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THE KANSAS FARMER.

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Diseases of Swine.

We have received from the Department of Agriculture, Washington, a copy of the Report on the "Diseases of Swine," and other animals, containing the reports of Drs. Dittmers, Law, Voyles, Salmon, Dunlap, Dyer, Payne, McNutt and Haines, appointed by the Commissioner of Agriculture to investigate the plague commonly called hog cholera. The report containing the investigations made by this board of scientific men, is highly interesting, and we hope will lead to valuable results in discovering and applying a remedy for hog cholera, or "swine plague," as the learned doctors have designated it. The report contains numerous plates showing the appearance, magnified, of the germs which constitute this virulent disease. Of the experiments by inoculation, the following account is contained in the introduction to the report:

"Perhaps the most important experiments conducted by Dr. Law, were those relating to the inoculation of other animals than swine with the virus and morbid products of pigs suffering with the plague, and the transmission of the disease from those animals back to healthy hogs. A Merino wether, a tame rabbit, and a Newfoundland puppy were inoculated with blood and pleural fluid containing numerous actively moving bacteria, taken from the right ventricle and pleura of a pig that had died of the fever the same morning. Next day the temperature of all three was elevated. In the puppy it became normal on the third day, but on the eighth day a large abscess formed in the seat of inoculation and burst. The rabbit had elevated temperature for eight days, lost appetite, became weak and purged, and its blood contained myriads of the characteristic bacteria. The wether had his temperature raised for an equal length of time, and had bacteria in his blood, though not so abundantly as in that of the rabbit. The sheep and rabbit had each been unsuccessfully inoculated on two former occasions with the blood of sick pigs, in which no moving bacteria had been detected. Subsequently, after two inoculations with questionable results, made with the blood of sick pigs in which no microzymes had been observed, Dr. Law succeeded in inoculating a rabbit with the pleural effusion of a pig that had died the night before, and in which were numerous actively moving bacteria. Next day the rabbit was very feverish and quite ill, and continued so for twenty-two days, when it was killed and showed lesions in many respects resembling those of the sick pig. The blood of the rabbit contained active microzymes like those of the pig. On the fourth day of sickness the blood of the rabbit containing bacteria was inoculated on a healthy pig, but for fifteen days the pig showed no signs of illness. It was then re-inoculated, but this time with the discharge from an open sore which had formed over an engorgement in the groin of the rabbit. Illness set in on the third day thereafter and continued for ten days, when the pig was destroyed and found to present the lesions of the disease in a moderate degree. A second pig, inoculated with frozen matter which had been taken from the open sore on the rabbit's groin, sickened on the thirteenth day thereafter, and remained ill for six days, when an imminent death was anticipated by destroying the animal. During life and after death it presented the phenomena of the plague in a very violent form.

"The results of these experiments have convinced Dr. Law, as they must convince others, that the rabbit is itself a victim of this disease, and that the poison can be reproduced and multiplied in the body of this rodent and conveyed back with undiminished virulence to the pig. Dr. Klein had previously demonstrated the susceptibility of mice and guinea pigs to the disease. The rabbit, and still more the mouse, is a frequent visitor of hog pens and yards. The latter eats from the same feeding troughs with the pig, hides under the same litter, and runs constant risk of infection. Once infected, they may carry the disease to long distances. During the progress of severe attacks of the disease, their weakness and inability to escape will make them an easy prey to the omnivorous hog; and thus sick and dead alike will be devoured by the doomed swine.

"Dr. Law says that the infection of these rodents creates the strongest presumption that other genera of the same family may also contract the disease, and by virtue of an even closer relation to the pigs, may succeed in conveying

the malady to distant herds. The rat is suggested as being almost ubiquitous in piggeries, and more likely than any other rodent to contract and transmit the disease to distant farms. In order to test its susceptibility to the poison, Dr. Law inoculated a rat with the virus from a sick pig, but unfortunately the subject died on the second day thereafter. The body showed slight suspicious lesions, such as congested lungs with considerable interlobular exudation, congested small intestines, and sanguinous discoloration of the tail from the seat of inoculation to the tip. With the fresh congested small intestine of the rat he inoculated one pig, and with the frozen intestine one day later he inoculated a second. The first showed no rise of temperature, loss of appetite, or digestive disorder; but on the sixth day pink and violent eruptions, the size of a pin's head and upwards, appeared on the teats and belly; and on the tenth day there was a manifest enlargement of the inguinal glands. In the second pig inoculated, the symptoms were too obscure to be of any real value. Dr. Law will continue his experiments with this rodent.

"In addition to the above, Dr. Law experimented on two sheep of different ages, an adult Merino wether and a cross-breed lamb, and in both cases succeeded in transmitting the disease. With the mucus from the anus of the wether he inoculated a healthy pig, which showed a slight elevation of temperature for five days, but without any other marked symptoms of illness. Eleven days later it was re-inoculated with scab from the ear of the lamb, and again three days later with anal mucus from the sheep. The day preceding the last inoculation it was noticed that the inguinal glands were much enlarged, and in six days thereafter the temperature was elevated and purple spots appeared on the belly. At the time that Dr. Law closed his report this fever had lasted but a few days, but he regards the symptoms, taken in connection with the violent rash and the enlarged lymphatic glands, as satisfactory evidence of the presence of the disease. It can, therefore, be affirmed of the sheep as of the rabbit, that not only is it subject to this disease, but that it can multiply the poison in its system and transmit it back to the pig.

"Among the later experiments by Dr. Law was one inaugurated with the view of testing the vitality of frozen products of the disease. This point was briefly alluded to above, but its importance would seem to call for further attention. In two cases healthy pigs were inoculated with virulent products which had been frozen hard for one and two days respectively. In both instances the resulting disease was of a very violent type, and would have proved fatal had it been left to run its course. The freezing had failed to impair the virulence of the product; on the contrary, it had only sealed it up to be opened and given free course on the recurrence of warm weather. Once frozen no change should take place until it has again thawed out, and if it was preserved for one night unchanged in its potency, it would be equally unaffected after the lapse of many months, provided its liquids had remained in the same crystalline condition throughout. It is in this way, no doubt, that the virus is often preserved through the winter in pens and yards, as well as in cars and other conveyances, to break out anew on returning spring. The importance of this discovery, as applied to preventive measures, cannot be over-estimated. Infected yards and other open and uncovered places may not be considered safe until after two months' vacation in summer, and not then if sufficient rain has not fallen during the interval to insure the soaking and putrid decomposition of all organic matter near the surface. This will be made more apparent by reference to an experiment which resulted in the successful inoculation of pigs with virus that had been kept for a month in dry wheat bran. In winter, on the other hand, the yard or other open and infected place may prove non-infecting for weeks and even months and yet retain the virus in readiness for a new and deadly course as soon as mild weather sets in. Safety under such circumstances is contingent on a disease of the premises so long as the frost continues, and for at least one month or so thereafter. Even during the continuance of frost such places are dangerous, as the heat of the animal's body or of the rays of the sun at midday may suffice to set the virus free."

Harvesting the Potato Crop.

Cultivators do not agree as to the time the potato crop should be harvested. Some leave them in the ground until after early autumn frosts, and the vines are dead. The argument

in favor of this practice is, if the tubers rot the labor of harvesting and storing them has been saved, and the disease following its course out under ground prevents a nuisance above ground and adds to the fertility of the soil. Others contend that the best time to dig is when the tops have ceased their growth and the vines begin to wither. Generally speaking, it is safe to remove the crop soon after the roots are well ripened, though they are liable to wilt and damage if the storing chances to be followed by very warm weather. When the tubers show the slightest indication of rotting, then by all means delay the harvest, not only for reasons already advanced but because exposure to the light and air increases the disease and tends to spread it to the sound potatoes.

Harvest always in cool, clear weather and when the soil is dry, that the potatoes may come out clean. Whether unearthed by hoe, patent digger or plough give the outside moisture time to evaporate previous to storing. Moisture is favorable to heating, which in turn induces decay, hence it is necessary to have them thoroughly dry, especially when a considerable quantity is to be put away in bulk. When the roots are perfectly healthy hundreds of bushels are often taken at once from the field to the place of storing without ill results attending it, is true, but the practice is not a safe one nor to be followed under any conditions if the tubers show the least symptom of rot. In this case spread in layers and exclude the light, waiting until cold weather to store in heaps. If disease appears after harvest, carefully sort at once, dry the sound potatoes, place them in layers and cover with ashes, burnt clay or fine dry mould, which acts as an absorbent and, according to trustworthy authorities, prevents contagion from any that may be imperceptibly affected. Later, if necessary, a careful sorting is again in order before the final bulking. Avoid, however, all handling so far as possible and do not disturb the pile after January 1 unless necessary, as some varieties are inclined to sprout from that time forward.

All varieties of potatoes are better for an absence of change in temperature, especially if the change be great and includes prolonged exposure to the burning rays of the sun at the time of unearthing. Some farmers to prevent handling, also to get the crop in a cool dark place as expeditiously as possible, put the potatoes after a few hours' exposure to the air in barrels taken to the field and headed there.

To save the labor involved in opening barrels, and because in many other respects it is more convenient, the custom of storing potatoes in cellars and houses built especially for the purpose prevails in numerous sections over the old time custom of storing in the open ground. It is better to pack them in barrels, but where large crops are raised this is of course impracticable. To obviate loss by shrinkage in drying, as well as to save cellar room and the expense of building root or store houses, some farmers continue to bury their potatoes in the field, in an excavation in the north side of a hill or under a shade in a porous soil. When dry they are lightly covered with earth and protected from rain, which last is readily effected by a thatch of straw. After this no further attention is bestowed until the beginning of severe cold weather, when the roots call for an effectual shield from frost as well as rain. If stored on level ground Allen recommends that a place be excavated for their reception from one to two feet in depth, four or five feet in width and of any length required. The potatoes are then ridged up like the roof of a house, and thatched and covered. A ditch lower than the base ought to encircle the heap when the soil consists of clay, from which an outlet conducts away all the water, as any left upon the tubers would produce decay.—N. Y. World.

To Start a Grove of Walnut Trees.

I saw an inquiry in a recent FARMER, about transplanting walnut trees. Trees can be successfully transplanted at one year of age, afterwards with but little chance of success, unless they are prepared the previous season, by having the tap root cut off 6 to 8 inches below the surface, without otherwise disturbing the tree, so as to cause the lateral roots to grow.

Trees one to two inches in diameter, which have received an annual root pruning, as above, may be transplanted with moderate success. I have often transplanted thousands of black walnut trees one year old without root pruning, with as much success as with that many apple trees. But in starting a forest of walnut trees, it is much cheaper to prepare the ground well and plant the seeds where they are to remain. Plant them in the fall, covering three to four inches deep. Or, if not ready to plant in au-

turn, mix them with moist earth or sand, in thin layers, and place where they will keep moist and freeze if possible. Call and

I know that many tree seedling growers advise to keep forest seeds moist but out of reach of frost, but that practice is useless. Keep clean and stir the earth often, and a nice forest will be the result. B. P. HANAN.

Langdon, Reno Co., Kan.

Pawnee County Fair.

The fourth annual fair of the Pawnee County Agricultural Society was held on the 24th, 25th and 26th of September, and was a grand success notwithstanding the hail storm, drouth and chinch bugs, that have visited our county the past season, causing almost a failure of all our crops.

The exhibit of farm products far exceeds our most sanguine expectations. The exhibition of wheat raised in 1879 was small and of a poor quality. The average yield did not exceed two bushels on the whole acreage sown in this county. Rye, oats and barley were a failure. Broom corn, sorghum, Egyptian corn and millet yielded good crops; but our corn crop is small and of a poor quality, owing to the chinch bugs.

The exhibition of vegetables of all kinds was good. The display of stock was fair, but did not represent the best stock of our county, as many of our farmers did not put their stock on exhibition on account of the management of our fairs in the past.

The horse race was a farce, and did not tend in my opinion to encourage the breeders of good stock.

