PREPARE THE HOTBED NOW.

Most people wait until it is too late before beginning to make preparations for the flower and kitchen garden. The result is a poor display of flowers and a late supply of many vegetables.

Now is the time to get the hotbed ready for next spring. Any farmer can make one with a little trouble. A convenient size is 4½ x 7 feet. The sides of the frame, which should be from a foot to sixteen inches in depth, can be made with cleats, into which the ends fit, and a hook and staple at each corner will hold them there so that they will not spread apart. By having them made in this way they are readily taken apart when the season is over and stored until wanted again. The frames can also be made in one piece by fastening the ends to the sides, and likely this form will suit the farmer best, as it can be set up in a convenient place and may remain there.

Those who have hotbeds should clean out all the old manure and spread it on the lawn, strawberry bed, or the garden. New soil should be made up for the hotbed and thrown into it. Then cover all with boards, so as to keep out the snow, and it will be a very simple matter to get the hotbed ready in the spring when it is wanted. If the manure is left in the frame, it may be frozen solid when the time comes to make the hotbed in the spring.

Every farmer should have a hotbed, not simply for flowers only, but for early vegetables that can be grown in it long before they can be obtained out of doors.

HOW TO GROW TULIPS.

The ladies in Germany take great pride in having their windows filled with a nice collection of plants. Their favorite plants in the winter, for decorating the windows, are the tulip, the narcissus, and the lily of the valley. They are very successful with the tulip, and one beauty about them is that they require so little work, that any farmer's daughter can have a window full of bloom at very small cost. First procure good healthy bulbs and secure a number of ordinary flower pots from four to five inches in diameter. Fill these pots to within an inch of the top with good garden loam, then set in three bulbs in each pot equal distances apart and not too close to the side. Now cover the bulbs with more earth, water sparingly unless the ground is very dry, and they are ready to go into the cellar or a dark room free from frost. They should be covered with sand and allowed to stay there for from four to eight weeks. At the end of this time they should be examined to see if they have started to grow. Any that have may be taken up to a suitable place for blooming. This they will do in from three to four weeks, and if not kept too warm the bloom will last for more than four weeks. The best temperature is from 50 to 55 degrees Fahr. In order to have them in bloom the whole winter only remove a few at a time from the cellar, and keep up a supply there.

The narcissus can be treated in a similar way, so also can the hyacinth. These plants require very little light and a moderately low temperature, hence are particularly suited to our climate.

QUESTIONS AND ANSWERS.

FREEMARTINS.

W.J.P., Kingston.—I have a pair of twin calves, one a heifer the other a bull. My neighbors tell me that the heifer will not breed. They call her a freemartin. Will you please tell me if this is true? Can you give any reason for it if it is true?

ANS.—The general experience of those who have twins, such as you mention, is that the heifer will not breed. That much we know; but *why* we don't know. Some light has been thrown upon this subject lately in a work on the "Evolution of the Sex," by Messrs. Thomson and Geddes. They quote from the observations of Spiegelberg. A distinction is drawn between "true" twins and twins which are not "true." They are produced, like true twins, two at a birth; but the distinction is this: whilst true twins are two organisms developed from one and the same ovum; the untrue, false or sham twins, are developed from different ova. Thus pairs, developed from different ova, are not true twins, although produced at one birth.

According to Spiegelberg and his co-workers in examination of ascertainable embryological facts, twins in cattle all come under one or another of the following three heads: (1) Both female, and both normal; (2) of different sexes, both normal; and (3) both male, one a freemartin. This is quite different to the common idea that a freemartin is a heifer with somewhat defective reproductive organs. According to this authority the freemartin is not an imperfectly developed heifer but an *undeveloped bull.*

We all know that twin heifers are usually as capable of breeding as single born heifers, so there is no difficulty about the first class. But that when of different sex that they should be normal seems to be strange. They must be the exceptions, and the only explanation seems to be that they are true twins developed from one ovum. Class (3), however, is the most interesting one, for most breeders must *have met with cases of twin born bulls* and both of them having proved fruitful The only explanation of this is that they must have been developed from different ova, and therefore could not have been *true* twins. But why the "freemartin" takes on female characters, and instead of being a heifer is really a male in disguise, is not explained We will have to wait for fuller explanations on this subject.

BLACK TEETH

C.P.—I was feeding swill to ten young pigs, about two months old, from an old butter tub, into which about a gallon of elm ashes was thrown one day. In a couple of days after this half of the pigs were sick. They worked their mouths and frothed a little. Some of them jerked, trembled, and then would lie down, others would wander around as if blind. They did not squeal, and would not even if handled. When they came to the trough they could not eat, but would root the feed and run around. Three died and two are getting better, but they had to be fed for a few days. They had plenty of room and a dry bed. They were fed on meal consisting of a mixture of barley, oats, buckwheat and some peas. They also had some pulped turnips. Might the trouble be caused by the ashes?

