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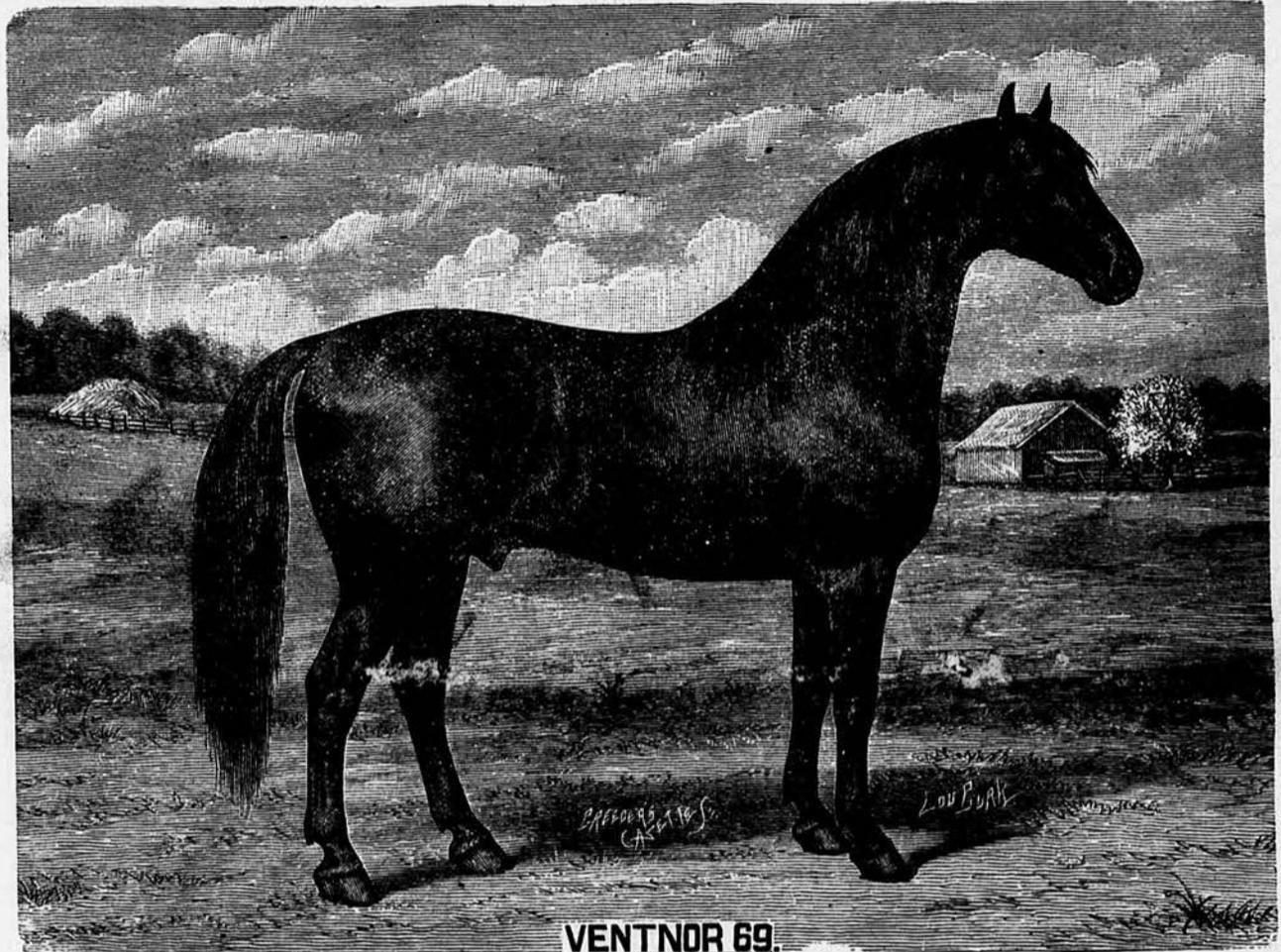
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(Continued on page 20.)

Agricultural Matters.

SOME INTERESTING OBSERVATIONS

Concerning Soils and the Action of Water in Them.

The following extracts are taken from an interesting lecture delivered by Prof. Whitney, before the Fairfield (S. C.) Farmers' Institute, recently, and published in the report of the Commissioner of Agriculture at Columbia, for October, 1888.

The physical properties of soils, especially as related to moisture and heat and the effect on these of tillage, cultivation and cropping, are of such importance and interest that I desire to call your attention to the matter to-day and review some of the most important points. It may help us to a clearer view of the matter if we consider the conditions necessary for the production of one of our most important crops, and consider the properties of some typical soils in these tubes before us.

Cotton is planted as early in the spring as possible, and at about the lowest temperature at which germination will take place, but yet when all danger of frost is over. From this time (about the middle of April in this section) till the middle of July, the temperature of the air and soil will rapidly rise and the rainfall increase, conditions which favor the growth of the plant or the production of weed. If these conditions continue unchanged, the plant will become perennial and continue to grow from year to year, assuming the form and size of a shrub or tree, as in the hot countries of India and Africa. With us, July marks a turning point in the life of the plant. The temperature begins to fall as rapidly as it before had risen and the rainfall to grow less, conditions which tend to stop the growth of the plant or weed and favor the production and ripening of the fruit.

To aid as much as possible these natural meteorological or weather conditions, we have, as a result of long practice, adopted the following method of cultivation. The soil is loosened by the plow from the packing effects of the winter rains and suitable beds are properly manured and prepared for the seed. From this time till the middle of July, or, as we have seen, until the weed practically completes its growth, the cleanest cultivation is maintained with the sweep and hoe to keep down, if possible, every sprig of grass and weeds and after each rain to stir the surface of the soil to prevent too rapid evaporation of the water from the soil. From July on, while the plant is ripening, not only is the surface stirred after the packing rains, but it is still further packed by the feet of the pickers, and grass and weeds are allowed to grow at pleasure, while some farmers even practice the sowing of rye and barley at the last working of the crop, for winter pasture, all of which conditions, acting in direct harmony with the meteorological or weather conditions, tend to dry out the soil and ripen the crop.

You will observe that during the first period or the growth of the weed, you want a high temperature and plenty of moisture in the soil, assuming, of course, a well-drained soil, so that the roofs will have plenty of air, and during the second or ripening period, a lower temperature and a drier soil.

It has been found, by carefully measuring the amount of water which is discharged from certain rivers and streams and the rainfall over the country drained by them, that about one-half of the rain which falls the year through finds its way to the sea, and the other half is evaporated from the soil or is transpired by our plants and trees.

* * *

So we can assume that we will only

have about half, or from 50 to 60 per cent. of the rain which falls, available for our crops. The rainfall, as it enters the soil, is absorbed as water is by a spongy. If the soil is a very coarse sand or gravel, the water very quickly runs through, down to the water level and leaves the surface too dry for the crops. If the soil is a very fine sand or silt, or a heavy clay soil, or has an impervious subsoil, too much water will remain at the surface for the good of our plants. The soil should be of such a kind as to be able, during a dry spell, to lift water up from below, to supply that lost evaporation or transpired by the plants and trees. This movement of the water in the soil, up and down, between the surface and the permanent water level of our wells, is caused by capillary attraction in the spaces between the same particles of the soil.

When water is contained in a vessel which it wets as it does glass, the edges crawl up the glass and are a little higher than the general surface of the liquid. If the vessel is so narrow as to have the sides closer than twice the width of this raised portion, the water will rise to a certain height, according to the distance between the sides.

I have here two glass plates which I will hold upright in this dish of water with two of the perpendicular sides together and the opposite sides separated by a short distance. You will see that the water rises between these plates, the height depending on the distance the glass plates are apart, so that the upper line is curved. I have here also some glass tubes of different sizes, but all of very small diameter. When the lower ends of these tubes are put in this bottle of red ink, you will observe that the ink rises to different heights in each, according as it is large or small. It has been found, by careful experiment, that if the tube is 1-25 inch in diameter, water will rise a little over one inch. In a tube ten times narrower, or 1-250 of an inch, water rises about 12 inches. In a tube one hundred times narrower, or 1-2500 inch, water rises 10 feet. If I have a tube just long enough to be filled with water and put another one of the same size also filled with water on top, the bottom tube will suck the water down from the top one, because the two tubes will be like one tube, in which water will only rise to a certain height, independent of the length of the tube. The smaller the inside of the tube, the slower the water rises, because the greater the friction in proportion to the amount of water which passes through the tube, so that in tubes of very small size, the rate of ascent is very slow. 25 feet is about the greatest height to which water can be drawn, and this only in the finest tubes.

The soil, by reason of the small spaces left between the grains of sand or clay, acts very much like these tubes, or more nearly like the glass plates I showed you. Small depths of soil, such as I have in these tubes, when saturated, hold different amounts of water. A coarse sand may hold 25 per cent. of water; a very fine sand or clay will hold 50 per cent. or more of water; while a good garden loam may hold more than its own weight of water, and peat two or three times its own weight of water, but as we saw in the case of the fine tubes, if the depth of the soil is increased, as in a field, the lower layers of the soil will suck out the water from the saturated part and the water will diffuse downward, the larger spaces, like the larger tubes, being emptied first and the smaller spaces just when the particles actually join, like the smaller tubes, holding the water longer and higher. When the upper layers of the soil dry out, the action is reversed and

the water moves upward to supply that lost by evaporation from the surface and transpired by the plants. If the soil be composed mainly of gravel or coarse sand, the spaces between the particles are so large that water passes through them too rapidly and they have not the power to lift the water from below more than a few inches. Such soils are unfit for cultivation if the level of the ground water is some distance below the surface. Green manures improve the water holding capacities of such soils. If you have a layer of gravel under your soil, like this in the tube, it may be that the spaces will be too large to suck the water down from the wet soil above, or in a dry time will be too large to bring water up from below, so your crops suffer in wet weather from too much water and in a dry time from a lack of water. With clay or very fine sand, the spaces between the particles may be so small that the movement of the water is very slow from the increased friction, as we saw in the tubes, and will neither draw the water down nor let it come up fast enough to supply the loss from the surface. Such soils may need artificial drains. "Clay" soils which are used for cultivation seldom contain more than 10 to 20 per cent. of pure clay, the rest being very fine sand or silt. Pure clay, as it occurs in our soils has the property of swelling up when wet into a pasty mass, which shrinks as it dries up. If a little of this clay is mixed with a quantity of water, the water is muddied and will not get clear if the water and clay are pure, for weeks or perhaps years, but a trace of salt or lime added to the water causes the clay to shrink together, something like it does when it dries up, and it falls to the bottom at once. So an application of lime or nitrate of soda, or any saline matter, to clay land will often improve the drainage and capillary powers of the soil, by causing the clay to shrink, which, in the absence of such saline matters, had swelled and clogged up the spaces between the particles of soil.

You can understand, from what has been said, that the soil which has the greatest capillary, or water-holding power, and which, by reason of the greater number of finer spaces, holds the most water, also has less evaporation from the surface, as in a fine sand or clay, and it has been found that probably from the same cause, plants can get more of the water out of a coarse grained soil than out of a fine one. It will be seen that the soil will in general be in the best condition physically for cultivation which is of a certain medium fineness. Most of the clay soils and sub-soils that I have seen in this State and North Carolina, contain a considerable amount of rather coarse grained sand, are generally well drained by narrow veins of broken quartz rock, and are of such a nature that by a little weathering, or when it is moderately dry, they readily fall to pieces when worked. Such soils and sub-soils as this are much more easily worked than a stiffer and more tenacious clay of England and our Northern States, which is almost impervious to water like our "pipe clays" and which it is necessary to underdrain at great expense.

Broadly speaking, as we have said, half of the rainfall finds its way down to the ground water and thence, through the springs, brooks and rivers, to the sea, but of course, for any particular field, this amount will depend upon the amount and distribution of the rainfall, the character of the soil and the cultivation and cropping of the land. The object in the cultivation of the cotton crop over the first period of the growth of the weed, is to conserve

the other half of the rainfall, or that which would otherwise evaporate from the surface, so that with a high and increasing temperature, the plant may have plenty of water at command. Evaporation takes place only at the surface of the soil and if you protect the surface with loose boards, or even gravel or stone, or a mulch of straw or leaves, very little evaporation will take place and the soil will remain moist for a long time after rains. If the surface of the soil is compacted by heavy rains, or by the roller, or even by the step of man or animal, the particles of soil are pushed nearer together so that it sucks up water from below, more water is brought up to your seeds to be sure, but more water evaporates from the soil and the soil dries out quickly, so it is a common practice after the seeds come up to loosen up the surface with the harrow, sweep or hoe to destroy the capillary connection with the lower layers and protect the soil from too rapid evaporation. The very surface quickly dries out in this case, but leaves the particles of soil so far apart that they can no longer bring up water from below, and this loose earth acts as a mulch to prevent evaporation from the surface and conserves the water in the soil for the roots of the plants. It is plain on the face of the matter, that different soils and crops will need different methods of cultivation. For a coarse textured soil, deep and frequent cultivation may keep the soil too dry, while the same cultivation on a wet sand or clay might serve to dry it out and bring it into a fit state for the crops. It would seem that in general on sandy lands tillage and cultivation should always be light and superficial, and the same would be true for the summer cultivation of most soils, that only the surface should be stirred after each rain, and the roots left undisturbed in the comparatively shallow depth in which most of the available plant food is contained. It is obvious, however, that no certain rule can be laid down for this, as it depends upon the soil, crops and season.

In filling the barrels pack two tiers of apples at the bottom, then fill, pouring carefully from the basket, and shaking down after every basketful; pack two tiers at the top so that they will be rounding up in the middle about an inch higher than the chine; place on the head and crowd it down by means of the lever or screw and secure it, and you will have a package that will arrive at its destination in good order and command the top of the market.

Gold Medal.

The J. C. Ayer Company have received notice from Spain that their medical preparations have gained the gold medal at the Barcelona International Exhibition. The jury of award consisted of eminent physicians and pharmacists. This exhibition, the first of an international character ever held in Spain, was opened in April last with impressive ceremonies, in which the queen regent took part. Nearly all the high functionaries of the kingdom were present. It has been continued through the summer with great success.—*Lowell Morning Mail*, Oct. 17, 1888.

Vandalia and Pennsylvania Route--St. Louis to New York.

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The Stock Interest.

The Future for Sheep.

Farmers differ very much in their estimate of the benefits of legislation upon the material interests of the people. Some have no hope for the wool industry without high duties on foreign wools imported, some would be satisfied with low duties, and some do not ask any protection. Our own opinion is, that with the large increase in population in this country, and with the relative decrease in wool production which will surely follow any permanent reduction of duties, foreign growers will gradually come into control of our markets and prices will not range below a living standard for those who pay as much attention to raising wool as they do to raising strawberries. Fifty or a hundred good sheep well kept will pay on any farm, even though prices be low. Poor stock is never profitable. Good wool will always be salable, and it will bring money. If we are to have free wool we will have many other things free or we will have revolution. Farmers are quite as good as mechanics and tradesmen and manufacturers. In any event we believe it is not wise for Kansas farmers to abandon wool-growing. Rather improve the herds, divide them into small flocks, keep only the best, and unite in building woolen factories in our own State.

Here are some suggestions from our excellent contemporary, *Western Rural*, published some time ago: "Sheep, like other stock, must be the best to be profitable. There is no one in this country making anything out of poor stock of any kind; and the flockmaster who thinks he can do it out of poor sheep had better undeceive himself at once, and at least purchase a good ram immediately. It is an ill-wind that blows nobody any good, and the owner of a poor flock can congratulate himself that the depression of the sheep business at least enables him to get a ram at low price. Now is time to buy sheep and it will be a pity for any one who may need sheep not to buy. We can now think of flock of sheep—though we do not know any in the West—that will never pay a dollar of profit whatever the tariff may be. They are good for nothing. But if their owners would place at their heads a thoroughbred ram, and select his very best ewes for breeders, he would soon have a flock that he could make something out of, tariff or no tariff, if the times were ordinarily fair.

"There are times, too, when a flock of sheep must have faithful and intelligent care. Slipshod sheep husbandry is no longer profitable, if it ever was. There are too many men in the United States who give the best of care to their sheep, and hence produce the best wool and the best mutton, for the careless, negligent shepherd to hope to compete satisfactorily in the business. It is unfortunate that the notion that the sheep needs but little care has been so prevalent. The notion has come down from the time when we had nothing but scrub stock that would not die a natural death and that not even the dogs cared much to kill. But we now have sheep that must be taken care of. Improved breeds necessitate better care. To some extent our manner of breeding weakens the constitution, but not sufficiently to do harm, if the animal is decently taken care of. The sheep, like other animals, must be fed properly if profit is expected from the business. We were about to say that there is often a greater violation of natural laws in feeding sheep than there is in feeding any other domestic animal. But upon second

thought we conclude that it would not be safe to say that. There is so much unscientific feeding it would be difficult to say which of our animals do suffer most. But the loss from improper feeding of sheep is very great. The loss in lambs alone from this cause is startling. The ewes are often so fed that they cannot produce lambs that will live, and it is often a piece of exceptional luck if the ewe herself is saved. The subject of feeding is such a broad one that several articles might be written upon it. But our space at this time will only permit us to say that the general fault is in feeding too much dry and heating foods. Many flocks get nothing from the beginning to the end of winter but hay and fat-forming foods. The result is constipation and feverish blood. A ewe thus fed is unfitted to be a dam and a fattening sheep needs something else besides the fat-forming foods. In England they have less trouble with their sheep than we do and they produce better mutton than we generally do. Our mutton is composed largely of fat and tough tissue. Their is not. There is not too much fat and there is plenty of tender flesh on their sheep. What is the cause of the difference? Well, they feed better. They are not eternally stuffing the animal with corn. They rely largely upon roots and the bone and muscle-forming foods. Hence the bone and muscle are well developed, the blood is not overheated and the digestion is kept in order. In feeding oil meal, mill stuffs, a reasonable quantity of roots—not too many, especially to breeders—and foods of the bone and muscle-forming variety generally, we supply a necessary moisture which can not be supplied by the fat-forming foods. We must all learn to feed in this manner if we expect our balance sheet to show a profit. The ordinary care in the matter of winter shelter need not be noticed, though there are some who do not give the care in this direction that they must give if they expect satisfactory results. In a word, let us not spend our whole time in working for legislation. There is something to do at home.

Provide Shelter for the Stock.

Winter is near us, and the wise farmer will see that his stock is well cared for. Not taking into the account any considerations of mere kindness and mercy, the selfish view alone shows that shelter is a large item of profit in the raising of stock. Wherever a test has been made it proves that animals which are left to care for themselves during cold winter months, not only do not improve in flesh but lose in every respect, and it actually costs more money to bring them into good condition after the destructive processes of an out-door wintering have done their work, than it would have done to keep the animals going steadily forward under good care.

Shelter need not be expensive. Any farmer who has stock can protect it from storms and bad weather if he wants to do it. There is no more comfortable barn than can be made by what grows on the open prairies of Kansas. There is no better windbreak than a hay rick; there is no better protection against cold rains than a roof of hay or thatch. A few posts of scantling or of rails or of poles, make a framework that may be covered with hay, straw or corn-stalks and wrought into an enclosure where a man might room with his cattle or horses and be as warm and dry as if he were in his own dwelling without fire. An ingenious man, a good stack builder, can make a hay barn without a stick of wood or a board. Build two ricks, starting ten or twelve feet apart, and after going up

straight ten feet, draw together and top out as one rick.

The feed saved by reason of good shelter in one winter will pay for all the work and material necessary in providing it. If a hay shed only is made, or if hay or straw or stalks is the principal material used, the expense is nothing, and the labor costs nothing, for the work is done, or may be done at a time when it interferes with no other work. The importance of this matter is apparent to all observers. If a farmer would have sleek, growing, healthy animals, he must take good care of them, and nothing is more necessary in good care than shelter.

Winter Handling of Colts.

There is no better time than during the winter for that preliminary handling of colts, so proper, prior to what is termed "breaking them in to work." That is the opinion of an Iowa farmer who expressed his views some time ago in the *National Live Stock Journal*. And he is right. The degree of education to which the horse is susceptible has a very wide range; as wide, in fact, as in the case of man, who, from being able to speak half a dozen languages fluently, being a naturalist, with intimate knowledge of every walking and creeping thing upon the globe, or thoroughly educated in a learned profession, may run down in a regular gradation to the man who has barely knowledge enough to enable him to entrap game and eat the meat raw. The horse, educated to go through the military evolutions with precision, doing divers tricks at the word of command, and showing a full knowledge of all that develops upon him while in harness, represents the higher type of education in the horse; while another caught up from the ranch on which he had grown, not knowing shelter or halter, put before a cart, merely knowing enough to rear, plunge, and kick, represents the lower grade of education and accomplishments. There is, however, between these two extremes, a grade of education that can be secured on every farm and in every horse-breeding establishment that will fit the young horse for the highest stations in ordinary service, leaving the accomplishments which fit for ring performances and military drill to special teachings, with a view, not to the useful line of service, but to exhibition in the hands of the travelling showman.

