Farm Notes.

PUMPKINS FOR PIGS.

Pumpkins are excellent to make pigs grow. They should be boiled and the seeds removed. Pigs will thrive on this with very little meal, before the time for heavier feeding comes on.

EGG SHELLS.

The egg shell is porous and any filth on it very soon affects the meat. Eggs should be cleaned as soon as gathered if at all soiled, and those to be put up for Winter should be eggs which have been gathered as soon as laid. Eggs wet by rains are difficult to keep.

DRY QUARTERS FOR HOGS.

As cold weather approaches it will be more necessary to see that hogs have shelter, at least to sleep under. A hog cannot thrive, however liberally fed, when obliged to sleep in the cold and wet. Given a shelter from rain and snow and hogs will huddle together and keep themselves warm. If one pig is kept by itself with plenty of straw it will entirely bury itself in it to keep warm.

OATS FOR WEANING COLTS.

The colt that is taken from its dam in the fall has a hard time of it the first winter, all the harder too for the prevalent idea that a little hardship at this time is no detriment, causing the animal to be tougher. On the contrary, there is no time in a horse's life when liberal feeding is more necessary or will pay better. Oats are even more necessary for the colt while growing than for the old horse while working or being driven.

IRON IN SAP.

Iron is an important part of the blood, giving its red color, but this does not necessitate taking solutions of iron for health. All well developed vegetation contains some iron. It is the coloring matter of green leaves. In soils from which every trace of iron has been removed seeds will germinate but they will be white. Pouring a solution of copperas or sulphate of iron on the soil will change the leaves to a dark green color.

FROST ON POTATOES.

A light frost after potatoes have fully ripened does them little or no harm. If a potato sticks above the surface it will not be made worthless; but such a specimen has already been spoiled by sun-burning for any other purpose than planting. Some kinds of potatoes set more deeply in the ground than others. In old times, when Peachblow potatoes were grown, we have dug them where in the morning the ground would be frozen half an inch deep, yet no potatoes were injured.

BEDDING THE BARNYARD.

It is astonishing how large an amount of straw can be worked down into manure with even a little stock, provided the barnyard is well covered. The first thing to be done when stock is put up is to spread straw to the depth of one or two feet. This will make a bed to save both solid and liquid droppings. Sheep, with their small feet will work down a big stack very soon, and if well fed make a manure that will tell wherever it is applied. One of the best foods for making manure is bean straw, which other stock do not relish, but of which sheep are very fond.

MAKING VINEGAR QUICKLY.

It is the union of oxygen with the sugar in fermentation of cider that changes it to vinegar. The more rapidly air is brought into contact with the cider, the faster the desired change will occur. Cider for vinegar should not be hurried into the cellar, but be left where it will be convenient to draw a little daily and return to the barrel. This will introduce a considerable quantity of fresh air into the barrel. Pouring cider through coarse straw or shavings is also recomended, as the more finely the liquid is divided the greater the quantity of air it will come in contact with.

STONE DRAINS.

If well laid a stone drain should last as long as one of tile. If a considerable amount of stone is used and there is a good outlet a stone drain will never fill up so that some water will not pass through it. Too great a fall or too large an amount of water are each apt to displace stones. Hence attempts to make the stone in the form of an arch often fail. One side or the other is liable to be displaced, and presently a stone is pushed into the channel. Earth accumulates around this and the efficiency of the drain is impaired. Tile set in a ditch just wide enough to receive it cannot easily be displaced.

CASTOR BEANS.

The success which many persons have in growing the castor oil bean in private gardens naturally suggests the query why they cannot be grown with equal success on a large scale for the market. They require a pretty long season and very rich soil, richer than is needed for any grain crop. The reason why they are not more generally grown is because it requires extensive machinery to extract the oil. The only market for any large quantity of castor beans is in St. Louis and the crop is generally grown for market near that place. It is successfully grown on rich bottom lands in Missouri and Kansas.

THE BEST HAY CHEAPEST.

