumph of modern mechanism. As our space will allow of only a very brief review of the subject, we will suggest to those interested to write the company for full descriptive circulars and testimonials.

Publishers' Paragraphs.

The Marion County Agricultural Society will hold their fair at Peabody, October 2, 3 and 4, 1889. M. I. Hill, Secretary.

E. M. Gale, Secretary of the Plainville Agricultural Society, announces that the next fair will be held at Plainville, September 24-27 inclusive. It will be a good one.

C. Fowler Wells, of New York, writes as follows: "I like your paper and think every Kansas farmer ought to be a paying subscriber and reader and would get a dollar's worth of practical knowledge from every weekly issue."

Our advertising agents, The Edwin Alden Co., have moved their Cincinnati office to 248 Race street, and added a photo-engraving department, where in a brief period of time and at a small cost advertisers may receive illustrations for insertion in the newspapers.

Those of our readers desiring wind-mills, pumps, tanks and water supplies, should consult the advertisement in this issue of Searles Bros. Mill and Pump Co., Atchison, Kas. They handle the Monitor mills, which the writer heartily endorses, for deep wells especially, having had one in use on his farm for several years.

NEW ADVERTISEMENTS.

Elliott, R. E. Free Reading.
Fritch, E. H. Southwestern Bus. College
Gepfert, Con. For Sale.
Stanton, H. H. For Sale.
Searles Bros. Monitor Wind Mills.
True & Co. \$30 Sewing Machine.

The Home Circle.

To Correspondents.

The matter for the Home Circle is selected Wednesday of the week before the paper is printed. Manuscript received after that, almost invariably goes over to the next week, unless it is very short and very good. Correspondents will govern themselves accordingly.

Betsy's Idea.

BY SUNFLOWER.

Well, I was only a-thinkin', Tom,
How very few folks there be,
In all this wide world of ours,
From false witnessing are free.
An' the more I think 'bout it, Tom,
And of the kind Father above—
Do you s'pose He thought we'd remember
As ourself our neighbor to love.

I think we have all read it over,
Or heard it was in the Good Book,
But somehow or other we forget it,
It seems so easy t' overlook.
But if we'd only think about it
How happy we'd be here below,
If we'd obey that blessed command
The world would be better, we know.

If we can not speak a good word,
We'd better not speak at all,
For there's grief and sorrow enough here
On this terrestrial ball.
Sometimes we feel like pickin' flaws;
Then we'd better be unseen,
An' take the Good Book all alone
An' read of the mote an' beam.

O, why do we care to listen
To gossiping tongues or to strife?
It only lessens joy of the world
An' throws thorns in the path of life.
Every one has his faults, it's true—
We, too, have them as well;
But all we happen to hear, Tom,
We have no right to tell.

I've heard it said by more than one,
That actions louder than words speak,
And in it there's lots of truth, Tom;
And if we'd endeavor to seek
To give a kind word of sympathy
Or a smile to folks as we go,
There'd be less of sorrow and woe, Tom,
Through the journey of life below.
Wakarusa, Kas.

Babyland.

There's a wonderful country we all of us
know
Where the strangest things talk, and the
queerest things grow,
Where the Fairies and Brownies guard every-
thing nice
And delight the small children with charming
advice,
Where there's nobody rich, yet there's no-
body poor,
For all are content, light of heart and secure,
And the name of this country, where all these
things be,
Is innocent Babyland, land of the wee.

I lived in this Babyland, long years ago
(We all of us live there at some time, you
know),
But somebody kept me one morning from
play
And took me to school, as they called it, that
day.
I sang as I went, for I guessed nothing then,
And thought myself wise with my book and
my pen.
Ah! little I knew as I danced on in glee
That I had left Babyland,—land of the wee.

They taught me to read, and they taught me
to write,
They filled my head so that it thought in the
night;
I wanted to go back to Babyland then
And have no more bother of thinking again.
But try as I would to remember the way—
'Twas lost, and forgotten forever that day,
For none may return once they leave it, and
see
Their innocent Babyland, land of the wee.

Oh, little folks living in Babyland now,
Sing with the birds as they sing on the bough,
Dance with the blossoms that dance at your
feet,
Laugh with each other wherever you meet,
Sleep, and in dreaming know naught of the
care
Kept far away from your Babyland fair;
Know that our happiest hours must be
While you are at play, in your land of the wee!
—Good Housekeeping.

Topeka Sketches.

Dear Home Circle: Yes, I'm here, in the capital city. How is it I am here? Well, because I have that most unfortunate of fortunes to be the wife of an inventor. You who live in the remote counties from the capital little dream what a large acreage it covers, or of the thousands of people who fill its great thoroughfares every day. I intend to tell you all I can about it, but not all in one letter, so if there is anything special any of you wish to know about it, ask, and I'll try to answer.

There is an art school here, with a public

library included. Yesterday there was an annual exhibition of the students' work during the past year. I went to see. The building is two stories, and surrounded by a handsome lawn, tall trees, velvety grass, graveled drives, where carriages were continually coming and going with visitors to see the free exhibition. As you enter the walk you see a poster which requests you to keep off the grass. At the doorway are other posters requesting you to "not smoke in the hall" and to "leave your dog outside." Having neither affliction or infirmity, I proceeded. Entering you will see on the walls engraved copies of pictures from many of the old masters. These continue up the stairway and on to the hall, where the original Kansas work is on exhibition. There is no industrial art work, only what is termed fine art—paintings in oil and water colors, crayon, etc. There were but two classes of work—flowers and portraiture, all of which were very natural. There were hundreds of them, and in a short round one could not presume to decide on the different grades of work. All seemed aspiring to the natural, which if attained is the highest degree of art. I was much disappointed that there were no landscape paintings, as that is my favorite class of painting, and I hoped to glean some ideas. I do not know why this class of art is not included. Perhaps our editor can tell and also give us a brief history of how the art school was instituted. It is a grand institution and will give to portrait painting an impetus that will leave its footprints on the centuries to come. The art school is close by the State Capitol. Some day I will go there and tell you all I can about that. My new home is just three miles from the Capitol building, yet it is in Topeka; so you can imagine what a city it is.
M. J. HUNTER.

Diphtheria from an Unnolean Cellar.

"I could not understand why that entire family of seven children should be stricken with putrid diphtheria till I had occasion to go into their cellar," a friend said who had been summoned to help care for the sick and dying children of a neighbor.

"We always thought the Wrights, with their trim, whitewashed fences and out-buildings, their neatly-kept dooryard and garden, the evident constant warfare against filth and slatternliness in any form, the most intelligent and cleanly of families in our community, and I wondered what possible breeding place for malignant diphtheria could lurk about that home, till I went into the cellar. When I opened the stairway door a horrible stench of decaying vegetables and tainted brine rushed up from the unventilated, loathsome pit below, that they call cellar. The air was so heavy with mold and stagnant impurities that the flame of the candle I carried flickered and lapped over, as though a weight had been laid on it.

"Hardly had I stepped from the bottom stair, before my feet struck a slippery, slimy chute of rotten pumpkin, and I went down into the dreadful mush that sent out its pestilential whiffs from the very depths of its putrefaction. The candle still burned, and after hastily rising from this unexpected tobogganing across the cellar bottom, I held the sickly flame high and low, scanning well that breeding nest of diphtheria and other fearful germs, before cutting the slices of salted pork for which I had been sent to bind upon the poor little, swollen, choked throats upstairs.

"Walls, green with mold and fungi; decayed and decaying vegetables everywhere; a slosh of rotted apples oozing their pungent juices from the bleated staves of a dozen barrels; a great bin of frozen, then thawed, potatoes, that to stir meant development of gas, powerful enough to run on electric plant, if odor is power. Under the stairs a heap of pumpkins had been stored in the late autumn, that decaying blot—months before—had holsted and rolled apart, some of the mushing, sliding spheres falling directly in the pathway and making the slippery chute that had unbalanced and mired me; and in every corner putrefying stacks of turnips and cabbages sending out their penetrating, loathsome breaths.

"The cellar was as dark as a coal pit, the little three-pane light under the dining-room windows being buried under the winter banking that late May still found uncovered. The gases and stagnant air, thick with dreadful odors and disease germs,

had no outlet of escape from the cellar only by stealthily filtering through every possible cranny and seam of the heavy timbered ceiling into the living and sleeping rooms overhead, and by strong rushes up the stairway whenever the opening cellar door stirred a current upward."

And still those parents wondered why their seven young children, whom they thought to cherish and protect from every harm, should be stricken with diphtheria, and called it one of the most mysterious of God's providences when they were called to lay two of their darlings under the sod.—*Clarissa Potter, in the Housewife.*

Let the Girls Romp.

Most mothers have a dread of romps, so they lecture the girls daily on the proprieties, and exhort them to be little ladies. They like to see them very quiet and gentle and as prim as possible. The lot of such children is rather pitiable, for they are deprived of the fun and frolic which they are entitled to. Children—boys and girls—must have exercise to keep them healthy. Deprive them of it, and they will fade away like flowers without sunshine. Running, racing, skipping, climbing—these are the things that strengthen the muscles, expand the chest and build up the nerves. The mild dose of exercise taken in the nursery with callisthenics or gymnastics will not invigorate the system like a good romp in the open air.

Mothers, therefore, who counsel their little girls to play very quietly make a mistake. Better the laughing, rosy-cheeked, romping girl than the pale, lily-faced one, who is called every inch a lady. The latter rarely breaks things, or tears her dresses, or tires her mother's patience as the former does; but, after all, what does the tearing and breaking amount to? It is not a wise policy to put an old head on young shoulders. Childhood is the time for childish pranks and plays. The girls will grow into womanhood soon enough. Let them be children as long as they can. Give them plenty of fresh air and sunlight, and let them run and romp, as much as they please. By all means give us hearty, healthy, romping girls, rather than pale-faced little ladies, condemned from their very cradles to nervousness, headache and similar ailments.—*Farm and Manufacturer.*

How to Act at a Fire.

In a lecture before the Society of Arts, London, Mr. A. W. C. Ghean gave the following concise and simple directions how to act on the occurrence of fires: Fire requires air; therefore, on its appearance every effort should be made to exclude air; shut all doors and windows. By this means, fire may be confined to a single room for a sufficient period to enable all the inmates to be aroused and escape; but if the doors and windows are thrown open, the fanning of the wind and the draft will instantly cause the flames to increase with extraordinary rapidity. It must never be forgotten that the most precious moments are at the commencement of a fire, and not a single second of time should be lost in tackling it. In a room, a tablecloth can be so used as to smother a large sheet of flame, and a cushion may serve to beat it out; a coat or anything similar may be used with an equally successful result. The great point is presence of mind, calmness in danger, action guided by reason and thought. In all large houses, buckets of water should be placed on every landing, a little salt being put into the water. Always endeavor to attack the bed of a fire; if you cannot extinguish a fire, shut the window, and be sure to shut the door when making good your retreat. A wet silk handkerchief tied over the eyes and nose will make breathing possible in the midst of much smoke, and a blanket wetted and wrapped around the body will enable a person to pass through a sheet of flame in comparative safety. Should a lady's dress catch fire, let the wearer at once lie down. Rolling may extinguish the fire, but if not, anything (woolen preferred) wrapped tightly round will effect the desired purpose. A burn becomes less painful the moment air is excluded from it. For simple burns, oil or the white of egg can be used. One part of carbolic acid to six parts of olive oil is found to be invaluable in most cases, slight or severe, and the first layer of lint should not be removed till the cure is complete, but sat-

urated by the application of fresh outer layers from time to time. Linen rag, soaked in a mixture of equal parts of lime water and linseed oil, also forms a good dressing. Common whitening is very good, applied wet and continually dampened with a sponge.

Good Things From Our Exchanges.

It is in youth that the spirit of truthfulness may best be cultivated. Few realize how strong are the impressions made upon the heart of childhood by the examples which are given to it. Let no one imagine that to teach a child not to tell a lie is sufficient to make him really truthful. He must be imbued with the love of positive truth; and that can be infused only by those who are themselves inspired by it.

No cosmetic, however well advertised, removes freckles. It may temporarily hide them, but it will be at the expense of the texture of the skin. A lotion of Jamaica rum and lemon juice is frequently effective, but strawberry juice applied at bedtime is decidedly the best, both for freckles and those annoying moth or liver patches. Strain the berries through a thin cloth and apply two or three times before going to bed. This is excellent for sunburn or redness of the skin, as well as for discoloration.

The modern ideal home is just as much an intellectual and emotional work as an essay or a poem. A book is a collection of thoughts. Such also is a dwelling house, and the woman who has in some degree fashioned it is as much an intellectual creator as is the masculine toiler whom we call an essayist or poet or dramatist. While, therefore, the new home of our age is the result of the great and free woman, it is also the cause and has made woman the possessor of an intellectual power which she could not claim in the cabin and tent period. The house has helped to create the new woman.