Any man who has sense enough to breed and rare a good horse is presumed to know enough to give or direct the preliminary as well as the final training of a young horse. The halter is the first thing that goes upon the colt to hamper his movements, and curtail the liberty to which he has been accustomed. He should have no inducement held out for attempting to break his halter, and should never have one put upon him that he could break if he tried. Wearing old harness while in his stall, even to the extent of having the tugs hooked to a whiffletree, the latter being so suspended behind him that in stepping back the length of his halter his heels would come in contact with it, is a mode that trial has proved to be one of the best ways possible for familiarizing the colt with the trappings which, in after life, he is expected to wear, in whatever line of work he may be assigned to. Especially should the young horse be made familiar with sights and sounds that, while hooked to a vehicle, he may be brought in dangerous proximity to. Dangerous, he too often proves, simply because he has not been taught that certain things that may startle by their sound or looks, are harmless in fact. He it always remem-

bered that if there be a boy or hired man upon the farm, at whose approach a given colt shows evidences of terror, that boy or man is not the right person to teach that colt in the duties he has before him. The fear of being hurt causes the spoiling of many horses. Kickers and runaways get their bad habits from fear. The colt, as well as the old horse is safe when in the submissive mood; never when aroused to act on the defensive.

Stock Notes.

Feed sweet and nutritious food regularly and change it often, and the best results may confidently be expected.

In cold weather much good is done by feeding hogs heated food. It warms up the body, and stimulates the digestive organs to vigorous action. It pays always to warm slops in cold weather.

The main reason farmers do not feed more cooked food to their swine, is fauced labor and trouble in preparing it. A good utensil is a large iron kettle, swung upon two poles of sufficiently strong wood.

A variety and change of food is essential to produce the best results, both as contributing to the general health of the animal and as a means of stimulating the digestive organs, and thus increasing the secretion of milk.

Pure, clean water should at all times be accessible to the dairy cow, and is as essential for health and profit as feed, and without both of good quality and liberal quantities, the best results will not be obtained.

It is a source of great economy to cut all hay, straw and fodder fed to cows, even though there be no mixture of meal or bran with it. They will eat up very closely much that would otherwise be left and wasted if fed long.

To insure the best results, and to be entirely successful with any system of feeding, requires that it be done at regular hours and in quantities suited to the wants and capacities of each animal. This entails judgment and discrimination.

Dry corn stalks, that so many farmers leave neglected on the ground where they grew to become a nuisance when preparing for the following crop, if cut at proper time, and after curing, stacked and kept dry, cut and crushed with a suitable machine, fed to the stock in winter, would become a source of great profit.

An interesting circumstance is that cattle are turned to market at two years old in those localities where the greatest number of Short-horns or Hereford grade cattle are found, and just in proportion as the number of thoroughbred or graded animals decrease the age of turning to market increases, and hence it is important for the breeder of cattle for beef to introduce into his herds pure blood of some good, beef-producing strain.

The business of raising cattle is in the hands of two great classes, viz., the men who raise cattle on, and sell them from the range, and the farmers who each year turn out from one to five hundred head of beeves to market. The interests of these two great classes are closely united, and they are of mutual benefit to each other. The range man is able in the fall of the year to turn over to the farmer such of his herd as are at that time not fit for market, but would make fine beeves by the next spring if properly fed during the winter. The range man has neither the feed nor the facilities for this part of the business, and finds it more profitable to sell a steer at two years past, than to hold him until three years past.

TIBBEE, MISS., Oct. 16, 1886.

MESSRS. A. T. SHALLENBERGER & Co., Rochester, Pa.—Gents.—The bottle of Shal- lenberger's Pills sent me in February last I gave to W. A. Anderson, of this place; a long-standing case of chills and fever. He had tried everything known without any permanent good. In less than ten days after taking your Antidote he was sound and well, and has gone through the entire season without any return. It seems to have effectually driven the malarious poison from his system. Yours truly,

V. A. ANDERSON.

Railways are said to consume more than half the world's production of iron, the car wheels required in the United States alone take more than 2,000,000,000 tons.

In the Dairy.

About Creameries.

EDITOR KANSAS FARMER:—Any system that from a given amount of raw material increases the product in both quantity and quality, at the same time lessening the cost of production, is certain to prevail, and this is what the creamery is now doing in the dairy industry of the world. Not only this, it stimulates and urges forward the dairyman to more intelligent and effective efforts in feeding, breeding and improvement in numberless ways. Creameries are operated upon two systems, the gathered cream and the separator. The gathered-cream system was first in the field and is in use in many localities. It is best adapted for sections of country where abundance of water is to be had, among the hills of New England, for instance. In a prairie country like Kansas it has no place. By this system patrons must provide proper milk-setting cans, usually a patent, and water tanks, items in the aggregate of considerable expense, and plenty of water must be available.

As a matter of fact the raising of cream by the deep-setting process is pretty nearly an exact science, and any departure from the one right way entails loss; and as another matter of fact there are numberless farmers that cannot give the work, the time and necessary attention, or that have the needed water supply to secure the maximum amount of cream. Of course 20 to 50 per cent. cream remaining in the milk is pleasant for the calves and pigs, but does not pay their owner. The cream is gathered by the creamery twice or three times weekly, perhaps every day, and payment is made according to a gauge upon the cream-raising can, or by a method known as the oil test, as may be agreed upon. The oil test is reasonably correct, but the gauge is a fraud, swindling patron and creamery alike, just as it happens. The cream-gatherer returns to the creamery his load of cream gathered perhaps at a score of places, each under different conditions of temperature, cleanliness and surroundings, and the butter-maker has to do with a varying compound in acidity and ripeness that neither separates perfectly in the churn or produces the gilt-edged, finely-flavored product he so much desires. At best the gathered cream system is cumbersome, expensive and unfair to patron and creamery.

The separator system eliminates all these drawbacks in the problem. The creamery can be built at from one-half to two-thirds the cost. The expensive methods of cream-gathering are done away with. All of the cream in the milk is recovered regardless of surrounding conditions. The cream is under perfect control and condition. A perfect separation can be made in the churn. Absolute cleanliness and purity can be attained. The butter is perfect and commands the highest market price at all seasons. To the patron the advantages are equally great. He receives the full butter value of his milk every day, and a steady reliable market is assured. The price paid him is based upon the highest instead of lowest market quotation. The expense of creaming cans and water tanks, as well as that of the labor attending their care, is done away with. Creameries of this class return to their patrons the skimmed milk at nominal prices for use in rearing young stock, if desired. Neighborhoods club together, so that the daily delivery of the milk to the creamery is of little expense. This system yields to all concerned from 30 to 50 per cent.

greater returns upon capital invested. It is available to all sections. In far away New Zealand a central factory has established separator stations in the outlying districts convenient to the farmers where the milk is received, separated, and the cream sent to the main creamery. This plan is also being adopted in this country and is destined to come into general use.

Every hamlet should have its separator station. The expense of building and equipment is not large, and I know of no better undertaking for any energetic man with a few hundred dollars at command, than to build and operate such a station in any good dairy neighborhood, selling the cream to some central factory. Kansas is destined to be a great dairy State. Let the work begin in the best available light.

Topeka, Kas. M. MADISON.

Ensilage for the Dairy.

At the late meeting of the Ontario Creamery Association, John Sprague gave his opinion of silos and ensilage with "no uncertain sound." He said: Ensilage is sure to revolutionize dairying and become a necessity to the farmers of this country. I strongly urge your careful consideration and early adoption of this and other improved systems of feeding. My observations lead me to believe that we, in the older counties of Ontario, are on the eve of a mighty change. That change will be in the ownership of our farms, or in a rapid change in our method of farming. The west, with its new virgin soil and easy tillage, has now driven us far from growing grain at a profit. To the business man the day of wooden ships and stage coaches has passed; we, too, as practical farmers, should be quick to abandon that which has not been a paying system in the past and be ready to adopt something better. That something better is, in my opinion, corn feed and the silo, aided by permanent pasture. By the use of this system of storing and feeding ensilage, the capacity of our farms can be largely increased. We can make our best butter and beef in the winter when both are in best demand and bring the highest prices. We had one hundred and thirty tons of green feed from thirteen acres and value the ensilage at \$7 a ton.

Mr. Fuller thought the yield too small; twenty tons per acre is small enough, and he thought three tons of ensilage worth two tons of hay. It is a very economical food. According to his experience it imparted no peculiar taste to cream or butter. Ensilage is bound to become an important factor in the economic production of milk in Ontario.

Mr. Derbyshire said it was the most economic food in the world. It is a food that is adapted for cattle—a grand food. It is a proper thing to do, and we, as farmers, must look more carefully to our interest than we have done in the past. We must cheapen the production of butter. We can never hope to get much more than from 30 to 55 cents for our butter, and any increase of profit that we may get must come from a decrease in the cost of production. We want to get twice as much milk with the same outlay, and we can get it with this ensilage corn. Mr. Fuller has told you that the estimate of Mr. Sprague is a very low one. There is no reason why, if you want southern corn, you can't raise twenty or twenty-five tons to the acre just as easily as not. Put enough manure on it so that the corn may never hear a word about dry weather, so that the richness of the soil will make it get right up and grow. Plant half an acre to try it, right in your garden where you will get the ground rich. There

are five hundred and fifteen silos in Wisconsin, and if it hadn't been for that they would have starved their cattle last winter.

Care of Milk.

Given good cows, success or failure in dairying depends upon a careful attention to details. The cows must be kept clean and healthy, must be milked regularly and fed and watered properly. The milk must be handled just right and the churning and working the butter carefully done with due attention to neatness.

Upon the point of handling milk Mr. Waldo F. Brown, who is most excellent authority, says: "I am more and more pleased with the deep setting in water sealed cans each year that I practice it. We use cans nine inches in diameter and thirteen deep, holding three gallons each, with a lid ten inches in diameter, which drops down six inches over the side, thus giving a half-inch space all around for the water. The cans should have bails to lift them by and a small handle soldered to the side near the bottom by which to tip them up to empty. I made a plain wooden tank to set them in, painted in three coats and arranged it so that we pump through a spout eight or ten feet long into it and draw the water through a faucet at the bottom into another spout which carries it away from the house. Finding a tendency in the cans if not filled alike to float and tip over we arranged a light wooden frame, which drops into gains or slots cut in the sides of the tank to the depth of four inches and divides it into squares of one foot, into which we set a can. The reason the frame is made movable, so it can be lifted out, is because it is necessary to sweep and scald the bottom of the tank once or twice a week as it gets slimy and makes the water impure, even though it is changed twice a day. Our well water stands at 50 degrees all summer, and we are able to keep the milk sweet and to make a good solid butter in the hottest weather without ice. There should be a vent-pipe in the lids of the cans to let the air escape, so that the water will rise to near the top, and this can be made three inches high and an inch in diameter, and it makes a handle to lift by. It should be stopped air tight with a cork or by a cap that screws on. To prevent flooding the cans or overflowing the tank, put a waste-pipe near the top, one inch below the top of the cans and have it discharge where you can see it when pumping. A tank to hold twenty-four gallons of milk should be four and one-half feet long and twenty-eight inches wide, and this will give enough water between the cans to cool the milk, but with this amount of milk, unless you have ice, the water should be drawn off and changed an hour after the milk is put in, but with plenty of ice the water need not be changed for two or three days. The tank can be set in the summer kitchen or any outbuilding, as the milk is sealed air-tight, out of the reach of odors, insects or cats. The cost of such a tank will be only \$2 or \$3, and the cans of the best tin, which is cheapest in the long run, will cost about \$1 each. I have used such cans for ten years, and then a new bottom gave them a lease of life for some years longer."

Catarrh Cured.

A clergyman, after years of suffering from that loathsome disease, Catarrh, and vainly trying every known remedy, at last found a recipe which completely cured and saved him from death. Any sufferer from this dreadful disease sending a self-addressed stamped envelope to Prof. J. A. Lawrence, 88 Warren St., New York city, will receive the recipe free of charge.

Best Cough Cure.

For all diseases of the Throat and Lungs, no remedy is so safe, speedy, and certain as Ayer's Cherry Pectoral. An indispensable family medicine.

"I find Ayer's Cherry Pectoral an invaluable remedy for colds, coughs, and other ailments of the throat and lungs."—M. S. Randall, 204 Broadway, Albany, N. Y.

"I have used Ayer's Cherry Pectoral for bronchitis and

Lung Diseases,

for which I believe it to be the greatest medicine in the world."—James Miller, Caraway, N. C.

"My wife had a distressing cough, with pains in the side and breast. We tried various medicines, but none did her any good until I got a bottle of Ayer's Cherry Pectoral which has cured her. A neighbor, Mrs. Glenn, had the measles, and the cough was relieved by the use of Ayer's Cherry Pectoral. I have no hesitation in recommending this medicine."—Robert Horton, Foreman *Headlight*, Morrillton, Ark.

"Ayer's Cherry Pectoral cured me of a severe cold which had settled on my lungs. My wife says the Pectoral helps her more than any other medicine she ever used."—Enos Clark, Mt. Liberty, Kansas.

Ayer's Cherry Pectoral,

PREPARED BY

Dr. J. C. Ayer & Co., Lowell, Mass.
Sold by all Druggists. Price \$1; six bottles, \$5.

Always select your horses for special work required. The heavy draft animals are best for farm purposes. Trotters are intended for the road more than for drawing heavy loads.

A well-known farmer who writes voluminously for the agricultural press, says that for feeding purposes high-grade cattle are preferable to full-blood. He can not explain it, but he knows it is true.

"Horse for speed, ox for draft, camel for endurance," says the Arab. We use horse for speed, horse for draft, horse for endurance, and grumble if he doesn't fill to perfection each demand made upon him.

Boils, carbuncles and other skin eruptions indicate that the system is endeavoring to reject poisonous acids, and that Ayer's Sarsaparilla is imperatively needed. It is the most reliable of all blood medicines. Ask your druggist for it and take no other.

The Lady Godiva must have had exceptionally long hair since it completely concealed her lovely person. Since Ayer's Hair Vigor came into use such examples are not so rare as formerly. It not only promotes the growth of the hair, but gives it a rich, silken texture.

Any man to be successful with sheep, or any other stock, should have in his mind a standard or pattern of that which he desires to raise, and then cross so as to come up to it as nearly as he can. In that way and no other will he approach to the best. It is true that many who have a good standard never reach it, through lack of judgment.

"Yes, I shall break the engagement," she said, folding her arms and looking defiant; "It is really too much trouble to converse with him; he's as deaf as a post and talks like he had a mouthful of mush. Besides, the way he hawks and spits is disgusting." "Don't break the engagement for that; tell him to take Dr. Sage's Catarrh Remedy. It will cure him completely." "Well, I'll tell him. I do hate to break it off, for in all other respects he's quite too charming." Of course it cured his catarrh.

In the garden, planting can be arranged to keep up a succession. One of the important items in a good garden is to keep up a good supply of vegetables, and this can only be done by making a sufficient number of plantings. Peas, beans, sweet corn, radishes and lettuce can all be sown now and another crop later to keep up a good supply during the summer. Keep the garden clean. If planted in long rows, it is a most easy task to go over every few days with the cultivator, and not let the weeds get well started at all.

Correspondence.

Kansas Sugar Industry.

EDITOR KANSAS FARMER: The production of sugar from sorghum cane is destined to become a great and profitable industry in Kansas, no doubt exceeding in magnitude and importance all others in the past or likely to develop in the future. The experience of several years has proved the soil and climate of this state to be peculiarly adapted to the growth of sorghum cane, and the trials made by the farmers during the last three years in the western portion of the state where the rain-fall is very limited, has also proved the adaptability of the plant to this section, as well as those parts where the rain-fall is greater. So that it is safe to say the crop can be successfully grown in every county in the state.

The experiments at the sugar works has proven the Kansas grown cane to contain so large a per cent of saccharine matter, and the process of producing sugar from it so successful, that no question remains as to the profitability of the industry. The product of the mills at Topeka and at Fort Scott, is reported by the state sugar inspector Prof. Cowgill, to be 97 per cent. pure sugar, which is somewhat remarkable. The yielding capacity of the soil in the production of cane is also very favorable to the success of this industry. Land well prepared will produce ten to twelve tons of cane per acre, and under most indifferent cultivation, from six to eight tons. The cane is worth at the mills \$2 per ton without stripping, which makes the value per acre of the crop range from \$12 to \$24; as much as can be realized from wheat, and the cane is grown and marketed with less than one-half the labor required in the cultivation of that crop. There is no limit to the extent to which this sugar industry may be carried, for sugar is equally as staple as wheat, and the market just as extensive. Sugar is consumed everywhere, and by just as many people as is flour. The great productive capacity of Kansas soil, and the ease with which cane can be raised thereon, makes it possible to put Kansas sugar on the market at a price which will insure it successful competition with the southern product in this line, and a protective tariff on the foreign importation will so restrict competition from abroad that a ready, extensive and profitable market will be had at home, and the price of sugar still be lessened to the consumer, as this product can be put upon the market at 5 cents per pound with good profit to the manufacturer. With the success which has attended the experiments in producing this kind of sugar, and the ease with which the cane is grown here, there is no reason why, within a very few years, the entire amount of sugar consumed in the country cannot be produced at home. Kansas also has an area greater than all New England, and nine-tenths of it is tillable and highly productive. One-half of this territory devoted entirely to the production of sugar, would easily produce more than the entire national consumption. With this statement accepted and before the mind, it is easy to understand what a vast industry the production of sorghum sugar may prove to Kansas, both in extent and profit. And it is a subject of interest not only to Kansas, but one of great national importance; hence one most worthy the attention and fostering care of the general government. The question of cheap sugar is one of great import to the nation, and the duty on the article, one of the vexing questions that enters into the tariff discussion of the day. Develop the home sugar industry and the tariff question, so far as it relates to this, one of the most extensive of all the imports, will settle itself. There is no other product, unless it be cotton or wool, the manufacture of which contributes so much to the benefit of the agricultural class as does sugar.

In the south cotton and sugar are the main dependence of the people. There is no reason why the production of sugar may not prove of even more benefit and importance to the people of Kansas, and with such a prospect in view the future of Kansas agriculture is indeed most encouraging and flattering.

G. H. ALLEN.

Richfield, Kan., Nov. 6, 1888.

Lakeside German Carp.

Special Correspondence Kansas Farmer.

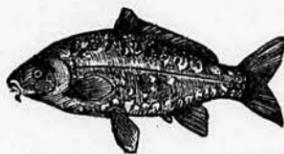
By invitation from Mr. W. C. Rose, proprietor of Lakeside Carp ponds, myself in company with Captain E. P. Delhl, of Olathe, was present during the annual drain of his ponds, which took place on the 23rd of last month. These ponds are seven in number and cover an area of 40 acres, and so constructed as to be easily and readily drained from one to the other without loss or detriment to the fish contained therein.

In order to give the reader an idea of the amount of labor expended in the construction of these ponds, I will state that one pond has an embankment 32 rods long, 36 feet wide at base, 16 feet at top, and lined with a stone wall—entire length, of 3 feet in width, with an average height of 7½ feet; another has an embankment 80 rods long, 50 feet wide at base, 25 feet at top, and an average depth of 10 feet; still another has an embankment of 100 yards in length, 36 feet wide at base and 30 feet at top, with average depth to correspond, while the others, though smaller, contain an equal amount of labor.

Several hundred people witnessed the drainage and movements of the finny tribe at they were being taken from the water preparatory to going into other quarters for the winter. Everybody was highly pleased and pronounced the industry, as conducted by Mr. Rose, a success. And why not, when it is easier to grow one hundred pounds of German Carp than it is to grow one hundred pounds of pork.

The largest carp taken out on this occasion measured 28 inches in length, 19 inches in circumference—largest girth, and weighed 14 pounds. It was 3 years of age, and as to quality for eating, I can safely say that the German Carp is indeed a superior fish and delicious to the palate beyond that of hundreds of other known fish now upon the market, and such is the free-will testimony of all who partook of the excellent carp fry as prepared by the hostess, Mrs. Rose. From Mr. Rose I learn that carp raising is no longer an experiment. It is a reality, a success. He readily sells all he has for market at 15 cents a pound live weight, and the unanimous verdict of all who have purchased was "as good as I ever ate." What better does one want than such testimony.

There are three varieties of the German Carp now in use in the ponds and lakes of this country, either of which give good results and are choice eating. These are known as the scale carp, mirror and leather carp.



THE MIRROR CARP

as shown in the above cut is but "partly covered with scales, which are sheeny and bright and beautiful, reflecting the light in gorgeous tints and colors, and from this peculiarity of the scales arises its fanciful and thoroughly descriptive name. These scales are irregular both in size and shape, and are scattered along the back and the sides of the belly from gills to tail, and along either side on the lateral line from gills to tail is a broken row of irregular sized scales, while about the gills and tail a few scales are also scattered. The rest of the body is naked of scales.

Ganckler, a German authority, gives the best description of the carp family for general identification. He says: "The carp is high on the back, compressed laterally, and covered with scales. The head is pyramidal, the mouth is very small, having two pairs of barbels, of which one pair is attached to the upper lip, and the others, which are larger, are at the corners of the mouth. The general color of the carp is golden brown; rather bright in the case of those which live in running water, and darker with those which have lived always in ponds. Often blueish reflections manifest themselves in the dorsal region, and an orange tint colors its sides. The belly is a yellowish white."