There are few markets in which enough difference is made in the price of hay on account of quality. Excepting those who feed fancy horses, few men are particular enough what they give to their teams. Hay full of weeds and stained withal sells within two or three dollars per ton as high as that which is bright and good. The higher priced is generally the cheapest, even leaving out the comfort and satisfaction of stock eating it. There is only one exception to this rule. Clover hay is always low in price. Even when well cured it usually sells low. Much clover however is badly stained and often musty, as it is the kind of hay most difficult to cure well.

SAVING OLD SOWS.

This is the time of the year when hogs are put up for fattening. There will be a temptation on the part of farmers to fatten sows after their first or second litter of pigs. Yet in most cases this will be a great mistake. The litters improve in size and quality as the sow grows older. If she is a good mother her milk will also increase until she is three or four years old, and has got all the growth of which she is capable. Even after this it will pay to keep her for breeding if she has developed no bad habits, eating her young and breaking out of enclosures. An old sow may have three litters a year if well cared for, and not be injured so much as a younger sow will by two litters. Too early killing of breeding sows is one of the reasons why pork growing is not more profitable.

KEEPING GRAPES FRESH FOR WINTER.

Few are aware how easily grapes can be kept fresh for winter use, provided the right varieties are selected. Concords and the most of the very early grapes are poor keepers. The later varieties of Rogers grapes, Agawam, Barry and Wilder are among the best having thick tough skins. If the Catawba is well ripened it is also a good keeper. Pick them on a dry day when fully ripe, touch the stem and where it breaks from the vine with sealing wax to prevent evaporation, and hang in a cool dry room where the temperature will always be a little above freezing. Well-ripened grapes, however will not be injured by a temperature for a few hours below freezing, and which would destroy those not thoroughly ripened. Grapes can be kept until midwinter, and with care even longer.

PRUNING PEACH TREES.

Peach trees require pruning to keep them in shape. The fruit is borne on the ends of the limbs, and if not pruned occasionally they invariably get scraggy. When a non-bearing year occurs, the trees may be generally shortened in. This will allow for new and compact growth and should be performed as early as it is found the season will not be a bearing one, or as early in the spring as possible. If a portion of the fruit is killed prune back such portions and early in the fall the balance of the tree may be pruned the succeeding year. Thus, by the exercise of judgment, the trees may be kept in good shape, and without seriously interfering with fruitful years. In fact, not at all, for the fruit will be larger and finer in every way. It is allowing trees to be overloaded with inferior-sized fruit that cuts off profits.—*Farm, Field and Stockman.*

FATTENING WITH BRAN.

On Oakwood Farm near Minneapolis, Minn., fifteen steers are kept on a regimen that makes common wheat bran an object of scientific enquiry, the purpose being to determine what value it has as a fat and flesh producing food. These cattle were put on bran and hay the first day of last June and at the end of sixty days all had made a substantial gain. The facts are reported in the *Northwestern Miller* the conditions as follows:

"When this matter was first considered, I urged Mr. Pilbury to get his cattle then and begin the feeding in the summer, in order that the heat and the flies might do their worst to defeat our object. I thought that the test at this time of the year would be the most severe which could be made, and if the results were good, it would prove that for an all-the-year-round fattener it is a great success, as well as the most economical feed. If you could go out to the farm on one of the hot days and watch the animals pant and fight flies, you would readily admit that we are testing the value of bran to the limit. Whatever the result under these conditions it may be relied on that the figures are the lowest that can be made in any season, for the heat and the flies in Minnesota this year beat all previous records."

As we stated in the first article on this subject, the fifteen steers being fed are all "scrub" stock, but one showing any signs of good blood. All the grass they had this year they got in May, and Dakota grass in May is short and hard to get. Since June 1 they have lived on bran, hay, salt and water. The second month was by far the hottest and was most trying to the cattle, and flies multiplying at a rate which threatened their total extinction.