The 26th was the great day of the fair, honored as it was by the presence of President Rutherford B. Hayes and wife, Gov. J. P. St. John and wife, General Sherman and other distinguished persons. President Hayes, Gen. Sherman and Gov. St. John made brief addresses to an audience of between two and three thousand people, after which the President and his company took special train east, leaving us to wind up our fair with the big baby show. The prizes were carried off by the twin children of Mr. and Mrs. Harris. The children rejoicing in the names of Solomon Philemon Paulinus, and Simon Philemon Alphonso Harris.

ENOCH ARDEN.

Selecting Seed Potatoes.

I am impelled to accept your invitation to offer such thoughts and facts as will be of interest to those as have given me entertainment of that kind, for the first thing I look for on receipt of the paper is the correspondence, and every new correspondent gives a new turn to the kaleidoscope, bringing up new thoughts in new forms, adding a fresh interest to old things and old subjects, so I will revert to the old and still unsettled subject of seed potatoes. Much has been said and written as to the merits of great or small potatoes for seed and the consequent result, and as they have been a hobby with me I will give my conclusions.

Potatoes will give as good returns for the careful selection of seed annually as any other plant. To select seed potatoes first never plant but one potatoe or part of one in the same hill, then when digging keep each hill separate so the result of each hill can be inspected, if a hill has many little ones and a few large ones reject all for seed as the tendency of that strain is little potatoes, but if a hill shows nearly all good sized and a few small ones then save all for seed, big and little, the strain or blood of that hill is the large size potatoes. What I have found is that each potatoe has a quality peculiar to itself and will perpetuate that quality whether we plant the large or small of its products; therefore, we by this method judge our seed by the whole result and not by an accidental growth. Who would think of going to a bin of shelled corn and picking out big kernels of corn for seed. Now for quality, cooking alone will tell, so select your potatoes a few for starters, cut off the seed end, then cut in two, square, slanting and pointed, so each piece will only fit its mate, then cook one half and reserve the other to be planted if its mate proves extra good. In this way a seed start can be got that will be free of any mixture of inferior, watery, yellow or cheesy species. By this care I think I have the finest potatoes in the world.

E. A. PECK,

Sycamore, Illinois.

Farmers' Neglect.

In no season of the year is neglect so ruinous as at present. The farmer may neglect in the spring to make a fence that should have been made, he may have neglected to have broken

certain pieces of ground and put in certain crops. And by the way this is not always so much neglect as it seems, for the prevailing disposition of farmers is to fence and plant and sow more than they can give proper care. But in this season of the year the crops that will be, now are, and after the expenditure of a seasons labor one can least afford to neglect. Too often the otherwise successful farmer thinking his crop raised his work is done, and devotes himself unduly to politics on the village corner, while bins are unprovided for small grain, his corn fit for the crib is left ungathered, resulting in cold fingers and chapped hands, it may be in digging it out of the snow, likewise his potatoes, squashes, sorghum and other products that might have been harvested in pleasant weather, are left to be injured by frosts resulting in loss. Let advantage be taken of our long autumn, all the crops secured, the farms cleared up, the fence corners, ditches, swamps, stone piles, gravel and seed-weed patches, earth-washes, rabbit shelters and other seemingly small though important matters, be looked after. And not least of all should attention be now given to providing comfortable quarters for the stock of the farm. Though neglect prevails so much, my observation inclines me to the belief that there has been much improvement in late years. We want to see it go on until Kansas shall become famous alike for fertile soil and careful farmers. ARNER.

September Weather Report.

Weather report for September, 1879, from observations by F. H. Snow, of the Kansas State University, Lawrence, Kansas.

The entire absence of frost at this station, in this and the two preceding Septembers, is a fact worthy of note. This was characteristic of no previous September of our 12 years' record, except in 1870. The high temperature of the last few days of this month should be noted in comparison with the low temperature of the rest of the month. In no previous year of our record, except in 1872, has the mercury reached 90 degrees in the second half of September.

Mean temperature, 65.40 deg., which is 1.25 deg. below the average temperature of the 11 preceding years. The highest temperature was 92 deg., on the 27th; the lowest was 42 deg. on the 20th; monthly range, 50 deg. Mean temperature, at 7 a. m., 58.78 deg., at 2 p. m., 76.02 deg.; at 9 p. m., 63.42 deg.

Rainfall, 3.57 inches, which is 0.42 inch above the September average. Rain fell on 6 days. There were two thunder showers. The entire rainfall for the 9 months of 1879, now completed, has been 22.33 inches, which is 7.03 inches below the average for the same period in the 11 preceding years.

Mean cloudiness, 37 per cent. of the sky, the north being 4.79 per cent. more cloudy than the average. The number of clear days was 15, (entirely clear, 8), half clear, 8; cloudy, 7, (entirely cloudy, 1). The large number of entirely clear days is worthy of note. Mean cloudiness at 7 a. m., 41 per cent; at 2 p. m., 41.67 per cent; at 9 p. m., 28.33 per cent.

Wind, S.W., 24 times; S.E., 15 times; N.E., 15 times; N., 12 times; N.W., 10 times; E., 8 times; S., 8 times; W., 3 times. The entire distance traveled by the wind was 10,237 miles, which gives a mean daily velocity of 341.23 miles and a mean hourly velocity of 14.22 miles. The highest velocity was 40 miles an hour, on the 28th.

Mean height of barometer 29.162 in., at 7 a. m., 29.197 in.; at 2 p. m., 29.133 in.; at 9 p. m., 29.155 in.; maximum, 29.464 in., on the 24th; minimum, 28.901 in., on the 28th; range 0.563 in.

Relative humidity,—mean for the month, 64.0; at 7 a. m., 76.7; at 2 p. m., 44.7; at 9 p. m., 71.1; greatest, 100, on the 5th; least, 25.9, on the 4th. There was no fog.

SUNNY SIDE, Coffey Co., Kan., Sept. 29.—We have had it very dry for some length of time. There is somewhat of an appearance of rain again; live in hopes if we die in despair. The farmers are getting along finely, with their fall seedling nearly all done and a large portion of it up and looking very well, considering the situation of things in general. A larger amount sown around here than has been for several years. The dry weather has damaged the corn crop generally to some extent, still there will be plenty, I think, for all, and no cause for much excitement on that branch of the grain trade. There is plenty of wheat, and some very fine pieces. I might refer you to one belonging to Mr. Henry C. Patterson, which yielded 324 bushels per acre, or 335 bushels on ten acres. This crop was grown on about as high upland as there is in this part of Kansas.

Several farmers have commenced gathering corn; price 20 cents per bushel now. Some think it will bring more by spring or sooner. I am glad to see all things looking as well as they do. HENRY K. BALDWIN.

Farm Stock.

Cattle in the Show Yard.

THE SHORT HORN.

The leading class in the cattle shows throughout the entire country will be, with very rare exceptions, the Short-horn. This is an English breed, originating in the valley of the Tees, and at one time called Teeswater cattle. They are also sometimes called Durhams, from the county in which they were extensively bred. They have long been famed for excellence as both beef and milk-producers, but it must be confessed that the practices of modern breeders have been such as to seriously impair the reputation of the breed for the latter purpose. As a class, however, they are still good milkers, and for the production of good beef, under a system of liberal feeding, it is doubtful if they have any equals. They attain a greater size than any other breed, and with rich pasturage and high feeding mature very early and make most excellent beef. In color they are all red, red with white spots, roan, or pure white. They have been more generally disseminated in this country and throughout the world than any other of the improved breeds.

THE HEREFORDS.

This breed has long contested for supremacy, as a beef-producing breed, with the Short-horns; and while there are few who will place them much below the short-horns in this respect, there are some who do not hesitate to place them much above their Durham rivals. Certainly the quality of the beef produced by the Hereford is at least equal to that of the best short-horn, but as to which is the better and more profitable beef animal for the average American farmer, we shall not attempt to decide. No especial claim is made for the Hereford on the score of milking qualities, the advocates of the breed having been content to rest their claims solely on the merits of the Hereford as a beef-producer. They take their name from the county of Hereford, in England. In size they are rather below the average short-horn, and in color they are quite uniform, being red, with white faces, white bellies, and more or less white along the back. They have not been very generally disseminated throughout this country, although they were introduced as early as the short-horns; but it cannot be denied that within the past three years they have made rapid strides in popular favor.

THE DEVONS.

This is also an English breed, and of all the breeds it is perhaps the oldest and the best established. They are uniformly of a deep, rich red color, with small heads, neat, and rather long horns, round bodies, are fine in the bone, do not usually grow so large as the short-horns or Herefords, and are famed the world over for hardness. The steers are unequalled as work cattle, the cows are usually fair milkers; and when quality, quantity, and cost of production are all considered, their advocates claim for them superiority over all other breeds in the production of beef, and that they will live and do well where the Short-horn and Hereford would starve. They have not been widely disseminated in this country, but there are several most excellent herds. No breed of cattle in the world presents a more attractive appearance than a herd of well-kept Devons, with their rich red color, neat, wavy horns, expressive eyes, and sprightly movements.

THE AYRSHIRES.

This is one of the recognized dairy breeds, and comes to us from Scotland. The specialty of the Ayrshire is that of a milk-producer, for the manufacture of cheese and the supply of cities with the lactical fluid. The milk of the Ayrshire is not especially rich in cream, but in all the other essentials that go to make up good milk it is equal to the best; and the breeders of Ayrshires claim that the quantity produced by their favorites is greater than that produced by any other breed. They are of fair size, and possess moderate beef-producing qualities. In color they are not very uniform, but red and white, brown and white, and black and white predominate. Small red, black or brown spots, on a white ground, is a more uniform marking than any other, although in many cases the red predominates. The cows usually have small heads and horns, light necks and shoulders, deep flanks, and heavy hindquarters, with all the marks of deep milkers.

THE HOLSTEINS.

This is also a dairy breed, larger and coarser than the Ayrshires; and while it is claimed for them that they are superior to the Ayrshires as deep milkers, it is also claimed that they are better adapted to the production of beef, and hence a better cow for either the dairyman or the general farmer. Those imported to this country have generally been quite uniform in color—black and white spotted, or "listed"—but there is a difference of opinion upon the color question, some writers claiming that they are of all colors. They are rather coarse and bony in appearance, are large, strong growers, and are unquestionably deep milkers. They come from North Holland; and it is claimed by some writers that this breed, translated to the North of England, formed the basis for the more modern short-horn. As dairy cattle they undoubtedly possess great merit.

THE CHANNEL ISLANDS CATTLE—JERSEYS, GUERNSEYS, AND ALDERNEYS.

The Channel Islands—Jersey, Guernsey, and Alderney—situated in the English Channel, between Great Britain and France, have a race of cattle that have attained great popularity among dairymen, mainly on account of the quality of the milk, which is especially rich in cream. Of these Channel Islands cattle, the Jersey is considered the typical race—at least it has attained the greatest popularity, and has been

most widely disseminated—but they all show unmistakable traces of a common origin. When first introduced into this country they were all called Alderneys, no matter whether from Guernsey, Jersey or Alderney; but as the cattle of each island are kept distinct, and no crossing between them is permitted, we have ceased to give them this general application, although the difference between the Alderneys and the Jerseys is so slight as not to be worth mentioning. They are famed for the large percentage of cream which the milk affords, and for its rich, golden color, and are especially desirable as family cows to furnish cream and butter for table use.

The Jerseys are the most numerous, as Jersey is much the largest island of the group—larger, indeed, than all the others combined. The Guernsey cattle are larger, and perhaps coarser than the Jerseys; and it is claimed that while they are equally as desirable as the latter with regard to the quantity and quality of the cream and milk, they fatten off more readily, and are more valuable for beef. On this account, it is urged that they are better than the cattle of Jersey and Alderney for the general farmer, for dairy purposes or for crossing upon other stock. On the other hand, the breeders of Jersey cattle claim superiority for this breed over all others in the quality of the milk and cream, and in the purity of the breed. The cattle of Alderney are, as a class, said to be smaller and more delicate than those of Jersey and Guernsey.