Lakeside is the property of Mr. W. C. Rose, and is situated in Bourbon county this state, west from Fort Scott about 12 miles, and those interested in this profitable

and pleasing industry are welcome at all times, whether they wish to purchase or not.

HORACE.

Pertinent Questions, Even After Election.

EDITOR KANSAS FARMER:—Will you be so kind as to inform the farmers of Kansas how and where they can find, in Topeka, decent clothing so cheaply as does the worthy editor? Instead of buying a suit "fit to wear in any presence" for \$10, we have to pay from \$15 to \$25, and about the same price for an overcoat, such as you bought for \$10, so good, warm, comfortable, &c. I would also like to enquire what we are to understand by your telling us "just think of a wool overcoat for \$5." Many a shivering farmer would jump at the chance to clothe himself and family at these low prices, and the merchant who can make them deserves a free advertisement in your valuable paper. I do not wish to insinuate that you are mistaken, and I have no doubt of your sincerity, but I do not like to pay 50 per cent. more for my goods than any others pay.

If I may, without being impertinent, desire you to state if you think 40 per cent. revenue tax is not sufficient protection for the good of all concerned, and whether the surplus in the United States Treasury ought or ought not to be reduced? These matters are pertinent, even after election, as they will continue to be discussed in the interests of truth and justice for years in the future. The farmers of the country, in the qualities that constitute real manhood, have no superiors in the wide world, neither have the mechanics and manufacturers, and they need not cringe to the monopolist, the money shark on the political shyster, if they will only keep their hands out of the lion's mouth by paying as they go, and on all occasions assert their rights as American freemen. Many of these farmers look to you, Mr. Editor, for friendly sympathy, for information, believing you have their interests in view while looking to them for patronage, and they expect you to give them the truth, the whole truth, and nothing but the truth, "as you understand it." As to goods manufactured here at the same or less cost than elsewhere, there is no controversy, no protection needed, no tax collected, no complaint. But who gets the benefit of the foolish tax on lumber, and the unconscionable tax on iron and steel, in these implements of husbandry that we have at hand at less cost than any other country can produce them?

As to the "street spouter" to whom you allude, permit me to say if he is as well clad as a majority of spouters he has, according to good authority, paid an excess for his toggery that would carry him twice across the Atlantic.

But really, Mr. Editor, you would not limit the farmer to overalls, and Kentucky jeans, and shoddy overcoats. Every man needs one good suit at least, when he goes to church, as every honest farmer should, and when he attends the State fair, and when he goes to the bank to borrow money which misfortune and adversity often, alas too often, compels him to do, that he may make a respectable appearance and feel that "an honest man is king of men for a' that." But why, pray, must he be compelled to pay tribute to rich beggars who beset Congress for protection, and he be left out in the cold to protect himself and family, and his country when needed? When told the consumer does not pay the tax he looks around in child-like simplicity and wonders who does. He sees on one hand millionaires springing up in every direction, on the other tramps and vagrants, living under the same laws and enjoying the same freedom of our blessed land of liberty. He hears of accumulations of great wealth in money centers, and of an overflowing treasury in the midst of unheard of extravagance, "and still the wonder grows." He is told about a certain infant, a suckling of a hundred years, that is still suffering for government pap. He shuts his eyes in bewilderment, then returns to mother earth to toil and sweat to keep the poor infant from starvation and to make millionaires of its fostering parents.

H. Z. FRISBIE.

Grantville, Jefferson Co., Kas.

A large line of \$2 wool overshirts just reduced to \$1.50, at the Golden Eagle Clothing house, 610 Kansas avenue, Topeka.

Our Illustration—Ventnor 69,

Is 4 years old, a deep dapple bay in color, standing 16 hands 1 inch, and weighing 1,350 lbs., he is a wonderfully well put up horse, standing on good sound legs and feet and has good style with free hold action, so desirable in a coacher, he is quite a premium winner, having won several premiums in England, after he was imported in 1886—he took first premium in a ring of over 20 good ones at the Illinois State Fair, at Chicago. In 1887 he again took first premium at the Illinois State Fair at Olney, and grand sweepstakes over all Cleveland bay's shown there, he also took first at the St. Louis fair in the "all work" ring. As a breeder "Ventnor" cannot be beaten, every colt sired by him up to now is a straight bay in color with his own style and form.

The premiums won in 1888 at Illinois State Fair—Cleveland Bay stallions, 4 years old or over,—first on "Lord Morpeth" 66; second on "Duke of Argyle," Vol. II. Cleveland Bay stallions, 3 years old and under 4, first on "Beverly" 430; second on "Carnival." Cleveland Bay stallions, 2 years old and under 3,—first on "Lord Chief Justice"; second "Lord Rundy." Cleveland Bay mares, 4 years old or over,—first on "Snowdrop"; second on "Dewdrop." Cleveland Bay mares, under 1 year,—first on "Patience," also silver medal on "Patience" for best home-bred Cleveland Bay mare of any age, recorded in American Cleveland Bay stud book.

English Shire stallions, 2 years old and under 3,—second on "Baron Hilton," Vol. X; English Shire mares, 4 years old or over,—second on "Stella."

At St. Louis, 1888, the English Shire stallions, 3 years old and under 4,—first on "Bingham" (4163.) English Shire stallions, 2 years old and under 3,—second on "Baron Hilton," Vol. X. English Shire mares, 4 years or over,—first on "Stella." English Shire or Clyde mares, 3 years and under 4,—second on "Lady Kelburn."

These prize winning Cleveland Bay, English Shire and Clydesdale horses are owned by the well known importers and breeders, Messrs. Stericker Bros., Springfield, Ill., who have gotten out a model catalogue which should be in the hands of intending purchasers.

Gossip About Stock.

If any reader of the FARMER wants a fine Kirklevington, Princess, or Bates Short-horn bull to head their herds, they can do no better than visit Shannon Hill Stock farm and select one of those fine beefy fellows that are so common in that herd. If you have not time to go, write to G. W. Gilck, Atchison, Kas., and get prices.

This week we advertise the sale of Clydes by Col. Robert Holloway, Alexis, Ill., who writes: "The stock to be sold is unusually good. My breeding stud of Clydesdale mares is the largest and best in the world. The character of my stock is shown from the fact that whenever I exhibit at the St. Louis State Fair or Chicago Fat Stock Show, I have won the larger share of the premiums awarded to Clydesdales." Last year at the latter two places his Clydesdales won 36 premiums.

John D. Ziller, proprietor of the Lawndale Herd of Poland-Chinas, Hiawatha, Kas., says: "My herd is the pink of thriftiness, sales splendid beyond expectation, but look for my best sales in December, having a number of orders booked for then. Prices about 20 per cent. below most breeders, and my pigs for this season's are surpassed by none in the verdict of purchasers. All pigs from aged dams and sires, such as Milbourne's dandy 4831, Lord Conway 1609. I have some fancy boars suitable to head any herd."

Rlx & Goodenough, Topeka, report sales of draft horses as quite satisfactory for this season of the year. The demand for good Shire horses was never better than at present. While some Percherous, and occasionally a Clydesdale is wanted, yet the Shire is the horse wanted by the majority of intelligent breeders. The following list of sales lately made by us will show the popularity of the Shires: The black Percheron Triumph 4142, 3 yrs. Shires: Black George (5522) 745, 3 yrs.; Carlton G. (5670) 1266, 5 years; Carlton Swell (5689) 1268, 3 years; Carlton Le Bon (5676) 1267, 6 yrs.; Blucher II (5548) 1264, 3 yrs. Blucher was first in class and sweepstakes at the late Kansas State Fair. Highland Matchless 1281, 2 yrs.; Blackmount 1282, 2 yrs.; Prince Regent 4 yrs.; Sire Lincoln (1350) dam by Heart of Oak (1005).

KANSAS FARMER REPORTS

From some cause, election excitement, probably, our special crop correspondents have not reported except in thirty-three counties. These we give below. We hope to have the others next week. It appears from these that the corn crop is generally very heavy, that feed is plenty, stock in good condition, and wheat doing well.

Bourbon County.—Corn is yielding an average of about 28 bushels to the acre of fair quality. Stock in good condition and free from disease. Hay in abundance; of good quality. Fifty per cent. more fodder than usual has been cut. Late potatoes are making about half a crop.

Dontphan.—Corn crop a good one, yielding from thirty to sixty-five bushels. The usual amount of fall wheat was sown and is making good growth. Stock in good condition, except some cholera among swine. Hay and fodder plenty. Potato crop fair in some localities, in others very light. About ten or twelve inches of snow fell here yesterday but is melting.

Douglas.—Corn good, but owing to a heavy wind storm before it matured caused some damage, average about forty bushels. Wheat never looked better. Stock in splendid condition—those that were pastured in county, cattle off the range west came in poor. Hay largest crop ever raised. Not so much fodder put up as usual on account of the stalks being down so bad. Early potatoes were nearly an entire failure. Late potatoes in some parts are very good, an average crop. A very large crop of apples, good in quality.

Ellsworth.—Corn cannot possibly exceed ten bushel per acre, counting entire acreage. Fall wheat is looking first rate, acreage increased. Stock of all kinds healthy, pastures brown, hay rather scarce. A good deal of corn fodder. Potato crop light, streams low.

Finney.—More corn produced in this county the present year than in any previous year. Under the irrigation ditches the yield is good, averaging probably forty-five to fifty bushels per acre; outside of the ditches the yield was light, except south of the Arkansas river, where the soil is more of a sandy nature. This fall, for the first time in the history of this county, there have been loads of ear corn sold on the streets, home-raised corn. Fall wheat seeding is light, for want of a mill to convert the wheat when raised into flour. Stock is in good condition for the winter. Abundance of hay and fodder to winter our stock, large quantities of hay, especially alfalfa, is being sold and shipped away. The crop of rough feed is much more than necessary for home use this year. Irish potato crop light. The sweet potato crop unusually large, yielding 150 to 200 bushels per acre. Large quantities have been, and are being shipped to Colorado and Utah. The onion crop is also very large, and providing a profitable crop for this section. The half dozen bear orchards of the county have produced abundant crops of plums and apples. By another year half the county will be under irrigation.

Ford.—Corn, fair yield, twenty bushels to acre. Wheat looks well. Stock in excellent condition. Hay, thousands of tons, and of good quality; plenty of fodder and roughness for stock, millet, sorghum and straw. Potato crop only fair. Sweet potato crop good. Vegetables of all kinds plenty and of good quality.

Franklin.—Corn-husking going on briskly and about fifty bushels to the acre. Wheat looking well; acreage larger than usual. Everybody feeding cattle that can, and will take low prices. Hay plentiful; potatoes light. But few hogs.

(2) Corn crop very good. Hay the best I have known in eighteen years' residence. Wheat seeding appears about the same in acreage as last year; crop promises very fine. Early potato crop poor. Condition of stock very good.

Grant.—More wheat put in than ever before, and still more would have been sown had settlers been able to buy the seed. Good rains in October have brought up the late wheat. The small pieces of rice corn planted this year did so well that a large acreage will be put out next year for grain. There will be plenty of corn and cane fodder to winter stock, but hay and grain are very scarce and dear. Stock healthy.

Harvey.—Corn not an average; very spotted. Fair acreage of fall wheat sown, looking well. Stock in fine condition. Hay and fodder of all kinds in abundance. Potato crop short; poor quality.

Johnson.—Corn average per acre about 38 bushels, varying from 15 to 60 according to tillage. Fall wheat a larger acreage than last year, and in very fine condition. Stock in good condition. Hay and fodder plenty. Early potatoes light, medium and late, nearly a full crop. Apples, full crop, keeping well. Trees in good condition.

Jackson.—Corn good, average per acre about 45 bushels. Fall wheat since the October rains is doing well. Stock in good condition. Hay is plenty, double what it was 1st year. Potatoes about half of an average crop.

Labette.—Corn two-thirds of a crop, double what we had last year. Wheat looking fine, with increased acreage. Stock looking well and generally healthy. Hay large crop, also fodder and of excellent quality. Potatoes a very fine average yield. Abundance of feed of all kinds for stock.

Leavenworth.—Corn is yielding from forty to sixty bushels per acre of good sound corn, but is hard to gather as so much of it is down. Wheat is looking very fine and there is a large acreage sown. Stock is in splendid condition; rather plenty of late pasture. The supply of hay is abundant. The late potato crop is good.

(2) Corn an average yield. Marketing the immense apple crop was a big item of labor this fall. The usual acreage of wheat sown, but some of it late. Hay a full crop, good portion of it is timothy or timothy and clover mixed. Fodder abundant. Potatoes poor in yield, fair in quality. Sweet potatoes good. Fall pasture good, especially the tame grass.

Lyon.—Corn from twenty to fifty bushels per acre. Fully one-half of the corn crop of county has been cut up and will be fed in the shock. Stock hogs scarce, but a good many have been shipped in from the western part of the state, and are now following the cattle that are being fed. Fall wheat is now looking very well. Stock of all kinds going into winter in good condition. Feed of all kinds plenty. Apples, cabbage and turnips good crop. Potatoes one-half crop. We had one foot of snow the 9th; now the 10th it is fast disappearing. Tame pastures very good for this time of the year.

Marshall.—Corn average crop. Wheat seeding all done; good stand; small area sown. Stock in good shape. Oceans of hay and fodder. Potatoes below average crop.

Mitchell.—Corn making from fifteen to thirty bushels per acre on bottom land; entire failure on upland. Wheat was late sown on account of dry weather; now looking fairly well; 20 per cent. larger acreage than last fall. Stock in good condition. Hay and fodder plentiful. Potato crop nearly a failure.

(2) Corn one-fourth crop. Wheat slow in growth because of dry weather. Stock in fair condition and good health; a great many have been sold and taken out of the country—horses, cattle and hogs. A good supply of good prairie hay secured; also of corn fodder. There will be no general shortage of roughness for stock. We are short on corn and potatoes only.

Montgomery.—Bottom land corn has proved excellent, and in some places on upland, where early corn was planted, early crop good. More than the usual acreage of wheat sown, and the weather has been fine for it; almost covers the ground. Hay plentiful. Potato crop light. Stock coming into winter in good condition.

Osage.—Corn is not yielding as well as was expected, yet we will have an enormous crop. An increased acreage of wheat sown; looks splendid. Stock in fine condition. The hay crop is big—plenty for home supply, and lots to spare; also a good supply of corn fodder. Potatoes not more than half a crop.

Ottawa.—Corn crop averaging from ten to forty bushels. Fall wheat looking fine, even the late sowing never looked better. Stock in fine shape. Plenty of hay and fodder. Potatoes an average crop.

Pawnee.—Corn a rather poor crop in most portions of the county. Sandy soil is the only soil where corn or other crops have succeeded. All the early sown wheat and rye dried out after coming up and has been sown over and is now up in good shape. Wheat is all sown but there is still some rye to be sown yet. Stock of all kinds are looking well and healthy. Hogs are scarce. The hay crop was light. Nearly all the corn and sorghum was cut and saved for feed, also straw stacked and secured. Potatoes are a failure in most parts of the county. It has been extremely dry in the central portion of the county, no rain has fallen to moisten the ground since late in August. Pastures dried up early in September and feeding has been going on for two months, which will shorten the winter supply materially. The weather has been fine but dry and sometimes quite warm.

Pottawatomie.—Corn from one-half to two-thirds of a crop. Not much wheat sown. Potatoes a poor crop. Cattle in good condition. Hay and corn fodder plentiful. No disease among cattle or hogs.

Reno.—Corn crop light, will average about twelve bushels to the acre. Large acreage of fall wheat sown and now in splendid condition. Stock cattle in good condition, plenty of roughness. Stock hogs scarce and high in price.

Rice.—Corn crop in south half of county, one-half to two-thirds of a crop; in north half almost a failure. Most of the corn fodder cut up and saved, abundance of it. Stock in good health and in fair flesh. Wheat is up and is a fair stand. Hay not as abundant as usual. Potato crop very short.

Riley.—Corn crop rather uneven, ranging from fifteen to sixty-five bushels to the acre, probably averaging about thirty-five bushels. Acreage of wheat sown about the same as last year, and is looking extremely well. Stock is in very good condition and healthy. Hay crop was from one-third to one-half heavier than last year, and put up in prime condition. A larger amount than usual of corn cut up and saved for fodder. Irish potatoes a poor crop. Sweet potatoes average.

Rush.—Corn crop—none to speak of. A full half-crop of wheat. A larger fall wheat acreage seeded than ever before, and looking well. Stock of all kinds in good condition. Wild hay, an immense amount put up; tame hay, such as millet, sorghum, etc., about an average amount put up. Fodder, more than an average. Potatoes, not a half-crop.

Sedgwick.—Corn yielding between one-fourth and one-half crop. Acreage of wheat small, but looks well. Stock looking well. The fall has been favorable for late grazing.

Hay plentiful. Fodder, a full supply. Potato crop short. Sweet potato crop good.

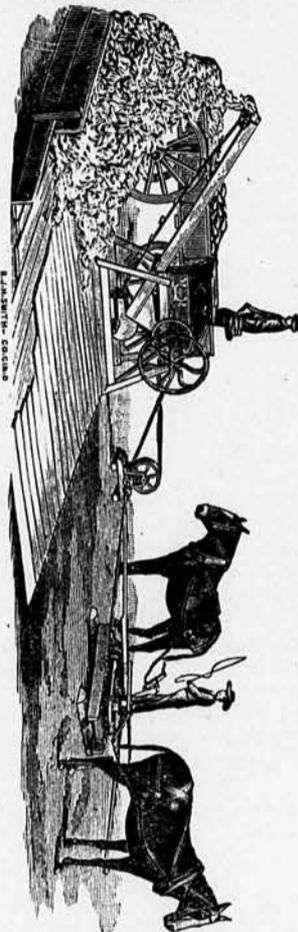
Sheridan.—Corn is not very good. A great deal of fall wheat sown, and it looks well. Stock looks well. Hay was good, and there is a great deal of fodder put up. Potatoes almost a failure.

Sumner.—Corn fifteen to sixty bushels per acre; average about twenty-five. Fifteen per cent. more wheat sown this fall; in fine condition. Stock of all kinds in good fix; an abundance of feed. Potato crop light.

Trego.—Corn crop very light; not enough for home consumption. Average crop of fall wheat sown; looking fair. Stock in good shape for winter. Hay and fodder crop sufficient for all demands at home; none for shipment. Potato crop light.

Woodson.—River bottom corn first-class; creek bottom, fair; upland, half a crop. Listed corn fully equal to planted. The past three seasons in this locality have been against any large, late, big-cob corn on upland. Early Leaming did well this year, also Mammoth Cuban. Wheat, acreage large; never looked better. Stock in good condition; plenty of hay and feed of all kinds. Irish potatoes poor. Sweet potatoes good. Apples, a heavy crop.

Cattle-Feeding Machine.



We furnish with this issue a cut of the celebrated Porter Corn Crusher. All cattle feeders would do well to investigate this wonderful machine, which is acknowledged by those who have tried it to be the best ever made for the purpose of cattle-feeding. The manufacturers are feeders of large and practical experience, and advise all to leave the husks on their corn. With their improved machine ear corn can be crushed with the husk on or off, wet or dry, hard or soft, at the rate of 100 bushels per hour with two-horse power. Can crush shelled corn, peas, beans—shelled or in hull—cotton seed, oil cake, roots, apples, etc., in double the quantity of any machine made with the same power. Machines are sold on trial and shipped from storehouses located throughout the country. For full descriptive circular and location of the nearest shipping point, address the sole manufacturers, E. A. PORTER & Bros., Bowling Green, Kentucky.

Parties desiring poultry should remember the Shawnee Poultry Yards, owned by J. G. Hewitt, Topeka, who can supply almost anything needed in the line of poultry or pet stock. In this connection we would say that the reporter who made a detailed report of the poultry exhibit at the State Fair is lamenting because none of the successful exhibitors have even promised him a Thanksgiving turkey.

The Foss Manufacturing Co., of Springfield, O., makers of the "Scientific" Mills of world-wide reputation as the "Best Mill on Earth," have just been awarded, at the Centennial Exposition at Cincinnati, the highest and only medal for the best grinding mill over all competition.

How to Get a Useful Little Book for Nothing.

For a limited time we make the following offer: To every one of our readers who will send us the name of one NEW yearly subscriber and one dollar, we will send one copy of "PEPPER'S TARIFF MANUAL."

Trade at the Golden Eagle Clothing house, Topeka, and you will be assured of fair treatment and no misrepresentations.

The Texas Stockman says: We know of men who have lost money by having their wool too clean. It is all very fine, this talk of the buyers and dealers about the desirability of having the fleeces skirted and tagged, but until they get ready to pay something for it, most of it will exist in their minds.

Secretary Gilbert, of the Maine Board of Agriculture, says that dairy farms well managed can be made to pay a larger rate of interest than do the best factories in the manufacturing cities, and he invests his own money in dairy farms, thus putting in practice the doctrines which he preaches to others.

Every additional pound of flesh that can be added to the carcass proportionally lessens the cost of the whole, with the same amount of food. The more comfortable the animal is kept the more rapidly it will increase. Shelter and warmth represent food, as they save that to create which food is required.