Accompanying the report is a tabular statement from which we gather facts that must have important bearing on the question of value of wheat bran as food for cattle. Thus for the fifteen steers two periods of thirty days each:

Av. daily ration of bran, each month	12½ lbs
Av. daily ration of hay, each, first month	16⅔ lbs
Av. daily gain, each, first month	3½ lbs
Av. daily ration of bran, all, second month	406⅔ lbs
Av. daily ration of hay, all, second month	475 lbs
Av. daily gain, all, second month	108 lbs
Av. gain, each, two months	144 lbs
Total bran fed	11,620 lbs
Total hay fed	14,620 lbs

It will be observed that the daily average of gain for each steer in the sixty days was two and four tenths pounds. The greatest gain was three and a half pounds daily increase through the whole period 217 lbs. But a large part of this gain was in the first thirty days when five steers increased their weight four or five pounds each daily, and one nearly five and a half pounds—172 lbs. in 30 days. In the second period this same steer gained but 45 lbs. and there were but two that gained more—each 50 lbs. Without doubt unnecessary exposure to annoyance from flies in the month of July had effect in lessening gain.

The *Miller* remarks: "The consumption of bran the second month was greater than the first, the practice being to increase the feed when the box was cleaned out by the animal, and all have steadily increased their eonsnmption, though some are naturally greater eaters than others."—*Agriculture.*

FARM EXPERIMENTS.

Whatever may be the value of investigations at the public experiment stations of the several States instituting them, they are no less valuable on the farm. Experiment Stations may demonstrate generally, but each farmer to receive the best results from these experiments must also investigate for himself.

Here is a case in point. An Experiment Station investigating the values of perhaps twenty varieties of wheat, gives the several values of these varieties in that special climate and in that soil. It does not follow that these varieties stated to do best there, will do so in another locality even though the soil may be similar so far as the farmer may be able to judge. But the probability is they will do so aside from liability to freeze out, mildew, rust, or the occurrence of other disease. Experiments by the farmer may easily decide this.

How to do this most economically it is well to know. The cheapest and best means we have found, where small packages are received for experiment, is to lay out the land selected into regular plots, with spaces between for separation, one from the other. Sow the seed in regular drills one foot or more apart. For wheat or rye the seed may be dropped four to six inches apart, for barley somewhat thicker, and for oats say three inches apart. These plots may easily be kept clean, and a careful record being kept, a fair determination of the several values of the varieties may be arrived at.

But one season's experiment does not satisfy absolutely: As soon as a yield is obtained sufficient to sow broadcast, or to drill by a machine, cultivate in the ordinary manner. Thus, in a few years, the value of a variety may be fairly determined, in accordance with varying seasons. In the meantime very little will have been lost in conducting the experiments, and each farmer will have gotten varieties best adapted to his climate and situation.

In the same manner the farmer may experiment in relation to the applicaton of fertilizers for special crops, or thick or thin, early or late seeding, or methods of seeding, methods of cultivation, winter protection, etc., etc. In examining varieties with a view of forming an opinion as to comparative values, the habit, growth, appearance of the plant and the grain must be taken into careful consideration. The time of seeding will also be a necessary record, especially since earliness in ripening is one of the most important values in a variety of grain. If these points are carefully written down they will form a most valuable record in determining the actual value of a grain or plant after several year's cultivation, under which its average value one year with another may be correctly estimated.—*Farm, Field and Stockman.*

AGE OF SHEEP.

Please give some reliable method for learning the age of sheep.—MRS. E. C. B.

ANSWER.—The age of sheep is determined by its teeth.

At one month, eight front milk teeth in lower jaw, and three temporary grinders in each jaw, upper and lower, or twenty teeth in all.

At three months a permanent grinder is added to the three temporary grinders in each jaw.

At nine months an additional or second permanent grinder appears in each jaw.

At fourteen months the two middle milk teeth (incisors) are shed and permanent grinders appear.

At eighteen months the third permanent grinders appear.

At twenty-one months two more permanent incisors appear.

At twenty-seven months the temporary grinders are shed, and permanent ones take their place.

At thirty months there are six permanent incisors.

At thirty-six to forty-two months there are eight permanent incisors; that is, all the temporary teeth have been shed and replaced by permanent ones, and the sheep is said to be "full mouthed." In some of the early maturing breeds, like the Cotswold, it is said that animals often become "full mouthed" six months earlier than the time given above. A full-mouthed sheep is regarded as full grown. A lamb is regarded as becoming a sheep when it has two permanent incisors or when it is fourteen months old.—*Southern Cultivator.*

PLANTS USED BY MAN.