The Jerseys are the only Channel Islands cattle that will make much show at the fairs. They are small cattle, with beautiful, deer-like heads. In color they are silver-grey, light or dark fawn, light or dark brown, pale red, with more or less markings of white sometimes occurring with all the above colors; but a "solid" color, with black nose, tongue, and switch are considered desirable.

OTHER BREEDS.

Other breeds, such as Galloways, Polled Angus, West Highlanders, Swiss cattle, etc., may be found occasionally in our show yards, but they are so rare that a description of them in these columns will scarcely be necessary.—*Nat. Live Stock Journal.*

Care of Horses.

The majority of the owners of horseflesh are not aware of the great amount of service a horse is capable of rendering if properly treated. Instead of giving out at about fifteen years old, he may be made to do good work twice that number of years—continuous, satisfactory work, avoiding straining, that is, putting the horse to his hardest. If a mettlesome animal, all of his powers will be employed, and his muscles are liable to be unduly tasked when young, resulting in soreness and stiffness and constitutional hurt. Some horses are thus treated habitually. They are, of course, short-lived and a loss to the owner, yielding but a small profit on their keep, and a loss of the original cost. Such are the extreme cases. But take the general run, and we find more or less of straining, occurring not often, but occasionally, as necessity seems to require. It is thought that an occasional effort of this kind will not result in harm, or at least not seriously. It is not considered that the harm is all the greater, the strain more disabling in its effect on account of the rareness of the occurrence. Serious results are thus occasioned with high-strung animals. Now, the excess of work thus secured is very little, and of little value, in no way proportionate to the harm. Not unfrequently the work is expedited by lessening the load and going oftener.

Here is the error: The benefit derived from violent efforts (if any there be, which, on the whole is doubtful), is far out of proportion to the loss sustained in the animal's capacity, and the shortening of his years. This is so much the case that the horse at fifteen years has become a condemned animal, having passed out of market. And yet at this age, if well treated, he is still in his best condition for service, and will continue efficient for the next five or six years, and then gradually decline until into the thirties, not only paying his way well in his decline, but giving profit on his first cost, making the horse one of the best interest-paying investments the farmer has. The mare usually arrives at her maturity sooner than the gelding, say at six, while the gelding requires a year or two more, continuing to spread out and develop his strength till his eighth year. From colthood up to this time he requires careful treatment if a substantial, serviceable animal is to be made of him. And this attention is not to be intermitted, but continued, to keep good what was made good, which can now be done with little trouble. Avoid the temptation of seeing the capacity of your horse for endurance or moving heavy loads put to the test. By doing this you will further avoid putting your horse into a highly-sweating condition so plentiful of evil in its consequences. An even tenor produces an even and unimpaired appetite, with less tendency to developing ailments. Less food, particularly less concentrated and costly food is required; there will be less waste of nutriment as well as of strength. Horses are abused, and the abuse is widespread and common. Much of this is owing to ignorance; much, also, to the temper of the owner or handler of the horse. Could the aggregate loss in consequence be seen, it would make one stagger, to say nothing of the inhumanity.—*Country Gentleman.*

Something in Favor of Pearl Millet.

A correspondent writing from Tennessee to the *Country Gentleman*, has been trying pearl millet on a small scale as a soiling crop, and is extravagant in praise of its good qualities as a feed plant and large grower:

"Notwithstanding the complaints of many of

your correspondents, I am of the opinion that pearl millet is a most valuable and prolific crop, and I believe that it is all (or perhaps more than) Peter Henderson claims for it. Its yield is simply astounding. I tried it this year on a small scale. I have three patches of between one-quarter and one-half acre each, several miles apart, all equally fine. I have one lot in town—about one-fourth of an acre—and from it I have been cutting and soiling three cows and one calf and four harness horses. I give the cows as much as they will eat and no other feed. They fatten on it and increase the flow of milk fully one-third over bran. As I designed the crop for seed, I had every other hill cut for the stock, leaving the other for seed. One could not tell in passing that the crop had been touched. This is my first year's experience with it, and I am free to say that one acre of it will furnish more valuable food than six acres of Indian corn. It grows right along, reaching six to ten feet high, and having from thirty to one hundred stalks to the bunch. It covers the ground as thick as the hair on a dog. No weed grows in it. I did not get my seed at Henderson's."

Dairy.

Why Cream Rises.

An exchange has the following piece of philosophy to account for the rapid rising of cream when milk freshly drawn from the cow is submerged in ice-water:

One hundred parts of average milk contains eighty-seven parts water, the balance being butter, casein, sugar of milk, ash and salts. The butter, and a portion of the other substances, are in the cream, and they rise to the surface because the cream globules are a little lighter, and only a little, than the watery fluid, skimmed milk. A separation takes place just in proportion as the natural difference, in density, of the cream globules and the watery portion of the milk, is increased. An expansion of the cream globules makes them lighter in proportion to their bulk, or the space they occupy in the milk, and they rise quicker because of that expansion. Thus heat applied at the base of a vessel containing milk, expands the cream globules, and an upward current is created that takes the cream to the surface more rapidly than though left without the application of heat beneath. The water expands, too, slightly, but being heavier than the cream, does not so easily rise. But this heating method can not be practiced, for butter-making, because the milk will sour in the process, before the cream is all up; and as soon as acid is developed, there is an end of cream-raising,—the acid at once goes to devouring the cream. Hence it will not do to simply expand the cream globules to philosophically raise cream for butter-making.

On the other hand, how shall we safely widen the natural difference between the density of the cream globules and the watery portion of the milk? Simply contract the watery portion of the milk with cold influences, and thus set the cream a little more free. Cold contracts or condenses, and thus makes bodies heavier according to their bulk.

It may be asked why does not the cold influence operate on the watery portion of the milk, and the cream globules alike, and thus preserve the natural, almost equipoise of the two? The answer of scientists is that the water is the better conductor, and hence grows dense quicker, and falls more rapidly, thus displacing the lighter cream globules, which, having no where else to go, naturally rise to the surface. So it will be seen we have thus widened the difference in density between cream and skimmed milk,—what we accomplished with heat, at the base of the milk,—but we have made it safe, because making it cold, arrests souring, and no acids are developed to devour the cream.

But why does the separation take place so rapidly? is what many do not understand. It is found that cream rises rapid in proportion as the milk is changed in temperature quickly; and in proportion as it rapidly ranges through more or less degrees of the thermometrical scale. Milk being at 98 degrees when drawn from the cow has to drop 58 degrees to reach 40—about ice-water temperature. The quicker it parts with that 58 degrees of heat the more rapid are the currents created, and the quicker the cream is at the surface. Indeed the operation can be performed, and the actual fact is, that in extreme cold weather, and the pails set in ice-water that almost congeals, the cream will rise in less than four hours, and go up with such force as to carry up with it considerable milk, so that there appears to be more cream than there really is.

It being true that quick results depend upon the extent of the change in temperature, it follows that the sooner the milk is plunged in the bath, after it is drawn from the cow, the better, because you need to get all the range in the thermometrical scale there is to get, for if it stands and cools you lessen the range. You can not make rapid currents in the milk, so long, and lose in yield. So also it is found that if the water is not quite cool, or made so by ice, that it takes more time to get the cream. This explains why ice-water will do in less than twelve hours what a cold, running stream requires twenty-four hours to do.

From this it will be seen why cream rises slowly in warm rooms from open setting. The milk set at 98 degrees has only a thermometrical range of 28 degrees to reach 70 degrees, 38 degrees to reach 60 degrees, and has air only to help reduce the temperature. There are no active currents created in the milk by a rapid change in the relative density of the particles,

and the process of separation is so slow that in hot weather, the range being then still less, acidity seizes it before the cream is up. It has not the semi-mechanical aid of a rapid condensation of the watery portion of the milk, and hence must have time to do its work. If the weather is favorable it will very nearly all rise; if not some of it will be lost. Ignorant persons say at such times there is no cream in the milk. But there is, only acid devours it, instead of being obtained, as the cold process would do, if given a fair chance.

Apiary.

Autumn Management of Bees.

The coming winter will be a season of great fatality to bees unless they receive unusual care from the Apiarist. The long continued drouth extending over the greater part of the country has made the fall supply of honey-producing flowers very scant. In this vicinity the supply has been so light all summer that those who depended on natural swarming got no new swarms at all. Beekeepers in this immediate neighborhood who keep over a hundred swarms each, report the queens alive but that the honey supply was so scant that the bees made no preparations for swarming during the entire spring and summer. Neither have I heard of a single buckwheat swarm. As a natural consequence many hives will be weak in numbers and will not have sufficient honey stored away to winter them. Now is the season when every stock should be carefully examined. An average swarm requires twenty-five pounds of honey to winter it. This amount will have to be determined by guess work. This may be done with considerable accuracy by inspection; but the better plan is to remove the cap and lift the hive from the stand. It must be remembered, however, that old comb is much heavier than new and allowance must be made accordingly.

If you have a colony with scant winter stores and one with a heavy supply you may exchange a comb. The combs which are full should always be placed on the outside and those which are partly empty at the bottom should be placed in the middle as bees require empty combs to winter in. The bees should have access to the outside comb without being compelled to crawl around the outside of the hive, for if they do they will be likely to become chilled and unable to return to the cluster. If the bees have not left an opening under the cross pieces of the frames, cut a round hole, about an inch in diameter through the comb, a couple of inches from the top. Bees winter in a cluster in the center of the hive; those in the center are continually moving to the outside and vice versa.

If you have two weak swarms by all means unite them. When united they will require but little more honey than one of them if they are kept separate. To unite them scarce both hives that they may fill themselves with honey. Then take an empty hive with the cap removed; treat the bees with tobacco smoke or sprinkle them with peppermint water which will give them the same smell. Remove the combs containing the most honey and place them in the new hive; cap, and close the entrance until near sunset, giving abundant ventilation. Close it again early next morning, opening it half an hour before sunset. The next morning blow a little tobacco smoke into the hive and leave the entrance open. The united swarms should occupy the stand formerly occupied by the strongest. More about wintering bees soon.

JOHN M. STAHL.

Camp Point, Ill.

Preparing Bees for Winter.

Prof. Cook, in his Manual of the Apiary, recommends the following cheap but very secure mode of providing bees with comfortable winter quarters:

Some pleasant day in late October or early November, raise the stand and place straw beneath; then surround the hive with a box a foot outside the hive with movable top, and open on the side on which the entrance for the bees into the hive is, or else have a long wooden tube opposite the entrance to permit flight. This tube should be six or eight inches square to permit easy examination in winter. The same end may be gained by driving stakes and putting boards around, when we crowd between this box and the hive either straw, chaff or shavings. After placing a good thickness of straw above the hive, lay on the cover of the box, or cover with boards. This preserves against changes of temperature during the winter, and also permits the bees to fly, if it becomes necessary from a protracted period of warm, winter weather. The entrance or tunnel to the hive when this packing-box is placed about the hive, is more particularly described as follows: At the center and bottom of the east side (if the opening for the bees to the hive happens to be on that side) cut out a square eight inches each way, and between this and the hive place a bottomless tube, before putting around the straw and adding the cover. This box should be put in place before the bleak, cold days of November, and retained in position until the stormy winds of April are passed by. This permits the bees to fly when very warm weather comes in winter or spring, and requires no attention from the apiarist. By placing two or three hives close together in autumn—yet never more the colonies more than three or four feet at any one time, as much removals involve the loss of many bees—one box may be made to cover all, and at less expense. Late in April these may be removed and packed away, and the straw or packing carried away.

Horticulture.

Planting Fruit Orchards.

The ultimate selection of fruit orchards depends upon the judicious selection of soil, situation, trees, and their proper arrangement and management, hence any man who contemplates planting, whether a small or extended plantation, will do well to keep these essential points in view, and avail himself of the experience gained in these several directions, not only by himself but his neighbors, for experience is the trustworthy guide.