When stock must wade knee-deep in the filth of the barnyard, colds and disease usually result. Dryness and warmth are essential for the rapid development of bone and flesh. Happiness and contentment are as essential to the success of animals, so far as health is concerned, as they are with human beings.

English shepherds purchase butter rejected by the market inspectors and rendered unsalable by being stirred with a tarred stick, for the purpose of smearing their sheep after shearing, as a protection against the torments of flies and other insects, and the effect of heat upon their tender skins. It is a practice that might be adopted with benefit in this country.

A bulletin issued by the entomologist, Prof. C. V. Riley, of the United States Department of Agriculture, gives the following directions for making a torch to be used in burning the nests of such insects as the orchard caterpillar and fall web-worm: Take a piece of soft brick known as salmon brick, and trim it to an egg shape; then take two flexible wires, cross them over the brick, wrap them around it and twist the ends together. Then attach it by the wires to a long stick, and soak the brick in coal oil; light it with a match, and you are armed for the work. Asbestos may be used to advantage; and a little thorough work early enough in the season will obviate the necessity of more expensive remedies at a later time. The soaking in the oil may be repeated as often as required to maintain the flame.

GO SOUTH,

And when you do you will wish to be fully informed as to the cheapest, most direct, and most pleasant route. You will wish to purchase your ticket via the route that will subject you to no delays, and by which through trains are run. Before you start you should provide yourself with a map and time table of the Memphis Route (Kansas City, Fort Scott & Memphis R. R.), the only direct route from and via Kansas City to all points in Eastern and Southern Kansas, Southwest Missouri, and Texas. Practically the only route from the West to all Southern cities. Entire trains with Pullman Palace Sleeping Cars and Free Reclining Chair Cars, Kansas City to Memphis; through first-class coach, Kansas City to Chattanooga, Knoxville, and Bristol; through Sleeping Car, Kansas City to New Orleans. This is the direct route, and many miles the shortest line to Little Rock, Hot Springs, Eureka Springs, Fort Smith, Van Buren, Fayetteville, and all points in Arkansas. Send for a large map. Send for a copy of the Missouri and Kansas Farmer, an eight-page illustrated paper, containing full and reliable information in relation to the great States of Missouri and Kansas. Issued monthly and mailed free. J. E. LOCKWOOD, Address G. P. & T. A., Kansas City, Mo.

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.

Behind the Mask.

Behind the mask—the smiling face
Is often full of woe,
And sorrow treads a restless pace
Where wealth and beauty go.

Behind the mask—who knows the care
That grim and silent rests,
And all the burdens each may bear
Within their secret breast?

Behind the mask—who knows the tears
That from the heart arise,
And in the weary flight of years
How many pass with sighs?

Behind the mask—who knows the strain
That each life may endure,
And all the grief and countless pain
That wealth can never cure?

Behind the mask—we never know
How many troubles hide,
And with the world and fashion's show
Some spectre walks beside.

Behind the mask—some future day,
When all shall be made plain
Our burdens then will pass away,
And count for each his gain.

—Good Housekeeping.

Shall I be left forgotten in the dust,
When Fate, relenting, lets the flower revive?
Shall nature's voice, to man alone unjust,
Bid him, though doomed to perish, hope to live?

—Beattie.

When reason, like the skillful charioteer,
Can break the fiery passions to the bit,
And, spite of their licentious sallies, keep
The radiant track of glory, passions then
Are aids and ornaments.

—Young.

Know, then, whatever cheerful and serene
Supports the mind supports the body too.
Hence the most vital movements mortals feel
Is hope: the balm and life-blood of the soul.

—Dr. John Armstrong.

HOW TO LIVE TO A GOOD OLD AGE.

The first lesson to be taught and learned is:—that all disease is the result of broken law; that much of it might be easily avoided by the observance of the laws of health on the part of the individual; that much more, which is beyond the reach of individuals, might be prevented by the combined efforts of communities and the state; and that those diseases which are entailed upon this generation by the law of heredity, might by obedience of law be gradually stamped out of existence, and future ages be freed from their curse.

The next thing to be taught is the laws themselves—and with the laws, and of even greater importance, the habit of obeying them. We know a great deal more than we put in practice. This is the fault of the common modes of health teaching. Our newspapers and periodical literature contain a vast deal of popular instruction in these matters. They are treated of in an abundance of well-written books which are within easy reach of all who care to read them. Our schools are taking hold of the good work, and instruction in hygiene is fast coming to be recognized as an essential part of even an elementary education. But all these do not reach the evil, or if they do, they only touch it on the surface.

Our schools are full of good grammarians who do not use respectable English in common conversation. So, too, they may be full of good reciters of the laws of health, who do not observe a single one of the laws they have learned. The main point is to secure obedience. The greatest criminals are usually well versed in the laws of the land; but their knowledge does not avail to keep them out of the penitentiary when they have broken these laws. Neither will a knowledge of the laws of health keep a man from being sick, so long as he does not live up to his knowledge.

We are creatures of imitation. Example counts for more than precept. The parent knows the law, and the child knows it too. It does little good for a child to learn at school that the food should be properly masticated, when three times every day at home he sees a hungry group crowd about the table like pigs around a trough, and bolt their food as nearly whole as it can be made to go down. The child whose mother gives it a bit of something to eat every time it cries for it, will not be in a condition to profit from an understanding of the law that food should not be taken between

meals, until it is too late for the knowledge to be of much service. The law of pure air and proper ventilation may be taught never so plainly in the text-books, but to the boy who is brought up to sit and to sleep in a close, unventilated room, foul with the breath of living beings, and to shun fresh air as he would a plague, the knowledge will be of little avail. While his father's cellar is filled with decaying meats, vegetables, and all manner of filth, and the cess-pool smells to heaven from beneath the kitchen window, all the teachings of the schools will not prevent his having typhoid fever, or diphtheria, or some form of filth disease, when the summer sun calls into activity the germs of disease which are latent there. If liquors are kept upon the side-board and wines are served upon the table in his home, not all the teachings of all the temperance text-books in the land can be relied upon to produce in him habits of sobriety and total abstinence.

It is this practice of the principles of hygiene in our homes, and this alone, which will lessen the rate of disease and death today, and develop a stronger race to-morrow. The child who has learned the laws of health from his father and mother, by seeing them continuously and persistently applied, will come to follow them in his own case, as naturally as he will conduct himself properly in good society, if good society has been his birthright, and gentlemanly conduct has become habitual.—*Good Housekeeping.*

Stop in Life's Hurry and Think About the "Last Time."

Did you ever stop, in the midst of life's tumultuous hurry and flurry, and think to yourself about the "last time" that is on its way to you and to me? There will be a last time for the careless good-bye thrown to wife and children as you hurry to the morning train. There will be a last time when your step will board the car and your form will mingle with the crowd of those who go about business when the day is new. There will be a last time to speak a kind word instead of a cross one, to give a smile for a frown. There will be a last time to mingle in the city's busy stream of life, to mount your office stairs and sit at your desk. There will be a last time to seize the chance of honesty and uprightness. There will be a last time to lunch, a last time to read the daily papers, a last time to watch the sun go down. There will be a last time to spend a happy evening at home, and bestow your company, speech and manners upon your own family circle. There will be a last time to say "good night," to turn out the lamps and woo the fickle goddess of slumber. There will be a last midnight and a last new dawning of a last day on earth.

Knowing all this to be so true, how shall we set about to keep the vigil of what may be the last hour we have to spend? Take the children first. If an angel from heaven came suddenly down and whispered in your ear, "The last day has come; you have but twelve more hours to live!" how, think you, would you set about to improve that time? Would you be anxious about the practice hours, the dress, the personal appearance of the little ones you would soon have to leave? Would you stop to train them how to dance, how to hold their hands in walking, how to pose or posture? Would you stop to think of masters to teach them to play, to paint, or to charm the shallow world with any gift of alluring grace? Would you care whether their dress was stylishly cut and made, or their garments freshly laundered and daintily trimmed? Would you give a second thought to any gift this world has in its power to bestow, whether of wealth or beauty, or social honor? I think not. Facing that last time to be together, I think your mind would turn to sweeter, purer things, and you would say something to this effect: "The time has come, my little ones, when I must go and leave you. You will be alone in the world to-morrow, so far as mother-love goes, and I pray you heed my last words. Be pure in all things; despise evil companionships and evil conversation and evil books. Keep your heart like a spotless flower, however you keep your outward garb. Carry back your soul to God undefiled as the June evening carries upon its bosom the morning's rose.

"Be true always. You may be poor and

and have to win your bread, but keep your lips from speaking untruths and your heart from brooding deceit. Honest speech may not win you many friends, but such as it does win for you will be worth the keeping. Remember, in friendship, as in precious stones, it is not the quantity but the quality which tells.

"Keep your heart kind. Be tender to everything that God lets live. The child that will needlessly torture a fly will make a cruel man or woman. You may not have gold to give, but God has given you a purse to draw from, the alms of which, dispensed among the children of earth, turn sorrow into sunshine and tears into smiles. Thoughtful words and deeds of helpfulness are better than dollars in our pockets to make the world run smooth.

"Be loyal to principles, friends and God. The man who forgets a friend in time of need will make a no-account sort of angel if ever he manages to slip into heaven. He isn't worth his keep either here or yonder. And finally, little children," you would say, "remember and let love hold its beautiful sway in your hearts and home forever. Never be ashamed to show the demonstrations of love, for love is God and where it dwells is the temple of God, whether it be roofed in by thatch or canopied with royal splendor. No home can be utterly unhappy where love is; no heart can go far astray, held by love's bands; no soul can perish upon the wings of pure and steadfast love."

So saying, you would bid the wondering little ones good-bye, and walk with covered face into the Shadow of Death's soft and dusky wing.—*Amber, in the Chicago Journal.*

Fancy Work for Rainy Days.

This work is adapted to rainy days because it is not pleasant company work, and on bright days one is likely to receive calls.

A very pretty and inexpensive screen for an unused grate is made of samples of wall paper pasted on a foundation of stiff grey or brown wrapping paper. Make the wrapping paper three yards long (piece it by pasting if necessary) and three-quarters of a yard wide. On one side draw crosswise, with lead pencil parallel lines three and a half inches apart. On the other side draw lengthwise one straight line eight inches from the bottom. At any store where wall paper is sold, last year's samples will be sold very cheap, possibly given away; these may be pasted on the foundation wrapping paper (not on the side where the cross lines are) from the top exactly to the lengthwise line eight inches from the bottom. One's own fancy should be used in arranging the samples—they may be put on straight or bias or in "crazy" fashion. Across the top, on each side, paste a narrow strip of bordering. To finish the bottom, cut a piece of black paper cambric eight and a half inches wide and a trifle more than three yards long, and paste it on the right side so as to cover the edges of the wall paper; then turn the fan and paste the remainder of the cambric on the other side. The parallel cross lines indicate where the creases are to be made. After making the creases, thread a large needle with black wire and draw through the bottom. (If my meaning is not clear, notice how the sticks of a fan are fastened.) The beauty of the fan depends greatly upon the material and the taste of the maker; the one that I saw was made of paper having gilt ground with bright figures and arranged in bias strips.

Writing of wall-paper samples reminds me of a room that I saw papered with large octagons of odd patterns. The pieces were bought for almost nothing, but the work must have been immense. Although the effect was very pretty and novel, I would not advise any housewife having many duties to undertake it.

Pretty rugs may be made from clean pieces of ingrain carpet. Cut the carpet into strips about half an inch wide, sew them together and wind into balls like ordinary carpet rags. Then send them to the weaver with instructions as to the desired color of warp and the length of rugs.—*Lillian Mayne, in the Prairie Farmer.*

Frosts in Maine cut the corn grown for canning purposes so severely that the output of canned stock will be materially shortened. The grape crop was ruined and cranberries and tender vegetables suffered severely.

Various Magical Illusions.

Some pleasing illusions can be produced by the aid of chemicals. By wetting a piece of fine loaf sugar with phosphorized ether, and throwing it into a basin of water, the surface of the water will become luminous in the dark, and by gently blowing upon it phosphorescent undulations will be formed which illuminate the air above the fluid to a considerable distance. In winter the water must be rendered blood-warm. If the phosphorized ether be applied to the hand or other warm objects, it renders them luminous in the dark.

Fix three pins in the table and lay a piece of money upon them; then place a heap of flour of sulphur below the piece of money, add another above it and set fire to them. When the flame is extinct, you will find that a thin plate of metal has become detached from the coin, thus making two out of one.

Dissolve camphor in spirits of wine, and deposit the vessel containing the solution in a close closet where the spirits of wine will evaporate. If any one enters the room with a candle the air will inflame, making an effect as bright and sudden as lightning, but there is no danger whatever from this sparkling effect.

To melt lead in a piece of paper wrap up a smooth ball of lead in paper, taking care that there be no wrinkles in it, and that it be everywhere in contact with the ball; if it be held in this state over the flames of a taper the lead will be melted without the paper being burned. The lead, indeed, being once fused, will not fail, in a short time, to pierce the paper and run through.

A pretty trick is performed in this manner: Take a pin and dip into glycerine and mark on your arm any number whatever—say 1,630—and let the marks remain. You must have a confederate, and on joining a company suggest that some one write some number down. Your confederate will quickly respond, writing the figures already on your arm on a piece of paper. Let him exhibit throughout the crowd and burn it on a plate. After telling the company that you propose to make the identical figures appear on your arm, rub the ashes off of the paper on the spot where you had previously put the glycerine, and you will have the number your confederate marked down on your arm in very bold letters.

Take a glass bottle; put into it some volatile alkali, in which has been dissolved copper filings, which will produce a blue color, looking like liquid of some kind. Ask some one to cork it while indulging in some pleasantries, and then call the attention of the company to the liquid, when, to their astonishment, they will find that the supposed liquid has disappeared as soon as it was corked. You can cause it to reappear by simply taking out the stopper, and this change will appear equally astonishing.

A very funny trick is done in this way at very little expense. Put into a crucible four ounces of bismuth, and, when in a state of fusion, throw in two ounces and a half of lead and one ounce and a half of tin. These melted will combine, forming an alloy, fusible in boiling water. Mold the alloy into bars and take them to a silversmith to be made into teaspoons. Give one to a stranger to stir his tea. As soon as the spoon touches the hot tea it will melt in his fingers, causing a great deal of merriment.—*Pittsburg Dispatch.*

The New Prize Story

Is eagerly sought for, read with pleasure or disappointment, is then tossed aside and forgotten. But ladies who read of Dr. Pierce's Favorite Prescription, read it again, for they find in it something to prize—a messenger of joy to those suffering from functional derangements or any of the painful disorders or weaknesses peculiar to their sex. Periodical pains, internal inflammation and ulceration, readily yield to its wonderful curative and healing powers. It is the only medicine for women, sold by druggists, under a positive guarantee from the manufacturers, that it will give satisfaction in every case, or money will be refunded. This guarantee has been printed on the bottle-wrapper, and faithfully carried out for many years.

Attention, Farmers!

The Woman's Exchange, 114 West Seventh street, has become the most popular place in the city as a resort for the hungry. Transient rates 50 cents per meal; lunches from 25 cents upward.

The Young Folks.

There Is No Death.

There is no death! The stars go down
To rise upon some fairer shore;
And bright, in Heaven's jewelled crown,
They shine forevermore.

There is no death! An angel form
Walks o'er the earth with silent tread;
He bears our best loved things away,
And then we call them "dead."

Born into that undying life,
They leave us but to come again;
With joy we welcome them—the same
Except in sin and pain.

And ever near, as though unseen,
The dear immortal spirits tread;
For all the boundless universe
Is life—there are no dead.

—Bulwer Lytton.

But what avail her unexhausted stores,
Her blooming mountains and her sunny shores
With all the gifts that heaven and earth impart,
The smiles of nature, and the charms of art,
While proud oppression in her valleys reigns,
And tyranny usurps her happy plains?

—Addison.

They parted, ne'er to meet again,
But never either found another
To free the hollow heart from paining;
They stood aloof, the scars remaining,
Like rocks that had been rent asunder;
A dreary sea now flows between.

—Coleridge.

Hopes, what are they? Beads of morning
Strung on tender blades of grass,
Or a spider's web adorning
In a strait and dangerous pass.

—Wordsworth.

'Tis greatly wise to talk with our past hours,
And ask them what report they bore to heav'n,
And how they might have borne more welcome news.

—Young.

SUMMER RESORTS NEAR MACKINAW.

An immense collection of summer resorts environ the straits Mackinaw, which attract swarms of people from Detroit, Chicago the South and well-to-do people of Michigan, Illinois and Wisconsin. The resorts are known as Mackinac City, Alpena, Cheboygan, Mackinaw City, Harbor Springs, Petosky, Charlevoix, Traverse City, St. Ignace and many others. The atmosphere of this region is peculiarly rarefied considering the vast bodies of water, and hot weather is never known there. The nights are always cold, the days delightful, but the water is too frigid for most people to bathe in.

Mackinac Island, of course, is the center of attraction, having the largest hotel accommodations. It rises majestically from the straits and around it the water is so pellucid that the pebbles and rocks are visible from its shores at considerable depths. It comprises an area of 2,221 acres, of which the National Park has 821 and the United States Military Reservation 103. It was supposedly here that Hiawatha, the Mena Boshu of the Algonquins, was born and some of the legends of the Islands are interwoven in Longfellow's poem of his name. The village of Mucinack is a curiosity situated at the foot of the bluff, while above it is the fort. Most of the buildings are antique, some of them having been removed from Mackinaw after the massacre of June 4, 1763. The Island is a mass of calcareous rock rising some 300 feet above water, with a water line showing that either it was pushed out of the water 250 feet or else the lake has sunk that amount. The latter theory conforms to the formation of the surrounding States. The cliffs tower in pinnacles like gothic steeples. It has many caverns where the Indians buried their dead. Large vessels can land at the beach, and there is a fine, safe harbor. There is much soil which the Indians cultivated. The forest of former years has been thinned out to form groves and walks. Numerous springs abound, with a uniform temperature of 44 degrees. One of the first and lasting experiences here is a ferocious appetite. The fort stands on a sheer precipice of white limestone, 145 feet above the water. It was established by the English in 1763 and given to the United States in 1796. A mile and a quarter distant is "Lover's Rest," high above the water, forming a natural sofa in the rock, and surrounded by a grove of cedars. Near this is "Robertson's Folly," 127 feet high, rising perpendicularly. Near at hand is the Giant's Causeway, with a natural staircase, down which one descends 100 feet to Arch Rock or Natural Bridge, with a 149 foot arch. Another curiosity is the "Sugar Loaf," 284 feet high, covered with moss, in the center of which is a cave.

There are also numerous other natural and artificial attractions on the Island.

Fourteen miles distant are the Les Che-neaux Islands (the Snows), more than 100 in number. They vary in shape, size and attractions, and the fishing here is tame because of the multiplicity of bass, perch, muscalonge, trout, pickerel and pike, often of large size. Brook trout abound in the island streams and in the woods are deer, bear and small game. These Islands are the Mecca of sporting clubs. The beauty of this resort is that each island has its special attractions, so that one can take a little map with each island named by a letter and decide on the species of sport for the day.

Petoskey is a charming resort of 2,500 people, at the head of Little Traverse Bay. It rests on a table land in a half circle, and is breezy enough to suit the most perspiring. On the left is a lofty limestone flank, well groved, where people camp out in numbers. Above this is an eminence where are many villas of the wealthy. Little Traverse Bay is five miles wide and is a delightful yachting-ground, both in summer and winter, the latter season with ice-boats. Harbor Springs lies opposite, six miles away, and between is Bay View, the Methodist Camp Ground. Harbor Springs has a harbor called Wequetousing, with visible depths, of thirty to fifty feet and a pebble beach from which innumerable cold springs gush. The pottery of the mound builders is found here in profusion. A Catholic church is over 200 years old, and Devil's Pond is a pool which cannot be filled up because it is evidently "bottomless." Harbor Point, opposite, is a favored resort on account of its immense rolling surf from Lake Michigan, which affords the best fresh water bathing known. The resort is on a narrow neck of land, in the rear of which is a body of water, always smooth, where children paddle about in safety.

Charlevoix is eighteen miles away, on the point between Lake Michigan and Grand Traverse Bay. Pine Lake lies on its eastern border. Here are many Chicago and Michigan cottages. Traverse City lies at the base of the Bay and is a great place for ice yachting in winter. It has, perhaps, the largest asylum for imbecils in the world, but this is not offered as a resort attraction.