The better hygiene you can observe for the first eighteen months of baby's life, the better chance the child has of living. A slight ailment, such as a cold, a little irritation of the bowels from solid food, may be the match to gunpowder, and another life is chilled in the budding, another home is made sorrowful that else would have been happy. It is a fallacious idea that a young child needs anything but milk, if that agrees, until the teeth are present in numbers sufficient for masticating food. Even soft foods often work mischief. Starchy foods need ptyaline for their digestion; this is a chemical ingredient of the saliva, but infants have very little saliva and less ptyaline, therefore the custom of giving potatoes, crackers and so on, during the early months is pernicious. While it may not harm nine out of ten, the tenth one may die.

Death to Bed-Bugs.

Benzine finely sprayed with a hand atomizer will penetrate the minutest cracks and is sure death to the bed-bug in all its stages, including the egg. It is a certain remedy and used thoroughly will destroy every bug in a house. Kerosene is almost as good and is a little more lasting in its effects. Many preventives have been advised but none are permanent. One of the best formulas for a substance with which to paint the cracks in a bedstead or the wall is one ounce corrosive sublimate, half pint alcohol and one-quarter pint spirits of turpentine.

There are always beginners and inexperienced persons to be informed; otherwise it were supererogation to advise the experienced housekeeper to pay particular attention to the belongings of new servants and even to the baggage of refined and cleanly guests who come from the South or West and have stopped on the way at hotels. Indeed we feel that little of a practical nature can be written of this insect that experienced housekeepers will not know already. It may not be out of place, however, to say that the bed-bug has been found in the woods under the bark of trees and that therefore in country houses in certain localities the occasional presence of the bugs is not necessarily a mark of uncleanness.

It may be well also to state that there exist other allied bugs which possess much the same odor and whose bite is even more severe than that of the true bed-bug. The blood-sucking conenose (*conorrhinus sanguisuga*) is one of these. It is found occasionally in beds as far north as New Jersey and Illinois, but does not habitually breed in such locations. Its bite is very painful and it will absorb a considerable amount of blood.—*Good Housekeeping.*

FOR A DISORDERED LIVER TRY BEECHAM'S PILLS.

The Young Folks.

Songs Unsung.

Sweet the song of the thrush at dawn,
When the grass lies wet with spangled dew,
Sweet the sound of the brook's low whisper
Mid reeds and rushes wandering through;
Clear and pure is the west wind's murmur
That croons in the branches all day long;
But the songs unsung are the sweetest music
And the dreams that die are the soul of Song.

The fairest hope is the one which faded,
The brightest leaf is the leaf that fell;
The song that leaped from the lips of sirens
Dies away in an old sea-shell.
Far to the heights of viewless fancy
The soul's swift flight like a swallow goes,
For the note unheard is the bird's best carol
And the bud unblown is the reddest rose.

Deepest thoughts are the ones unspoken,
That only the heart sense, listening, hears,
Most great joys bring a touch of silence,
Greatest grief is in unshed tears,
What we hear is the faintest echo,
A song dies out, but a dream lives on;
The rose-red tints of the rarest morning
Are lingering yet in a distant dawn.

Somewhere, dim in the days to follow,
And far away in the life to be,
Passing sweet, 's a song of gladness,
The spirit chant of the soul set free.
Chords untouched are the ones we wait for,
That never rise from the harp unstrung;
We turn our steps to the years beyond us,
And listen still for the songs unsung.

—Ernest McGaffey, in Nebraska State Journal.

For God has marked each sorrowing day,
And numbered every secret tear;
And heaven's long age of bliss shall pay
For all His children suffer here.

—William Cullen Bryant.

DEALERS IN OLD SHOES IN LARGE CITIES.

A sharp-looking, well-dressed man sat in the Bingham house smoking a cigar and reading a newspaper.

"That's the biggest man in his line of business in this country," said the clerk, indicating the sharp-looking man by a rapid motion of the eye.

"And what is his business?"

"Second-hand shoes, and there's big money in it, too, I can tell you."

On being judiciously approached the sharp-looking man proved affable and communicative. "I imagine," said he, "that few people have any idea of the extensive trade that is annually done in second-hand boots and shoes in this country. I suppose you think, as most people do, that none but the very poor people would condescend to wear the left-off shoes of other folks. In all cities and large towns you may notice shops for the sale of second-hand boots and shoes. At some time or another, I dare say, you have had a shabby-looking man call at your house and inquire if you had any cast-off shoes to sell. If you have ever given the matter a passing thought, no doubt the shabby man and the second-hand shoe store are connected in your mind. You conclude that the itinerant purchaser of cast-off footwear sells the result of his day's tramp to those who keep the second-hand shoe shops, and that from that source alone he derives his supply.

COLLECTOR AND CUSTOMER.

"Nothing of the kind, sir—nothing of the kind. The few people in my line of business—for, thank goodness, our trade is not as yet quite as overcrowded as most others—furnish a vast majority of the second-hand shoe stores with their goods. The headquarters of my firm is in New York, and as we are the biggest people in our line, nearly all the collectors in that city and for miles around bring the best of the contents of their daily 'bags' to us. It's no use bringing the rubbish, as they know we don't handle it. We keep bred 'examiners'—men who know all about shoes worth knowing—and they earn every dollar we pay them in examining shoes and boots from 8 a. m. to 6 p. m. every day of the week except Saturday.

"In this way we buy from 1,000 to 2,500 pairs a day. The best of these, say about one-half, are cleaned, paired and go into stock, classified in qualities and as nearly as possible in sizes. The remainder go into our repairing department, where they are resoled and heeled, and subsequently nearly all exported. We have also collecting agents, not buyers of private people, but agents who purchase on our account from the 'collectors' here in Philadelphia, Boston, Baltimore, Chicago and a few other cities. From these sources we gather about as many as we do in New York. All the country stuff is treated the same as that which comes to us direct from the 'collector.'

"Altogether we do a pretty extensive busi-

ness, sending out daily more boots and shoes than most of the manufacturers, but then, you see, there are not a dozen people in our business, all told, and shoemakers, wholesale and retail, are numbered by the thousand. We never buy a shoe that has the slightest cut or crack in the uppers, as this would necessitate patching, and the sort of people who buy high-priced second-hand shoes would not look at a disfigured pair. Still these have a marketable value and the collector can give a quarter for a slightly cracked pair and resell to the 'restorer' or dealer in much worn second-hand shoes at a profit, and he will retail them at a profit of from 75 cents to \$1.50 after he has fixed them up. Of course this sort of stuff is only patched up, it don't pay for resoling and heeling. We only deal in men's shoes. There is no market for second-hand women's footwear of good quality. You cannot get the ladies to wear left-off shoes anyhow. You might as well ask them to wear second-hand gloves or discarded 'bangs.'"

THE TRADE IN PHILADELPHIA.

In this city the retail trade in second-hand shoes of fine grade and in good condition does not flourish to any extent. Worn footwear of this character, however, is to be found in a few dingy-looking shops in the neighborhood of Sixth and Spruce streets and along South street by those who have no prejudice against wearing "dead men's shoes," or encasing their pedal extremities in the cast-off soles and uppers of fashionable folk. In one of these establishments an ostensible purchaser was shown second-hand shoes of all styles and sizes, ranging in prices from \$1.50 to \$3 a pair. All these goods were evidently of fine make. The leather was soft and pliable, the stitching close and fine, and although the "uppers" had evidently already done good service, no cracks were observable. But all the style and finish was confined to the "uppers," for in every instance the shoes had been resoled and heeled in a rough-and-ready fashion. Several pairs still bore the names of well-known New York and London makers, while between the heel and sole of one shoe the name of "Helbestern, Paris," was still clearly to be made out.

One dealer said that high-priced second-hand shoes actually lasted longer than new ones sold at about the same price. The best second-hand goods, he claimed, were the cast-offs of wealthy people who would not wear a shoe an hour after it had lost its shape, and consequently the "uppers" were in many cases really as good as new.

Another class of people, he said, were regular customers at his shop, whose feet were so tender that they could not wear a new shoe under any circumstances. Some of these unfortunate folks would spend an hour at a time in trying on forty or fifty pairs of shoes, until at last they found one exactly suited to the unhappy idiosyncrasies of their "poor feet." This particular dealer in "discarded understandings" does not handle any of the much worn and common lines of second-hand goods. He buys the shoes just as they are purchased by the wholesale dealer in New York, and keeps two men constantly employed in resoling and heeling his purchases before retailing them to that eccentric portion of the community whose patronage he enjoys.—Philadelphia Times.

A Scout With Negro Soldiers.

From an article on the "Buffalo Soldiers" in the Century, written and pictured by Frederick Remington, we quote the following: "Up the ascent of the mountains we toiled, now winding among trees and brush, scrambling up precipitous slopes, picking a way across a field of shattered rock, or steadying our horses over the smooth surface of some bowlder, till it seemed to my uninitiated mind that cavalry was not equal to the emergencies of such a country. In the light of subsequent experiences, however, I feel confident that any cavalry officer who has ever chased Apaches would not hesitate a moment to lead a command up the Bunker Hill monument. The slopes of the Sierra Bonitas are very steep, and as the air became more rarified as we toiled upward I found that I was panting for breath. My horse—a veteran mountaineer—grunted in his efforts and drew his breath in a long and labored blowing; consequently I felt as though I was not doing anything unusual in puffing and blowing myself. On the trail ahead I saw the Lieutenant throw himself on the

ground. I followed his example, for I was nearly 'done for.' I never had felt a rock as soft as the one I sat on. It was literally downy. The old troop-horse heaved a great sigh, and dropping his head went fast asleep, as every good soldier should do when he finds the opportunity. The negro troopers sat about, their black skins shining with perspiration, and took no interest in the matter in hand. They occupied such time in joking and in merriment as seemed fitted for growing. They may be tired and they may be hungry, but they do not see fit to augment their misery by finding fault with everybody and everything. In this particular they are charming men with whom to serve. Officers have often confessed to me that when they are on long and monotonous field service and are troubled with a depression of spirits, they have only to go about the campfires of the negro soldier in order to be amused and cheered by the clever absurdities of the men. Personal relations can be much closer between white officers and colored soldiers than in the white regiments without breaking the barriers which are necessary to army discipline. The men look up to a good officer, rely on him in trouble, and even seek him for advice in their small personal affairs. In barracks no soldier is allowed by his fellows to 'cuss out' a just and respected superior. As to their bravery, I am often asked, 'Will they fight?' That is easily answered. They have fought many, many times. The old sergeant sitting near me, as calm of features as a bronze statue, once deliberately walked over a Cheyenne rifle pit and killed his man. One little fellow near him once took charge of a lot of stampeded cavalry horses when Apache bullets were flying loose and no one knew from what point to expect them next. These little episodes prove the sometimes doubted self-reliance of the negro."

Genteel Quacks.

"Yes, it pays," said a big, fat physician, with a name which is known throughout the medical world. "I have a practice worth \$40,000 a year." "Women?" "Yes, you've guessed it first time. They pay \$10 every time they come into my office. When one gets on my list I tell you she stays!" and Dr. H— laughed long and loud. This is quackery—gilt-edged, genteel quackery—to keep suffering women paying tribute year in and year out, and doing them no good. Dr. Pierce's Favorite Prescription cures the peculiar weaknesses and diseases of women. It does not lie to them nor rob them.

Europe is all very well, but don't you think it is only fair as an American to know your own country thoroughly? Try the "American Alps" on the South Park Division of the Union Pacific in Colorado this summer. There's nothing like them in Switzerland.

"For peculiarly soft yet penetrating shades of color, marvelous grouping in form, fantastic, solemn and tender shaping of rugged cliff and mountain and valley," says a distinguished artist, "the wonderful empire of Colorado stands peerless." The Alpine scenery along the line of the South Park Division of the Union Pacific in Colorado is the most magnificent in the United States.

"They rested there—escaped awhile
From cares which wear the life away,
To eat the lotus of the Nile
And drink the poppies of Cathay."

And every American business man is beginning to find that his summer vacation is more and more of a necessity; the money-making machine won't stand the strain without an occasional rest. The "American Alps" of Colorado offer the highest conditions for perfect relaxation, pure vital air, comfortable hotels and the noblest scenery in the country, and may be reached on the South Park Division of the Union Pacific railway.

It is un-American in the higher sense for our people to prate about Europe so glibly when so many of them are profoundly ignorant of the wondrous beauties of their native land. As a matter of fact there are hundreds of thousands of American citizens who are thoroughly familiar with Switzerland; who have idled away weeks at Lucerne, done Chamouni, and attempted the Matterhorn, and yet have never feasted on the lovely beauty, the wild weird majesty of any one of the Colorado Peaks. "More than Alpine glory" rewards visitors along

\$93 Sewing Machine Free!

We want one person in every village, town and township, to keep in their houses a line of our ART SAMPLES; to those who will keep and simply show these samples to those who call, we will send, free, the very best Sewing Machine manufactured in the world, with all the attachments. This machine is made after the SINGER patents, which have expired. Before the patents run out, this style machine, with the attachments, was sold for \$93; it now sells for \$50. Reader, it may seem to you the most WONDERFUL THING ON EARTH, but you can secure one of these machines ABSOLUTELY FREE, provided your application comes in first, from your locality, and if you will keep in your home and show to those who call, a set of our elegant and unequalled art samples. We do not ask you to show these samples for more than two months, and then they become your own property. The art samples are sent to you ABSOLUTELY FREE of cost. How can we do all this?—easily enough! We often get as much as \$2,000 or \$3,000 in trade from even a small place, after our art samples have remained where they could be seen for a month or two. We need one person in each locality, all over the country, and take this means of securing them at once. Those who write to us at once, will secure, FREE, the very best Sewing Machine manufactured, and the finest general assortment of works of high art ever shown together in America. All particulars FREE by return mail. Write at once; a postal card on which to write to us will cost you but one cent, and after you know all, should you conclude to go no further, why no harm is done. Wonderful as it seems, you need no capital—all is free. Address at once, TRUE & CO., AUGUSTA, MAINE.

the South Park Division of the Union Pacific in Colorado. There is no scenery like it in the new world.