Beginning with the question when to plant, there are advocates for both fall and spring setting of orchards. Pomologists very generally agree that fall is the season for lifting seedlings and rooted layers for stocks. Many of them go farther and advise planting these in the fall as this saves handling, avoids all danger from loss in heeling-in, and gives the trees time to throw out and mature new rootlets before the severe summer heat and drought comes on, which is not always the case in spring planting. Another argument advanced in favor of fall planting is the leisure time occurring at this season, which naturally induces more extended orchards with work better done than during the rush and worry of the spring season.

While on general principles it is safe and wise to advise the fall planting of fruit orchards, this advice, like all others, is subject to modification. Fall planting, for instance, should be avoided in climates where the winters are long and severe, as where alternate freezings and thawings are frequent. Again, on some soils, experience has taught that stone fruits succeed best when set during the spring. The matter, therefore resolves itself into the fact that the season of planting extends from after the fall of the leaf in autumn by frost, until its reappearance in the spring, provided the ground is not frozen.

There are soils of a certain texture and quality, as that commonly termed sandy loam, with a sandy, clay subsoil, in which, with proper management, all the hardy fruits can be grown in perfection.

On this may be gained good results in apples, pears, plums, cherries and peaches. On the other hand, soils there are wholly unfit for any kind of fruit trees; these comprise such as are peaty or mucky, damp and cold and spongy soils. Experience has proven that apples thrive best in a dry, deep soil, between a sandy and clayey loam, and possessing a considerable portion of lime. The plum—excepting perhaps the Canada or native, and Mirabelle, which succeed on very light soils—do best on a rather stiff, clayey loam. The cherry and peach require a light, dry and warm soil for enduring orchards.

The best site for an orchard varies with localities, hence the wisdom of gaining in the immediate neighborhood the knowledge required. An eastern and southern exposure on low ground is to be avoided in sections where late and severe spring frosts prevail. If high winds from the west and north are to be guarded against, it is recommended that a situation be chosen where some natural protection, as a belt of woods or hill, will break their force. If no such protection already exists, it will be wise to set out at the same time the orchard is planted a border of some rapid growing tree which will form a protection by the time the fruit trees have come into bearing.

Selecting the varieties for a fruit orchard is a most important point, and should be made in reference to the special purpose for which the fruit is intended. A commercial orchardist in the immediate vicinity of a good market, will find profit in summer and early autumn fruits, for instance, while the market grower at a distance obtains his gains from late autumn and winter varieties which may be safely packed and transported. Low, stout trees, other things being equal, are preferable to tall, slender ones, and especially should this preference be observed in elevated and exposed positions.

The square form, in rows the same distance apart and an equal space between each tree, is the usual plan practiced in setting out orchards. Twenty-five feet is the distance commonly allowed for the average apple orchard. P. Barry recommends thirty feet in all directions as none too many for standard trees. (Forty feet is still a better distance, if the trees are expected to attain age and remain thrifty.—*ED. FARMER.*) Peach trees should be set at about fifteen feet apart, as should plum and cherry trees. Standard pear trees require from twenty to twenty-five feet. These distances are of necessity only approximate, there being a great difference between the sizes and varieties of the same fruit, and also in their habits of growth.

The season previous to planting the soil should be at least twice ploughed. When this has been done planting an orchard is a simple matter, holes being dug deep and wide enough to admit the roots. Where the soil has not been previously prepared, planting requires considerable labor, especially if there are any defects in the soil, which ought to be remedied at this time by the aid of composts. Dig large holes and line the bottom with a good bed of compost, composed, if the soil is too compact, of sand, leaf-mould, muck, etc., to render it more porous, and if too light, of clay, stiff loam and ashes to render it more retentive. Lime should form a part of these composts, especially for apple and pear trees. Barry recommends half a peck of lime mixed with the bed of each tree in soil not naturally calcareous. In soil adapted to fruit culture if in a good state of till, there is no necessity for either large holes or compost. The compost having been laid and covered with a layer of pulverized soil, set the tree in the hole, carefully adjusting the roots, and fill it with fine earth, [which should be firmly trodden down around the tree. When the trees are large or in exposed positions, one or two stakes should be placed with each tree. Mulching is always advised; it prevents the moisture of the soil from evaporating and maintains a uniformity of heat. A deep mulching is required for trees planted in the fall to prevent the frost from penetrating to the roots and heaving the tree out of the ground.

The Effect on the Value of Land Caused by Unequal Rates of Transportation.

On this subject F. P. Root in *Rural Home* advances some very logical reasoning supported by facts and statistics, showing the ruinous policy railroads are forced into pursuing from the absence of a general system to regulate rates of transportation. It is self-evident that the freight over every mile of railroad, if the road is self-supporting, should pay the cost and a reasonable profit on capital invested. If each part of a road does not pay its proportionate share of expense and profit, then some other parts must not only bear their legitimate share, but must also make up the deficiency of non-paying parts. And thus it is that the life is being crushed out of intermediate portions of country lying between great competing railroad points. If railroads are forced by competition, or war among themselves, to carry freight at cost or a nominal profit, from those points or cease entirely to carry, it is self-evident that they must make up the deficiency by overcharging on that freight which is drawn from territory that is compelled to be tributary to the road, by having no other outlet. Such a system as this we can readily see will continue to steadily impoverish the country subject to such a drain, and the unjust practice must eventually react upon the railroads disastrously.

The railroads vainly strive to remedy this evil by "pooling," but this brings only temporary relief, and the evil breaks out again before the disturbance in trade caused by the "new schedule" has subsided, and prices have assumed their normal condition. The result of this abnormal state of transportation is shown by the writer referred to in its effects on western and central New York. The same causes are at work in a greater or less degree all over the country, and will continue to intensify and grow worse till a remedy is found and applied. The following extract from Mr. Root's article presents the case very forcibly:

"The state of New York, though favored with nearness of market, is now, by the discrimination on railroad freight, put at great disadvantage with the great west, and can now enjoy a fair share of business prosperity in competition with the favored locality. We are charged more on local freights, than for through freights when carried more than twice the distance, and as a consequence, all branches of manufacture, as well as products of the soil, are put at disadvantage, as well as all consumers of merchandise. All extra charge on merchandise must be paid by the consumer and all extra charge on products of the soil, or of manufactured wares must be borne by the producer. This may seem to be but a small item in the cost of production, but it is often enough to give a profit or a loss on manufactures and determine whether a business man can be a success or a failure. In former times, before the western grain was carried by rail, the manufacture of flour at Rochester and at other points in Western New York, was a profitable branch of business, for the miller had shorter and cheaper freight than the rest, but now, the miller must pay the same freight on grain as is charged to New York, and then charged the same freights on flour to the eastern market as from the west, which practically makes double freights on flour and reduces the value of grain grown in this locality, in the same ratio. Then if we take any other manufacture, furniture, carriages, machinery, leather, &c., which must seek a market either east or west, it is charged a higher freight than at the terminating point east or west, and for all material consumed, brought from east or west, is also charged exorbitant freights to be added. This, it will be seen brings such disadvantage to business at any interior point in this state, as to destroy any business enterprise, that can be as well conducted when freights are less. Now, what is the effect of this discrimination, so disastrous to business enterprise, on the agricultural interest of our state? The natural competition of the fertile lands of the west, must of necessity have a depressing influence on agriculture of the east. Of this we have no right to complain; it is but the natural effects of bringing under cultivation the broad and fertile prairies of our vast domain, but it is the unnatural competition which arises through competing railroad routes for the carrying trade of the west, which bears most heavily on agriculture of the east. The central railroad must pay dividends of eight per cent. on ninety millions of stock, and it is evident that if through competition with other roads the western freightage is done at cost or less, larger profits must be paid on local state business. It then follows that the state of New York is taxed millions annually, to give an unnatural advantage to the west.

This is what most depresses agriculture in western New York, and also throughout the state, for the same, or like product is worth no more here—and oftentimes less—than in the central market, Chicago, of the west. The products of our state at present prices, affords little or no profit to the producer, hence our lands have only a nominal value fixed more by the attachment of ownership than by any real profit gained from their cultivation. A reduced rate of transportation, though seemingly a small item, would be to the farmer a net gain, and equal rates established would add a per centage to the value of farming lands. The cost of moving freight by rail is estimated by experienced railroad managers to be about five mills per ton per mile; some estimate the cost less. This would give about eleven cents from Buffalo per one hundred pounds to New York. Regular rates charged in years past have been fifty cents and upwards, while special rates have been from twenty to thirty cents to New York from different points through the county of

Monroe, and the same also from other points more or less remote.

These special rates, it will be seen, afford one hundred and fifty to two hundred per cent. on real cost whilst western freights have been carried at about cost or on a small margin. Now the annual production of farming lands in grain crops in this locality is about fifteen hundred pounds for shipment, and if equal and just rates were established there would be a reduction of about ten cents per hundred, making \$1.50 gain on each acre of land, or \$150 on each 100 acres of grain, and in other products, potatoes, fruit, &c., the difference would be triple that amount. At the low estimate of one dollar and fifty cents per acre excessive freightage, which is much below what is paid on production, would be interest at six per cent. on thirty-five dollars per acre, and this would be the increased value of our farms. This may seem a speculative estimate of the value of lands, but there is no true estimate to be put on farming lands other than that sum which income will pay legal interest on. Lands that will pay for cultivation, and pay six dollars annually profit, are worth one hundred dollars per acre; if they can pay no profit above expenses there is no value as an investment in them. There can be no denial of the fact that railroad discriminations against the products of this state have depressed the value of our farms twenty-five per cent. below what equal pro rata freight with the west would assure us."

Bulbs should be planted rather deep. Lilies; three to four inches, according to the size of the bulb; tiger flowers two inches, tube roses two inches, Jacobean lily two inches, and gladioli three inches. These rules admit of exception, and the larger bulbs require to be planted deeper than small bulbs of the same species. Lilies, contrary to the generally received opinion, may be safely transplanted in spring, care being taken not to break the shoots or small roots. All planting should be finished by the 20th of May, and if the hot sun causes the ground to become parched, water should be given at night.—*Fruit Recorder*.

Patrons of Husbandry.

NATIONAL GRANGE.—Master: Samuel E. Adams, of Minnesota; Secretary: W. M. McDaniel, Washington, D. C.; Treasurer: F. M. McDowell, Wayne, N. Y. EXECUTIVE COMMITTEE.—Henry James, of Indiana; D. W. Aiken, of South Carolina; S. H. Ellis, of Ohio. KANSAS STATE GRANGE.—Master: Wm. Sims, Topeka, Shawnee county; Secretary: P. B. Maxson, Emporia, Lyon county; Treasurer: P. B. Pope, Topeka, Kan.; Lecturer: J. H. Martin, Mound Creek, Miami county. EXECUTIVE COMMITTEE.—W. H. Jones, Holton, Jackson county; Levi Dumbauld, Hartford, Lyon county; J. S. Payne, Cadmus, Lincoln county. COUNTY DEPUTIES.—T. T. Stevens, Lawrence, Douglas county; T. B. Tyers, Beatty, Marshall county; R. F. Powell, Augusta, Butler county; C. F. Morse, Milo, Lincoln county; A. J. Pope, Wichita, Sedgewick county; A. P. Reardon, Jefferson Co., Post Office, Dimock, Leavenworth county; S. W. Day, Ottawa, Franklin county; G. A. Hovey, Belleville, Republic county; E. E. Barrett, Greenleaf, Washington county; W. W. Cone, Topeka, Shawnee county; J. McComas, Holton, Clay county; Charles Diabrow, Clay Centre, Clay county; Frank B. Smith, Rush Centre, Rush county; G. M. Summerville, McPherson county; James W. Williams, Topeka, Shawnee county; J. K. Miller, Minneapolis, Ottawa county; F. M. Wierman, Millard, Morris county; John Andrews, Huron, Atchison county; George F. Jackson, Fredonia, Wilson county; D. C. Spurgeon, Leroy, Coffey county; James W. Williams, Peabody, Marion county; E. T. Ewalt, Great Bend, Barton county; C. S. Worley, Eureka, Greenwood county; James McCormick, Burr Oak, Jewell county; L. M. Earnest, Garnett, Anderson county; D. F. Clark, Kirwin, Phillips county; George Fell, Larned, Pawnee county; A. Huff, Salt City, Sumner county; George F. Jackson, Fredonia, Wilson county; J. P. O. Kirwin, J. H. Chandler, Rose, Woodson county; E. F. Williams, Erie, Neosho county; J. O. Vanorsdal, Winfield, Cowley county; George W. Black, Olathe, Johnson county; W. J. Campbell, Red Stone, Cloud county; John Reeling, Fairfax, Osage county; I. S. Fleck, Bunker Hill, Russell county; J. K. Miller, Sterling, Rice county; W. D. Rippling, Severance, Doniphan county; Arthur Sharp, Girard, Crawford county; P. B. Maxson, Emporia, Lyon county; A. M. Switzer, Hutchinson, Reno county; S. N. Wood, Cottonwood Falls, Chase county; G. S. Kneeland, Keene, Wabunsee county.