The trip to the Soo is the thing to which every traveler looks forward with interest. Taking a steamer at Mackinac Island, one follows the north shore of Lake Huron as far as Detour, to the entrance of St. Mary's river, where the scenic interest begins in earnest. The river is sixty-two miles in length, a succession of straits and broad lakes. It is bordered with high hills and has many of the eccentricities of the Hudson and Rhine Rivers. The channel is often so narrow and crooked that shipping must pass it by daylight. In it are many islands, which add to the picturesqueness and form the fishing and camping resort of hundreds. The boats at either end start out at daylight. Going north, one arrives at Sault Ste. Marie at 6 p. m., fifty-five miles from Lake Huron. This city of 5,000 inhabitants is the seat of the great bridge of the straits. It has recently been put in communication with the West and East by powerful railway lines, and is the connecting link of the Canadian Pacific with the Michigan Central for the East and the Soo route for the Southwest. Here, too, is the government ship canal for passing the St. Mary's rapids, 650 feet long and 80 feet wide. As the steamer rises on the 18-foot lift the American and Canadian villages and the foam and mist-enveloped rapids come into view. The immense structure of masonry, the water power necessary to run the machinery for the huge gates and locks, and the dynamos which furnish the electric lighting for the canal, form an impressive picture. The Indians and adventurous people shoot the rapids in canoes. Here is old Fort Bradley, erected in 1823. Fishing is everywhere fine, and the woods and waters environing are well stocked with game.

Every summer and every winter I traverse this grand scenic country. I like it best in winter. Then it is that the great pine forests present a sublime spectacle from a Wagner car, well warmed and comfortable within, however fierce the cold without. The ice yachting on the bays is exhilarating and dangerously seductive. As one passes north from Detroit he can almost feel the curve of the earth, and certainly

can detect the rapid approach to the purest atmosphere of which I know. At the Straits of Mackinaw it is a wonderful spectacle to see the immense transfer boat cross in winter. I usually arrive at Mackinaw at the break of day, and behold the most gorgeous sunrise painting the forest, wastes of ice and snow and expanse of innumerable islands. Promptly as the sun appears the transfer boat starts on its spiral trail through the ice blown out by dynamite. The path is twelve miles long, and one enjoys the novel spectacle of seeing a huge steamer evidently traversing a vast field of ice covered with deep snow, while behind it trails a long wreath of black smoke, rainbow-hued by the rising sun.—William H. Ballou, in Topka Capital.

The Monkey Bread Tree.

The baobab, or monkey bread tree, is another most extraordinary production of nature. Imagine to yourself a tree, 30 feet in diameter at the base and only 40 feet high, with the trunk rapidly diminishing toward the top, and then spreading out into what looks like a little forest. In one of the old trees the branches form a spherical head 100 to 150 feet in diameter, the center branch rising to the height of 60 feet, while others drop over the main trunk and conceal it from view. Some of these trees have been hollowed out, and a space made large enough to hold twenty to thirty men, without any apparent injury to the tree. The baobab must be the slowest-growing plant in the world, as it is supposed to be one of the oldest. A tree has been cultivated in the gardens at Kew for over forty years, and thus far it has attained the height of only 4½ feet. Some of these trees are estimated to be 5,000 years old, and dates are cut in the bark which were made in the fourteenth century.—Banner of Life.

"I want to thank you," writes a young man to B. F. Johnson & Co., Richmond, Va., "for placing me in a position by which I am enabled to make money faster than I ever did before." This is but a sample extract of the many hundreds of letters received by the above firm.

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The business situation last week was reported good, generally throughout the country.

Twenty-nine persons were killed by an explosion in a mine, near Pittsburg, Kansas, last Saturday.

The Missouri State Horticultural Society will hold its thirty-first annual meeting at Nevada, Vernon county, on the 5th, 6th and 7th days of December, 1888.

Our weather report for October in Greeley county on the west line of the State shows that the "pleasant showers and mild winds made it a grand time to do fall work and enjoy life."

A large addition to our subscription list the latter part of last week shows what good work our friends did on election day. We appreciate it and will try to merit further favors of like character.

American steel rails are now selling at \$27 a ton. The tariff duty on foreign rails is \$17 a ton. Foreign rails are about \$19. These facts prove that the duty, in this case at any rate, is not added to the foreign price.

The Supreme court of this State decided, a few days ago, that marching, and singing, and beating drums, &c., on public streets, is not unlawful, even when done by the Salvation Army, if there is no evil intent in the proceeding.

The National Farmers' Alliance will hold its annual convention at the city of Des Moines, Iowa, January 10th and 11th next. The basis of representation will be two delegates at large for each State and Territorial Alliance, and one delegate for each 25 local alliances or major fraction thereof in each State or Territory.

All the Northern States except Connecticut and New Jersey, gave majorities for the Republican candidate for the presidency; and all the Southern States except West Virginia gave majorities for Democrat candidate. The Republican majority of the electoral vote will be 77. The next Congress will have a Republican majority of about 20.

WELCOME TO THE FARMERS' CONGRESS AND NATIONAL GRANGE.

Kansas greets these bodies warmly. Speaking on behalf of many thousand readers, the *KANSAS FARMER* extends a hearty welcome to the members and wishes them both profit and pleasure in their coming. Ours is peculiarly an agricultural State, a creature of the later dispensation, placed on the map since the beginning of the great war which rid the country of its greatest curse. Kansas is a monument to the spirit of Western enterprise, it marks one step in American progress. A State of more than a million and a half people with property worth \$12,000,000,000 grown in less than the time of a generation of men, with a moral influence strongly exerted on a nation of sixty millions of people. We are peculiarly an agricultural people, at least 75 per cent. of our citizens being farmers; our needs are largely made up of things needful to us as farmers, hence we all feel interested in this meeting of men of our calling coming to us from other parts of the country. The best thing we can say of and to the Congress now in session in the Senate chamber is that we expect great good to flow from their meeting.

The National Grange of the Patrons of Husbandry, the oldest and best organization of farmers in the United States, is now in session in this city. One of the best features of this excellent body is its admission of women on terms equal with those of men.

WORK FOR THE FARMERS' CONGRESS.

The National Farmers' Congress now in session in this city, has at its command facilities for doing a vast amount of good to and for the agricultural interests of the country. They have the pressing need of the time to urge them to great exertion; they have the attention of the whole country to suggest good work; they have the local newspaper press to spread the proceedings in detail before the people of Kansas, and they have telegraphic connection with the world, so that the substance of their work will go to all the people.

What will be done during the session, beyond the delivery of a dozen or more good addresses, cannot be known before its occurrence, and therefore the *KANSAS FARMER* takes the liberty of suggesting a matter which in our opinion needs attention and the best consideration this congress and its successors for some years to come can bestow upon it, namely, the need of a general plan of State organization among farmers which shall be simple in outline, easy of management, broadly educational in its work, and attended with but little expense in money. There is now a general recognition of the need of self-help among farmers, and many crude efforts at organization are being made. The tendency is toward union. The patrons of husbandry are doing more and better work now than ever before, and if they could absorb the great body of farmers, or if they could visibly affect them, that would do; but with all the hard work and patriotic zeal of its members, it does not and will not reach all the farmers any more than one denomination does or will reach all christians. And so of the Alliance, the Union, the Wheel, and other associa-

tions. All are doing good and helping the general cause of agriculture. But farmers as a class need something different from all of these, some great central power which will work almost unseen and unfelt, but yet powerful, wisely, continuously, reaching out among the people, teaching them what they most need to be taught, helping them all to higher planes of usefulness and enjoyment. What shall it be, and how shall it operate?

Let the present session of the Congress consider the matter, ever so briefly, and provide for its further and more elaborate consideration at a future session. The people, farmers, we mean, are ready for action. They will hail the advent of this farmers' school which will help them over rough places in the way yet to be travelled. They need training in every department of human work—in trade, in legislation, in law. Let the school be opened. But when, how, by whom? These are the great questions.

HOW MUCH SHALL THE SUGAR TARIFF BE REDUCED?

In another part of this week's *FARMER* the reader will find an interesting communication on the sugar industry in Kansas. It raises the question—what protection shall the sugar industry have? Readers of the *KANSAS FARMER* know that, we advocate free sugar, and that, too, in face of the fact that we have many times stated our absolute faith in the growth and ultimate success of sugar-making in Kansas. Both of the great parties propose a reduction of duties from the present rates—Democrats one-fifth, Republicans one-half. Either would be better than no reduction, and 50 per cent. is much better than 20 per cent., but in our opinion 100 per cent. would be better than either, and for the reasons following:

First.—Our sugar is costing us too much. The average duty is two cents a pound, and that is almost, if not quite, all a tax on the consumer, because we import ten pounds and produce only one pound of every eleven pounds which we use. The average annual importation during the last half dozen years is about 2,200,000,000 pounds and the average annual home product during the same years is about 200,000,000 pounds. The home product is too small to affect the price materially. The committee which reported the Mills bill stated in their report that the duty on sugar is at least 85 per cent. tax on the people who use it. At that rate, when a person purchases twenty pounds of average sugar he pays 34 cents tax because of the tariff duty on foreign sugar; if he paid the full two cents a pound, the excess would be 40 cents. There ought to be some pressing reason to justify so heavy a tax. The total amount of duty paid on foreign sugar imported during the fiscal year ending June 30, 1888, was upward of \$56,000,000. Assuming the committee estimate to be correct, 85 per cent of \$56,000,000, or \$47,600,000, is the amount which fell upon the people who consumed the sugar. Putting the home product at 200,000,000 pounds, the entire quantity could be purchased outright and paid for at five cents a pound, the whole crop costing only \$10,000,000 which amount could be deducted from our tax of \$47,000,000, leaving us \$37,000,000 clear profit. We submit that a bounty of \$37,000,000 is too much to pay for protecting an industry whose total output is not worth more than \$10,000,000.

Second.—The sugar industry can be amply protected by a tax proportionate to the amount of sugar produced by our people. The Southern ribbon cane pro-

duct is not increasing. The average above given is not half the amount produced in the best years between 1850 and 1860. At the Fort Scott works this year the product was about 450,000 pounds, at Topeka the output was 150,000 pounds. We have not had complete returns from Conway Springs in Sumner county, nor from Douglas in Butler county. Let us put their joint product at 100,000 pounds. That gives us a total product for the four factories of Kansas—700,000 pounds, less than three-fourths of 1,000,000, while the Southern product is 200,000,000, and that not one-tenth part of the total amount which our people consume. With such a showing for 1888, it will require a rapid expansion of the sugar industry both South and North to supply the home demand by the year A.D. 1900. To produce as much sugar as the Southern States now do, Kansas must increase her present product 2857 per cent.; that is, the present output must be multiplied by 2857 before it will equal the present Southern product. And then, the two products will be equal to only four-elevenths of the amount which the country now uses in one year. When the census of 1900 is taken our population will not be less than 80,000,000 which is one-third more than it is now, assuming it to be 60,000,000, and we will then use one-third more sugar than we do now. It will be seen that the sugar field is a very large one. The present duty is about two cents a pound. Say we cut that off and pay our home producers of sugar a bounty of two cents a pound on their product, pay it direct from the treasury. We have seen the home product is—Southern States 200,000,000 pounds, Kansas 70,000 pounds. Let us assume that in the next twelve years the Southern product is doubled, and that the Kansas product is increased 140 times; that would give us—Southern States 400,000,000 pounds, and for Kansas 9,800,000—say 10,000,000 pounds. To this let us add ten times the Kansas product for New Jersey, Illinois, and other States that may engage in sugar-making, and we have for them 100,000,000 pounds, or a grand total of 510,000,000, the product of the year 1900. Say we call 400,000,000 pounds a fair average yearly output for the period; that would only be one-seventh part of the average yearly quantity consumed during the period. (The present consumption of the country is 3,000,000,000 pounds; add to that one-third increase, 1,000,000,000 for the year 1900. Add half the increase for the average, and we have the total annual average, 3,500,000,000.) Now let us pay 2 cents a pound bounty on the home product, which would amount to \$10,000,000 annually. The duty on the foreign article (3,500,000,000 pounds) at two cents a pound would amount to 70,000,000. The difference between the bounty and the duty is \$60,000,000 which would be saved to the people directly, and yet our own sugar interests be protected quite as well as they now are. The saving would be equal to one dollar a piece for every person, man, woman and child now in the country. Is not \$60,000,000 a year worth saving to the people?

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SOME PERTINENT QUESTIONS ANSWERED.

On another page the reader will find an interesting, well written and very respectful letter of inquiry under the heading—"Pertinent Questions Even After Election," written by H. Z. Frisbie, Grantville, Jefferson county, this State. The writer submits a few questions, and also states broadly a just conclusion as to the relation which the KANSAS FARMER bears to its patrons. He says: "These farmers look to you, Mr. Editor, to give them the truth, the whole truth, and nothing but the truth, as you understand it." Questions submitted in that spirit are entitled to respect as well as to accurate answer. The statement affords us another opportunity to say that while we have opinions and strong convictions, they do not stand in the way of truth as it is proved by facts. Facts are things, they are fundamental; opinions are what persons believe facts prove. Men do not differ about facts which are established; they differ only about what those facts prove. Persons of opposite politics or religion agree about certain facts, but they do not agree in methods of reasoning, and hence come to different conclusions. When our readers ask for facts which are within our reach, they get them as we find them; when they ask our opinion they get that, and when they ask the reasons for that opinion, they are gratified. This kind of candid, respectful and truthful interchange of ideas cannot fail in doing good.

Mr. Frisbie wishes our opinion as to whether "40 per cent. revenue tax is not sufficient protection."—We think it is too much as to some things, about right as to some things, and not not enough as to other things. It is more than enough on a general average. Thirty per cent., properly adjusted, is enough.

Who gets the benefit of the tax on lumber, he asks.—The government gets it. We are for free lumber, not because it would be cheaper to the consumer, for, on investigation we do not believe it would be, but because it would encourage our lumbermen to purchase fresh timber in Canada and thus save our forests to some extent and give us better lumber. Of every forty feet of lumber consumed in this country we produce thirty-nine feet and import one foot. That fact, alone, is conclusive to our minds that removing the duty of \$1 to \$2 a thousand feet on undressed lumber, would not cheapen it to us.

And who gets the benefit of the "unconscionable tax on iron and steel in these implements of husbandry that we have at hand at less cost than any other country?"—Let us see. In the first place, there is no tax on the iron and steel used in our farm implements unless the manufacturers use foreign iron and steel, and as most of such implements are made in the Western States, American iron and steel, made of Western ore, is about as cheap as the foreign article, free of duty, when carried that far inland. The difference between the cost of a plow made of American iron in Ohio, Illinois, Missouri or Kansas, and one made in the same States of foreign iron brought to the shops free of duty, would hardly be worth talking about. If duties were wholly removed from all the iron and steel used in the manufacture of our farm implements it is doubtful whether the Western farmer would save a cent by the change. If there really is any such tax, however, the miners and forgers and smiths that work the iron and make the utensils get the benefit of it.

If consumers do not pay the tax, who does? our correspondent asks.—Who

pays the tax is determined by principles embodied in the following rule:

Current prices of commodities are affected by duties on imports according to the proportion which the amount of the home product bears to the amount of the imports of like commodities which are brought in to make up the difference between the home product and the home demand or consumption. If the home product and the imports (of like articles) are about equal in amount, the duty is about equally divided between the foreign producer and the home consumer; if the imports are greater in amount than the home product, the consumer pays the greater part of the duty and in about the same proportion (inversely); if the home product is greater in amount than the imports, the duty falls more heavily on the importer; if the imports supply the entire demand, then the consumer pays all the duty; and if the home product supplies all the home demand or substantially so, then the importer pays all the duty.

To apply the rule, take four examples—wheat, sugar, flannels and dress goods. We produce enough wheat to supply the whole country, though a small quantity is imported. Wheat is as cheap here as it is in the foreign market, and the foreigner pays all the tariff tax on imported wheat. Of sugar we produce only about one pound in eleven that we consume; we import ten-elevenths of all we use, hence the tariff tax is almost if not quite all paid by the consumer. Our common flannel manufacturers supply the home market. The total value of all cheap flannels (those not exceeding 30 cents a pound) imported in 1887 was only \$19. The tariff tax in that case was all paid by the importers. Dress goods imported the same year amounted to \$7,657,370, and the duty on that (\$4,883,762) was paid by the producer and consumer both, in the proportion which the imports bore to the domestic product of like articles. Take two examples in iron: We make all the nails we need, hence the value of all we imported last year was \$746, on which the duty was \$321, which the foreign maker had to lose. Of pig iron we imported \$6,510,126 worth, (418,807,456 pounds), on which the duty was \$2,811,026, most, if not all of which, the foreign makers paid because our home product amounted to twenty-five times that quantity.

Apply that rule to any given article and you can determine who pays the tax, whether consumer or producer or both, and in what proportion. Wooden articles, or things made principally of wood, are cheaper here than like articles are in Great Britain because, if for no other reason, wood is cheaper here than there. Such articles are not affected at all by the tariff. None such are imported, only in exceptional cases, and they are too few to consider. This applies to farm implements generally, but more particularly to such as are made mostly of wood. American farmers have been producing about 75 to 80 per cent. of the wool needed by all the people, hence the tariff duties on foreign wool imported is paid largely by the foreign wool-grower. Of the cheaper grades of cotton and wool cloth and ready-made clothing, our factories produce about all we need, so that there is but little of those grades imported. Only \$830 worth of cheap blankets were imported last year. Only \$8,000 worth of cheap cotton goods, but \$5,000,000 worth of cotton laces, trimmings, curtains, etc. Of the higher grades of goods, where more labor and more costly material are used, we do not produce near enough to supply the home demand, hence importations of the more costly manufactures of cotton, wool, flax and iron, are large, and the consumers here pay all or part of the duty on such, according to the rule above given.

As to clothing, tailor-made of all grades, is cheaper in England than in the United States, and the difference is very great in the finer grades. A \$50 suit, tailor-made, here can be duplicated in England for \$30 to \$35, while a \$15 suit, tailor-made, here can be matched

there for \$10. Ready-made clothing does not show so great difference. Cheap cotton clothing, ready-made, is quite as cheap here as there, and the same is substantially true as to cheap woolen clothing, ready-made. The English article is, usually, more substantial and less showy than ours, with actual money cost about the same.

And now, our correspondent wants to know where the editor of the KANSAS FARMER got that "dressy" \$10 suit, and the "big, comfortable overcoat" for \$10. They were purchased at the Golden Eagle Clothing House in Topeka, Mr. S. Ettlinger, proprietor, on Kansas avenue between Sixth and Seventh streets. The prices were the regular retail figures. There are half a dozen other houses in the city where like goods can be had at like prices, we suppose. A dressy beaver cloth overcoat can be bought in Topeka for \$12, and a heavy, warm, all-wool overcoat for \$5. This morning the writer hereof saw a heavy, strong, wool overcoat advertised at \$7.50. There is no trouble about cheap clothing here, and there is not tax enough in it to talk about. But when you get high-priced goods, then you pay tariff tax, and the workmen, wool and cotton-growers, cleaners, spinners, weavers, dyers, cutters, tailors, etc., get the benefit of it. American manufacturers do not make greater profits than foreign manufacturers do, and we have not near as many millionaires, tramps and vagrants here as there are in Great Britain.

Yes, we believe the surplus ought to be reduced, and have been urging it ever since there was a surplus.

Let Them Be Not Wise in Their Own Conceit.

The last two Presidential elections are full of lessons of warning to men in office and to those who expect to be. The change of administration four years ago was a rebuke to those Republicans who had come to look upon the management of public affairs as their lawful heritage and who regarded subordinate places in the public service as things that may properly be bartered for personal service in party politics. The principles of that party, as they had been ingrafted in legislation, were not objectionable to a majority of the people as had been determined at six consecutive elections; but the people did not intend to turn the government over to men who regarded office as their lawful right.

The defeat of the present administration at the recent election was not because of any distrust of the President's patriotism or personal or official integrity; it was not because of any evidence of dishonesty or disloyalty anywhere in office; it was not because of a general belief that a man's politics regulate his honor, that personally men are better or worse because of their party affiliations; it was not because the public business has not been carefully and honestly transacted since Mr. Cleveland's inauguration, and it was not because his counselors and assistants are not good men. The President's defeat was because, while he did not improve on any of the methods of his predecessors, and while he followed them exactly in the matter of removals from office, he proposed to wholly change the commercial policy of the country by making our excise laws permanent and by reducing customs duties below the rates of any period in our history. Not only this, but he proposed to eliminate the protective principle from our tariff legislation, and his proposition was made the creed of his party. The people do not want any more revenue from import duties than

the government needs, but they want all the protection which that amount can be made to afford by judicious discriminations in the law.

It will be wise on the part of men recently elected to office and of the party which will soon be again in power, to remember these facts and profit by the lessons they teach. The people want good government, just and equal laws, and they want all boodlers and corrupt managers cast out and kept out; they want cliques and rings and combinations which are despoiling citizens weeded out and utterly suppressed; they want clean government and honest administration. The next Congress will be expected to revise the tariff if the present one does not do it, and the revision must effect a substantial reduction of revenues, while at the same time leaving all necessary protection to the industries of the people. But there must be no assumption of authority not granted, no putting on of airs simply because of a restoration to power after one term out. The new men must not be wise in their own conceit. The people expect them to be honest and economical and to be mindful of the common interests of the men who bear all the burdens of the government. The lesson of the late election will last all parties at least a quarter of a century. There will be no other attempt, we believe, during that time to strike down our protective system. But the ruling party must be clean and on the people's side of all issues, or other exchanges will be made. The people will rule in the end.

Inquiries Answered.

ST. LOUIS CONVENTION.—We presume, though without knowledge, that the convention of stockmen and butchers at St. Louis, the 20th inst., will be a delegate convention. For railroad rates inquire at local office.