Summer Resorts of the Rockies.

All the summer resorts of Colorado, Utah and the Rocky Mountains, are reached in through Pullman Buffet sleeping cars from St. Louis and Kansas City, via. Missouri Pacific Railway. "The Colorado Short Line" to Pueblo, Colorado Springs and Denver. Tourists' round-trip tickets at low rates are on sale at all principal coupon offices in the United States, good for six months to return. For beautifully-illustrated tourist guide of 140 pages, descriptive of the resorts, and further information, address H. C. Townsend, General Passenger & Ticket Agent, St. Louis, Mo.

Colorado Tourist Rates.

With the approach of the summer's heat, many people will seek a "cooler climate." Colorado, with its high altitudes, furnishes an abundance of "climb," and is a favorite summer resort. The Santa Fe Route has placed on sale at all coupon ticket offices round-trip tourist tickets, at reduced rates, to Denver, Colorado Springs, Pueblo, and Trinidad. Excursion rates from junction points in Colorado to all mountain resorts. Tickets are good going 30 days; returning, 5 days; final limit, October 31, 1889. Through Pullman Sleepers daily to Denver, Colorado, Springs, Pueblo and Trinidad. Call on nearest Santa Fe Route ticket agent for rates and tickets.

GEO. T. NICHOLSON, G. P. & T. A.,
A. T. & S. F. R. R.,
Topeka, Kansas.

Summer Tourist Rates.

Round-trip tickets, at reduced rates, are now on sale, via. the Santa Fe Route, to Denver, Colorado Springs, Pueblo and Trinidad, Colorado and Las Vegas Hot Springs, New Mexico. Holders of tourist tickets can purchase, at reduced rates, round-trip tickets from junction points in Colorado to all mountain resorts reached by the Denver & Rio Grande, Colorado Midland and Union Pacific railways in Colorado. Tickets to Colorado are good going 30 days; returning, 5 days; final limit, October 31, 1889. Tickets to Las Vegas Hot Springs, N. M., are good going 30 days; returning, 30 days; final limit, 90 days from date of sale. Two daily trains, with through Pullman Sleepers, to above points. For rates, tickets and sleeping-car berths, call on nearest Santa Fe Route ticket agent.

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GOLD Live at home and make more money working for us than at anything else in the world. Either sex. Costly outfit FREE. Terms FREE. Address, TRUE & CO., AUGUSTA, MAINE.

YOUR NAME ON 50 FANCY & Hid'n Name CARDS. Outfit and 100 Pictures, all 10c. Game of Authors, Sc. Dominos, Sc. Box of Paints, Sc. The lot, 50c. GLOBE CARD CO., Centerbrook, Conn.

SALESMEN We wish a few men to sell our goods by sample to the wholesale and retail trade. Largest manufactory in our line. Enclose 2-cent stamp. Wages \$3 Per Day. Permanent position. No portals answered. Money advanced for wagon, advertising, etc. Centennial Manufacturing Co., Cincinnati, Ohio.

KANSAS FARMER.

ESTABLISHED IN 1868.

A TWENTY-PAGE WEEKLY,

Published Every Thursday by the

KANSAS FARMER COMPANY.

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Corner Fifth and Jackson Sts.

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ADVERTISING RATES.

Display advertising, 15 cents per line, agate, (fourteen lines to the inch).
Special reading notices, 25 cents per line.

Business cards or miscellaneous advertisements will be received from reliable advertisers at the rate of \$5.00 per line for one year.
Annual cards in the *Breeders' Directory*, consisting of four lines or less, for \$15.00 per year, including a copy of the *KANSAS FARMER* free.

Electros must have metal base.
Objectionable advertisements or orders from unreliable advertisers, when such is known to be the case, will not be accepted at any price.

To insure prompt publication of an advertisement, send the cash with the order, however monthly or quarterly payments may be arranged by parties who are well known to the publishers or when acceptable references are given.

All advertising intended for the current week should reach this office not later than Monday.
Every advertiser will receive a copy of the paper free during the publication of the advertisement.
Address all orders,

**KANSAS FARMER CO.,
Topeka, Kas.**

Rainfall in Greeley county last month was two and a half inches deficient, and the temperature was 3 deg. below normal.

Wool received at St. Louis between the 1st day of April and the 5th day of the present month aggregated 4,000,000 pounds, just twice as much as was received at the same city during corresponding period last year.

Edwards county now has two co-operative cheese factories, as we learn from the *Kinsley Graphic*. One of them is located at Kinsley, the other at Lewis. They use about 11,000 pounds of milk daily, making 1,100 pounds of cheese.

An examination of the weather statistics shows that in the spring wheat region the aggregate rainfall from the 1st day of January last until the 1st day of the present month was about 50 per cent. less than an average during the same period in many years past.

Mr. John C. Snyder, President of the Kansas Poultry and Pet Stock Association, P. O. Constant, Cowley county, writes us as follows: "The Kansas Poultry Association intend holding an exhibition this winter, particulars hereafter. Mr. Horace J. Newberry having removed from the State has resigned as Secretary of above association, and Mr. Harry Swift, of Marion, appointed to fill vacancy. We need the assistance of every breeder in the State of Kansas, and we hope they will send in their membership fee and become members. Any information gladly given."

Mr. H. A. Murphy, of Elk City, Montgomery county, Kansas, has invented an implement which he calls the "Trick Harrow" and which he claims is adjustable so as to be serviceable in garden or field, working one, two or three rows, and dropping to the bottom of listed corn rows, running along the sides or on top of the ridges, or in all three positions at once, and he wants to open a manufacturing establishment in some city where the citizens will take stock in the enterprise. If Mr. Murphy will correspond with officers of boards of trade he will soon learn what the probabilities are in the line of his desire.

LOOK UP THE RECORD.

The editor of the *Kansas City Live Stock Indicator* kindly directs our attention to a communication in the last number of that paper signed "Prometheus," and requests an expression from us concerning it. That our readers may comprehend the situation, let it be stated that the "Prometheus" article is an inspiration which came to the writer of it upon reading a reference in the *KANSAS FARMER* two or three weeks ago to a discussion invited by the *Indicator* on the query—"Why farmers are poor." In submitting the query the editor divided it into seven sub questions and suggested that answers to all of them might be written out on a postal card. In our allusion to the proposed discussion we suggested that if answers were to be brief, four words—"debt and poor crops"—would answer the query as to those farmers who are poor.

"Prometheus," instead of answering the *Indicator's* query, and instead of attempting to put his words all on a postal card, occupies about two columns of the paper in a criticism of the *KANSAS FARMER* and the personal conduct and opinions of the author of PEPPER'S *TARIFF MANUAL*, concluding with an appeal to his readers and to farmers in general to rally to the support of the *Kansas City Live Stock Indicator* because it is the farmer's friend.

We suppose that the particular point upon which our contemporary desires an expression from us is the comparison which "Prometheus" writes of the two papers—the *Indicator* and the *KANSAS FARMER*, for the query in discussion—"why farmers are poor." "Prometheus" does not pretend to answer, and his personal allusions are not relevant.

Then, as to the two papers, we repeat the text—look up the record. "Prometheus" refers first to the *KANSAS FARMER*, therefore let it be first subjected to examination.

First.—This paper does not hesitate to express an opinion on any important public measure in which farmers as a class are interested directly or indirectly, and the editor conscientiously and faithfully tries to give to his readers the exact truth concerning every matter discussed when the facts are attainable. Opinions may be weighed one with another, and they are worth only what they weigh; but facts are bases upon which opinions are framed—they are fundamental, and our rule is to get at facts first, so that our readers as well as ourselves may form individual opinions. What is more, our columns are open to respectful discussion of all subjects of interest to farmers, and we never question a writer's opinion—that is his business, not ours.

Second.—The more important matters of public nature to which allusion is made here, and upon which this paper has decided convictions and has often expressed them, are money, transportation, class influence in legislation, protection of monopolies, high interest rates, spoliation of borrowers by unscrupulous money-lenders, taxation, gambling in products of labor, oppression by monopolies, social and commercial disadvantages of farmers, tariff, foreign competition in agriculture, markets, etc. The *KANSAS FARMER* favors the use of gold and silver either in bullion or coin, in unlimited quantities and at present rates and ratios of coinage, as money or as a basis for the circulation of paper money; it favors a divorce of the government from all banking and other moneyed institutions except such as may be necessary for the transaction of government business with the people, this would abolish national banks and would make it prudent for

the government to issue money, whether metal or paper, whether coin or notes, directly to the people; the *KANSAS FARMER* favors the regulation of interest rates by national law, the same as the value of money is regulated, the government should lend its credit and its money to its citizens poor as well as rich, upon reasonable security of lands or bonds, the rate of interest should be high enough to pay expenses of necessary agencies of distribution and low enough to abolish and in future prevent all schemes of private money-lending, to the end that the people may have the use of money at rates which they can pay, and to force idle money of individual persons into productive channels so that their interest may come to them in the way of profits of industry, and that working people may get some benefit from it on its passage. We believe money ought to be provided by the government on the same principle that roads and highways are provided for the common convenience. A monopoly of money is not a whit more reasonable than a monopoly of a public road.

Without going into details further, the *KANSAS FARMER* favors a national railroad system, the punishment of all conspirators against the common rights of the people as members of "corners," "combines," "trusts," etc.; favors such an adjustment of taxation as that its burdens shall be more equably distributed, bearing heavier among those who produce least and yet receive most protection; favors a rigid enforcement of public rights in every special corporate franchise; favors larger appropriations of public money for the benefit of agriculture and smaller ones for objects not necessary for the public good, favors basing salaries of public officers on the value of such services as they perform; favors removing tariff duties from sugar, salt, lumber, coal, and from every useful article which our people need but do not or cannot produce in quantities sufficient to affect prices, with protective duties on all farm products and manufactured articles except as above indicated, and on all raw materials which we have in abundance and which enter into our manufactures.

This enumeration is sufficient to show the scope and bearing of our opinions, and the files of the *KANSAS FARMER* are cited as proof. Now what can be said of the *Kansas City Live Stock Indicator* in this respect? What do its files show? Has it any opinion on any subject of public concern? If so, what is the subject, what is the opinion and when was it expressed? Take the subjects herein above mentioned, submit them one at a time to the *Indicator* and inquire what that paper has said, says now, or probably will in the future say about it. Having been directly appealed to by the *Indicator* to express ourselves on the matters discussed in the article of "Prometheus," and having done so, we now appeal to the *Indicator* and ask the opinion of that paper on any or all of the subjects mentioned either in the communication of "Prometheus" or in this article. Let the farmers hear from you in this connection, brother.

THE STATE FAIR.

All arrangements are now complete for holding a State Fair at Topeka this fall on the same dates in September as last year. The grand stand is to be rebuilt on a larger scale than before and many new attractions added. The management feel confident that they will succeed in making the largest and best State Fair ever held in Kansas. E. G. Moon is Secretary, and full particulars will be given by him upon application.

THE WICHITA RAILROAD DECISION.