TO OFFICERS OF SUBORDINATE GRANGES.

For the use of Subordinate Granges we have a set of receipt and order books which will prevent accounts getting mixed up or confused. They are: 1st, Receipts for Dues, 2nd, Secretary's Receipts, and 3rd, Orders on Treasurer. The set will be sent to any address, postage paid for \$1.00.

We solicit from Patrons, communications regarding the Order, Notices of New Elections, Feasts, Installations and a description of all subjects of general or special interest to Patrons.

A Word to Outsiders.

It is nothing unusual for persons who are not members of the order, and who talk on most subjects with fairness and moderation, to display neither of these qualities when they talk of patrons and grange matters. Combination and co-operation on the part of farmers seem to them most indefensible, although against combination and co-operation on the part of many other classes they have but little or nothing to say. They are inspired by any amount of unflattering discourse by unusual eagerness or energy on the part of a grange agent or storekeeper in making sales and purchases for patrons, while the same eagerness or energy on the part of any other business man would perhaps inspire their commendation. They discredit the reports of the business managers in the order; and, if the reports show on their face a large success, they say, "there is probably something back of the reports;" and yet in the reports of some business men outside the order whose reputation is not as good as the reputation of the business men in it, they have full confidence.

To such persons we would say that all the order asks at their hands is the same candor in discussing it and its enterprises which they display towards other societies and their affairs. They do not feel aggrieved or enraged at the book-sellers of the country for meeting every summer at Put-in-Bay and adopting certain self-protecting rules to be observed in the sale and publication of books. Nothing in opposition was heard from them when, about two years ago, the manufacturers of writing-paper in the United States formed a league and agreed not to make any writing-paper for a specified number of months, in order to raise the price of writing-paper. They do not complain that the pork-packers either independently or unitedly hold on to the meat which they pack in the winter, in order to secure the higher prices which are apt to prevail during the spring and summer. In short, they do not object to any

reasonable alliance of men who follow the same occupation, so long as that occupation is not farming; nor do they object to the withholding of commodities from the market until prices become better, if the commodities withheld are not agricultural commodities. Why should they make an exception against farmers and farm products?—*Grange Bulletin*.

The agricultural journal is what the representative, or, more properly, the ideal representative farmer makes it. I believe it to be true of all journals of this class that deserve the name that they are controlled by an editorial force of the most progressive and elevated farmers, and that they seek the most intelligent and progressive farmers for correspondents. Do not think, my reader, that I consider a classical education a necessary part of a progressive farmer's education. The time is fast coming when a scientific course will be, but to-day the farmer who has learned his business and not necessarily books, is the progressive and advancing farmer. It is not the men who have read Cicero, but the men who have read the plain lessons of experience, personal and of others, who are to-day in the front rank of the agricultural profession. It is such that will, and do now, determine the character of our agricultural press, and so long as they do, the agricultural press will advance its readers. As long as such men contribute the matter of our own professional papers, the papers will be above the masses; and the masses will strive to get on the same level.

The question has been asked thousands of times, what is the grange aiming to accomplish? I will not undertake to answer the question specially, but will sum it up thus: The object of the grange is to protect and promote the agricultural interest, to cultivate and elevate the human mind, and its ultimatum the prosperity and happiness of all. I do not believe that any one can give a specific answer to the question, because the grange is so young comparatively, that it might be properly said to be still in embryo, and we could no more tell in our present state of knowledge everything that it expects to accomplish in the mysterious centuries to come, than we could tell by the germ of an acorn how many leaves the grand old oak of future years will bear. Figuratively speaking, we are climbing a great mountain, and every step up brings to view beautiful objects and landscapes unseen before.—*Dr. J. R. Lewis, of Franklin Grange, No. 746, Mo.*

It has been said, and perhaps with some showing of truth, that there is too close adhesion to the ritual in our grange meetings, and that in consequence of its lengthy and monotonous formality, many members of the order whose thoughts are of a versatile turn, are constrained to absent themselves oftener than it is for the good or the well being and perpetuity of the grange. The impressive lessons which are to be taught by the beautiful and striking imagery of the ritual, fail often of their effect, for they present to the view of the majority of members, standards for practical living and working which are impossible of attainment. In order to cultivate interest in grange meetings, we must curtail this formality to some extent, and introduce instead exercises that are not incompatible with our "Declaration of Purposes." This is easy of solution if we but reflect momentarily and thoughtfully. In every grange there should be a leading spirit. Some brother or sister who is endowed with intelligence and wise judgment, to lead the order into the channel of interesting and versatile entertainment. By doing thus, we accomplish a great purpose and mislead our defamers. Our grange meetings should be entertaining assemblages, thereby securing full attendance and interesting attention. In this way it is but possible to get favorable responses to our invitations to join. These are undeniable truths, and the earlier we fix them upon our memory the healthier it will be for us as a grange.—*Farmer's Friend*.

One hundred and twenty pages in the last report of the New Hampshire Board of Agriculture, that for 1878, are devoted to the reports from the subordinate granges of the order, and to essays and papers read at their meetings. In August last the state grange held a three days' convention at Weirs, which was largely attended, not only by members of the order, but by farmers generally, at which time the secretary of the state board, Mr. J. O. Adams, invited the officers of each grange in the state to present a condensed report of its doings with some essays, for publication in the annual volume. It is from the material thus furnished that this concluding portion of Mr. Adams' readable reports has been prepared.—*Am. Agriculturist*.

Too many patrons have supposed that because the grange numbered more subordinate societies or lodges, and an aggregate membership greater than any other social order, no difficulty would be experienced in carrying out successfully any well devised plan of co-operation to promote the interests of farmers. There has been no more difficult task for patrons than this. Farmers have become wedded to their modes of business, and are the last men in the world to surrender an established custom for another, however plausible. In this, as in other respects, the few must take the lead and demonstrate the wisdom of their cause by success. The hesitating and indifferent will soon follow.

The grange was designed to elevate the farmers and to educate them. In what do they more need information than in the principles of the government under which they live and the laws enacted by their representatives? The farmers need light on all public questions, and nowhere can they obtain it so well as in the grange.—*The Patron of Husbandry*.

Advertisements.

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

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

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30 Merino Bucks FOR SALE.

The subscriber has for sale 30 American Merino Bucks one year old last spring. The Bucks are of the celebrated American Merino stock, bought of W. C. Vandercreek of Cherry Valley, Winnebago Co., Ill., who raised the celebrated Buck, the property of John Steer, of Ash Grove, Kansas, which sheared a fleece last spring weighing 40 pounds, an account of which was published by Mr. Steer in the KANSAS FARMER of August 6th, 1879. Address,

W. D. WITWER,

Topeka, Kansas.

One Hundred HEAD

Choice MERINO BUCKS for sale at low and reasonable prices. These bucks are bred from pure blood stock and second to none in the state. Those who wish to supply themselves with good bucks will do well to call and see them at the Allison Ranch, 14 miles north of Topeka, on Little Soldier Creek, or address

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W. J. COLVIN & SON have 300 head of the finest and best assorted MERINO RAMS in the west for sale at low prices for cash, or exchange for good young ewes. We sell to every one who comes to look at them. Larned, Kansas.

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Short-Horn Cattle

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Catalogues free. The largest and best herds in the west. Over 200 head of cattle, and a like number of pigs. Prices low. Address letters to DURHAM PARK, Marion County, Kansas.

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Thoroughbred English Berkshire Pigs.

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Dark Brahmas and White Leghorns Chickens.

None but first-class stock shipped.

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THOROUGHbred POLAND-CHINAS and BERKSHIRE Pigs and Hogs for sale. The very best of each breed. Early maturity, large growth, and fine style are marked features of our hogs. Terms reasonable. Correspondence solicited.

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WANTED—A man fully competent to manage the sale of Dr. Hays' Family Medical Work and take charge of territory. Must be a good organizer and able to hire and control men; also willing to go into the field and learn how to sell the book then teach others. Will pay a man who can do this business from \$1,000 to \$3,000 a year after a fair trial. Give age, experience, and send this.

W. J. HOLLAND & CO., Chicago, Ill.

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G. B. BOWELL, Breckenridge, Mo., breeder of Spanish or Improved American Merino sheep, of Hammond stock, noted for hardiness and heavy fleece. 200 rams for sale.

L. A. KNAPP, Dover, Shawnee Co., Kas., breeder of Pure Short-Horn Cattle, and Berkshire Pigs.

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

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THE KANSAS HOME NURSERIES offer a superior and Large Variety of trees for Western Planters, all the standard and choice varieties of Apples, Peaches, Cherries, Pears, Plums and Quinces. Small Fruits, Vines, Shrubs, and Ornamental Trees, No. 1 Apple Seedlings. Prices to all applicants. Send stamp for samples. A. H. & H. C. GRISPA, Lawrence, Kansas.

LEE'S SUMMIT AND BELTON NURSERIES, Fruit Trees of the best, and cheapest. Apple Trees and Hedge Plants a specialty. Address ROBT. WATSON, Lee's Summit, Jackson Co., Mo.

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

TEETH extracted without pain, by Nitrous Oxide gas, or laughing gas, at DR. STULTZ'S Dental Rooms, over Funk's Clothing Store, Topeka, Kansas.

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Can rely upon immunity from contagious disease in their flocks after use of LADD'S TOBACCO WASH. GUARANTEED an immediate cure for scab and prevention of infection by that terror to flock-masters. GUARANTEED to more than repay the cost of application by increased growth of wool. GUARANTEED to improve the texture of the fleece instead of injury to it as is the result of the use of other compounds. GUARANTEED to destroy vermin on the animal and prevent a return. GUARANTEED to be the most effective, cheap and safe remedy ever offered to American Wool-growers. No flock-master should be without it. I have the most undoubted testimony from the most corroborative of above. Send for circular and address orders to W. M. LADD, 21 N. Main St., St. Louis, Mo.

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The latest and most reliable instruction about Syrup and Sugar making from Sorgo is given weekly in COLMAN'S RURAL WORLD, an Agricultural Journal of over 30 years' standing, by J. A. HOLMES, Cashier of the Cane Growers' Assn., and the veteran of this industry. As such Secretary he has established Agents, Correspondents and Experimenters in over thirty States, and will furnish the results of his and their labors, weekly, for the RURAL WORLD. Sorgo Culture has a special department in this paper, and is the only Agricultural paper that has. Terms: \$1.50 per annum; 6 months, 75 cents; 4 months, 50 cents. Address NORMAN J. COLMAN, Publisher, St. Louis, Mo.

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Twentieth term begins September 2. No public exhibitions; prosperous; sixteen teachers; and very high; musical advantages superior. For catalog address—J. A. QUARLES, Care.

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Kansas Pacific Railway.

Lands! Lands! KANSAS TO THE FRONT!

The Leading Wheat State in the Union in 1878, and the Fourth Corn State. The Great Kansas Harvest of 1878 was sold for the Golden Belt.

The celebrated Grain Belt of country, in the limbo section of Central Kansas, traversed by the Kansas Pacific.

The following statements are taken from the report of the Kansas State Board of Agriculture for 1878:

WHEAT! Kansas rises from the Elevator.