SUGAR MONOPOLY.—Is it true that the sugar made in Kansas cannot be bought by the consumer direct, but passes into the hands of a trust or monopoly and has the tariff added to it before we get it again?

—No. Any person who wishes can go to either of the factories and purchase all he wants at wholesale prices.

TICKLE GRASS.—What is the best plan to pursue to get rid of tickle grass in a timothy meadow without plowing and reseeding it? I have a seven acre field that has become almost covered with tickle grass during the last year. It has been mown for hay three years. Will this grass materially injure the meadow if nothing is done with it? It goes to seed after the timothy is cut. I have thought that perhaps if I sowed red-top and one or two other grasses with the timothy would run the tickle grass out. What is your opinion? The timothy has some clover with it.

—If we had such a field, we would sow red clover seed thickly on the timothy ground early next spring and harrow lightly. If you get a good stand of clover you have no further trouble with the tickle grass. If this experiment failed, we would plow up the ground and sow red clover and orchard grass seed mixed. If your ground is high upland, red-top will not do well on it.

Patents to Kansas People.

The following list is prepared from the official records (through Washington office) by J. C. Higdon, solicitor of patents, Hall Building, Kansas City, Mo., from whom information relating to patents may be obtained. A printed copy of any patent here named can be had for 25 cents:

For week ending November 10, 1888.

Grain measuring device—Beaumont Parker, of Highlands.
Fumigator—David L. Scediker, of Emporia.
Wash boiler—Monroe B. Davis, of Oak Valley.
Calendar—William W. Haas, of Newton.
Leveling device—Richard H. Lee, of Marysville.
Adjustable miter bevel—Matthias Gates, of Wichita.
Horse collar—Oliver I. Langworthy, of Nortonville.

For week ending October 27, 1888.

Keeper for loose ends of straps—Henry Sherman, Luctor.
Nutlock—Howard Gamble, Lansing.
Arch bridge—Jesse B. Ellis, Great Bend.
Vehicle brake—Charles Fuller, Ludell.
Device for cutting corn—Solomon C. Cross, Sedgwick.
Thill-coupling—Drake & Wait, Salina.
Barber's dressing case—Charles Brown, Emporia.
Water wheel—Seldon B. Lard, Waterville.
Double-acting force pump—Winfield S. Shahan, Russell.
Fire-escape—Louis P. Santy, Clements.
Operating mechanism for station indicators—William T. Snedden, Wyandotte.

Horticulture.

Something About Apple Tree Growth.

As our readers know, Prof. Hawn, of Leavenworth, has been discussing soil conditions attending the growth of apple trees. Here is an extract from one of his articles recently published in the *Leavenworth Times*:

"In 1847 my brother planted an orchard of thirty apple trees on the Missouri river bottom, two miles above Weston. Soon after he removed away, and not having been on the premises for years and wishing to know its conditions, I recently wrote to my friend, Mr. J. A. Durkes, a gentleman of intelligence, a practical horticulturist, and a prominent member of the Missouri State Horticultural society, he replied as follows:

"I was glad to avail myself of the opportunity to visit the old farm of your brother's, though seeing it daily almost, I have not been upon the ground and near the objects around which cluster so many memories of my boyhood. I found only three trees living then planted, one on the west side of the creek and two on the east. The one on the west side stood near the house measures two and one-half feet in diameter, the tree is quite healthy, the variety medium sized apple, known as English golden russet. Of those on the east side, one a Pennock, or large Romanite, the trunk measures about 18 inches, the top partially living, some broken off. The other far advanced in decay."

"Were those on the east side of the creek like Pharaoh's lean kine, who famished through thrice seven years and died of starvation at the Douglas County Horticultural society would have, while one but a few rods away grew to be the champion tree of the Missouri river valley? The principles involved in this discrepancy I attempted to explain on general principles in a series of articles on the diseases of apple trees in Kansas and Missouri and published in *Colman's Rural World*. But as this example brings us within tangible realization of what I believe to be at the root of the failing orchards in Kansas and upper Missouri, I will endeavor to apply the principles direct.

"The champion apple tree on the west side of the creek is on a stiff 'gumbo' soil, fertile in the extreme. The creek rarely goes dry until late in the season. Its normal level in the growing season is about four feet below the surface of the ground upon which the tree stands. That the water distribution by absorption reaches under the tree is shown by the rise and fall of the water in a well in close proximity is governed by the fluctuation of the levels of the creek. It is there seen that the sub-conditions in excessive moisture four feet below the surface is inimical to the growth of the root in that direction, consequently they spread latterly near the surface. The twenty-nine trees on the east side of the creek stood on a bench eight feet higher. The soil is equally fertile, more pulverulent and physically better adapted to tree growth. There being no obstruction for twelve feet in the passage of the roots downward, and in this direction they probably extended their growth in search of moisture in protracted droughts, or from other instincts. We have records where, on the high grounds of Kansas and Missouri, the roots of forest trees had punctured the rich subsoil marl beds to the depth of eighteen feet; osage orange on the washed banks of a creek in Leavenworth thirteen feet, and the terminal yet further down; pokeweed,

seventeen feet; clover ten feet, and blue grass five and six feet. The roots of the apple trees that were on the east side of the creek in their warm beds deep below the surface, were ever ready to send up sap into the tree above during warm spells in the winter, and on sudden changes to the low temperature this sap become frozen before it was eliminated from the branches and become dead matter, and by chemical changes developed into a progressive poisonous infection, which finally destroyed the trees; and like causes produces all the phases in the diseased apple tree in Kansas and Missouri. While this disintegration was progressing in the trees of the east side of the creek, the roots of the champion tree on the west side lay dormant by season of being near the surface and enveloped in frozen earth, or in a temperature that restrained them from activity, and this conservative influence prolonged the youthful vigor of it through forty-one years, with a good claim for the champion tree of the Missouri river valley.

"Place any apple tree under like conservative influences either by artificial means of local selection and the tree will be healthy in Kansas or anywhere else within the apple tree belt, irrespective of the condition of the soil.

"On the shallower sub-soils which are more often sterile, and the surface soil less organic, between the Wabash and the Atlantic, is the home of the apple tree, or in any other part, where such conditions exist. While on the rich organic soils resting on the deep marl beds in Kansas and upper Missouri, successful horticulture is yet problematical.

"The horticultural reports of southern Missouri show that on the thin soil of the Ozark region there is now developing a fruit district, which will not be rivaled in the northwest. The lower section of southern Illinois, from whence Chicago is supplied with some of her best fruits, but fails to produce such on her deep soils higher up in the State. In the region of Washington county, Indiana, where cider and apple jack is as free as water, where a Kansas bred farmer should attempt to make his support would soon imagine himself on the way 'over the hills to the poor house.'

"In the upper valley of the Delaware, of Pennsylvania, where the apple tree flourishes as if to the manor born. Pass up the valley toward the head of the stream, and then over to the Susquehanna, where once grew one of the most magnificent forests of its kind on this continent. Through that region an orchard was occasionally planted in some sequestered nook, where they grew in mimic rivalry of the monarchs of the forests. Transpose a Kansas bred farmer unconscious to that region, on recovering he might imagine himself in the land of Idumea; though he might not hear the cry of the satyr, but he would be regaled by the howling of wolves from the going down of the sun to the rising thereof."

A writer in *American Garden* makes this statement about grafted roses and those on their own roots: "Few professionals really agree on the question as to the advantages of grafted roses and those on their own roots. Of course there are many, especially among the teas, which must be grafted to force well. The finest flowers of William Francis Bennett, I have seen, were from plants grafted on some stronger grower, such as the Mermets. But according to our experience, worked hybrid remontants never stand the winter outside as well as those on their own roots; they are very apt to be winter-killed. When rapid growth is required for inside use, the worked plants certainly have the advantage. But it is an unnatural condition, and really there seems no reason for it in most cases."

White Arsenic-- Experiments at the Iowa Experiment Station.

Ever since the practice of spraying fruit trees with poisonous preparations has existed, certain horticultural writers have repeatedly urged the use of white arsenic as a cheap substitute for London purple and Paris green. Serious objections to the use of this substance, however, have been pointed out by several leading entomologists—the most important being the greater liability of scorching the foliage, and the danger of mistaking the poison for flour or other household articles. And we are very glad to see that Mr. C. P. Gillette, of the Iowa Experiment Station, reports in Bulletin 2, a series of elaborate experiments which show very clearly that arsenic cannot be used with safety and success.

Mr. Gillette used as a standard solution, 1 ounce of white arsenic dissolved in 1 gallon of boiling water. This was diluted in proportions varying from 1 pound arsenic to 200 gallons water, to 1 pound to 1,200 gallons, and applied to foliage of apple, plum, grape, box elder, and various other trees. On apple, in the first series of experiments the 1 to 250 solution scorched at least one-half the leaf surface within a week, while the 1 to 400 solution scorched the tips and edges of the leaves. On plum, however, the 1 to 250 solution hardly left a green leaf, and the 1 to 800 solution damaged the leaves too badly to allow this strength to be recommended. Another set of experiments gave the following results:

Plum.—Twenty-four hours after the treatment plum leaves showed plainly its effect: three weeks after the application there was scarcely a green leaf on plum trees where the strength exceeded 1 to 600; and 1 to 200 not only took all of the leaves, but killed all of the small twigs as well; 1 to 1,200 took off about half of the leaves and left remainder looking sickly and somewhat burned.

Apple.—The three weakest dilutions, 1 to 600, 1 to 800 and 1 to 1,200 differed little in their effects. In any of these cases it is difficult to find a leaf not damaged, the amount of harm varying in each case from a small spot to more than half of the leaf, and some of the leaves, on account of the treatment, have fallen to the ground. The stronger solutions did much more harm, 1 to 200 leaving but a few scattering leaves and they with a large portion of the surface burned to a crisp.

Effects on Insects.—Deeming it thoroughly proven that arsenic could not be used in solution stronger than 1 pound to 1,200 gallons of water, a portion of an apple tree was thoroughly sprayed with this solution, and the leaves gathered daily and fed to larvae of *Datana ministra*. After feeding on the poisoned leaves for five days the worms gave no signs of failing health and the experiment was discontinued.

WHY ARSENIC BURNS FOLIAGE.

Mr. Gillette had some analyses made of leaves which had been treated with arsenic, and the results bear out the following:

It may seem strange at first that dissolved arsenic in so small quantities should injure foliage when London purple or Paris green, which are nearly one-half as strong in arsenious acid, can be used in the proportion of 1 pound to 150 gallons of water on the most delicate foliage without doing perceptible harm. The reason seems evident, however, on a second thought. It is certain that only that part of the arsenic that is in a soluble condition can act on the leaves to corrode them. Paris green and London purple do not dissolve in water except in very minute quantities.

Their finely divided particles are simply held in suspension in the water, and when the latter evaporates these particles remain in an insoluble condition on the surface of the leaves where they may be plainly seen by the aid of a microscope. The white arsenic, on the other hand, is so perfectly soluble in the proportions used that it is able to pass quickly by osmosis into the substance of the leaves, and produce its evil effects.

IN CONCLUSION.

Mr. Gillette writes: "When we add to these facts the increased danger to human life, that is incurred by having in the house so deadly a poison, which cannot be distinguished in color from flour, saleratus, baking powder, and other materials used in cooking, and the other fact that London purple, which is also a waste product, can be had almost as cheaply as arsenic, it would be unwise in the extreme to recommend the latter, especially if it be in solution, for insecticidal purposes."

Horticultural Notes.

An amateur gardener in Milwaukee warms his hot bed from a heating stove in the house. He makes the bed twenty-five or thirty feet from the house, and the heating is done by a simple hot water system.

As a rule, a half peck of nice selected apples will sell for as much as a peck if the other half is made up of small, crooked wormy apples mixed in among them. Save the expense of marketing the inferior fruit.

The oldest rose bush in the world is trained against the old church at Hildersheim in Germany, and it is claimed that authentic record states that in 1079 Bishop Hephlo caused a trellis to be erected to support the rose. The main branch is larger than a man's body.

The apples when picked should be carefully piled in heaps under the tree, and there allowed to "sweat" as it is called for a week or two. Should very cold weather occur before they are barreled, they can be easily covered with canvas, but usually they will need nothing of the kind.

Bushel crates are handy for apples. They may be made of two ends and one middle piece, each 9x15 inches; to these nail laths 24 inches in length, making the space between them to suit the purpose for which they are to be used. If you cannot get them ready-made, make a few some wet day.

Some packers take great pains in assorting their apples, making three grades, the No. 1 being the largest and highest colored apples from the outside of the branches; No. 2 the smaller but high colored ones; No. 3 the greener but sound fruit from the shady side of the tree. All inferior, bruised, wormy or wind-fall fruit is fit only for cider or vinegar.

Very much depends in shipping apples either to a foreign or domestic market, upon the way in which they are packed. If small and knarled or wormy fruit is mixed with sound and good, the whole will be sold at the price of the poorer specimens; but if care is taken to assort them evenly, and pack them carefully they will sell, especially in the English market, as soon as the brand becomes known at a price that will pay well for the care required; indeed a little care in such matters often makes all the difference between profit and loss in shipping goods.

Remarkable Surgery.

The science of surgery has made such wonderful progress in modern times that the most intricate and delicate operations are now undertaken and carried to a successful issue. There are now several well-authenticated cases of what is known as pneumotomy, that is to say, the removal of diseased portions of the lungs in cases of consumption. While, however, this delicate operation has sometimes been successfully performed, the risks attending it are so great, and the chances of recovery so slight, that it is seldom resorted to. The safest plan in consumptive cases is to use Dr. Pierce's Golden Medical Discovery. This will always cure the disease in its earlier stages, thoroughly arresting the ravages of the terrible malady, by removing the cause and healing the lungs.

The Poultry Yard.

Hard Facts.

"We read of hens that lay from ten to twelve dozen eggs in a year, of hens that lay in winter when eggs are worth anywhere from 25 to 35 cents a dozen, of hens that pay their owner a clear profit of \$1 per head each year, but mine don't do any of these things. Why?" And the "anxious enquirer" looked at me as if he thought I were in some way responsible for the shortcomings of his hens. I told him why, and now I am going to tell you the same thing. Yes, I am talking of "somebody in particular;" these "few remarks" are aimed right at every reader who makes the same complaint that the "anxious enquirer" made.

To begin with, you don't keep the "best breed" of fowls. You haven't got it through your head that the improved varieties of fowls are more profitable than the common kind; so you still keep the old "dunghills," and you don't even keep the best of them. When the surplus chickens are sold off in the fall, the biggest and earliest pullets are sold because they will weigh more than the later ones; old hens are kept year after year, until they die of old age, and as for the roosters—well, when you take a notion that the rooster has lived long enough, you "save out" a young rooster to take his place. Instead, however, of saving the strongest and most vigorous—the one that "bosses" all the rest—you keep an inferior one just because you like his color, and he is "kind o' peacable like."

"Come now," puts in the wise man, "you are overdrawing that." Not a bit of it. Like a good many others who don't know anything about it, you have an idea that because nearly every agricultural paper contains the advertising cards of breeders and thoroughbred poultry, the majority of farmers have improved their old "dunghill" fowls off the earth, and now keep either pure-bred or high-grade fowls. But "it ain't so." The majority of farmers still keep only the commonest kind of common fowls, and the queerest thing about it is that many of these same farmers have improved all their other stock. They can see that pure-bred or high-grade cows, sheep or pigs are more profitable than common ones, but when it comes to poultry they "can't see it."

Another reason why your hens don't pay like the hens you read about, is because you have no decent place for them to work in. You probably have comfortable places for the horses, cows and pigs—even the dog has a comfortable kennel—but your hens either live out of doors altogether, or else are allowed to keep house in some old shed, or old building that is not considered fit for anything else.

Here the wise man speaks up again, and says: "I think you must be mis—"

No, I am not mistaken, either. I am of an observing "turn of mind," especially where poultry matters are concerned, and I have, in my trip through various parts of the country, observed that the farms where there were very poor poultry-houses, or none at all, greatly outnumbered those where the poultry had suitable accommodation. On one trip, and that, too, through an Ohio country, where the farmers are generally "free-handed," I found thirty-seven farms that had not a

poultry-house fit to be seen, against five that had good accommodations for their fowls. On nearly all the thirty-seven farms the other buildings were good. On one farm, where the fowls were in about the poorest apology for a house that I ever saw, there was an \$800 barn; and on another where there was no poultry-house at all, there was a dog kennel that probably cost \$10 at least.

An Ohio breeder told me that he has often ridden a whole day without seeing more than two or three decent poultry-houses. Even in New England, New York State and Eastern Pennsylvania, where the people are more alive in poultry matters than in any other part of the United States, the poor poultry-houses outnumber the good ones.

Then you don't feed your poultry right. Sometimes you feed too much; sometimes not enough; and you don't take any pains to give them any variety of food in winter when they need it. If you throw them all the whole corn they will eat once or twice a day, you think you have done your whole duty, and wonder why those hens don't lay.—*Fanny Field, in Prairie Farmer.*

A Word For Chicken Meat.

What flesh is better in the human diet than that of poultry of all sorts? We allude especially to common fowls, as they are more easily raised in great numbers than ducks, geese or turkeys, barring cases of special adaptability. We wish some old ideas about such things as this could be dissipated. The common poor farmer of this country, as a rule, does not consider a good fat fowl as the appropriate thing for the meat part of his dinner after a hard morning's work in the field. He eats few chickens except on Sunday or when he has company. Yet, as matter of fact a fowl or chicken contains more that is nutritious, digestible as well as relishable, than the same weight of bacon. We do not speak by the book alone, but again our personal experience supports our position. We have for generations been daily loading our stomachs, as a rule, with hog flesh. It is one of the habits that have been inherited, like others that ought to be abolished or more frequently varied. Of course, the lean portion of hog or other animal flesh contains muscle-making nitrates, but this constitutes only a small portion of the bulk of side meat, besides it has hardened by salt. On the other hand the fat part is purely carbonaceous food, containing, it is true, some healthful juices, but nothing that supports the muscles, the brains or the nerves of the body, just the elements the working man needs in the toilsome labors of the farm.—*Cotton Plant.*



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KIDNEY PAINS, Backache and Weakness cured by CUTICURA ANTI-PAIN PLASTER, an instantaneous pain-subsidying plaster. 25 cts.

It's Easy to Dye WITH DIAMOND DYES



Superior IN Strength, Fastness, Beauty, AND Simplicity.

Warranted to color more goods than any other dyes ever made, and to give more brilliant and durable colors. Ask for the Diamond, and take no other; 36 colors, 10 cts. each. WELLS, RICHARDSON & CO., Burlington, Vt.

For Gilding or Bronzing Fancy Articles USE DIAMOND PAINTS.

Gold, Silver, Bronze, Copper. Only 10 cts.

Baby Portraits.



A Portfolio of beautiful baby pictures from life, printed on fine plate paper by patent photo process, sent free to Mother of any Baby born within a year. Every Mother wants these pictures; send at once. Give Baby's name and age. WELLS, RICHARDSON & CO., BURLINGTON, VT.

— 3 NEW VOLS. —

Giants & Goblins, \$1.
Wings & Stings, 75c.
Paws & Claws, \$1.

Mailed Postage Free.



QUEER PEOPLE
BY PALMER COX

AGENTS WANTED TO SELL THE BRIGHTEST, JOLLIEST JUVENILE BOOKS. Full of the oddest pranks and most charming stories with laugh-provoking pictures by the Prince of Juvenile Artists. A GREAT HIT! Over 10,000 sold. Critics say of it: "It sets my little folks wild with delight."—Hon. Clinton B. Fisk. "Don't send me another, for I can't get the children to bed."—R. H. Conwell, D. D. "A delightful book."—Phila. Press. "Incomparably neat and elegant."—Hon. S. S. Cox. "Fascinating as 'Esop and Uncle Remus.'"—Hon. Howard Crosby. HUBBARD BROS., Philadelphia, Chicago, or Kansas City.

BOYS GET YOUR GUN!

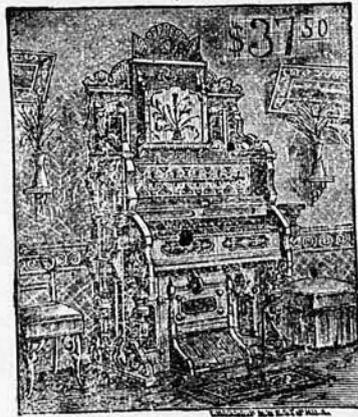
NOW IS THE TIME!
CHICKENS ARE "RIPE."
DUCKS ARE COMING.

We have the Largest Stock of GUNS, RIFLES, REVOLVERS, AMMUNITION ETC., to be found in the West. PRICES GREATLY REDUCED. Send for Catalogue, containing everything needed by SPORTSMEN, which we mail free.

JENNEY & GRAHAM GUN CO.,
53 STATE ST., CHICAGO.

In writing to advertisers, mention the KANSAS FARMER.

GREAT OFFER!



T. SWOGER & SON,
Fine Church and Parlor **ORGANS.**

DIRECT FROM THE FACTORY AT MANUFACTURERS PRICES. No Such Offers Ever Made.

EVERY MAN HIS OWN AGENT. BOXED IN THE FACTORY.