The State Board of Railroad Commissioners feel the force of criticism upon their order in relation to freight rates to and from Wichita. In a rehearing of the matter, the 4th inst., the Board affirm the former decision, and in doing so take occasion to notice the unfavorable comments of people and press on the case, and they express astonishment at what they regard as a total misunderstanding of the scope and object of the Wichita decision and, also, a misconception of the law and the Board's duties and authority under it. In order that the Board's defense of its action may be placed before the same persons that our criticisms were delivered to we append hereto as much of the defense as gives the principal points. They say:

It has been charged that the board has by this decision created a discrimination, that it has made a class of rates in favor of Wichita which has been denied to other places in the State equally entitled to the same as Wichita. As Wichita was the only place that had made complaint, it was assumed that the Board could make findings and facts and decisions upon the Wichita complaint, in favor of Topeka Fort Scott or other places, without notice to the railroad companies affected without investigation, and without evidence. This necessarily assumed further, that either the Board is bound to take judicial knowledge of the condition of business affected by transportation in every portion of the State, the rates afforded upon all classes, whether such rates be open or private, and the manner in which each class of business is affected by such rates; in which case it was quite superfluous to provide by statute for public investigation of these matters; or else, that the Board possesses unlimited authority and is absolutely despotic in the methods of its procedure. Both assumptions are equally fallacious. It is a rule of universal application in all controversies possessing a legal character, that the party, whether a person or corporation, accused of having wronged another, shall be made acquainted with the nature of the complaint against him, and shall be afforded a reasonable opportunity to answer and be heard in defense of the matter complained of, and any decision or judgment made or rendered without such opportunity being given would be without the slightest legal efficacy or value. This rule applies equally to the proceedings of this Board. The statute provides that, upon complaint being made to it of the existence of unjust discriminations or unreasonable rates, notice shall be given of the same and a time and place appointed for the hearing of the matter charged, and the Board is required to make its findings and decisions upon that complaint, but it is not required nor authorized to rake about for causes foreign to that complaint, and decide those also against railroad companies not before it and against it whom no charge has been laid. It would thus result if this species of criticism possesses any validity, that if the Board might order an abatement of unjust discrimination at the place complaining without abating similar discrimination at all other points not complaining it would not be competent to abate them anywhere. It would be quite as consistent to impeach the judgment of a court in favor of and against the party before it on the ground of discrimination, if it failed at the same time to afford the like to all other parties not before it who were suffering a similar wrong. The utmost that can be claimed from it by others not parties to the judgment, is a rule which may apply in all like cases. The courts are open alike to all, and all those suffering any grievance or wrong at the hands of another may present their claims for redress and demand a hearing and judgment, but those who neglect the means provided by the statute for redress are in no position to criticize the court because its judgment has restored the diligent man to his rights. It would be a strange anomaly if a court, before whom a cause was pending, should, instead of proceeding in orderly manner to its investigation and decision, call a state convention to decide the character of judgment to be rendered. Yet, notwithstanding the law has provided substantially the same general rules to govern the proceedings before this Board it has been visited with liberal denunciation for not having pursued this fantastic course. The same right that Wichita has exercised exists in favor of all other parties to submit by means of a complaint any grievance within the competence of this Board to redress, to the operation of such remedial measures as the Board has been authorized to administer. But the Board is not competent to set aside the statute of the State; it is confined not only to the exercise of such authority or power that has been specifically conferred but also to the method and manner in which the same shall be exercised.

The Board does not quite understand the scope of the criticism. It was not complained that Wichita was getting justice, or that the people of that city were looking after their own interests vigilantly, nor that the Board usurped authority or does not understand the law. The substance of the criticism, when digested is, that the Board neglected to perform a plain duty in not applying the Wichita decision to every city in the State. Replying to this the Board hold up the letter of the law as a shield and ask the people to strike at the law, not at the Board which is the

creature of the law. But that will not excuse the failure complained of. In the first place, if the law were just as the Board claims it is, every member, and especially Judge Humphrey who is an educated lawyer, knows that by a specific enactment made in the infancy of the State, Kansas statutes are to be construed liberally in furtherance of justice. But this particular law is not so strict as that. It allows a little latitude to the Commissioners. In many cases where they may act on complaint they may act of their own motion if they have knowledge of any injustice or wrong which the intent of the law would have corrected. Here is the language of the law itself on that point:

Said commissioners shall have the general supervision of all railroads in the State operated by steam, and all express companies, sleeping car companies, and all other persons, companies, or corporations doing business as common carriers in this State; and shall inquire into any neglect or violation of the laws of this State by any person, company or corporation, etc. . . . Whenever in the judgment of the Railroad Commissioners it shall appear that any railroad corporation or other transportation company falls, in any respect or particular, to comply with the terms of its charter or the laws of the State, or whenever in their judgment any repairs are necessary upon its road, or any addition to its rolling stock, or any addition to or change of its stations or station houses, or any change in its rates for transporting freight, . . . it is reasonable and expedient in order to facilitate the security, convenience and accommodation of the public, said Commissioners shall inform such corporation of the improvement and changes which they adjudge to be proper, by a notice thereof in writing, etc. (See Section 5 of the act, Section 108 of the railroad laws, Section 5282 of the Compiled Laws of Kansas, 1885.)

In order that we may do no injustice to the Board in saying that they understand the law as allowing them some discretion, we call attention to the fact of their calling before them the railroad managers of the State on several occasions for conference touching a reduction of freight rates, and to their action in cases of striking railway employes. A fair construction of the law not only authorizes but requires the Commissioners to right any wrong within the purview of the law when they have knowledge of its existence, and especially to prevent as much as possible all unjust discriminations against or in favor of particular places within the State. To say that the Board did not know of the discrimination in this case would be to discredit their intelligence, for everybody knew of it, and all Kansas has been complaining of it for years. But the following paragraph, copied from the decision, shows that the Board understood the matter as well as the people did. After quoting rates on different classes of property and showing a discrimination of 12 to 16 per cent. against Wichita, the Board say:

We cannot be blind to the fact that the manufacturing and commercial interests of Kansas City, Mo., derive the principal benefit of this discrimination in freight rates. We have never been put in possession of any good reason why the railroads built upon Kansas soil, in part with the money of her people, should be employed in such manner as to repress development and enterprise within the State, and determine the location of capital and business at a point immediately beyond her limits. We are quite unable to imagine, and no one has ever revealed to us a single reason founded in justice or good business policy, why Missourians living in Kansas City, competing with Kansans living in the interior of the State, and pursuing the same lines of business, should be given 20 per cent. the advantage over the Kansas man in transportation rates over Kansas railroads. The logic of our decision in this case is, that the Kansas man is entitled to be placed in this respect upon a condition of fair equality with the Missourian.

Precisely. That is what the people have been saying a long time. We cannot express the logic of such reasoning better than in the language of the Commissioners themselves in the paragraph preceding that just quoted: "Whatever advantages there are in bringing the producer nearer to a market for his productions, that advantage he is entitled to enjoy if fair conditions of trade and traffic will secure them. To defraud him of them by a system of artificial and unfair transportation rates is neither just to him nor conducive to the prosperity or best interests of the road." What the people want is the Wichita rule applied to every city in the State. The law intends equality and justice among Kansas people. There was no need, in the beginning, for every town to appeal to the Board

before a general re-arrangement of freight rates could be established; the Commissioners proceeded on the general authority of the law. The same practice may be applied in the present case.

SAVE THE CROPS.

Harvest is here and the crops are good. The thing most needed now is to save the grain. That is always important, but it is particularly so in a year like this. We are likely to have showery weather. Indications are that way now. For that reason not an hour should be lost in getting the grain into stack or mow after it is dry enough.

Grain that is well bound and shocked will stand a great deal of wet weather. As long as the shocks stand up well and the caps remain in place properly, there is little danger; but a wind storm may come at any hour and twist the shocks out of shape, strewing the caps about the field, letting the rain into every sheaf. Take no chances. Hurry the grain under cover as fast as possible as soon as it is fit. Every kernel is needed.

INTERESTING DISCUSSION--WHY FARMERS ARE POOR.

An interesting discussion is in progress in the columns of our excellent contemporary, the *Live Stock Indicator*, of Kansas City, the subject being, Why farmers are poor. The editor had subdivided the subject into seven heads, and asked brief answers to them by correspondents, suggesting that the whole case could be covered on a postal card. The first instalment of answers was in for last week's paper, but they are so long that room could be found for only half a dozen of them. The first occupies about two columns, the second more than one column, and the shortest is more than a quarter of a column long. Strange it is, the longest answers answer least, the first one not mentioning one specific cause of farmers' poverty beyond the fact that some of them are heavily mortgaged. The second letter expressly says, in the beginning, that the main question will not be answered, but that the writer will discuss tariff, prices, etc., which is done. In comparing prices of the present and those of thirty years ago, the writer shows that sugar, rice and whisky are higher now. He mentions no other articles, not even a wagon, a hoe or a spade. The other writers are divided in opinion concerning the main proposition, only one of them being of opinion that farmers are really poorer now than they ever were. One of them asserts positively that farmers are better off now than they were formerly, another asserts that careful farmers are in good condition comparatively, and two of them say farmers are not only not worse off but that they are gaining in wealth and rising in social and political influence.

The discussion is not only interesting, it is instructive. If the disputants will only confine themselves to the points submitted by the editor and follow his advice to be brief, a great deal more can be put into one issue of the paper and it will be worth more. We think of nothing which could be more instructive than brief statements by farmers on the double query—are farmers poor, and if so, why? How do farmers really feel and think about this? We are pleased that our neighbor has started the discussion, and we hope it will be continued until all who desire to be heard have spoken.

SECRETARY MOHLER'S CROP REPORT.

The Secretary of the State Board of Agriculture, in his report, dated June 6, says:

Reports now in from about five hundred correspondents, representing one hundred and two of the one hundred and six counties in the State, indicate an unusually good condition of crops generally throughout the State.

The weather conditions have been pre-eminently favorable to the development of the wheat plant as well as to the growth of rye, oats and barley, while the growth of corn has been retarded somewhat by excessive rains and cool weather.

The agricultural conditions generally throughout the State are excellent at this date, and the prospects for abundant harvests in all crops could not well be more encouraging.

WHEAT.

Winter wheat.—The area as estimated by the correspondents of this board in the March report was 1,833,979 acres. From abstracts of Assessors' returns already in, and special reports of County Clerks kindly furnished at our request, we find this estimate is too low by about 175,000 acres. A few counties are yet to be heard from. Enough, however, is known to warrant us in placing the total area for the State, in round numbers, at 1,500,000 acres. The probable product per acre for the State is placed by our correspondents at 22.52 bushels, a fraction higher than the average product in 1882, which was the highest in the history of the State.

This average per acre gives a total wheat product for the State this year of 33,780,000 bushels, or an excess of 17,644,880 bushels above that of last year.

Spring wheat.—The area, as estimated by our correspondents in a previous report, is 54,920 acres, and from the abstracts of County Clerks now in, we are warranted in saying that the actual acreage returned by the Township Assessors will not be less than that amount.

CORN.

Acreage, as estimated by our correspondents, is 4 per cent. greater than that of last year, making a total area of 7,280,638 acres. The stand is good; only a fraction over 1 per cent. is reported as having failed to grow. The wet and cold weather have retarded the growth of the plant; however, as the important matter at this date is to secure a good stand, the prospect for the crop except where excessive rains have interfered with its cultivation or rendered replanting necessary, is entirely satisfactory through every portion of the State. It seems to be entirely free from insect depredations.

RYE.

Rye is reported a good crop. The average product per acre is estimated at twenty bushels for the State.

OATS.

Oats in a few of the eastern counties are reported damaged to some extent by chinch bugs, but generally throughout the State they are in excellent condition, and in many places promise extraordinary yields.

SUMMARY.

Corn, compared with full stand, 98 per cent. Spring wheat, compared with full stand and unimpaired vitality, 95 per cent.

Oats, compared with full stand and unimpaired vitality, 95 per cent.

Barley, compared with full stand and unimpaired vitality, 98 per cent.

Potatoes, compared with full average condition, 105 per cent.

Tame grasses, compared with full average condition, 105 per cent.

Apples, compared with full average condition, 75 per cent.

Cherries, compared with full average condition, 102 per cent.

Peaches, compared with full average condition, 92 per cent.

RAINFALL AND CHINCH BUGS.

With the exception of the extreme southwest portion of the State, our correspondents report rains abundant, in some sections excessive, for the month of May, and the weather being cool, the conditions were not only highly favorable to a vigorous growth of cereals, but in an eminent degree favorable to the destruction of chinch bugs, which in the early spring, probably on account of a mild winter, were exceedingly numerous. Without this providential interference the damage must have been immense. As it was, in some localities wheat and oats were seriously hurt. The crisis, however, seems to be past. The old bugs, which have done the damage, after depositing their eggs, seem to have filled their mission and died, and the young broods are reported either dead or in a dying condition. Enough, however, are likely to survive to be the source of much anxiety and loss before the corn crop is made, unless rains continue abundant throughout the growing season.

The Henry George Single Tax Doctrine.

The following brief statement of the "Land Tax" doctrine, as advocated by Henry George, is copied from the *Standard*, Mr. George's paper:

The *Standard* advocates the abolition of all taxes upon industry and the products of industry, and the taking, by taxation upon land values irrespective of improvements, of the annual rental value of all those various forms of natural opportunities embraced under the general term, land.

We hold that to tax labor or its products is to discourage industry.

We hold that to tax land values to their full amount will render it impossible for any man to exact from others a price for the privilege of using those bounties of nature in which all living men have an equal right to use; that it will compel every individual controlling natural opportunities to either utilize them by the employment of labor, or abandon them to others; that it will thus provide opportunities of work for all men, and secure to each the full reward of his labor; and that as a result involuntary poverty will be abolished,

and the greed, intemperance and vice that spring from poverty and the dread of poverty will be swept away.

First and Second Class Cities of Kansas.

The following list of first class cities and second class cities in Kansas was prepared recently by the Secretary of State:

First class—Topeka, Wichita, Leavenworth, Kansas City, Atchison and Fort Scott—six in all.

Second class—El Dorado, Great Bend, Hiawatha, Horton, Girard, Pittsburg, Columbus, Weir City, Baxter Springs, Galena, Winfield, Arkansas City, Concordia, Clay Center, Seneca, Minneapolis, Osborne, Osage City, Pratt, Larned, Belleville, Lyons, Olathe, Kingman, Oswego, Emporia, Independence, Coffeyville, Paola, Beloit, Harper, Hutchinson, Nickerson, Manhattan, Wellington, Caldwell, Salina, Burlingame, Leroy, Waverly, Lebo, Lawrence, Abilene, Garden City, Ottawa, Dodge City, Eureka, Junction City, Newton, Anthony, Holton, Parsons, Chetopa, Marion, Cherryvale, Council Grove, McPherson, Harper and Maryville—sixty-three in all.