The FIRST WHEAT STATE in the Union in 1878, producing 26,518,959 bushels winter wheat, and 4,756,403 bushels spring wheat; total,

32,315,361

Bushels Wheat, with only one-eighth of the state under cultivation. The organized counties lying in the Golden Wheat Belt of the Kansas Pacific produced 13,335,324 bushels, or over 41 per cent. and including unreporting counties, fully 14,000,000 bushels, or 45 per cent. of the entire yield of wheat in the state, with an equally grand showing in all other departments of agriculture.

The foregoing facts show conclusively why 29 per cent. of the increase of population in the State during the past four years; and 40 per cent. in the increase in population during the past year; and 45 per cent. of the increased acreage of wheat in the state in 1878, belonged to the "Golden Belt."

A FARM FOR EVERYBODY.—\$2,500 farms—5,000,000 acres—for sale by Kansas Pacific—the best land in America, at from \$2 to \$6 per acre one-quarter off for cash, or on 6 or 11 years credit at 7 per cent. interest. It don't take much money to buy a farm on the Kansas Pacific; \$25 to \$50 will secure 80 acres on credit, or \$120 to \$500 in cash will buy it outright.

Send to S. J. Gilmore, Land Commissioner, Salina, Kas., for the "Kansas Pacific Homestead," a publication that tells about Lands, Homesteads, Pre-emption, Soil, Products, Climate, Stock Raising, Schools, Wages, Land Explorers' Tickets, Rates, etc. It is mailed free to all applicants.

Read all you can gather about Kansas, and when you decide to start, be sure and start right by locating along the KANSAS PACIFIC RAILWAY.

T. F. OAKES, Gen'l Superintendent.

100 ACRES PLANTED WITH BERRIES.

Plants grown for transplanting, and fruit for the market. See new catalogue for what sorts to plant. Sent free. Address JOHN S. COLLINS, Moorestown, New Jersey.

Also JERRY RED FISH, all pure stock.

Literary and Domestic.

Maiden's Hair.

BY DONA GOODALE.

Where the tinkling waterfalls,
Sparkle over rocky ledges,
Where the slate-gray cat bird calls
In and out the tangled hedges,
Green and slender, spreading fair,
You may see the Maiden's hair.

'Tis as though some lady left
By the stream her floating tresses
Long ago, and now, bereft,
Where they be she little guesses:
But they still are tossing there,
And we call them Maiden's hair.

Then may there a picture bring
Of green adorns overhanging,
Of a wind-blown brook in spring
And a thousand ripples clanging
In a silver mingling, where
Nods the slender Maiden's hair.

'Though their graces more formal be
Than when by the brook they fluttered,
Touched by winds that lazily
In among the tree tops muttered,
Still the same quaint charm they bear
Of the earliest Maiden's hair.

Literary Items.—No. 26.

"CONSIDER BOTH SIDES OF THE QUESTION."

Those of my young readers who have read (in Wilson's Fourth Reader, page 247) the instructive lesson of the two knights who met before the goddess of victory and disputed about the shield of the statue, and finally agreed to decide the dispute by mortal combat, will find a parallel in the following case, which I will relate from memory, as the transaction took place over fifty years ago.

Two officers of the British army were regaling themselves over their wine at one of their well known clubs in the city of London. They had been in the service a long time and had seen many parts of the world. The conversation turned on fish sauce. One of them remarked he had seen anchovies grow on trees in India. His friend, who had also been there, disputed the point, remarking that anchovies did not grow on trees, but were a small fish caught in the Mediterranean sea, and made into catchup and used as sauce for fish. His friend insisted he was right, for he had seen them growing on trees and could not be mistaken. One word followed another in quick succession, the excitement became general, the parties broke up their social meeting for the purpose of making arrangements to decide the veracity of the question by mortal combat.

The anchovy officer sent a challenge to his friend, according to "the code of honor." Seconds were appointed to meet the combatants on the battle field, or commons near the city. At an early hour they met, and after the preliminaries were all arranged the parties stood in line, with their dueling pistols ready to be discharged. The word "fire" was given, and the anchovy officer hit his antagonist on the leg, which caused him to perform various antics, movements, at which the second of the anchovy officer exclaimed: "See, see what capers he cuts up!" "Oh," said the principal, in reply, "capers, capers—I am mistaken; it was capers I saw growing on the trees in India." He cast away his pistol, ran towards his antagonist, and begging his pardon, telling him he was now convinced of his mistake,—it was capers and not anchovies, that he had seen in India. His friend remarked that it was unfortunate he had not thought of this a few seconds sooner. They became mutual friends once more.

GAZETTE.

There is no country on the globe which issues from the press the same amount of weekly and monthly intelligence as the United States; and Kansas, for its population and age, will equal any state in the Union. In some countries, as in England, the newspapers are printed on stamped paper, which provides a very considerable income to support the expenses of the government.

The first gazette established was issued at Venice, Italy, about the beginning of the seventeenth century. It was published once a week, and was called *Gazette*, from the word *gazette*,—the name of a small coin which was of general circulation in Italy.

Journals of a like character, in a short time, were established throughout all the large cities of Europe. They were sometimes under the eye of the ministry, but in England and the United States they are untrammelled by the powers that be. Literary gazettes, or journals, soon followed the wake of political ones, but they were at first confined to the advertising of books and criticism upon them.

The monthly magazines published in the United States and Europe, employ some of the best talent of the country. As a general rule, they are conducted with dignity, and in some cases they have been marked with odious personalities and severe criticism. Reason and good taste generally correct this evil.

JAS. HANWAY.

Lane, Kansas.

Rustic Pictures.

There can be no more beautiful home-made household elegancies than rustic pictures, which are so varied in character that we could describe scores of them, yet feel so far from having reached the limit of their capacity, as though attempting to name all the inspirations of the painter, or poet, for just as infinite is their varied and lovely forms are these pieces of fairy-like finger work.

The artist, in exhibiting the treasures of his studio, will show you a piece of barren, rocky shore, with a glimpse of the stormy ocean and lowering sky, and beside it some bright flower

piece, full of color and glow, showing the power of the brush to give pictures directly opposite in character.

Just as varied may these rustic pictures be made. In one we may have a background of black velvet throwing out in beautiful contrast the silver anchor with its foundation of pearly and rose tinted shells and feathery sea weed, while beside it, a woodland cross, moss covered and lichen bound, rising from a bed of ferns and flowers, is made more rural by a background of rough sand-paper, yet each of its kind is as lovely as the two pictures of the painter, and we have seen lovers of the beautiful stand a long time before two such exquisite objects undecided which is to be preferred.

There is still another class of rustic pictures; those imitating natural landscapes in miniature, and to such perfection has this art been carried by some, that upon a piece of thin wood, or heavy binder's board in a recess three inches deep, landscapes are delineated so perfectly that they appear like mimic scenes in nature.

These pictures are as varied as those of the painter, and may portray an arctic expedition, with a "bit" of frozen sea, the mariners in their cunning little fur caps, with Esquimaux friends, and all the accompaniments to a polar scene; so perfect that it almost makes one's teeth chatter to look upon it, yet so perfect that you cannot but wonder how objects all duly formed in natural rotundity, can be arranged to appear as a picture upon so narrow a space.

Or as an entirely different scene, we have a woodland May party, with its greenness and beauty, bright with gay flowers and gayer children, the wreathed May-pole and gypsy camp, in the distance, all perfect and complete, from the crystal lake with its tiny pleasure boat, the woodland grotto glittering with stalactites, and green with fern and moss, and the deep, dark forests, through the vistas of which you find yourself peering, as though you might gain a glimpse, beyond the dark line of trees which appear to obstruct your view.

An old bridge, with a vine-covered, moss-grown mill, and its waterfall; an Alpine hamlet with crystal lake and pretty chalets, rustic bridges and quaint mountain church; an American forest with wigwams and their occupants; and an old ruin, of some ancient castle, with moat and draw-bridge, broken wall and gateway, turrets and pillars, gothic arches and millioned windows, are the most attractive of these beautiful art works.

The winter scenes are especially lovely, frost and snow entering largely into their composition, and imparting a charmingly soft effect, fairy-like in its sparkling beauty.

These effects of living scenes and landscapes in miniature, are produced by the application of light and shade, arranged with artistic discrimination and skill, mosses, grasses, lichens, bark, stones, shells, indeed all natural productions, are brought into use, and so mingled with certain mechanical and art work that, by arranging each particular part, with a view to perspective effect the appearance of a natural scene, or landscapes imparted. By dyeing the grasses, moss, etc., and applying them, in the same manner, as colors in painting, the idea of distance is given with excellent effect.

It commencing this fascinating work it is better to try the simpler kinds first mentioned, as even here a certain amount of perspective effect adds very materially to the beauty of the work.

For instance, in making and embellishing a woodland cross the little mound of green at the base is far prettier if tastefully designed so that it appears like a piece of wild woodsy loveliness shaded into tiny knolls, and appearing to rise from a bed of mossy rocks.—*Home Arts.*

The Humming Birds.

We find the following graphic allusion to this smallest and most beautiful species of the feathered tribe of birds, by a correspondent in the *Poultry Yard*.

Mary Howitt has written thus:

"How glad the heart of Eve would be,
In Eden's glorious bowers,
When she saw the first, first humming-bird
Among the radiant flowers!"

Among the rainbow butterflies—
Before the rainbow shone—
One moment gazing in her sight,
Another moment gone!

Thou little shining creature,
God saved thee from the flood,
With eagle of the mountain land
And tiger of the wood."

And the enthusiastic Wilson thus mentions this bird:

"The richest roses, though in crimson dress,
Shrink from the splendor of his gorgeous breast.
What heavenly tints in mingling radiance fly!
Each rapid movement gives a different dye!"

as this bright, sparkling, beautiful atom of flesh, sinew and feathers rushes in and out, on the wing, among the dainty flowers!

Of all animated creatures, says Buffon, "the humming-bird is the most elegant in form and the most splendid in coloring." Precious stones and metals, finely polished, cannot compare in brilliancy with this jewel of nature, which, though placed in the lowest order, as to magnitude, possesses all the gifts of beauty that others only share. Its nimbleness, graceful action, rapidity of motion and gorgeous hues of feather are incomparable; and no bird known on earth, large or small, is its rival in respect of these attributes.

Of all the people in this world, but a handful, comparatively, have ever seen this exquisite little creature alive. We notice this rare bird as portrayed in illuminated books, occasionally, or we see them stuffed and mounted in the glass case of the taxidermist. We read about them frequently, and yet few persons, as your

correspondent has stated, know anything of them, beyond this.

The emerald, the topaz, the turquoise, the opal, the ruby, the amethyst, all sparkle and glint in their varied and glistening plumage, which is never dimmed or soiled by coming in contact with the vulgar earth, upon which it never alights. It lives in the air and flits among the flowers incessantly, when away from its nest, and its whole life is one dream, apparently, of humming action and joy.

As it dwells in the air, darting from flower to flower, it seems almost a dazzling, exquisite little flower itself. It feeds on the nectar it extracts with its tiny long bill from the buds and roses, carnations and lilies it encounters, as it goes romping about in the gay sunshine, "gathering its coveted sweetness," and flitting continuously from one petal to another for the choice tid-bits that will only suffice for its dainty and exacting palate!

Hum—hum—humming all the live-long day! The American Indians call it by a name signifying sunbeam. As soon as the returning sun has introduced the vernal season, and caused myriads of plants to open and bloom, the brilliant little hummer is seen "advancing on fairy wings," carefully visiting every flower cup, and removing therefrom all the little insects that may fasten on the bursting leaves, and which would destroy the petals.

Its long, thin tongue is imbued with a sticky saliva, and as it thrusts this in among the close leaves, the little insects adhere to it. Every bug is instantly swallowed by the humming-bird, and away he goes for more. The gardens, the woods, the fields, the orchards, the prairies, all are visited, wherever flowers bloom. And thus he feasts upon the lesser species of flower insects and upon the honey that he abstracts similarly from the ripening flowers, without cessation, so long as the sun is shining.