OPENED AT YOUR HOME NO MIDDLEMEN. NO WHOLESALE DEALERS. NO AGENTS.

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WRITE FOR PARTICULARS, ADDRESS T. SWOGER & SON, ORGANS, Beaver Falls, Pa., U. S. A.

JOLLY TAR PLUG CHEWING TOBACCO

Have you tried it?

The largest quantity of good quality ever offered to chewers.

ALWAYS up to STANDARD

Always pleases. All dealers sell it.

Jno. Finzer & Bros., Louisville, Ky.

ON 30 DAYS' TRIAL.

EGGLESTON'S ELASTIC TRUSS

Has a Pad different from all others, its cup shape, with self-adjusting Ball in center, adapts itself to all positions of the body, while the pad in the cup presses back the intestines just as a person does with the finger. With light pressure the Hernia is held securely day and night, and a radical cure certain. It is easy, durable and cheap. Sent by mail for 50 cents. EGGLESTON TRUSS CO., Chicago, Ill.

BEST OFFER YET. For 6 cents we will mail you this Glorious Ring, the famous Bird Call or Trivia Whistle, with which you can imitate any Bird or Animal, and our new Book of Agents Sample Cards. Address, BANNER CARD CO., CADIZ, OHIO.

M.M.L. MEXICAN MUSH-TANG LINIMENT Should be kept in stable, Kitchen, Factory, Store & Shop!

M.M.L. MEXICAN MUSH-TANG LINIMENT Should be kept in stable, Kitchen, Factory, Store & Shop!

M.M.L. MEXICAN MUSH-TANG LINIMENT is for Man & Beast. Kills Pain. Rub it in very vigorously!

M.M.L. MEXICAN MUSH-TANG LINIMENT is for Man & Beast. Kills Pain. Rub it in very vigorously!

WEATHER PREDICTIONS.

By Prof. C. C. Blake, Topeka.

[Correspondence on account of this Weather Department should be directed to C. C. Blake, Topeka, Kas. See advertisement of Blake's Weather Tables on another page.]

THE GREAT STORM.

While we have been advising the seeding of winter wheat vigorously till November 1, with the assurance that there would be four inches of rain in this month in Kansas, some of our correspondents have been fearful that there would not be rain enough for the wheat before winter sets in. But we had predicted that cold weather would not come till the last of November, and that rain would be more plentiful than usual. Ordinarily, such a heavy precipitation as we have had for the past few days would have ended, at this time of year, with a fearful blizzard, and intense cold which would have lasted several weeks if not all winter. But this time it ended with a warm, wet snow, as was but natural in so great a storm which cut off the sun's rays for several days at a time toward the end of autumn. The temperature at the end of the storm was just low enough to make snow instead of rain. We did not predict snow, as we could not figure fine enough to know the exact number of degrees the temperature would be reduced by the heavy rain and cutting off the sunshine for so long. Had it been a very few degrees higher there would not have been even the warm, wet snow. Many in Topeka were fearful that it would end with a blizzard, as usual in such a November storm; but we assured them the cosmical conditions were such that cold weather was impossible at present. The snow will melt slowly in the warm rays of the sun, and the water all be absorbed by the earth, filling the wells and springs with plenty of stock water. The snow also absorbs a large amount of rich gases in the air while falling, and as it melts it adds thousands of dollars' worth of manure to the land. Winter wheat throughout the State is in the best possible condition. If the Kansas farmers will now make their plans for spring in accordance with the weather indicated in our Tables for 1889, the crops next year will be so large, the prices so high and the immigration from less-favored States so immense next fall that farms will sell for a fabulous price. "There is a time and tide in the affairs of men which, taken at its flood, leads on to fortune; but, neglected, we spend the remnant of our days upon the shoals and quicksands of poverty."

QUESTIONS AND ANSWERS.

CLARENCE, IOWA., Nov. 4, 1888.

C. C. BLAKE:—Find enclosed \$1.75 for the KANSAS FARMER and your Weather Tables for 1889. You say these problems are not difficult for you to solve if you just think that way. Please tell us in some number of the KANSAS FARMER the relation the planetary system has to the earth and why so.

SCOTT MCNEIL.

Our friend asks a simple question, but one which would take a large volume to answer. While it is very easy to solve problems in square and cube root after one has learned all the rules in arithmetic up to that point, yet it would not be easy for one who had studied no farther than fractions. In order that one may solve astronomical and meteorological problems easily he must learn step by step all the rules and laws which lead up to those higher problems. When we were publishing *The Future* we published five long chapters, entitled "Cosmogony," in which we laid the foundation step by step, so that our readers would be able to understand "the relation the planetary system has to the earth, and why so." In the first issue of *The Future* we published a large number of astronomical laws and illustrated them with mathematical tables in which the problems were worked out in figures, not in algebra. We can furnish all of the above for 35 cents. We therein show mathematical laws by which the earth and planets revolve upon their axes, and the cause thereof, which is what no astronomer has ever shown. Those articles are entirely too lengthy for the columns of the KANSAS FARMER, which is not a scientific journal. But we shall reproduce all of those articles, with additions, in book form, as soon as we think the demand will be sufficient to justify the expense.

OXFORD, KAS., Nov. 5, 1888.

Enclosed please find \$1.00 for two copies of your Weather Tables. I think you are

the greatest humbug of modern times, or the greatest benefactor. I hope you are and will prove to be the latter. I. W.

We quite agree with our friend from Oxford. But the fourteen years we have been before the public has pretty thoroughly solved the conundrum which he puts. It is not, however, to be wondered at that men should yet be surprised at our apparent audacity in attempting to solve a problem which has heretofore baffled all of the wise men of the earth. It baffled us for more than twenty years, but we "hung to it like a dog to a root," till we gradually brought order out of confusion, and established a perfect mathematical science which the world now recognizes. It matters not what men's opinions may be as to whether it is possible to predict the weather—the actual fact that we do do it, and have done it constantly for the past fourteen years, is superior to any amount of opinion. At first we only attempted to predict generally for the whole United States. We tried to divide it up, and calculate what the weather would be in each State for each month, but in that we repeatedly failed. But we "stayed with it," and step by step we solved even that problem, till now we can predict successfully for each State; and in a few years we are in hopes that we will be able to predict successfully for each county. Our predictions for each State, as published in the KANSAS FARMER during the past season, have made a verification of 90 per cent. till October, when it was 100 per cent. But we do not expect to be able to make 100 per cent. each month. We expect to make a verification of 90 per cent. each month, and when it gets above that figure, we regard it as most extraordinary.

WA KEENEY, TREGO CO., KAS., Nov. 5, 1888.

I have been reading your predictions in the KANSAS FARMER for the past six months, with both eyes open. I "tumble to the racket." You are the only man that I have ever had the least particle of faith in as a predictor of future weather. In accordance with your directions I planted corn about July 1st, and but for that I would have had no corn, for my main crop was all burned up by the hot winds. Enclosed please find cash for your Weather Tables for 1889.

E. W. BROWN.

Thanks, Mr. Brown. It is a great pleasure to us to know that we have contributed our mite towards ameliorating the condition of the farmers in Western Kansas. When we can assist the farmers to tickle mother Earth at the right time, so as to make her yield forth her abundance, it is no burden for them to contribute a mite in purchasing our publications, and thus enable us to keep the good work going. Some kinds of business are simply machines for collecting taxes for which no equivalent is rendered; but a business which causes the earth to produce more than it otherwise would, adds wealth to the country without robbing any one.

SAN FRANCISCO, CAL., Oct. 31, 1888.

Send KANSAS FARMER and your Tables for 1889. I enclose \$2.00. Success to you.

DR. J. E. M.

TOPEKA, KAS., Nov. 6, 1888.

Enclosed find my check for \$1.00 for two Tables for 1889. Your predictions have been of benefit to me this season, and I expect to follow them more closely another year. Will want several copies more for other parties.

J. S. A.

We will send the tables to clubs of ten or more at 40 cents each.

WYCKOFF, LYONS CO., KAS., Nov. 7, 1888.

Send two Tables. We are having a fine rain to-day. Wheat is in good condition, and a much larger acreage than last year. I have seventy acres, and hope to enjoy the benefits of your predictions verified as to wheat next season.

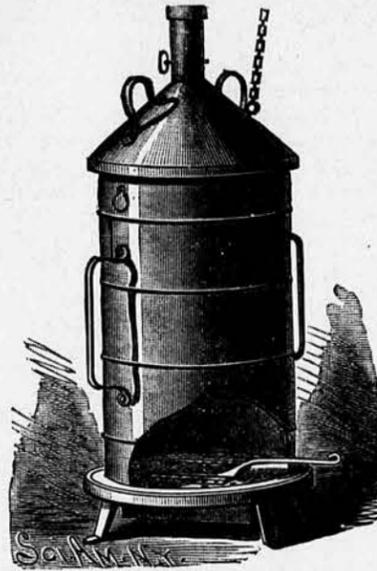
F. M. C.

How does this big, warm November rain and snow storm strike you fortunate ones who have a large crop of winter wheat? Could anything be better? "Didn't I told ye so?" Won't you wear velvet, while "those who took no oil in their lamps" continue to wear fringe on their pants?

Splendid underwear at extremely low prices at the Golden Eagle Clothing house, Topeka.

A New England paper avers that careful experiments show no gain in yield from the common practice of rolling down onion tops a few days before gathering the crop. This is the testimony of a grower who has tried both methods side by side.

The Dakota Stove.



The above illustration is a good picture of a trash-burning stove that was seen by a FARMER representative at the Nebraska State Fair, where it was awarded the first premium. The stove while called the "Dakota stove" might properly be called the homesteader stove or the poor man's friend, as it is designed as a heating stove without the use of coal or wood and solves the fuel question for many prairie homes. The stove is attracting much attention and large sales. It is one of the most useful, economical and practical inventions of the age, and is needed in every room where a heating stove is used, as there is a loud and crying want by the masses for something, or some way to reduce the cost, or labor; or both of procuring fuel. It has been thoroughly tested the past year and is pronounced by all an entire success, burning any and all kinds of combustible material, such as weeds, straw, corn stocks, leaves, barn yard litter, cane mash, potato and other vines, buffalo and other chips, and will burn these in a half wet condition, giving off as much heat as wood or coal, thus reducing the cost of fuel to the least possible minimum.

It is easier and neater to replenish than either a wood or coal stove, this is done by filling the bodies outside the room, the bodies being the magazine in which the trash is burned, there being two with each stove. When the contents of one body (which will last from six to fourteen hours) is consumed it is removed and replaced by another.

Every stove is warranted to give satisfaction or no sale. Good agents wanted in every county. Full particulars will be given to any one mentioning this paper and addressing the manufacturer,

W. H. RYER, Steel City, Nebraska.

A Child's Self-Respect.

Once given a reputation to live up to, a character to maintain, and the child's pride comes to the rescue, his sense of honor is cultivated to the point of giving birth to truthfulness, and thenceforward noblesse oblige, until at last he seizes on the real beauty and value of truth, upon which truth itself obliges. And on the other hand, if you would make the little liar a big liar, and eternally a liar, then constantly confront him with the fact that he is a liar already. He will have small motive for telling the truth, since all the world believes and knows that he is a liar; he sees that he would not be credited if he told the truth; he will not have the name without the game, and his fate, which the tact and watchfulness of which we have spoken might have made very different, is early sealed.—*Harper's Bazar.*

Farm Loans.

Loans on farms in eastern Kansas, at moderate rate of interest, and no commission. Where title is perfect and security satisfactory no person has ever had to wait a day for money. Special low rates on large loans. Purchase money mortgages bought.

T. E. BOWMAN & Co., Jones Building, 116 West Sixth street, Topeka, Kas.

A correspondent of the *Jersey Bulletin* says that corn meal fed a little in excess will hasten the ripening of the cream, but the butter therefrom was soft and oily; on the other hand, an excess of bran feed will

retard not only the process of ripening, but the churning as well, and the butter will be pale and sickly looking, as well as "crumbly," despite your efforts.

ADDITIONAL.

Cheap Excursions South--Memphis Route.

Another series of half-rate excursions to southern points has been arranged by the K. C., F. S. & M. R. R. Co., as follows:

On November 7, 13, 20 and 27, and on December 4 and 18, to points on its own lines in Southern Missouri, Arkansas, Tennessee, Mississippi and Alabama.

On November 13 and 27, to points on St. L. A. & T. Ry., in Arkansas (via Jonesboro.)

On November 7 and 20, and December 4 and 18, to West Point, Miss., Hammond, Baton Rouge, Jennings and Lake Charles, La.

Tickets sold from Kansas City and stations in Eastern Kansas and Western Missouri. Write for full particulars. Send for copy of *Missouri and Kansas Farmer*, an 8-page illustrated paper—mailed free.

J. E. LOCKWOOD,

Gen. Pass. and Ticket Agent, Kansas City.

The President's Message.

The inaugural address of the Great Rock Island Route, the Chicago, Kansas and Nebraska railway, is to announce that on November 18 solid vestibule trains will be run between Chicago and Denver, Colorado Springs and Pueblo without change, making close connections at the above points with all trains for Salt Lake, Los Angeles, San Francisco, Portland, Oregon and all points west, and at Kansas City and St. Joseph eastward for Chicago, St. Louis and all points east, north and south.

These royal trains consisting of Pullman sleeping cars, restful reclining chair cars magnificently furnished day coaches, were built expressly for this service by the Pullman company and are without question the handsomest ever turned out by that famous establishment. The reclining chair cars spoken of are free to all holders of first-class tickets, and a courteous attendant will be found with every car to care for the wants of our patrons. Ask your nearest ticket agent for a ticket via "THE GREAT ROCK ISLAND ROUTE" or write to

JOHN SEBASTIAN, Gen'l. Ticket and Pass. Agent, Topeka, Kas.

The editor of the *Maine Farmer* has "long held the opinion that the merits of the Devon cattle have been overlooked in breeding those of monstrous size." They are, indeed, a fine breed of cattle, fairly good milkers, economical feeders, and superior for beef.

D. C. Curtis writes: March 1, 1888, man came to my farm who dehorned all but year-old cattle. At first I did not like the plan, but now, and in fact ever since the first month, the method suits me better and better. There is nothing that could ever induce me to keep horns on the farm again.

Look Here, Patrons and Farmers!

Delegates to the National Grange and National Farmers' Congress will find the Central Barber Shop the best place in the city for baths and barbering. Ten good barbers. Everything first-class. Crawford's opera house.

It has been demonstrated that the quantity of meat produced by sheep delivered to the butcher at the precocious age of from 9 to 15 months costs exactly half the expense of those fed to double that age. By bringing the animals early to the block we reduce risks and labor and time, which in this, as in everything else, means money.

An advocate of pig pork declares that a young pig will produce more live weight from a given weight of food adapted to its use than any other domestic animal. Skim milk and meal, he says, are the most effective rations fed. Middlings is the best single food; cob meal, fine ground, is an efficient food, and equal to clear corn meal.

In one of our exchanges a writer says that when sheep have badly swollen lips, the swelling extending under the jaws and up the side of the head, the animal being much worse at night, the animal is poisoned by eating poisonous plants. As a rule we think that is true, but very similar symptoms may be seen when the sheep is not poisoned, except, perhaps, the feature of being worse at night.

STRONG, CHEAP, CAPACIOUS BARN.

Essay read by G. Leary, before the Douglas County Farmers' Institute, and published by request.

The necessity of barns in Kansas is readily admitted by every one acquainted with its climate. Located as we are, in the center of the continent; shut off by mountain ranges or by distance from the ameliorations of the ocean and the great inland lakes and with no dense forests to stay the progress of storms, we realize, on the one hand, the intensity of the Northern blast until abated by, or lost in the softness of a Southern latitude; and on the other, the fury of the Southern tempest until equilibrium is restored by Northern cold. Thus we have a climate of extremes, and, consequently severe upon unsheltered stock in winter, and upon exposed hay and grain during the entire year.

A second necessity is, that barns, when built, should be strong, permanent and capacious.

The third necessity is, that they be inexpensive.

The average farmer cannot build a large barn, after the most approved style, without a mortgage; and a mortgage means a species of bondage, which should never be incurred to build anything. It is true that something cannot be made from nothing, but the American farmer of to-day must make the nearest possible approach to this impossibility. To aid, in such an attempt, is the object of this effort.

Assuming that the owner of a farm can command \$250 in money; that he has a woodlot on which can be found fifty-seven pieces of timber varying from 16 to 28 feet in length, and from 6 to 12 inches in diameter, he may build a barn 50x48 feet, with 16 foot posts, after the following plan:

This plan shows, on either side, a mow 16x48 feet, and in the center, a stable 18x48. First, secure the timber of the proper size. This should be peeled and painted with coal tar to prevent the work of worms. Next, secure 900 cubic feet of stone for foundation; one-third of this may be spawls, or refuse stone, for filling the foundation trench. The trench should be dug 12 inches deep and 18 inches wide. Upon this trench work build a foundation two feet high. The first foot need not be faced, as it will be covered by earth in banking. Cover the entire length of the foundation with an oak plank sill 2x10, and in 16 foot lengths, coupling the ends by pieces 3 feet long, firmly bolted. Saw the posts accurately, and set them 8 feet apart, spiking firmly to the sill. Each corner should be secured both ways, by a strong cross brace (x) of timber, spiked to the sill, and bolted at the top and center. Each side is secured against lateral pressure by two strong cross sills. The plates are oak scantling 4x4 and of 16 foot lengths. The comb rafter is also oak 2x8. The end rafters may be 2x6, but the other main rafters should be 2x8. These should be securely spiked and bolted, and bound by pieces of strap iron at the plate and comb. The two sides are bound together by strong timbers resting upon posts 9 feet high. These are bolted to the inner line of main posts. An x brace, for each pair of main rafters, bolted at the center, and attached to the rafter and the opposite post, secures the roof immovably. The girts, 2x4, should be placed four feet apart; they should be let into the posts more or less, and spiked securely through the width. There are ten lines of transverse rafters 2x4, running the entire length of the roof. These are cut into 8 foot lengths and spiked to the main rafters, crossing them at right angles. The frame is then ready for

covering. This all consists of 16 foot lumber, 12 inches wide, and surfaced on one side; the best should be selected for the roof. The roof lumber should be grooved half an inch from the edge, to the depth of one-fourth of an inch. The boards should be seasoned, and then placed close together, the joint being covered by a batten not more than two inches wide. The battens should be secured by long nails driven through the joints and into the transverse rafters. This will permit the roof boards to expand or contract without disturbing the batten. A 12-inch roof board should be secured at each bearing, by three 10-penny nails. All nails and spikes should be heated to redness before using, thereby greatly lessening the liability of breaking the head. A hay car may be constructed at a slight expense so as to receive hay from a horse fork outside, and deliver it at any point within.

This barn, as planned, has a storage capacity of 48,000 cubic feet, or 140 tons of hay, and a stable capacity for twenty-four head of cattle, allowing 36 square feet standing room for each animal. By a slight change it can stable seventy-two head, and store 110 tons of hay. Any man of ordinary genius can construct it from beginning to end. It requires 1,937 feet of dimension lumber for sills, girts, rafters and braces, and 7,163 of boards for covering; the aggregate is 9,100 feet. By shrewd buying, its cost need not exceed \$250, and when built, it will pay for itself in one year.

Rice is an excellent addition to the bill of fare for young chicks up to three months of age. Refuse rice—the broken grains—is bought and cooked in a nice dry mess, one pint of the rice to a quart of water. It is a cheap and good flesh-forming food for the little chicks, especially for ducks.

Attention, Farmers!

The Woman's Exchange, 114 West Seventh street, has become the most popular place in the city as a resort for the hungry. Transient rates 50 cents per meal; lunches from 25 cents upward.

Ask for the celebrated Miller hats, at the Golden Eagle Clothing house, 610 Kansas avenue, Topeka.

THE MARKETS.

By Telegraph, November 13, 1888.

LIVE STOCK MARKETS.

Chicago.

CATTLE—Receipts 9,000. Market stronger. Top natives, \$5 80; best steers, \$5 00a5 80; good, \$4 20a4 90; medium, \$3 70a4 10; common, \$2 75a 3 60; stockers, \$2 00a2 60; feeders, \$2 60a3 30; bulls, \$1 25a2 50; cows, \$1 25a2 75; Texas steers, \$2 25a3 00; Texas cows, \$1 50a2 25.

HOGS—Receipts 14,000. Market 5 to 10 cents higher. Mixed, \$5 25a5 50; heavy, \$5 35a5 65; light, \$5 25a5 45; skips, \$5 00a5 40.

SHEEP—Receipts 4,000. Market stronger. Natives, \$3 00a4 00; Texas, \$2 50a3 25; lambs, \$3 75a5 50 per cwt.

St. Louis.

CATTLE—Receipts 910, shipments 1,120. Market firm. Choice heavy native steers \$4 60a5 00, fair to good native steers \$4 00a4 50, medium to choice butchers' steers \$3 40a4 00, fair to good stockers and feeders \$2 10a3 25, grass rangers \$1 75a3 00.

HOGS—Receipts 2,700, shipments 500. Market slow. Choice heavy and butchers' selections \$5 50a5 60, medium to prime packing \$5 35a5 50, ordinary to best light grades \$4 30a5 40.