A city to become a city of the first class must have 15,000 population. To become a city of the second class, a city must have 2,000 population.

State Temperance Union.

The seventh annual meeting of the Kansas State Temperance Union will be held at the Tabernacle, Forest Park, Ottawa, Thursday, June 20, 1889, opening at 5 o'clock p. m. Temperance societies, churches, Sunday schools and all organizations in sympathy with the cause of temperance are entitled to three delegates, and should elect them as early as possible, and forward credentials to the Secretary at Winfield. This will be Temperance Day at the Ottawa Chautauqua, and with the low rate of one fare for round trip, we should have a rousing meeting. The officers of the Union are N. C. McFarland, Topeka, President, and A. H. Limerick, Winfield, Secretary. In announcing the meeting at Ottawa, the officers suggest: "Kansas should be in position to give substantial aid to her sister States now struggling for legal prohibition, and we can only do this by standing in the line, organized and ready to beat back the assaults of falsehood and misrepresentation that are already being made against the sobriety and good citizenship of our fine State."

The KANSAS FARMER will be sent on trial thirteen weeks to new subscribers for 25 cents.

Topeka Weather Report.

For week ending Saturday, June 8, 1889:

| Date. | Thermometer. | Max. | Min. | Rainfall. |
|-------------|--------------|------|-------|-----------|
| June 2..... | 75.7 | 54.8 | ..... | ..... |
| " 3..... | 75.9 | 52.9 | ..... | ..... |
| " 4..... | 79.0 | 46.6 | ..... | ..... |
| " 5..... | 83.2 | 51.1 | ..... | ..... |
| " 6..... | 82.9 | 57.0 | ..... | ..... |
| " 7..... | 82.6 | 58.2 | ..... | ..... |
| " 8..... | 84.8 | 58.5 | ..... | 1.09 |

Messrs. Dixon & Son, fruit growers, Netawaka, Kansas, forwarded for our inspection, last week, twelve boxes "strawberries as the pickers brought them." There were seven varieties—Crescent, Jessie, Miner, Bubach, Mammoth, Windsor, and Garretson. Jessie and Mammoth scored most on sampling. They were large and luscious, with firm body.

The first Merino sheep brought to this country were brought in 1793, by Wm. Foster, of Boston. Three were imported and killed for mutton.

Mr. G. Jaqua says: "Every year implement makers advertise some great improvement in corn-planters. It is questionable whether any real improvement of any consequence has been made for the last ten years."

Horticulture.

Distance From Market.

The distance of the berry-grower from market plays an important part in his business. To illustrate: Quincy has a population of 35,000, that has been well educated to eat berries three times a day. Hence the local demand is not small; and the near-by growers can control the local market. They can drive to the city in an hour, or less time, and deliver the berries from their wagons to the dealers; whereas, the grower twenty miles away must drive to the railway station, put his berries on the cars, and ship them by rail to Quincy. Though gathered at the same time, they will be at least two hours later in reaching the dealer than the berries brought in by the near-by grower; and to their cost is added the expense of shipment. On account of the longer time, as well as greater expense required to get berries twenty miles away to market, they must be sold at a very small profit in competition with the product of near-by growers; and as a result the growers twenty miles from Quincy rarely market here; they ship at once to Chicago or St. Paul. This gives the near-by growers a good local market, and as the cost of marketing a product is always borne by the producer, and the cost of marketing in Quincy is much less than the cost of marketing in Minneapolis, the grower within an hour's drive of Quincy makes more per quart than if he had to market farther away.

This is not the only advantage of being near a city, small or large. The berries can be got to the dealer in better condition. They are fresher, and not so near crushed by transportation and more handling. Also, the grower near a city can get cheaper labor and more of it when needed. In the city there is a large number of girls and boys who are willing to work at very low wages; the grower near a city can get all the pickers he needs. Away from the city, the growers can get only a limited amount of help. And as the demand in the picking season is fully equal to the supply, wages are sure to be good for the laborers.

But near the city land is higher than away from it. The crop must be charged with interest on the price of the land. However, I do not think this will offset the advantages pointed out above, and unless the land near a city is already occupied by berry-growers and competition in the local market is very sharp, it will be better to get within driving distance of the city than farther away, notwithstanding the higher price of the land. When locating, the character of the roads must be considered. The berry-grower can afford to pay something for smooth, hard roads over which to transport his products to market.

But, a person situated farther than driving distance from a city, or who finds it very inconvenient to locate within that distance, may well grow berries away from the city. Often it is possible to build up a splendid home market in the near village and among the farmers round about. It is wonderful how nice berries will increase the demand for themselves. For every neighborhood in which the consumption of berries cannot be increased, there are ten neighborhoods in which this consumption can be quadrupled. Among the berry-growers of my acquaintance there are none doing better than some who settled down near a railway station in a country neighborhood, where berries had been little grown and not at all intelligently. They

have built up a splendid local demand, and although there is now competition, they "have the inside track," while any surplus can be shipped from the railway station.

While, as I have tried to show, there are advantages in being near a city market, yet this does not cut so much figure now as it did some years ago, as my readers know, and I would place above nearness to city special adaptation of soil and situation, especially if there was much difference in the price of land. With express trains on which to ship, and pint boxes in which to carry the berries, a market 500 miles distant is not far away, and berries, with the possible exception of some very soft varieties, can be put before consumers in good order.—*John M. Stahl, in Popular Gardening.*

The Quality of Plants as Modified by Their Food.

A correspondent inquires whether "chemical analysis would show any difference in composition between two samples of wheat raised on the same soil but with different fertilizers?" The reply to this somewhat indefinite question would be, "Probably, yes." The information desired, however, opens an interesting subject about which little is known, and which deserves careful study. Of course in a general way it is true that one hundred pounds of wheat contains certain definite weights of nitrogen, potash, phosphoric acid, iron, magnesia, sulphuric acid, and so on. But the normal or average proportions vary within narrow limits. The variation in these constituents depends on a great many conditions of soil, climate, healthfulness of the plant, etc. But they vary, too, according to the food given, and this, we take it, touches the kernel of our correspondent's inquiry.

A well-known illustration of this is found in the application of nitrate of soda to the beet crop. This fertilizer largely increases the yield of beets, but the proportion of available sugar is cut down. It was shown at the New Jersey Experiment Station last year that the application of potash to sorghum increases the proportion of sugar. Prof. Goessman has found that the proportion of different elements in grapes and peaches could be modified by the application of different fertilizers; that potash and phosphates diminished the free acids in grapes, for instance. The use of nitrogenous manures has been known to cause a variation of from 2 to 4 per cent. in the albuminoids of hay. Pasture grasses when supplied with both soda and potash will select the latter, but when potash is unavailable in sufficient quantities they will make the best of it and put up with soda.

Many other facts might be added, as, for instance, that the chemical constitution of one crop, like wheat, varies comparatively little under different feeding, while with root crops and other succulent vegetation the variation may be considerable. Some plants have the ability to take a larger proportion of one element from the soil than others. But the question of practical moment to the farmer is, to what extent can he change and improve the quality of his products by manure? To the gardener it is of interest to know whether he can improve color and flavor in his crops, as well as quantity, by fertilizers; to what extent he can control the quantity and whether it will pay. Professor Sanborn is quoted as saying that he can modify the potato at will by fertilization, producing a good, mealy potato or a rough, unpalatable one. There are certain limited areas which produce tobacco of such a flavor that it brings a much higher price than plants grown in

other soil. Can any plant food be given to insure a product of like quality elsewhere? This whole subject of the relation between the quality of plants and food is worth investigation at the experiment stations.—*Exchange.*

The Circulation of the Sap in Plants.

It is a very prevalent opinion that there is in plants a circulation of sap analogous to the circulation of blood in the higher animals; that there is an upward flow of sap and a downward flow, and that certain parts of the plant serve as the path of the upward flow and other parts as the path of the downward flow. Ever since the discovery of the circulation of the blood in man, by Harvey, in 1628, this has been the popular theory, and only a very few years ago it was considered a well-established fact (e. g. see Lindley's Theory of Horticulture, p. 32 et seq.)

Before going further it will be well to define "sap." In every plant, permeating every part, is found water; this water holds in simple solution the food materials of the plant, solids from the earth as well as gases from the air; it contains also all the soluble portions of the organic products formed from this food. This water with its contained substances is the "sap."

There is an upward flow of water in the plant. This is necessary in order to supply the loss due to the constant evaporation from the leaves and green stems, and that due to the use of water as a food material. In a lamp there is a constant flow of oil upward through the wick to take the place of that burned, so in the plant the upward flow of water is as purely a physical phenomenon, and in no way homologous with the flow of blood through the veins of animals.

There is no return flow of sap in the sense of a flow of blood through the arteries. What has given proof to the theory that there is such a flow, is the fact that materials, e. g. starch, formed from the food in the leaves, find their way to all parts of the plant. But this is a simple case of diffusion. If in one end of a trough containing water we place a quantity of salt, and some time afterwards examine the water in the other end we would find it salty; still there was no flow of the water from one end of the trough to the other. If now instead of salt alone we were to place in different parts of the trough any number of soluble substances, they would all diffuse throughout the entire extent of the water. The rapidity of diffusion would of course vary according to known physical laws, but the diffusion would continue until all parts of the water contained the same amount of the substances. If now at any point or points any substance or number of substances were to be removed from the solution, either by chemical reaction producing a new substance, or by other means, there would be a constant diffusion toward that point, or those points, of the substances undergoing removal. Very complex movements might thus arise within the mass of the water without the water moving in the least. Keeping this in mind, suppose by evaporation or otherwise the water might be removed from one end of the trough, without, of course, removing any of its contained substances, there would be a flow of the water toward that end, but the direction of the diffusion of the dissolved substances would not be changed.

So it is in the plant. There is an upward flow of water to supply the loss by evaporation from, and use, in the leaves and green stems. Dissolved in this water are all the food substances directly taken in by the plant and all

Dress the Hair

With Ayer's Hair Vigor. Its cleanliness, beneficial effects on the scalp, and lasting perfume commend it for universal toilet use. It keeps the hair soft and silken, preserves its color, prevents it from falling, and, if the hair has become weak or thin, promotes a new growth.

"To restore the original color of my hair, which had turned prematurely gray, I used Ayer's Hair Vigor with entire success. I cheerfully testify to the

Efficacy

of this preparation."—Mrs. P. H. Davidson, Alexandria, La.

"I was afflicted some three years with scalp disease. My hair was falling out and what remained turned gray. I was induced to try Ayer's Hair Vigor, and in a few weeks the disease in my scalp disappeared and my hair resumed its original color."—(Rev.) S. S. Sims, Pastor U. B. Church, St. Bernice, Ind.

"A few years ago I suffered the entire loss of my hair from the effects of tetter. I hoped that after a time nature would repair the loss, but I waited in vain. Many remedies were suggested, none, however, with such proof of merit as Ayer's Hair Vigor, and I began to use it. The result was all I could have desired. A growth of hair soon came out all over my head, and grew to be as soft and heavy as I ever had, and of a natural color, and firmly set."—J. H. Pratt, Spofford, Texas.

Ayer's Hair Vigor,

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Dr. J. C. Ayer & Co., Lowell, Mass.
Sold by Druggists and Perfumers.

the soluble compounds formed by the plant.

As these compounds are used in this formation of other compounds (e. g. sugar changed into starch), there is a diffusion toward the points where they are used. But while we speak of the particles of solid matter diffusing through the water to points where they are used, does not the water among these particles pass to the points where it is used? If so, and it is so, the whole matter may be expressed thus: In the plant all liquids, and solids in solution, tend to pass and do pass to the points where they are used.—*Students' Farm Journal.*

Old Currant Bushes.

I notice that in more than one-half of the farm gardens, the rows of currant bushes, old and mossy, are struggling for life around the margin of the patch, and sod-bound at the roots. The currant bush, because it is hardy, is abused more than any other fruit-bearing shrub or tree on the premises. It will produce even under the most gross neglect, but its fruit is inferior to the natural product—that is, a vigorous growth of wood will furnish currants superior in size, if not in flavor, to the neglected. I believe it pays to cultivate the currant.

The best time to kill out the grass at the roots of the sod-bound bushes, is to spade it up and turn the grass downward in the fall, and then put on a light coat of leached ashes. If the sod is overturned in the spring a new growth will come up between the sods, and spread over the whole surface again; but turned late in the fall, the grass dies out and forms an excellent mulch. The ashes act as a fertilizer also, and at the same time making the killing of the roots of grass a double certainty.

When turning the sod be sure that all the grass is taken out from between the bushes. To do this the use of the hand is necessary.

Every old, mossy and imperfect bush should be cut out, and all cut back which have imperfect tops. Try it and see what a change there will be next July when the fruiting season comes. Once cleaned, see that there is no more clogging up.—*Exchange.*

The Poultry Yard.

Rations for Chickens.

In order to feed fowls to the best advantage during the different seasons of the year, we must consider, in the first place, what specific result we are desirous of accomplishing at that special season; and in the second place, what is the cheapest and most effective means of accomplishing that result.