The brilliant tints upon its throat and breast baffle competition or comparison, save with the glowing jewels I have mentioned. The royal purple, deep green emerald, shining topaz or opal, the ruby and fiery amethyst alone can rival the gorgeous hues that glitter upon the hummer's front. It dashes through the air with great velocity and vivacity. It moves like a gleam of variegated light, up and down, to the right and left—now here, now there—before your eyes for an instant, but away in a flash, if you chance to be discovered near its haunts. In this way it travels through our northern climate in summer only, and with great precaution, as the cold weather approaches, it retreats speedily towards its tropical home.

"Where," asks Audubon, "is the person who, upon seeing one of these lovely creatures moving on humming wavelets through the air, suspended as if by magic in it, flitting from one flower to another, with motions as graceful as they are light and airy, pursuing its course over our extensive continent, and yielding new delights wherever seen—where is the person, kind reader, who, on observing this glittering fragment of a rainbow, would not pause, admire, and instantly turn his mind with reverence to the Almighty Creator, the wonder of whose hand we discover at every step in life?"

The amplest history of these feathered gems is given by Audubon and Wilson. The finest illustrations of their beautiful plumage, in its varied combinations of purple, green and gold, may be found in the sumptuous drawings of the works of Mr. Gould and M. Lesson.

Their variety is extensive, and I will not lengthen out this rough sketch, by naming the different kinds of hummers that are well known to be as distinct, one from the other species, as are our numerous breeds of poultry. But all are beautiful, all are lovely, all are exquisitely plumed and formed, throughout the category.

Recipes.

[Prepared for the Kansas Farmer.]

JELLY CAKE.—One cup sugar, two eggs, half cup butter, half cup sweet milk, one and a half cups flour, two teaspoons baking powder.

ANOTHER JELLY CAKE.—One teaspoon sugar, 1 teaspoon milk, 1 egg, 1 tablespoon butter, 1 pint flour, 2 tablespoons cream tartar, 1 teaspoon soda; flavor with lemon.

SPONGE CAKE.—One cup sugar, 3 eggs, 3 tablespoons hot water, 1 cup flour, 1 teaspoon cream tartar, half teaspoon soda; beat the yolks with the sugar and add the whites last.

YELLOW SPONGE CAKE.—One and a half cups sugar, 3 eggs, 1 cup sweet milk, 4 tablespoons sweet cream, 2 tablespoons baking powder, 1 teaspoon lemon essence; beat whites and yolks separately.

DELICATE CAKE.—Two cups sugar, 1 cup butter, 1 cup sweet milk, 2 cups flour, whites of 6 eggs, 1 spoonful cream tartar, 1 teaspoon soda.

GOLD CAKE.—One cup sugar, 1 cup butter, 1 cup sweet milk, yolks of 8 eggs, 2 cups flour, 1 teaspoon cream tartar, 1 teaspoon soda. B.

Nora's Gingerbread.

"It is very simple," rejoined Mrs. Saymore: "One cup of molasses, one teaspoonful of saleratus or soda, one teaspoonful of butter or lard,—if lard is used a pinch of salt will be needed. Stir these together, and then add one and one-half cups of boiling water, and flour enough to make a thin batter. Bake about one inch deep in a broad pan. Twenty minutes is required, in a quick oven, to bake it nicely. I generally have three pans baked to last over Sunday. If it is not all consumed before, it is quite convenient for Monday's lunch."

"Very convenient it would be for lunch, any day," said Mother, laughing, "or to eat at any time of day."—*New England Farmer.*

THE

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the balance of 1879 for

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A sample copy will be sent free to any address.

If you have friends in the east to whom you want to send a live Kansas paper, this presents an opportunity. For instance: One dollar pays for five copies which will be sent, postage paid, to four different addresses in any part of the United States. This offer is made to introduce the paper.

The State news, the Crop letters, News from the cities of the state, Local news from the Capital, Fashion notes and Editorials all combine to make this the

CHEAPEST

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BEST PAPER

EVER MADE in KANSAS.

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\$66 a week in your own town. Terms and \$5 outfit free. Address H. HALLETT & Co., Portland, M.

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18 Elegant New Style Chromo Cards with name 10 postpaid GEO. I REED & CO., Nassau, N. Y.

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Land! Land! Land!

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350,000 ACRES

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CO'S, KANSAS,

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20 PER CENT DISCOUNT FOR CASH IN FULL AT DATE OF PURCHASE.

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the largest herd of thoroughbred Berkshires in the west, consisting of 340 head as fine as are to be found anywhere. 180 summer pigs sired by the grand boars, Stockwell (brother to Royal Hopewell) and Wrangler 2nd, (2357). Would say to Patrons and others that I now have a grand lot of pigs. Can please the most exacting. Prices always in reason.

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MAKE HENS LAY.

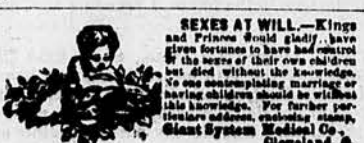
An English Veterinary Surgeon and Chemist, now travelling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable. Nothing on earth will make hens lay like Sheridan's Condition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

FRUIT TREES!

Parties in Kansas who wish reliable Fruit Trees adapted to the climate of Kansas will get them in condition to grow by ordering of me direct. Also, Maple, Elm, Box Elder, Green Ash, and Catalpa of small size, cheap, for Groves and Timber. Also Evergreens of all sizes of the best possible quality. All the new Strawberries. Send for Price Lists. Address D. H. WIER, Lecom, Marshall Co., Ill.

Apple Trees,

Hedge Plants, Grape Vines, Evergreens, and a general line of Nursery Stock at wholesale and retail. Order direct and save commissions. Price List Free. KELSEY & CO., Vineland Nursery, St. Joseph, Mo.



Scott's Improved Sheep Dip.

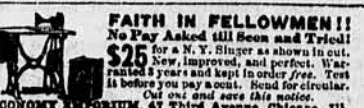
Has been thoroughly tested for the last two years. We know that it will cure scab, and kill all insects that infest sheep. We are prepared to furnish as to terms with it on reasonable terms. Apply to A. Scott, Westmoreland, Pottawatomie Co., Kansas.

ST. LOUIS LAW SCHOOL.

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Send 25 cents for a sample package, or 50 cents for a large package of the largest grained, pure white wheat in the world. For full planting. Agents. Postage prepaid. T. C. Nash, St. Clair, Schuyler Co., Pa.



CHOICE SEED WHEAT.

The Tweedwell, a white winter wheat, makes the choicest flour, yields well, never knew it to winter-kill or fall unless by grassy pasture, pasture in winter when dry, price \$1.35 per bushel at depot; sacks 20 cts extra. Send stamp for sample and particulars to M. W. WOLCOTT, Sabotha, Nemaha Co., Kas.

50 Perumed, Snowflake, Chromo, Motto eds, name in gold & jet, 10c. G. A. Spring, E. Wallingford, Conn.

Good Farm Hands.

There are many young men seeking employment on farms who do not seem to comprehend what the term "good farm hand" means. It is not merely an ability and willingness to work. Nor is it enough that he is acquainted with all the routine of farm business. Laborers come in contact with the family and especially the sons of the farmer, and as a matter of conscience and duty the employer wants help of good moral character, who not only keep sober and are always at the place of business, but who will not be teaching his sons—the pride and hope of his life—all the foul lessons of debauchery and crime with which too many laborers are familiar. When an affectionate and kind mother first hears her son swearing, or learns of his smoking cigars, she is generally informed that such things come from the example and teachings of the hired help. A farmer not only wants his help kind to his stock, but it is of far more importance that they should be careful of the morals of his children. In hiring hands those who use liquor or smoke should be taken only when strictly temperate and moral ones cannot be had. The practice of smoking is a serious one on a farm. It is probable that half the fires in the country which destroy barns are caused by careless smokers. It is a dirty practice at best, but when it endangers so seriously a man's property, he should discriminate against smoking. We acknowledge the legal right of any man to smoke, but the right to refuse to employ them is equally as just. Profanity, obscenity, intemperance, disregard of the law of God and the State, etc., should bebar any and all from the farm and from a free intercourse with the farmer's family, and we trust in employing help, farmers will look more to the moral health of their rising sons, as well as the security of their property. It is due to the future character of our country that the farmers should bear faithful testimony against intemperance, vice, immorality and obscenity in all their forms. And young men who are loose on all these questions should be taught that on the farm, with the innocent children, is no place for anything which is unclean in thought, word or action.—*Iowa State Register.*

Storing Sweet Potatoes.

Sweet potatoes designed for winter storage must be dug at the right time, and the right time is when they are ripe. Harvested previous to maturity potatoes will not keep no matter how carefully protected. A ripe potato breaks dry and maintains its light color when broken. If on breaking it exudes a gummy juice and turns dark as it dries, the potato is unfit to be taken from the ground. It is not necessary that the frost should kill the vines before digging, provided they have already ceased their growth and the roots are not in a sappy condition. Potatoes must of course be lifted before the weather indicates a degree of cold sufficient to freeze the ground.

Dig sweet potatoes in dry weather only, and allow them to air-dry in the shade before packing in winter quarters. Handle carefully, as slight bruising from rough carriage proves injurious to their keeping qualities.

There are many modes in practice for preserving this tuber. The principle underlying them all is the exclusion of cold air and keeping the roots perfectly dry. At the north sweet potatoes are usually stored in barrels or shallow boxes placed in tiers, indoors, with spaces of a few inches between for ventilation. Thus arranged, a uniform heat is maintained from a fire in the cellar or elsewhere. Not infrequently sweet potatoes are stored in tight, dry cellars, a portion of which is partitioned off and the sides and bottom lined with straw. When large quantities are preserved for spring sale, houses are erected expressly for their preservation. They are generally two stories high and so constructed that the potatoes can be stored in boxes placed in tiers with spaces between for ventilation and a source of heat by which a uniform temperature can be preserved. Thus stored neither chaff, shavings or other packing material is required.

At the south the common practice is to hill sweet potatoes in a dry place and protect them from the weather by a thatching of straw, shingles, etc. The spot selected must be sufficiently elevated to prevent rain from settling about the hill. Large hills are objectionable, because when a hill has once been opened the potatoes are more liable to rot. From twenty to forty bushels in the hill is the rule. A method much practiced is making a bed several inches thick of dry pine straw or similar material and heaping the potatoes in this bed; they are next covered with straw, and unless the weather is very cold, permitted to remain without other protection for a few days, then beginning at the bottom the hill is shingled over in such manner as to turn water. This protection is lightly covered with earth, a hole being left at the top large enough to admit the hand. The covering of earth must be regulated by the temperature of the winters, the object being to afford sufficient protection from frost. A shelter of boards on the hills to protect from rains, renders the work complete.—*N. Y. World*

THE POULTRY WORLD,

(Monthly) and

AMERICAN POTLTRY YARD,

(Weekly).

Both Publications are exclusively devoted to Poultry. Published by H. H. STODDARD, Hartford, Conn.

The Poultry World is sent postpaid for \$1.25 per year, the American Poultry Yard for \$1.50. Both papers for \$2.00. A series of twelve magnificent Chromos, each representing a standard breed of fowls, sent for 75 cents extra, to all subscribers of either publication.

THE STRAY LIST.

HOW TO POST A STRAY

BY AN ACT of the Legislature, approved Feb. 27, 1866, 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 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.

How to post a Stray, the fees, fines and penalties for not posting.

Broken animals can be taken up at any time in the year. Unbroken animals can only be taken up between the 1st day of November and the 1st 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, 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 householders 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.

If such 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 had advertised it for ten days, that the marks and brands have not been altered, also that he shall 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 numbers.

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 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 the householders to appear and appraise such stray, summons to be served by the taker-up; said appraiser, or two of them shall in respect 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 up, 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.

Fees as follows:
To taker-up, for head of cattle, \$1.00
County Clerk, for recording each certificate and forwarding to Kansas Farmer, .35
To Kansas Farmer for publication as above mentioned, for each animal valued at more than \$10, .50
Justice of the Peace for each affidavit of taker-up for making out certificate of appraisement and all his services in connection therewith, .35

Strays for the week ending September 24.