Is there such a thing as black teeth in pigs?

ANS.—(1) From the symptoms given it would seem as though the trouble was caused by the feed. Such a dose of ashes would likely cause serious trouble in the stomach.

(2) There is no such disease as black teeth affecting pigs. Veterinarians call it a humbug. Black teeth will be found sometimes in a young pig's mouth. Very often, when a sow carries her pigs beyond her usual gestation period, the teeth of the little pigs make an abnormal growth, become discolored, and hence are called "black teeth." These teeth are sometimes too long, and pierce the gum of the other jaw, thus causing pain and preventing the pig eating. The remedy is to break them off; but "black teeth" is not a disease.

CORRESPONDENCE.

The replies to the questions on the care and management of swine are continued this week; also a number of letters on the management and feeding of dairy stock.

(1) What is your method of housing pigs during the winter?

(2) Do you allow pigs to run out during the winter for part of the day, or do you prefer to keep them inside all the time?

(3) What is your method of keeping the piggery and pens clean?

(4) What kind of feed has given you the best results for the winter feeding of pigs for the market?

(5) If grain is fed, do you feed it wet or dry?

(6) Do you feed turnips to pigs, and if so, in what way?

(7) Have you any special way of caring for and feeding stock boars and brood sows during the winter?

Editor of FARMING.

SIR,—(1) In a frame hog pen, double boarded with tar paper between, five pigs in each pen.

(2) We let out the different pens for a little while on fine days, but rely mainly on the sunlight through a good window in the south side of each pen.

(3) We give them clean bedding every second day and clean the pens out twice a week.

(4, 5 and 6) I have tried several different mixtures of feed and ways of feeding, but am now pursuing the following with best results for *cheap* production. We pulp the turnips first, then boil them in an agricultural furnace with sufficient water, but no grain. This is then mixed as hot as can be handled with barley meal, middlings and bran, equal proportions of each kind of grain evenly mixed together. As much of the mixture is stirred into the boiled turnips as they will absorb, this is fed warm morning and evening, all the pigs will eat. At noon we give them a few mangolds. Some skim-milk is fed also morning and evening. We have been able to produce pigs under 100 lbs. weight at 1½ cents per lb., and from that weight up to 200 lbs. the cost has increased to 2½ cts. per lb.

(7) We keep from four to five brood sows—Tamworths. They are kept in a pen and yard away from the store pigs and fed a liberal allowance of grain and mangolds, and allowed plenty of exercise. I have them bred twice a year. We feed the small pigs liberally, and keep them growing right from birth to the block.

We have raised and fattened about ninety during the past year. We also mix salts ashes and sulphur together and allow the growing pigs free access to all they will eat of it. Once a week we give them some of the dirt out of the root cellar. This keeps their digestion good and their blood in a healthy condition.

W. C. SHEARER.
Sprucedale Farm, Bright, Ont.

Editor of FARMING:

SIR,—(1) We keep them in a dry, warm, clean, comfortable house well lighted and ventilated and easily cleaned.

(2) We always allow them to run out into small separate yards just outside of the winter house, except in very cold stormy days.

(3) (See description of Mr. Tillson's piggery in another column.)

(4) We find that barley meal, wheat bran, shorts and pea meal (the siftings from split peas) all mixed together with warm fresh separator skim-milk has been our best food. When potatoes are very low in price and unsalable we cook and mash the potatoes and mix them with the meal. Occasionally we feed mangolds (raw) to keep the pigs in good health.

(5) During cold weather we feed grain dry, but generally it is fed wet. Sometimes it is mixed in barrels and let stand one day before feeding. We also feed corn ensilage in winter to brood sows and to growing or store pigs.

(6) We never have fed turnips; think mangolds are better.

(7) We feed our stock boars and brood sows on lighter feed with more roots, roughage, and they are allowed more exercise.

E. D. TILLSON.
The Annandale Farm,
Tilsonburg, Ont.

Editor of FARMING.

SIR,—(1) Our pig house is a frame building, close boarded on outside, sheeted, tar papered, and again boarded on inside, concrete floor and troughs. It faces the south, with a window in each compartment.

(2) We confine pigs to the pen, except occasionally, on a fine day for a short while.

(3) There is a door on the south side of the pens, opening into the barnyard. The manure from the pens is thrown out and removed to the field every few days. Plenty of straw is used to retain all moisture, and the pens are kept strictly clean. We are careful to change the straw of their sleeping nest at least twice a week. This is absolutely essential to the health of young pigs.

(4) We find the best results from feeding mixed grain, such as oats, peas and barley (all ground fine), with equal bulk of bran. Each day's feed is mixed in a barrel with the milk from the separator and washings from the dairy, and fed as a slop. The last six weeks of feeding we reduce the amount of bran. We always feed a little oil cake meal to our growing pigs.

(5 and 6) In the absence of milk there is nothing better for winter feeding than turnips or other roots. We pulp the turnips and mix them and the