During winter, it is of primary importance that fowls should generate sufficient heat to keep the body at an even temperature, and therefore their food in cold weather should be rich in carbohydrates, whose main office in animal nutrition is to produce heat and the formation of fat, which is reserve fuel stored away in the body ready to be converted into heat. According to some estimates, corn, barley, potatoes, rye, etc., contain a large percentage of carbon, and are good winter foods. But as there is a steady demand for eggs in winter, the daily rations of hens should also contain a liberal supply of albuminoids—those substances which go to make up flesh, ligaments, tendons, etc.; for it is said that all which remains of the albuminoids after supplying the waste of the body, is utilized in the direction of egg-making.

The typical albuminoids are white of egg, lean meat and curd of milk. As the spring opens and the weather grows warmer, the rations for poultry should be altered so as to decrease the fat-producing foods, and increase those foods containing a preponderance of egg elements, in order to obtain an abundant supply of eggs for hatching purposes, in addition to keeping up the regular market engagement; for it sometimes happens, as was the case this year, that the market price of eggs was higher in March than in February, the remarkably mild weather having caused an unusually large production of eggs. In summer, the heat-giving foods should be curtailed to a still greater extent, both on account of the warm weather and because the supply of food attainable elsewhere is more abundant. When fall comes, we have to return to the heat-producers, as the first cold weather is very keenly felt by all animal life, and then comes the moulting season, when a greater variety of food is necessary than at any other time; for feathers are the most highly refined of animal products, and only a small part of the substances entering into their composition can be obtained from a large quantity of food.

The moulting period is a very trying one, and in order to bring hens through it in good condition for winter work, they should be liberally fed on foods containing a large percentage of carbon, nitrogen, and albumen, and not be expected to produce many eggs, either. They should be allowed perfect rest for a month or six weeks in the fall, and not be thought hard of, or fed upon exciting egg-stimulating concoctions. Many of the Leghorns are stimulated in this way until they actually die from no disease whatever except overproduction. It is wrong to treat them so; a hen does not need any medicine to make her lay eggs; if she be fed properly, it will be impossible to keep her from it. She realizes that egg-making is her mission in life, and is so bent upon doing her duty, that all the nutriment she can spare after building up the tissues of her body, and maintaining them under the wear caused by the living functions, she manufactures into eggs.

A careful study of Prof. Stewart's combinations for feeding different kinds of live stock, and especially for dairy cows, would be exceedingly helpful to poultry-keepers. The wise ones say

that whatever will make a cow give milk will make a hen lay eggs. For instance, corn meal, potatoes and barley are said to be rich in carbon, and therefore these foods are fattening; while wheat, oats and buckwheat are composed of a preponderance of albuminoids, and the surplus is converted into eggs instead of being stowed away as fat.

Then, too, like the anxious inquirers who write to Prof. Stewart and tell him what they have, we must take an inventory of our stock of foods and make the best combinations of what we have on hand. Just now I have a quantity of potatoes left over from last winter, but as potatoes are very poor in egg elements when fed alone, containing very little albumen, I will mix with them cottonseed meal, which contains about 45 per cent. of albuminoids. The latter, however, is said to be rich in carbon also, so lest the diet be too concentrated I will put only one pint of the cottonseed meal to one gallon of cooked potatoes, thus making a tolerably well-balanced ration for one meal. This should be given them in the morning, for it will digest in a few hours, and compel the fowl to take a considerable amount of exercise in searching for their mid-day meal. At evening they will have boiled corn, which contains carbon in preponderance, and some sort of dry grain, as oats, which contain a large percentage of albumen; and the uncooked grain being slow of digestion, will occupy them during the night. Out of this combination the fowls can obtain all the nutriment they require, both for sustaining life and for the production of eggs, though no set of foods should be fed exclusively for any considerable length of time.

Young chicks that are making bone, muscle, feathers, etc., should be given foods that are rich in both carbon and albumen, for while no animal can live unless supplied with carbonaceous food, neither can it grow when deprived of albuminoids. Many poultry-raisers feed nothing to chicks except corn meal, which is principally fattening in its tendency, when equal parts of corn meal and wheat bran would come much nearer meeting their requirements. After the chicks get their growth then the ration for fattening them would be compounded very differently, arranged so as to afford a preponderance of the carbohydrates.—*A Farmer's Daughter, in Country Gentleman.*

A perfect specific—Dr. Sage's Catarrh Remedy.

The money made by farming, says an exchange, is the cleanest, best money in the world. Agriculture fills the farmer's pocket at the expense of no other man. His gain is no man's loss, but the more he makes the better off is the world.



MANLY PURITY AND BEAUTY

CUTICURA REMEDIES CURE SKIN AND BLOOD DISEASES FROM PIMPLES TO SCROFULA.

NO PEN CAN DO JUSTICE TO THE ESTEEM IN WHICH THE CUTICURA REMEDIES are held by the thousands upon thousands whose lives have been made happy by the cure of agonizing, humiliating, itching, scaly, and pimply diseases of the skin, scalp and blood, with loss of hair.

CUTICURA, the great Skin Cure, and CUTICURA SOAP, an exquisite Skin Beautifier, prepared from it, externally, and CUTICURA RESOLVENT, the new Blood Purifier, internally, are a positive cure for every form of skin and blood disease, from pimples to scrofula.

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Pimples, blackheads, chapped and oily skin prevented by CUTICURA SOAP.

Rheumatism, Kidney Pains and Weakness speedily cured by CUTICURA ANTI-PAIN PLASTER, the only pain-killing plaster.

Low Rates to Puget Sound Points.

The St. Joseph & Grand Island and Union Pacific railroads, and Oregon Railway & Navigation company, via Portland, form the new short line to Tacoma, Seattle, Olympia and Port Townsend, Washington Territory, and Victoria, British Columbia.

The ticket rates to these points via the above line have just been lowered to \$60 first class, and \$35 second class, baggage checked through. For further information, call on any agent.

E. McNEILL, General Manager,
W. P. ROBINSON, JR., G. P. & T. A.,
St. Joseph, Mo.

Summer Tourist Rates.

Colorado and Las Vegas Hot Springs, New Mexico, have become famous as pleasure and health resorts. As the "heated term" approaches, many people are preparing for a summer tour to the mountains. They should keep in mind that the *Santa Fe Route* has double daily train service, with through Pullman Sleepers to all Western points. Round-trip tourist tickets, at reduced rates to Denver, Colorado Springs, Pueblo, Trinidad and Las Vegas Hot Springs are now on sale at all coupon ticket offices. For further information, call on or address

GEO. T. NICHOLSON, G. P. & T. A.,
A. T. & S. F. R. R.,
Topeka, Kansas.

OKLAHOMA--THE PROMISED LAND.

"On to Oklahoma!" is now the watchword of the thousands of home-seekers who have anxiously awaited the President's proclamation opening this vast and rich country to public settlement. Colonies are being formed in every State and Territory in the Union. The millions of acres may not furnish a *homestead* for all who come, but there will be thousands ready to relinquish their claims at a nominal figure. The intending settler should look the country over. Go via the GREAT ROCK ISLAND ROUTE, popularly known as the "People's Favorite" wherever it runs. KINGFISHER, the U. S. Land Office for Oklahoma, is the coming metropolis of the Indian Territory, and is located on the ROCK ISLAND ROUTE. A fast line of stages has been put on to Fort Reno, to connect with the trains of the Rock Island Territorial extension. This is the cheapest and best route and direct to the place you want to go. Through solid vestibule trains from Chicago via Kansas City and St. Joseph, also from Denver, Colorado Springs and Pueblo to the Territory, through the cities of Topeka, Hutchinson, Wichita, Wellington and Caldwell. It will be to your advantage to locate on the People's Favorite railway. Look at the map. The Rock Island has excellent connections from all portions of the Union. For full information concerning Oklahoma, the land laws, and the best way to get into the country, address

JOHN SEBASTIAN,
G. T. & P. A. Chicago, Kansas & Nebraska Ry.,
Rock Island Route, Topeka, Kas.

"The peerless empire of form and color is found in Colorado," says a great artist. So are there many other wonderful effects. There is that grand triumph of engineering skill, the Bow-Knot Loop, famed all over the world; the pretty town of Graymont nestled against the base of Gray's Peak, the giant prince of the range; sunrise on Gray's Peak—a sight once witnessed never to be forgotten; Idaho Springs the beautiful, a restful spot blessed with the healing waters for all who come, within two hours ride of young levithian Denver; the storied gold camp of Georgetown perched in the upper air of the mountains, ever fresh and cool and clear—these are a few of the delightful spots in the "American Alps" reached by the Colorado Central Division of the Union Pacific railway in Colorado.

TO MONTANA, OREGON AND WASHINGTON.

If you are going West, bear in mind the following facts: The Northern Pacific railroad owns and operates 987 miles, or 57 per cent. of the entire railroad mileage of Montana; spans the Territory with its main line from east to west; is the short line to Helena; the only Pullman and dining car line to Butte, and is the only line that reaches Miles City, Billings, Bezenan, Missoula, the Yellowstone National Park and, in fact, nine-tenths of the cities and points of interest in the Territory.

The Northern Pacific owns and operates 621 miles, or 62.1 miles, or 56 per cent. of the railroad mileage of Washington, its main line extending from the Idaho line via Spokane Falls, Cheney, Sprague, Yakima and Ellensburg, through the center of the Territory to Tacoma and Seattle, and from Tacoma to Portland. No other transcontinental through rail line reaches any portion of Washington Territory. Ten days stop over privileges are given on Northern Pacific second-class tickets at Spokane Falls and all points west, thus affording intending settlers an excellent opportunity to see the entire Territory without incurring the expense of paying local fares from point to point.

The Northern Pacific is the shortest route from St. Paul to Tacoma by 207 miles; to Seattle by 177 miles, and to Portland by 324 miles—time correspondingly shorter, varying from one to two days, according to destination. No other line from St. Paul or Minneapolis runs through passenger cars of any kind into Idaho, Oregon or Washington.

In addition to being the only rail line to Spokane Falls, Tacoma and Seattle, the Northern Pacific reaches all the principal points in northern Minnesota and Dakota, Montana, Idaho, Oregon and Washington. Bear in mind that the Northern Pacific and Shasta line is the famous scenic route to all points in California.

Send for illustrated pamphlets, maps and books giving you valuable information in reference to the country traversed by this great line from St. Paul, Minneapolis, Duluth and Ashland to Portland, Oregon, and Tacoma and Seattle, Washington Territory, and enclose stamps for the new 1889 Rand-McNally County Map of Washington Territory, printed in colors.

Address your nearest ticket agent, or CHAS. S. FINE, General Passenger and Ticket Agent, St. Paul, Minn.

The "Eli" Once More.

The Burlington Route (Hannibal & St. Joseph R. R.) once more leads all its competitors, in restoring the fast train service between Kansas City and Chicago. The train so well known a year ago as the "Eli," and so deservedly popular with the traveling public, has once more been put on. It is a solid vestibule train with sleepers, free chair cars and coaches, and makes the through run between the two cities in about fourteen hours. Leaving Kansas City in the evening the passenger takes supper on the dining car and arrives in Chicago for breakfast, and *vice versa* on his return. This is a great saving of time, and the Burlington's action in restoring this service meets with the hearty approval of all business men and the public generally.

The Burlington's new St. Louis line increases in popularity every day, and now holds a high place in public favor.

The Burlington runs on this line through Pullman Sleeping Cars of the latest improved design, and Reclining Chair Cars, seats in the latter being free of charge.

We should also strongly advise any one going to Omaha, St. Paul, Minneapolis or the Northwest to take the daily forenoon train on the R. G., St. J. & C. B. R. R., which has a through Pullman Buffet Sleeping Car from Kansas City to St. Paul and Minneapolis and free Chair Car to Omaha, or take the evening train from Kansas City, which has a through Sleeper and Chair Car to Omaha.

All of the above trains are in every way models of comfort and convenience. A. C. DAWES, General Pass. & Ticket Agent, St. Joseph, Mo.

"FOR SPRAYING FRUIT TREES"

The Lewis Pump is the best. Will thoroughly spray a ten-acre orchard per day. Endorsed by the leading State entomologists.



It makes 3 complete polished brass machines (see cut). To introduce, I will send a sample pump, express paid, for \$5.50, and will also give a valuable illustrated book (just published) containing the latest and best receipts for destroying insects of all kinds, to each purchaser of a pump. The receipts alone are well worth \$5. Pump will throw water 50 to 60 feet. My agents are making \$10 to \$20 per day. They sell rapidly. Send for illustrated catalogue, price-list and terms. Goods guaranteed as represented, or money refunded. Address P. C. LEWIS, Lock Box W., Catskill, N. Y.

Dr. WHITTIER

ORIGINAL Dr. Whittier in Kansas City. OLDEST Dr. Whittier in Missouri, and ONLY Dr. Whittier in Kansas City who has practiced medicine over 15 years.

CURES Syphilis, Scrofula, Rheumatism, Gout, Eczema, etc., causing ulcers, eruptions, pain in bones, swelling of joints, enlarged glands, mucous patches in mouth, falling hair, and many other symptoms. All poison thoroughly and permanently eradicated from the system by purely Vegetable Treatment.