It is estimated that about 3,000 different plants are used by man. Of these about 2,500 are cultivated in America. The varieties used for food do not exceed 600. Of edible fruits and seeds there are 100 classed as vegetables, 100 as roots and bulbs. fifty varieties of grain, about twenty of which produce sugar and syrup. In addition to this, perhaps thirty kinds will yield oil and six kinds wine. The number of medicine-supply plants is nearly double that of the fruit-yielding, amounting to 1,140 about 350 of which are employed in the various branches of industry. Of the latter, seventy-six furnish dyestuff, eight wax, sixteen salt, and more than forty supply food for cattle. There are no fewer than 250 kinds of poisonous plants cutivated, among which are only sixty-six narcotic, the remainder being classed as deadly poisons.—*Farm, Field and Stockman.*

INCREASE OF TOBACCO PRODUCTION.

The rapid increase in the production of tobacco in Virginia is shown by the fact that, during the trade year ended September 30, Lynchburg handled 50,000,000 lbs. and Danville 40,000,000 lbs., or in other words, 90,000,000 lbs. were sold in these two cities alone, whereas in 1880 the entire tobacco production of the state was only 79,900,000 lbs. The growth of this industry in five years in North Carolina has probably been equally as large as in Virginia, and one of the most satisfactory features of the business in both States has been that instead of this tobacco being shipped away in the leaf, it has been manufactured at home. Tobacco factories by the dozen have been built throughout the tobacco sections of these two States, and thousands of hands have thus found steady employment. Lynchburg, Richmond, Petersburg, Danville, Martinsville, Abingdon, Durham, Reidsville and many other places have grown rapidly in population and wealth through the manufacture of tobacco.—*Baltimore Journal of Commerce.*

THE GREAT WEST.

That our readers may learn something of the disadvantages attending a life in the great west, we give the following extract from a letter to *The Farm and Fireside*, from a Dakota correspondent:

"A four years' residence here has enabled me to speak advisedly, and when I say 'that there is not one who came out here and has depended on farming for an income but that has gone down hill, I but speak the simple truth. True those who came full-handed and loaned their money, or invested it in stock, or went back to some reservation or isolated place and escaped taxation have made money. Crops are short, and prices low. Wheat five to fifteen bushels per acre, price 40@48 cents; oats 15 to 35 bushels, 15@18 cents per bushel; corn of previous years fair, but most of it frost-bitten; flax, 4, to 10 bushels per acre, 80@90 cents per bushel; milk, no sale; butter, 3 cents per pound; eggs, 5 cents per dozen; livestock, 1½@2½ cents per pound. Now look on the other side: Soft coal, $8 per ton, hard $13; dried fruits 9 to 20 cents per pound, owing to kind and quality. The high price of fuel has driven even well-to-do people to the use of hay, corn-stalks, flax straw, and through the summer season almost all residing in the rural districts have used cow chips for fuel. Add to this a third of a man's time for hauling water, and your readers will have something of a correct idea of the inconveniences and expense of living in a new country. I might add that, with rare exceptions, it is impossible for laboring men to get employment. The advantages are health and presumably long life. The disadvantages are no market, no fuel, no water, no fruit, no demand for labor."

SHY CHILDREN.

We ought to be tender with naturally shy children. The agonies these little people have to go through, they alone understand. But those of us who have passed through the the same ordeal can remember what we suffered in our days of small beginnings and unused experiences and by ourselves we can judge for them. To be told to go and speak to a stranger—to be taken between his knees and kissed by a big dark man with a scrubby beard and a red nose—to be asked, when older to repeat that bit of poetry which it is as much as the poor stammerer can do to say to his governess calmly—to be made play that sonata before a proficient—to be sent down to dinner with a spectacled stranger who has a reputation—to be taken out to drive with a formidable old aunt who asks questions and finds fault—to be, in fact, initiated from childhood upward in any of the necessary procedures of life—is to be simply tortured. We would not force a weakly child to take the exercise of a healthy, strong and powerful one; nor should we force a shy child to moral exertion oversevere for its constitution.—*Ex.*

—The largest clock ever known is that in the cathedral at Strasburg. It is one hundred feet long, thirty feet wide and fourteen feet deep, and has been in use for 300 years.