Anderson County—G. W. Goltz, Clerk.

Taken up by S. McCallum of Lincoln tp., on the 18th day of August, 1879, two young horses, one a dark bay, star in forehead, some kind of brand on right shoulder, and other a sorrel branded with the letter S on right shoulder; both about 15 hands high, and about 6 yrs old each. Valued at \$80 each.

Butler County—V. Brown, Clerk.

HORSE—Taken up by E. Cooper, Chelsea tp., August 15, 1879, one dark brown horse with white star in forehead, about sixteen hands high, no marks or brands. Valued at \$80.

Barton County—J. D. Brougher, Clerk.

COY—Taken up by Geo. W. Murphy, Independent tp., June 14, 1879, one white coy, with red spots, roan neck and head and blazed face, no brands, age three years. Valued at \$10.

Cowley County—M. G. Troup, Clerk.

HORSE—Taken up by Henry Sartin of Cedar Township, one cream colored horse about ten years old, small star in forehead, left fore hoof is white, and has a Spanish brand on left hip. Valued at \$15.

Doniphan County—D. W. Moore, Clerk.

HORSE—Taken up by Jesse Jones, August 11, one light bay horse, 14 or 15 years old, no marks or brands, blind in one eye. Valued \$10.

MARE—Taken up by Jesse Jones, August 11, 1879, one sorrel mare, about 8 or 9 years old, branded on left side.

HORSE—Taken up by Jesse Jones, August 11, 1879, one dark bay horse, about 12 to 15 years old, no marks or brands. Valued \$10.

Doniphan County—M. P. Jolley, Clerk.

HORSE—Taken up by Peter Good, Jefferson tp., Sept. 5th, 1879, one dark bay horse, about six years old, with stripes in the face, gait on the shoulders, about 15 hands high. Valued at \$80.

Elk County—Geo. Thompson, Clerk.

Taken up by Jordan Logsdon of Greenfield tp., August 23, 1879, 2 bay mares branded W. Y. and J. W. on left hips also bay colt. Total value \$80.

Franklin County—Geo. D. Stinebaugh, Clerk.

HORSE—Taken up by Nathan Root of Centropolis tp., July 17th, 1879, one iron gray horse, about 15 hands high, collar marked about 15 yrs old, valued at \$40; also one smaller dapple iron gray, about 11 yrs old, weighing about 900 pounds, valued at \$35.

Labette County—L. C. Howard, Clerk.

PONY—Taken up by J. B. Ketter, in Richland tp., Aug. 8, 1879, one bay mare pony, 10 years old, 14 hands high, a bay sucking colt with her. Valued \$20.

PONY—Taken up by J. B. Ketter, in Richland tp., Aug. 8, 1879, one bay mare pony, 4 years old, 14 1/2 hands high, a little white on right hind leg. Valued \$20.

Leavenworth County—J. W. Niehaus, Clerk.

MARE—Taken up by Henry Snee, of High Prairie tp., August 29th, 1879, one mare, 4 years old, small star in forehead, a scar on left hind leg and pastern joint, about 14 hands high. Valued at \$25. The marks or brands have not been altered since to his knowledge.

PONY—Taken up by W. C. Sagan one mile west of Kickapoo and posted before Geo. O. Sharp, J. P., August 15, 1879, one red roan mare pony 3 1/2 hands high, 4 yrs old, black below the knees, collar marked. Valued at \$30.

Marion County—E. R. Trenner, Clerk.

MARE—Taken up by Henry Hartke, Aug. 16, 1879, two miles north of Lincolnville, one bay mare, about 14 hands high, about 7 years old; no marks or brands, shod on all four feet, and headstall of a strap halter. Valued \$25. Address Henry Hartke, Lincolnville, Marion county, Kan.

Miami County—B. J. Sheridan, Clerk.

MARE—Taken up by W. S. Wadsworth, one dark bay mare, collar and harness marks, no brands to be seen, 15 hands, light built, thin in flesh.

Marshall County—G. M. Lewis, Clerk.

MULE—Taken up by Hiram Shroyer, Elmer Creek tp., Aug. 19, 1879, one 2 year old, a dun color with black stripes on shoulders and down back.

MARE—Taken up by Nicholas Copas in Marysville tp., Aug. 10, 1879, one dark chestnut sorrel mare about 7 yrs old, 14 hands high, white on forehead and on right hind leg. Branded "H" on left shoulder.

Mitchell County—J. W. Hatcher, Clerk.

PONY—Taken up by Julius Winton, three miles east of Cawker City, one bay pony, 14 hands high, white spot on left hind leg. Valued at \$20.

Rush County—F. E. Garner, Clerk.

HORSE—Taken up by A. J. Miller, Pioneer tp., Sept. 1st, 1879, one iron gray horse, six or seven years old, 15 hands high, no brands, scar on right hind leg between hock and fetlock joints. Valued at \$65.

Rice County—W. F. Nichols, Clerk.

PONY—Taken up by A. N. Grant, Washington tp., Aug. 19, 1879, one brown pony mare, small size, brown color, white spots on forehead and nose. Valued at \$15.

Wabasha County—T. N. Watts, Clerk.

BULL—Taken up by Henry Fort, in Rock Creek tp., (Chalk Mound P. O.), one bull, blood red color, three years old, Fosted Aug. 23, 1879.

PONY—Taken up by Pal McCassey, June 23d, in Mission Creek tp., two miles north-west of Dover, one small roan horse pony; saddle marks, scar or brand on left hip.

As good Short-Horn Cattle, Berkshire and Poland China swine, as can be found in the West. All orders should be sent to the Secretary of the Association. The Executive Committee of the Society will take such orders, and give that Selections are made that cannot fail to give Satisfaction, to the purchasers.

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How to Start a Flock of Sheep and Keep Them in Good Condition.

K. H. Allen lays down some very sound rules on this subject in *Coleman's Rural*, which may be followed with entire certainty of leading to very satisfactory results:

In almost every part of the country common sheep are being sold in large quantities, every fall, for mutton. Large and small, old and young, are sent or sold to the butcher. Go into a man's flock and select as many ewes as you want. Get all of one age (yearlings), which you can readily distinguish by their teeth. Select those of uniform size, and pay the owner an extra price to let you select them. If you do not get enough in one man's flock, go through another, and so on, until you get as many as you want. Depend upon it, you will never be sorry if you get them all of the same age and style. Now comes the most important part. Get a good thoroughbred ram of the breed you fancy—be it Merino, Leicester, or Cotswold. Get it of an honest breeder, and get one of undoubted purity of blood, so that he will transmit his valuable qualities to every one of his progeny.

Do not ask a breeder to sell you a No. 1 sheep for a scrub price. Use the ram two years, and then get another, and so on. Change your rams every two years. Sell all of your first purchase of native sheep after breeding them two years. Then you will have a flock of sheep you will be proud of.

Wean your lambs at five months old and see that the ewes' bags do not spoil, but milk them at least twice (the second and fifth days) after weaning. Do not let your lambs breed the first year, but give them a little extra care the first winter.

3d, Do not confine your sheep too much in the winter. Let them have plenty of range and grass whenever the ground is bare, but always have good shelter to go under whenever they wish.

4th, Take care to keep your flock as even in flesh as you can the whole year round. Too fat and then too poor, has a bad effect, both on the sheep and the wool. In this climate, a feed of a pint of corn daily to each sheep, from the first of December to the first of April, suits them exactly.

5th, Take care of the health of your sheep. Put a little pine tar in your feed troughs in winter, and give a little sulphur occasionally with their salt. The first of June, July and August daub their noses with pine tar. It is good for the sheep and prevents the gad-fly from annoying them. Sometimes the digestive organs of a sheep become disordered. The sheep will lose its appetite, look badly, become isolated, and one hardly knows what to do for it. Still, if something is not done, in nine cases out of ten, when they are so affected in the winter season, they die. My remedy is this: Half a teaspoon of spirits of turpentine, one tablespoonful of common salt and one teaspoonful of water, well shaken together in a bottle. Drench them with it twice a day, morning and evening, until they are well. Take care to drench slow, so as not to strangle them. This remedy hardly ever fails to cure when administered in season. The product of the pine tree seems to suit the sheep exactly. When the boughs can be obtained to put in their yards in winter, there is nothing better for the health of the sheep.

Here is a remedy for the scours: Take one egg, stir in flour until you have a thick paste, add thirty drops of laudanum, divide into six pills, and give one of these pills each morning and evening until they are cured. By putting the pill in the mouth and holding the sheep's jaws together, they will swallow it very quickly. This is the best remedy I have ever tried.

Berkshires.

Prof. Shelton, in answer to a request that he give his views on the Berkshire pig for general farm purposes, replies through the *Industrialist*, as follows:

"The general farmer cannot afford to keep any kind of farm stock because pre-eminently adapted to some one purpose, or because it possesses, in a high degree, some one valuable quality, which, of course, has been developed at the expense of other valuable qualities. It is because the Berkshire is a very symmetrically-developed animal, having many useful qualities moderately and often very strongly developed, that we have taken occasion in this paper to advise his cultivation by the general farmer. In some single quality, many breeds will surpass the Berkshires; the Essex we are satisfied will mature earlier, and will make a pound of pork for less outlay of feed; the Poland-China uniformly has better hams and comes to a greater weight; and the "native," in the number of young produced at a litter, will surpass either. But when we consider all of the numerous valuable qualities of the Berkshire, the superior quality of its flesh, its great hardiness and ability to resist diseases, the ease with which it fattens at an early age, and its fertility, we have no hesitation in giving our preference to the Berkshire, so far as general farm purposes are concerned.

A great injury has been done the Berkshire breed, of late years, by breeders who have endeavored to increase the size of the race by breeding only from the largest and coarsest specimens. In this way a nervous, long-legged, flat-sided, and weak-jointed animal has been produced, and one that has little to recommend it except size, which is a poor enough recommendation for this breed. The best Berkshires that we have ever seen have been the medium or undersized ones.

The advantages or strong points of the Berkshire breed are these: The meat is the best,

and it commands the highest price; the sows are very prolific, and make the best and most attentive mothers. The Berkshires, as a rule, although there are many exceptions to it, are heavily developed at the fore-end; and you nearly always find with this breed a broad head, set closely on a deep, short and thick neck, the neck blending well with the shoulder, and the muscles of the shoulder again pass smoothly into those of the ribs. The ribs are deep and well sprung, qualities which always accompany constitution and vitality. For these reasons, chiefly, we prefer the Berkshire to any other breed for general farm purposes; and the only breed which has ever tempted us seriously to change our mind in this matter is the little all-black Essex."



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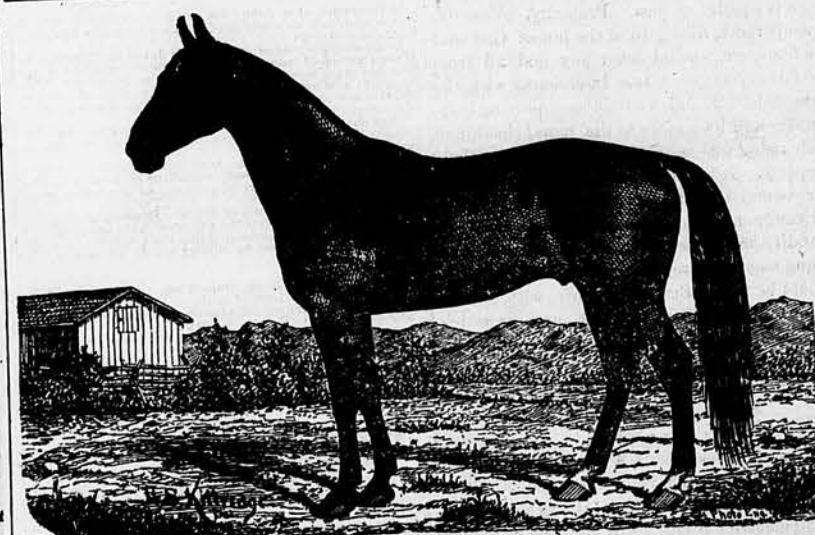
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