Spermatorrhoea, Impotency, Nervous Debility, etc., resulting from youthful indiscretion, excess in matured years, and other causes, inducing some of the following symptoms, as dizziness, confusion of ideas, defective memory, aversion to society, blotches, emissions, exhaustion, Varicocele, etc., etc., are permanently cured.

URINARY, KIDNEY and BLADDER troubles, Weak Back, Incontinence, Gonorrhoea, Gleet, Stricture, etc., are quickly and perfectly cured.

Consult the OLDEST DR. WHITTIER in person or by letter first. No promises made that age, integrity and experience do not justify. Medicines sent anywhere by mail or express, secure from observation. Consultation free and invited. Office hours, 9 to 5, 7 to 8; Sunday, 10 to 12. No fee until cured, from responsible persons.

NEW BOOK free. Address, H. J. WHITTIER, M. D., 10 W. Ninth St., Kansas City, Mo.

Alliance Department.

[Authorized members of the Farmers' District Alliance, including Jefferson, Jackson and Shawnee counties, contribute to this Department.]

AN INSIDE VIEW.

For months and years past the Western stock-raiser has believed and insisted that there was a combination among Chicago packers by which competition was suppressed and prices of live stock in a great measure fixed without regard to competition. We say "in a great measure," for in the nature of things it is not possible to fix prices of things absolutely. The Eastern demand cannot always be determined, nor yet the Western supply, but yet, within limits, the prices have been manipulated beyond question and the West milked systematically. This has been the settled conviction of the farmers, although, had proof been demanded, it would have been hard to make out a clear case. The fact of a combination has been positively denied by all the political papers of Chicago, and with one or two exceptions the agricultural papers have either joined in the denial or remained silent. These papers declared in the most positive manner that there was no combination, and the guileless reader would have supposed that if there was anywhere on the green earth that business was conducted according to the sermon on the Mount it was in the packing houses and in the stock yards of Chicago. Of course the political papers knew better. They were not so phenomenally ignorant. Now and then in their market reports the fact would be let out by some truthful James who was not trained to disguise the truth. Mr. Orange Judd, however, when he came out to Iowa last December to attend the meeting of the Improved Stock Breeders' Association, used his privilege as an honorary member to oppose a resolution condemning this combination and boldly assured the members that no such trust or combination was in existence. We do not believe another editor in Chicago would have risked his personal reputation for sagacity, to say nothing of integrity, by making such a statement.

The Inter-State Commerce Commission sat in Chicago last week, and while investigating the rates on live hogs and packing house products, asked Mr. John H. Robertson, of the Allerton Packing Company, if there was not an agreement between the packers stating that a portion of the packing houses should remain closed and should receive a certain amount from those which were working during the time they remained closed. Mr. Robertson refused to answer. Mr. Allerton himself was then placed on the stand and asked the same question, and he, too, refused to answer. Mr. J. C. Hatley, a packer, was then placed on the stand and he answered that "there was such an agreement." We now ask Mr. Orange Judd to rise up and state whether he was so blind to the facts about him that he did not know, or if he was trying to deceive the Iowa breeders.

We do not know that it matters much whether he was chargeable with ignorance or duplicity, but it does matter much to the farmers of the entire West whether there is to be competition in buying hogs in Chicago, or whether a few packers are by their combination to fix just what price they please on the stock of the farmers of the entire West and rob them at their pleasure.

If the State of Illinois cannot find means to break up a combination in Chicago formed for the purpose of robbing the people of other States that do business in that city, it remains to be

seen whether Legislatures and railroad commissioners of the Western States cannot establish rates of freight on live stock that will obviate the necessity of Western farmers shipping it to Chicago at all.

The Inter-State Commission has established the fact of the pool. Later developments show that it is carried on on the percentage plan. Each packing house by agreement is allowed to pack a certain percentage of the hogs. Some of the houses buy the percentage of others that remain idle. The price paid is taken from the price paid to the shipper, who of course takes it off the farmer. The business being thus placed in the hands of a few men, the only thing that prevents them from putting the price down as low as they please is the shipping demand from Eastern buyers. When this is light from any reason all that the packers need to do is to stay out of the yards till the afternoon. The farmer is there with his hogs, he is at heavy expense, his hogs are shrinking in weight, and he wants to get home. He must take what they give him. If there should be a brisk shipping demand for several days, prices are advanced, telegrams are sent all over the West, "Bring on your hogs," a grand rush ensues, of the extent of which packers are fully advised, the yards are crowded, the buyers stay out till afternoon and the bottom falls out of prices. Every farmer and every shipper who has been at the yards this winter knows that we are describing the existing conditions. We are glad the Inter-State Commerce Commission brought to light the secret compact which makes this system of robbery possible. We have no doubt that a similar combination prevails in the dressed beef establishments. It is time that provision was made by the Western States to obviate the necessity of doing business in a market where robbery is reduced to a science.—*Iowa Homestead.*

Chaplain's Duties.

EDITOR KANSAS FARMER:—As you have given us space in your valuable paper for alliance news, we want to have a little talk with the brothers and sisters through the KANSAS FARMER under the above heading. It is fitting and proper that meetings be opened and closed with prayer, but it often happens in this sinful State of Kansas that there is not (according to the eternal fitness of things) any one present who is qualified to discharge the duty. Hence the duty is dispensed with. True, 'tis pity, and pity 'tis, 'tis true; but the evil needs a remedy, and that remedy is in formulating a short and appropriate prayer for opening and closing, and incorporate it in the ritual, to be used the same as the other ceremonies of different officers, then it could be used by saint and sinner without embarrassment. Others orders are thus provided, and why not us? Then it would obviate another thing: There are often to be met those who are anxious for an opportunity to air themselves with a long-winded prayer that no one cares to hear. A prayer from the ritual shuts them off, and I think we ought to talk the matter up and bring it before the State and national orders, that when the great cooperative union is formed of alliances, granges and wheels, the prayer be incorporated in the new work, and will make a motion to that effect, if I can get a second. Now, brethren (and sisters, too), speak out on this and any other topics that need ventilating. If the alliance page is not filled before this gets into it, we will speak of other matters. I will say right here and now that no well organized alliance family can afford to be without the KANSAS FARMER.

W. W. HUDKINS.

Rock Creek, Kas., June 10.

Farmers' Alliance Notes.

Our alliance friends are sending us many cordial greetings for giving this organization a department. We shall soon have it in good trim, but we expect every one to send in any important news that comes to their

notice promptly. Any alliance news of general interest should be sent in very promptly. Brief articles, suggestions or announcements will be in order.

The KANSAS FARMER may always be relied upon to champion the cause of any worthy farmers' organization. Co-operation and organization has been urged by this journal for years. Yet to attain successful results it is necessary to be active, aggressive and permanent.

It was a rainy day for the meeting of the District Alliance last Saturday in Turner hall, Valley Falls, but the attendance was good and enthusiastic. The action of the committee of conference with the KANSAS FARMER regarding an Alliance Department was adopted, and it was resolved that all matter intended for that department should be forwarded to the KANSAS FARMER, where it would be edited and utilized. The meeting expressed its gratification in having such a medium for communication. Its wide circulation will be useful to the Alliance.

Prairie Farmer: There is a strong cry by journals in the interests of trusts over the Missouri anti-trust law. There is no cry from syndicate organs over the defeat of the two anti-trust bills introduced in the Illinois Legislature, one of which was passed by the House and killed in the Senate. It was stated that trust money killed the bills. The Senate, by committee, investigated and disclaimed that such was the case.

Weather-Crop Bulletin

of the Kansas Weather Service, in co-operation with the United States Signal Service, for the week ending Saturday, June 8, 1889:

Precipitation.—The rainfall has been very nearly normal this week for the State, averaging 0.74 of an inch. Of the whole amount received, 23 per cent. fell in the eastern division, 49 per cent. in the middle and 28 per cent. in the western division. It is deficient in the eastern counties, about normal in the central, and is in excess in the western. The larger part fell in the southern counties, but the heaviest for the week occurs in the counties from Harper to Russell. On the 1st a good slow drizzly rain fell in the extreme southwest counties, which was followed on the 3d, 4th and 5th with more, that of the 5th being heavy, thus breaking the drouth that was holding sway, and the week closes with more in prospect.

Temperature and Sunshine.—The first part of the week the temperature remained below the normal, but was above on the 5th, 6th and 7th. Generally over the State there has been an average amount of sunshine, but in the extreme southwest and northwest counties cloudy weather has prevailed, while the intervening counties report an excess of sunshine.

Results.—The general conditions this week have been highly favorable to all crops except corn, which needs a higher temperature. In the central-western counties, where the temperature has ranged higher, corn is growing finely. Wheat harvest is progressing as far north as Harvey, and in quality is reported superior to that of preceding years. It is ripening in the central and filling in the northern counties, with promise of a berry equaling that of the south. Barring hail storms, the wheat crop is now considered out of danger. In the southern counties the cotton farmers complain of cut worms and too much water. Chinch bugs still at work in Woodson, while many central counties report them flying on the 5th, 6th and 7th. Raspberries are ripe in the south, while home-grown strawberries and cherries are in the northern markets. The promise of an abundance of peaches is good.

T. B. JENNINGS,
Signal Corps, Ass't Director.

Consumption Surely Cured.

To the Editor:—Please inform your readers that I have a positive remedy for Consumption. By its timely use thousands of hopeless cases have been permanently cured. I shall be glad to send two bottles of my remedy FREE to any of your readers who have consumption if they will send me their Express and P. O. address. Respectfully,
T. A. SLOCUM, M. C., 181 Pearl St., N. Y.

Although sheep will bear to be kept in large flocks, it is much better to divide and sort them, so as to have the flocks as small as convenient.

Better Beeves.

In our time, only modern modes keep us moving with the current, and it will profit us nothing to be looking longingly back to a period when tradition, far more than an intelligent understanding of things, prevailed. Taking a fatted steer as an object lesson, estimate the proportion of choice cuts now found in a modern high-class beast, comparing these in amount with cuts approaching these in quality—if any such can be found—from scrub beasts, and this will show faintly how wide the chasm is between the average beast of 100 years ago, the scrub of our day, and the improved modern steer. As an example, showing the meager amount of the best cuts in an average good steer,—not one of the best,—let us take the prices realized in a leading Eastern market for the portions of the cut-up carcass. Say the steer dressed 800 pounds. We have 60 pounds that sell for 25 to 30 cents per pound; 140 pounds that sell for 18 cents; 400 pounds that sell at 12 cents; 30 pounds at 10 cents; 40 pounds at 6 cents; 99 pounds at 3 cents, and 40 pounds at 1 cent. This, while not strictly applicable to all cases, is, perhaps, as near to the correct figures as can be arrived at. Now, how evident from this showing that we gain immensely by improving the capacity for storing up flesh in those parts that carry the best meat. It will be observed that to materially modify the two items, 400 and 140 pounds, through an improved system of breeding, is to modify and influence the value of more than five-eighths of the entire dressed carcass.

There is no disputing the fact that, though overproduction of meats of low grade, the prices on all grades have been lowered. It is improbable that this depreciation has in part been caused by damaging combinations; but this does not affect the argument, as the relative proportions between the poorest and the best parts, and the general high character of select meat-producing animals—no matter from what cause or causes depressed—will still maintain a pronounced supremacy, and will continue, as heretofore, to prove the only kind of animals that it pays to rear and feed. Regarding reversion, it should be borne in mind that all reversion; if to animals far back, must, of necessity, be to lower forms, almost never to higher, because of the notable scarcity of the latter.—*G. S., in Prairie Farmer.*

Book Notices.

THE STATESMAN—For June contains articles on "The Coming Struggle," "Woman Suffrage," "Insane Asylums," "Party Spirit," "The Single Tax Movement," "Cost of Life Insurance."

THE CENTURY.—In the June *Century* Mr. Kennan begins his account of the most important investigations made by him into the exile system, viz.: his visit to the convict mines of Kara. He will take several articles to cover fully the description of the mines and the facts learned by him in this part of his extraordinary journey. The article is placed first in the *Century*, and is more profusely illustrated than usual. Two striking pictures are those of "Convicts at Work in one of the Kara Gold Placers" and "Convicts Returning at Night from the Mines." The frontispiece of this number of the *Century* is a portrait of the famous French artist, Corot, whose work has had such immense influence on the art of the day and has been subjected to such fierce controversy. The article is by Mrs. Van Rensselaer, and along with the letter-press is another portrait of "Corot at Work," drawn from a photograph by Wyatt Eaton. The old painter is working away in the open air under an umbrella, with a pipe in his mouth. A number of reproductions of Corot's paintings are also given. The wood engravings are interesting as specimens of American reproductive work of this kind. They are all by Mr. Eldridge Kingsley.

An experiment recently made in Scotland proves that the tortoise can walk a mile in four hours.

THE GREAT ENGLISH REMEDY.
Beecham's Pills
For Billious and Nervous Disorders.
"Worth a Guinea a Box"—but sold
for 25 cents.
BY ALL DRUGGISTS.

Patents.