SHEEP—Receipts 155, shipments 410. Market steady. Common to good, \$2 00a4 00.

Kansas City.

CATTLE—The supply was estimated at thirty loads of corn-fed natives. The inquiry was light and sellers were bid early 10 to 15 cents below what they thought the cattle were worth Saturday. Sales at \$3 00a4 75 for dressed beef and shipping steers.

HOGS—The supply was moderate. Trade was active, with eight home buyers and one Chicago buyer in the market. The bulk of sales was at \$5 35a5 45, against \$5 35a5 40 Saturday. There were more sales at \$5 40 and less at \$5 35 than on Saturday. Pigs were quiet at \$4 60a5 25 for common to choice.

SHEEP—\$2 00a3 35.

RIVERVIEW

The Prettiest Young City of the Smoky Valley.

Beautiful Springs, Lake, and also, what the name implies,

RIVER VIEW.

Buy a home in or farm adjoining Riverview. Call on or address

THOS. E. FULGHUM,
Hays City, Kansas.

THAT ELEGANT

MILLINERY!

For the newest and most taking styles in Ladies'

HATS AND BONNETS,

And everything in the Millinery line, call at the new store at 803 Kansas Avenue. I can please you. Your patronage respectfully solicited. An expert Trimmer from the East.

ANNA ALLAWAY.



The BUYERS' GUIDE is issued March and Sept., each year. It is an encyclopedia of useful information for all who purchase the luxuries or the necessities of life. We

can clothe you and furnish you with all the necessary and unnecessary appliances to ride, walk, dance, sleep, eat, fish, hunt, work, go to church, or stay at home, and in various sizes, styles and quantities. Just figure out what is required to do all these things COMFORTABLY, and you can make a fair estimate of the value of the BUYERS' GUIDE, which will be sent upon receipt of 10 cents to pay postage. MONTGOMERY WARD & CO. 111-114 Michigan Avenue, Chicago, Ill.

M. W. DUNHAM'S OAKLAWN FARM.

3,000 PERCHERON

FRENCH COACH HORSES,

IMPORTED.

STOCK ON HAND:

300 STALLIONS

of serviceable age.

150 COLTS

superior individuals, with choice pedigrees.

200 IMPORTED BROOD

MARES

(80 in foal by Brilliant, the most famous living sire).

ALL STOCK SOLD FULLY GUARANTEED.

Best Quality. Prices Reasonable.

Terms Easy. Don't Buy without inspecting

this Greatest and Most Successful

Breeding Establishment of America.

Address, for 250-page catalogue, free,

M. W. DUNHAM, WAYNE, ILLINOIS.

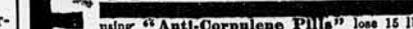
35 miles west of Chicago on C. & N.-W. R'y,

between Turner Junction and Elgin.



FAT FOLKS

using "Anti-Corpulene Pills" lose 15 lbs. a month. They cause no sickness, contain no poison and never fail. Particulars (sealed) 4c. Wilcox Specific Co., Phila., Pa.



Just half price. Smith Mfg. Co., Palestine, Ills.

HAGEY & WILHELM,

WOOL

COMMISSION

MERCHANTS

ST. LOUIS, MO.

REFERENCES:—KANSAS FARMER Co., Topeka, Kas.; Boatmen's Bank, St. Louis

Dunn's Mercantile Reporter, St. Louis; First National Bank, Beloit, Kas.

GENERAL AGENTS FOR COOPER'S SHEEP DIP.

We guarantee sale and full returns inside of TEN DAYS from receipt of shipment.

Say Mister
give me a
plug of
JOLLY
TAR PLUG
TOBACCO.
No MONKEYING



but give me the
genuine **JOLLY**
TAR PLUG
I've chewed
it and when
I find a good
thing I hang
on to it. **JOLLY**
TAR
CAN'T be beat.

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The Busy Bee.

Queen's Injured in Shipping.
 From an article by G. M. Doolittle, in *Gleanings*, we clip the following: While studying on these things, and looking for a cause, my eye chanced to rest on a few sentences regarding the shipping of queens, written by Bro. Hutchinson, or Hayhurst, if I mistake not, in which he said that the removing of a queen from a full colony during the height of her egg-laying, and immediately sending her off, caused her to be unprolific ever afterward, and that, to remedy this, they caged such queens a day or so before they sent them off, which allowed them to rid themselves of their eggs before they were subject to the rough usage they must be subjected to in the mails. I may not have quoted this just right, but have given the impression it left on my mind at that time. Soon after this I saw where another of our brethren recommended the taking of queens out of full colonies, which were to be sent off, and leaving them in a nucleus a week before they were shipped, for in this way they became like a queen which had just got to laying in a nucleus, and such queens were scarcely ever injured by shipment. Putting the whole together I believed that the trouble lay in the sudden and unnatural stopping of a prolific queen from laying, so I went about experimenting to see if I was right. I caught two of my most prolific queens and caged them the same as I would do for shipment, giving them the usual number of bees for an escort, placing them in my shop, where I would occasionally handle them and give them about the usage I thought they must receive where going by mail or express. Others were caught and handled as carefully as possible, all being kept from the hive for one or two weeks, some even having the workers renewed on account of the first set dying from confinement, and upon returning them as heads of colonies again, at least one-third of them proved of little value after that, none of them coming up to their former prolificness afterward while they lived. Having solved the matter to my satisfaction, that queens were injured by suddenly stopping them from prolific egg-laying, and not by the usage they received in the mails, I next went about finding out if this unprolificness had any effect on daughters from these once prolific queens, but now almost valueless mothers, and am pleased to be able to go on record as saying that, as far as I can see, such injured queens just give as prolific daughters after their confinement as they did before. Since then my advice has always been, where I have had occasion to say anything about it, that the receiver of a queen which he has bought for breeding purposes, should go about rearing queens from her immediately, as soon as any of her brood is old enough to use for that purpose. In this way the buyer gets a fair return for his money, even if his queen does not turn out all that he would have her be, as has been the case with many I have purchased.

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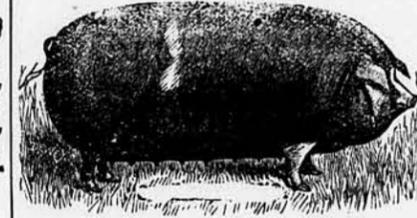
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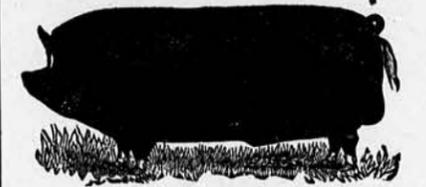
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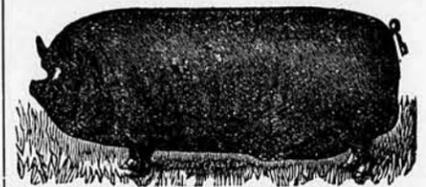
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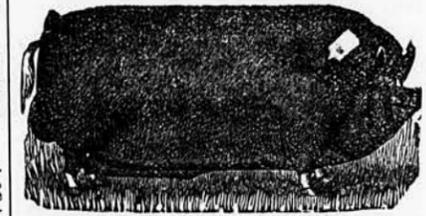
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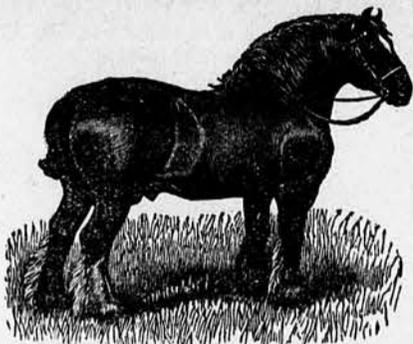
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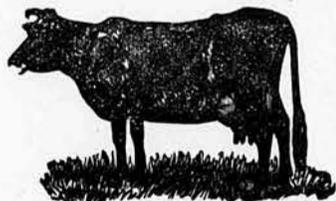
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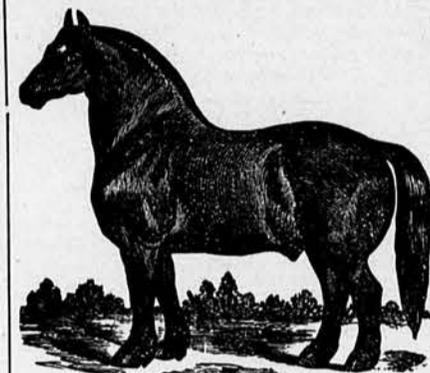
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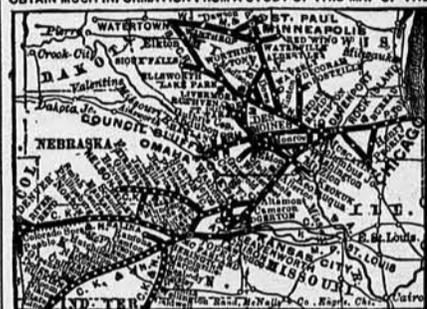
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INDIGESTION.—I purchased a 6-year-old mare a few days ago. I saw nothing wrong with her at that time. To-day, when cleaning her, I discovered a hard lump between fore legs. Is a hard movable substance; appears to adhere to the skin; is not very sore to the touch. She has also had some sores break out on hind leg, which I paid no attention to. Her skin seems pretty tight.

—Keep animal on soft feed, (as mashes,) as much as possible. Give her one of the following powders in feed night and morning: Nitrate of potash, 6 ounces; powdered gentian root, 3 ounces; powdered ginger root, 2 ounces. Make twelve powders. Rub the hard lump briskly with hand as often as you can and then apply some good stimulating liniment.

CYSTIC TUMOR.—I have a horse that has something growing on his shoulder. I think I hurt him in the spring. He never was lame a day and has worked nearly every day since. It has got to be about as large as your two fists; seems very hard; I can move it around some. I have used a strong liniment on it, but seemed to do it no good. Will it be apt to go away itself, or what had I better have done to it?

—You evidently injured your animal in spring—a bruise. A small abscess formed, which has become consolidated by the formation of new tissue about it. As is often the case, a little pus will be found in the center of the tumor, never a large quantity, and this pus is inclosed in a thick wall of fibrous tissue hard and resisting. Outward applications to the tumor are simply useless, only adds to the irritation already present. Your best and about the only method for its removal will be to have it removed by the knife. This requires some skill and a knowledge of surgery and anatomy and should not be undertaken by a novice. Again, by making a free incision into center of tumor, and by the use of powerful caustics to cause sloughing, a greater portion of the tumor may be removed in the course of time. It is a slow process at the best.

ECZEMA.—I have a colt, 3 years old last May, that early in the spring before he was a yearling, showed an irritation of the skin that caused him to rub and bite himself. It grew worse as the season grew warmer, and diminished as the weather grew cold, and by winter almost if not entirely passed away. The following summer he was troubled the same way, but at this time has nearly passed off. Some little time after the irritation commenced little pimples came out on his body, more on his neck and legs, but more or less on his sides and hips. After a time a scab would form and come off and with it the hair; that would leave a spot there by continued greasing, would well cover with hair so that I have kept him covered with a fine coat.

—Most skin diseases among the lower animals are due to some form of eczema. We think your animal is troubled with a form of skin disease known as simple eczema. This disease manifests itself very suddenly, accompanied by intense itching, which causes animal to rub and bite itself at all opportunities. Little vesicles make their appearance upon the skin which may break and dry up or discharge their contents which seems to extend the disease. This eruption may appear upon any part of the body, however, more particularly upon head, neck, fore arms and thighs. Successive crops of these vesicles are apt to occur which denudes the parts of hair and is followed by a raw sore. With some horses it occurs periodically and is then generally due to

some sudden alteration in the diet. As a rule an animal once having the disease is very liable to have a recurrence of the trouble. It is considered to be a summer disease, gradually wearing away towards fall, and disappearing entirely during the winter months.

Treatment.—As the eruptions are simply the outward indications that a poison is being eliminated from the system, care should be taken that the discharge be not suppressed too quickly. These cases require other treatment than external applications. The colt should receive a purgative ball, consisting of 4 drachms of powdered aloes, 1 drachm of calomel, 1/2 drachm of powdered nux vomica, and 2 drachms of ginger, made into a suitable ball. After the purgative has operated use the following powders: Powdered colchicum seeds, 1 ounce; nitrate of potash, 3 ounces. Make twelve powders and give one powder night and morning in feed. As a specific alterative, ask your druggist for Fowler's Solution of Arsenic, and give colt one-half to one ounce in drinking water twice daily. Continue this treatment for a couple of weeks. Be careful in changing diet. If itchy-ness is very severe use a weak solution of subacetate of lead upon the parts. Confine animal so that he cannot rub. Wash raw spots with your carbolized water or oil and keep parts denuded of hair well greased.

1889.

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THE STRAY LIST.

HOW TO POST A STRAY.

THE FINE, FINES AND PENALTIES FOR NOT POSTING.

BY AN ACT of the Legislature, approved February 27, 1886, section 1, when the appraised value of a stray or strays exceeds ten dollars, the County Clerk is required, within ten days after receiving a certified description and appraisement, to forward by mail, notice containing a complete description of said strays, the day on which they were taken up, their appraised value, and the name and residence of the taker-up, to the KANSAS FARMER, together with the sum of fifty cents for each animal contained in said notice. And such notice shall be published in the FARMER in three successive issues of the paper. It is made the duty of the proprietors of the KANSAS FARMER to send the paper, free of cost, to every County Clerk in the State, to be kept on file in his office for the inspection of all persons interested in strays. A penalty of from \$5.00 to \$50.00 is affixed to any failure of a Justice of the Peace, a County Clerk, or the proprietors of the FARMER for a violation of this law.

Broken animals can be taken up at any time in the year. Unbroken animals can only be taken up between the first day of November and the first day of April, except when found in the lawful enclosure of the taker-up.

No persons, except citizens and householders, can take up a stray. If an animal liable to be taken up, shall come upon the premises of any person, and he fails for ten days, after being notified in writing of the fact, any other citizen and householder may take up the same.

Any person taking up a stray, must immediately advertise the same by posting three written notices in as many places in the township giving a correct description of such stray, and he must at the same time deliver a copy of said notice to the County Clerk of his county, who shall post the same on a bill-board in his office thirty days.

If such a stray is not proven up at the expiration of ten days, the taker-up shall go before any Justice of the Peace of the township, and file an affidavit stating that such stray was taken up on his premises, that he did not drive nor cause it to be driven there, that he has advertised it for ten days, that the marks and brands have not been altered; also he shall give a full description of the same and its cash value. He shall also give a bond to the State of double the value of such stray.

The Justice of the Peace shall within twenty days from the time such stray was taken up (ten days after posting), make out and return to the County Clerk, a certified copy of the description and value of such stray.

If such stray shall be valued at more than ten dollars, it shall be advertised in the KANSAS FARMER in three successive issues of the paper.

The owner of any stray may, within twelve months from the time of taking up, prove the same by evidence before any Justice of the Peace of the county, having first notified the taker-up of the time when, and the Justice before whom proof will be offered. The stray shall be delivered to the owner, on the order of the Justice, and upon the payment of all charges and costs.

If the owner of a stray fails to prove ownership within twelve months after the time of taking, a complete title shall vest in the taker-up.

At the end of a year after a stray is taken up, the Justice of the Peace shall issue a summons to three householders to appear and appraise such stray, summons to be served by the taker-up; said appraisers, or two of them, shall in all respects describe and truly value said stray, and make a sworn return of the same to the Justice.

They shall also determine the cost of keeping, and the benefits the taker-up may have had, and report the same on their appraisement.

In all cases where the title vests in the taker-up, he shall pay into the County Treasury, deducting all costs of taking up, posting and taking care of the stray, one-half of the remainder of the value of such stray.

Any person who shall sell or dispose of a stray, or take the same out of the State before the title shall have vested in him, shall be guilty of a misdemeanor and shall forfeit double the value of such stray and be subject to a fine of twenty dollars.

FOR WEEK ENDING NOV'R 1, 1888.

Brown county—N. E. Chapman, clerk. STEER—Taken up by Frank Deaker, in Walnut tp., October 6, 1888, one red and white steer, 1 year past, white face with some red on nose, square hole in left ear, branded E C on left hip, valued at \$18.

2 COWS—Taken up by R. M. Travis, in Robinson tp., October 8, 1888, two cows, both red and white face and belly, one 12 years old and one 5, both branded V. G. on left hip.

HEIFER—Taken up by S. W. Round, in Walnut tp., October 9, 1888, one red and white 2-year-old heifer, branded D upside down on left hip, square on left side, silt in right ear, rope round horns when taken up.

Cowley county—S. J. Smock, clerk. HORSE—Taken up by J. W. Hant, in Windsor tp., (P. O. Cambridge), October 19, 1888, one light bay horse, branded B on left shoulder; valued at \$25.

HORSE—Taken up by W. R. Constant, in Pleasant Valley tp., September 30, 1888, one bay horse, 15 1/2 hands high, some white on right hind foot, black mane and tail, white spots on back; valued at \$40.

Pratt county—J. J. Waggoner, clerk. 2 MULES—Taken up by Geo. W. Allmon, in Carmi tp., October 20, 1888, two mules, one sorrel, flax mane and tail, one dark bay; sorrel has a rope scar in front of left hock, the bay has a small scar on left front leg below the knee; 17 hands high; valued at \$125.

Cherokee county—J. C. Atkinson, clerk. COLT—Taken up by J. E. Murphy, in Sheridan tp., October 5, 1888, one dark brown horse colt, 3 years old, about 14 hands high; valued at \$35.

COLT—By same, one dark iron-gray horse colt, 1 year old, scar on right hind ankle; valued at \$25.

Chautauqua county—W. F. Wade, clerk. MULE—Taken up by Samuel Smith, in Harrison tp., October 3, 1888, one bay mule, 8 years old, 16 hands high, weak in back; valued at \$40.

Cloud county—Chas. Proctor, clerk. HORSE—Taken up by John Marshall, of Concordia, October 10, 1888, one bay horse, 6 years old, two small white spots on left side under harness and one white spot on right side under harness pad; valued at \$70.

Jefferson county—E. L. Worswick, clerk. COW—Taken up by David German, in Delaware tp., on or about October 14, 1888, one red and white cow, 5 years old, with calf at side; cow branded I. B. on left hip, point of right horn broken off.

FOR WEEK ENDING NOV'R 8, 1888.

Leavenworth county—J. W. Niehaus, clerk. STEER—Taken up by G. W. Draper, in Delaware tp., September 24, 1888, one red steer, red and white

forehead and white jaws, 3 years old; valued at \$15.

COLT—Taken up by J. M. West, in Reno tp., October 1, 1888, one bay horse colt, 1 year old; valued at \$35.

Harvey county—R. H. Farr, clerk. COW—Taken up by W. H. Wagoner, of Newton, October 17, 1888, one cow, 7 years old, white spots on right flank and hip, large horns turned outward and upward; valued at \$25.

Butler county—T. O. Castle, clerk. MULE—Taken up by W. H. Slatenbaugh, in Chelsea tp., October 15, 1888, one brown mule, 2 years old, no marks or brands; valued at \$35.

MULE—By same, one brown mule, 2 years old, no marks or brands; valued at \$35.

MULE—By same, one dun mule, 2 years old, no marks or brands; valued at \$35.

MULE—By same, one gray mule, 2 years old, silt in one ear; valued at \$35.

COLT—By same, one bay horse colt, age unknown; valued at \$35.

COLT—By same, one bay mare colt, age unknown; valued at \$35.

Nemaha county—W. E. Young, clerk. PONY—Taken up by G. H. Stuart, in Wetmore tp., (P. O. Wetmore), September 28, 1888, one black mare pony, 2 or 3 years old, white face and white hind feet and legs, hair on tail thin; valued at \$30.

Crawford county—J. C. Gove, clerk. STEER—Taken up by D. W. Shaw, in Baker tp., (P. O. Pittsburg), October 22, 1888, one red steer, white belly, end of tail white.

Labette county—W. J. Millikin, clerk. HORSE—Taken up by William Page, in Howard tp., October 3, 1888, one bay horse, 15 1/2 hands high, silt in right ear and a scar on right hind foot; valued at \$75.

HORSE—By same, one sorrel horse, 15 1/2 hands high, large bell on when taken up; valued at \$75.

FOR WEEK ENDING NOV'R 15, 1888.

Smith county—John H. Ferris, clerk. STEER—Taken up by H. J. Hammond, in Harlan tp., October 20, 1888, one light red steer with a few white spots, some white on belly and white star in forehead; valued at \$20.

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BREEDERS' DIRECTORY. (Continued from page 1.)

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"For Sale," "Wanted," "For Exchange," and small advertisements for short time, will be charged two cents per word for each insertion. Initials or a number counted as one word. Cash with the order.

Special.—All orders received for this column from subscribers, for a limited time, will be accepted at one-half the above rates—cash with the order. It will pay you! Try it!!

LOST—One chestnut sorrel colt, 2 years old, about twelve hands high, white spot in forehead. Got out of Caldwell's pasture, near the Reserve. Will pay a liberal reward to any one notifying or returning it to us. R. & M. Bernstein, 834 Kansas Ave., North Topeka, Kas.

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