The following list is reported through the official records for the week ending June 4, 1889, by Higdon & Higdon, Patent Lawyers, office rooms 55 and 56 Hall Building, Kansas City, Mo., and room 29 St. Cloud Building, Washington, D. C. By applying to them at either office a printed copy of any patent here named can be obtained for 25 cents.

- MISSOURI. Wire stretcher—Eljah Gutheridge, Fayette. Furniture drawer—Joseph N. Knaus, Fayette. Composite truss for barns—James W. Evans, Kearney. Apparatus for the manufacture of fuel and illuminating gas—John W. Harrison, St. Louis. Self-closing hatchway—Emil J. Herman, St. Louis. Buggy-top spring—Cortez V. Pugh, Vandalia. Bicycle—Stephen D. Reynolds, Nevada. Cable grip—Charles S. Chapman, Kansas City. Double pointed pin—James H. Birch, Plattsburg. Water wheel—Lee Middleton, Clarksville. Carriage—Michael Haughey, St. Louis. Valve—Frederic Egner, St. Louis. Shutter for photographic cameras—Robert E. M. Bain, St. Louis. KANSAS. Churn—Heinrich Sommerfeld, Canton. Combination lock—Irvin A. Shaw, Kinsley. Weather strip—Andrew M. Stadard, Eureka. Tree protector—Hiram L. Webber, Stafford. Pipe coupling—Cyrus F. Hurrel, Holton.

Interesting Items.

- A ray of light travels 11,160,000 miles in a minute. A Norwegian savant estimates the age of the world at 1,000,000 years. It costs \$25 fine or thirty days in jail to sell boys cigarettes in Ohio. One hundred and twenty-five thousand heads of clover yield 2.2 pounds of honey. The ratio of insane persons to the whole population is very high in Russia, being as one to 450. A necklace of human knuckle bones was the gift received by a missionary from a partial chief. Of the 200 gold-beaters in New York, not one is a woman; while of the 900 gold-cutters one is a man. In the Himalayas is found a plant resembling the cobra with its head erect, called the cobra plant. The vanilla, as a living plant, was imported into England toward the end of the eighteenth century. One of the wonders of Paris is a well 2,350 feet in depth. Hot water rushes out of this well in a stream 114 feet high. A little girl in De Kalb county, Ga., rejoices in the name of Susan Julia Melinda Maria Savannah Sophia Elizabeth Ladybug Towers.

Short and Sharp.

A correspondent seeking to set forth his troubles, uses the puzzle language to explain that he has tried all kinds of remedies for rheumatism without relief. To indulge his fancy the following reply was sent in the same language, which deciphered will lead him, as it will all others so afflicted, in the right course towards a certain and permanent cure: Stand & C U R Y Y S 2 B Dvd & C Y U We CCs 2 UUs It. At Is. try S. J. O. Its FX give EEs. Its Qrs. Its EEzZ to get S. J. O. XLLs all B Ys, 0 else is 1/2 so FXUL. 1000s say so. The English of which is that St. Jacobs Oil is the best known remedy for pain.

Manuring in the hill is like heaping manure about the stem of a fruit tree. Better spread it out as far as the roots extend.

It is said by practical sheepmen that a grade mutton sheep will mature more quickly and fatten more rapidly than thoroughbreds.

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On about 20,000 bushes last year we used forty pounds of hellebore. This is at the rate of about an ounce to thirty-two bushes. Every bush had a little hellebore, but if there was no sign of worms only the slightest shake of the box was given in passing. Some of the bushes where the caterpillars had commenced their work of destruction were carefully dusted all over. This takes more time and more hellebore, but the cost is nothing as compared with the benefit. For dusting on the hellebore we use an old baking powder tin box. Punch holes in the top large enough to let the powder come through freely—say about the size of a pin's head. One of our neighbors, who has 1,000 bushes, mixes two pounds of flour with a pound of hellebore, and he kept his bushes last year free from caterpillars with less than a pound of hellebore. It is better to dust the bushes on a still morning while the dew is on the leaves. But the point of greatest importance is to dust the bushes the first moment there are any signs of the worms. And the next thing is to keep a close watch, and if any worms have escaped or new ones hatched out, go over the bushes again, and stick to it till they are absolutely free from the pest.—American Agriculturist.

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Causes of Sour Ensilage.
 Prof. H. E. Alvord, President of the Maryland Agricultural college, whose long experience and varied experiments with ensilage make him one of our best authorities, says: "From its first introduction the chief fault found with ensilage has been the acid character of the material at the time it is fed to animals. This acidity results from fermentation in the silo, caused by living organisms, known as bacteria. Enthusiastic friends of this process of preserving forage claimed, a few years ago, that they had discovered a method of making sweet ensilage. The theory upon which this method is based is that the bacteria of the ensilage fermentation are destroyed and the fermentation thus arrested by a certain degree of temperature, placed variously at 120 to 140 degrees Fahrenheit. The little creatures are induced, as it were, by favorable conditions to work themselves into such a state of excitement as to die of apoplexy from their own fervent heat. It is a very pretty theory, or was, as long as it lasted, but that was not long. As well try to fan a fire to such intensity that it would extinguish itself and without injury to the fuel. Careful students soon discovered that the bacteria of the silo were particularly happy and active at the very temperatures which it was claimed would destroy them. Temperatures 120 to 160 degrees Fahrenheit are most favorable to their development and activity, and it requires at least 185 degrees to destroy them, while fermenting ensilage does not often exceed 140 degrees, and no authentic record of 150 degrees Fahrenheit can be found. How men could so deceive themselves—and some of scientific reputation have been among them—it is hard to understand; but the evidence is conclusive that they were wrong. I have never yet been so fortunate as to see any ensilage which I could call 'sweet.' Of course the material differs greatly in the degree of its apparent acidity, and as comparative terms, sour and sweet, may be convenient as applied to ensilage, although deceptive. I see no evidence that any relation exists between the method of filling the silo—the slow process or the quick process—and the acidity of the product.
 On the whole, I prefer the straight-ahead way, no undue haste, but pushing the job of harvesting and filling to completion without necessary delay. It is most economical of labor, especially if the task is a large one, and gives ensilage of full as good a quality. Yet, if circumstances make slower work desirable, or if an accidental detention occurs, there need be no fear of serious loss." On the same subject Prof. F. G. Short, of Wisconsin Agricultural Experiment Station, says: "This change from sour to sweet ensilage without material difference in the method of handling the corn is a difficult thing to explain. The factor of temperature which was first thought to explain the difference between sweet and sour ensilage, does not appear to be sufficient to explain their radical differences. Ensilage of a high degree of acidity, and of offensive odor, has been made when the temperature of the silo has been as high as 150 degrees Fahrenheit, while ensilage of a high grade with but a light acidity, has been made when the temperature has not risen above 80 degrees Fahrenheit. A peculiarity of the ensilage formed at low temperature has been that, apparently, little fermentation has taken place, the ensilage having the same green, fresh appearance as when put into the silo. It is evident that sour ensilage can form when the temper-

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ature has been high as 150 degrees Fahrenheit, and sweet ensilage when the temperature has not risen above 100 degrees Fahrenheit, consequently we must seek for some other factor than temperature to explain the difference. The action of ferments on organic matter is little understood, consequently any fine-spun theory concerning the action of this or that ferment or what would take place at this or that temperature would be of but little value. There is one fact, however, which may throw some light on the cause of sweet and sour ensilage. It is well known that the amount of water present in a body has a great influence on the kind of fermentation which it will undergo if left to the air. The change from sour to sweet ensilage has accompanied a greater maturity of the corn. Each year the corn has been planted a little thinner and allowed to become more mature before being put into the silo, and each year has seen a less degree of acidity in the ensilage. Examination of the analysis of ensilage received from various silos in the State, as well as our own, would seem to indicate that the acidity varies with the amount of water present in the corn; the more water the greater the per cent. of acid.

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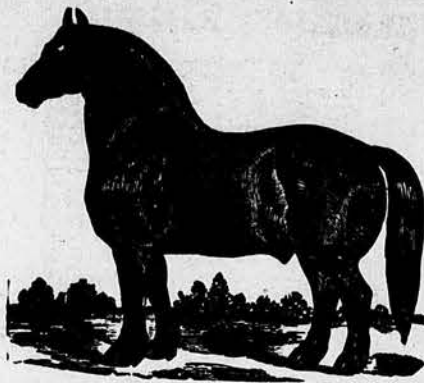
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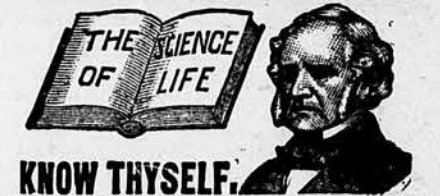
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P. O. Ezbon, May 14, 1889. one small mouse-colored mare...

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FOR WEEK ENDING JUNE 13, 1889.

Cowley county—S. J. Smook, clerk. PONY—Taken up by J. K. Hall, in Windsor tp., P. O. Cambridge...

Harper county—H. E. Patterson, clerk. PONY—Taken up by L. H. Hamilton, in Chicaska tp., P. O. Bunnymede...

Trego county—O. A. Hoar, clerk. MARE—Taken up by Charles S. Lee, in Franklin tp., May 3, 1889...

Morris county—Geo. Irvin, clerk. HORSE—Taken up by George M. Munkres, in Neosho tp., May 25, 1889...

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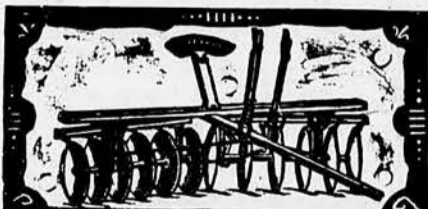
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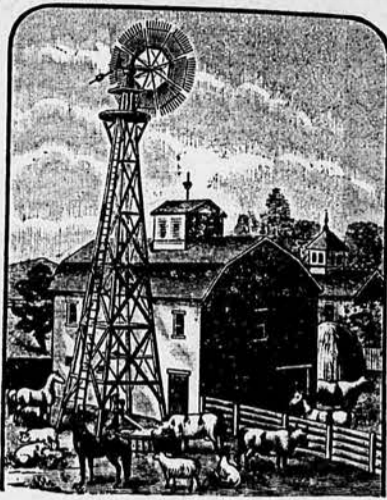
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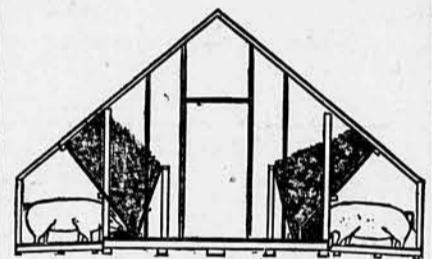
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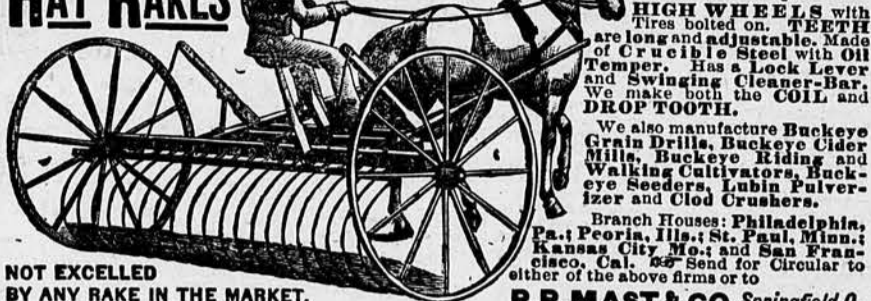
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[Patented Oct. 9, 1888, by a practical feeder.]
 For Saving Feed and Work and Protect-
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A Granary and Automatic Feeder Combined,
 to be erected in the Feed Yard. Will store 900
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 For feeding laxative and nitrogenous food,
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 Warranted, when properly used, to save at
 least 20 per cent. of the feed as usually fed.
 Not by the direct saving alone, but mostly by
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 2,000 feet of lumber and 3,000 shingles for
 feeder of regulation size. Can be built of less
 capacity and added to at any time to suit the
 farmer's needs.
 The use of this feeder with a proper supply
 of nitrogenous and laxative food with corn,
 will in two weeks' time place the most un-
 thrifty hogs in good condition, if not already
 infected with cholera. It is the greatest safe-
 guard against cholera. Sanitarium hogs eat
 regularly and often; never overeat. No mud
 or filth to consume; all work and waste prac-
 tically dispensed with.
 The use of shelled corn or meal in the San-
 itarium is not half the trouble it is to feed ear
 corn. Keeps the yard free from litter; gives
 all hogs in the yard the same chance to thrive,
 all having equal access to feeder. When you
 see your corn trampled in the mud and filth
 you feel like kicking yourself. When you
 witness hogs eating from the Sanitarium in a
 muddy time you smile; so do the hogs. You
 do not hesitate to provide for the comfort of other
 farm animals; why neglect the hog? He brings a
 quicker and better return for money invested than
 any other animal. Protect his health and feed him
 properly and he will be more remunerative to you. I
 furnish Permit with full instructions about building
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 Above special proposition will be withdrawn July
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 Circulars on application.
 Any party building the Sanitarium, or adopting or
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