certain stipulations that guarantee merit as milkers in the winners. The Association encourages the keeping of milk records, and the work is so successful that this performance certificate is becoming as important a factor in the sale of an animal as is the pedigree of breeding.

This movement is intended to meet a great want felt by the British dairy farmers. It is a want which is felt in Canada, as well, for, with the growth of specialized dairying there has been a growing scarcity of beef cattle of the right kind, or, in truth, any kind.

Suggestions Re Abortion.

In the Journal of the Board of Agriculture of England for September, the Departmental Committee of Epizootic Abortion make report of their investigation, for the purpose of introducing administrative measures for the prevention of this disease. This committee finds that the disease has a very serious hold on the cattle stock of the country, and is constantly being spread. It thinks that private effort is foredoomed to failure in attempting to combat the disease, and consequently recommends a preliminary measure under the Board of Agriculture, requiring:

1. Compulsory notification of suspected cases of the disease.
2. Veterinary inquiry to establish the existence of disease on any particular premises.
3. Temporary isolation and restrictions on the movement of any cow that has recently aborted.

THE FARM.

Selecting Seed Corn.

Where possible the proper place for the selection of seed corn is in the field where it has grown, and in most parts of Eastern Canada this should take place in the first week of September. The next choice of selection is from the shock, where the corn is still on its parent stock, thus allowing for its consideration. During the process of selection, says the Minnesota Experiment Station, in a special bulletin on this subject, consideration of the strength and character of the stalk, the height of the ear from the ground, and the size of the shank, should be noted. A stalk does not necessarily have to be large to be a big producer. A tall, spindling plant lodges very easily. The stalk should be of good size and strong at the base, gradually tapering, and not necessarily tall. Strong, vigorous stalks, of medium height usually produce the best and earliest-matured ears. The ear should be attached to the stalk by a medium-sized shank which is long enough to allow the tip of the ear to hang down.

All ears in a corn field will not mature at the same time. A variation of fifteen days in maturing of ears in a field is not uncommon. One of the reasons why a good selection of seed corn cannot be made from the shock, or from the field in late fall, is that one is not able to tell the time the ear matured.

Desirable ears may mature ten or fifteen days later than the average freezing-time; and, if those are selected, they will insure a late-maturing crop. Again, if corn is left unhusked until late, the husks prevent the ear from drying out properly; and, as a consequence, it is likely to be frozen before it is husked, or, at least, before it has had time to dry out after husking.

In the choice of corn for seed, one selects the ears that he believes will give him the largest yield of good corn the following year. It is a good plan to choose an ear of corn that is as near the type wanted as possible; then, keep this ear from year to year, or until you get a better one. At any rate, have a sample ear that you can look at occasionally to help you in following one type. Keep this type-ear handy when selecting corn in the fall; and in the spring, when the final selection is made, it is well to compare all ears carefully with the type-ear.

A common practice is to select ears that are too large. It is much better to grow three medium-sized mature ears to the hill than to grow three larger immature ears per hill. As a general rule, the larger the cob and the deeper the kernel, the longer it will take for the ear to mature.

Indications of immaturity are looseness of kernels on the cob, a high percentage of moisture, chaffiness or thin, small, poorly-developed kernels, a difference of the tip-cap to the cob, and generally a large amount of white starch.

It has been learned, by many tests, that ears of a certain form yield more than other ears differ ent from the standard form. Ears of corn likely to give the best results carry the butt diameter well toward the tip; they are free from indentations or other irregularities that would tend to decrease the vitality of the ear; they have straight, regular rows of uniform kernels, and have kernels extending well over the tip and butt.

The rows of kernels should round well down over the butt, and extend well over the tip (not necessarily clear over), thus insuring a good proportion of corn to cob. The rows should run straight from the butt to the tip, because, in crooked rows, there are more irregular kernels, and kernels of irregular size make it impossible to plant a uniform number in each hill.

The furrows between the rows of kernels should be wide and deep. If there is scarcely any furrow, and the crowns of the kernels touch, it will be found that the ears are hard to dry. To be right, the furrows should be merely distinguishing grooves between the rows of kernels.

Nothing will aid more in making a high yield of shelled corn than a deep, well-formed kernel. But do not select a too deep kernel, because, the deeper the kernel, the greater is the length of time required to mature it, and, above all other things, maturity is the first consideration. A good dent kernel will be somewhat wedge-shaped, about half again as broad at the top as at the bottom. Flint corn has a more rounding shape, being often as broad or broader than deep. A corn-planter can plant a uniform number of kernels in each hill only when the kernels are of uniform size. To secure this, the kernels of selected seed corn must be all nearly the same size, not only on one ear, but throughout the whole selection.

Diaphram Air Chamber for Hydraulic Ram.

Editor "The Farmer's Advocate":

In your issue of Sept. 15th., Edgar M. Zavitz asks for remedy to prevent the loss of air in hydraulic ram. Twenty-one years ago I installed a ram; at first I had the same trouble as he has, and until I got a diaphram air-chamber, 15 years ago, and since then we have had practically no trouble in this, or, in fact, any other respect. A diaphram air-chamber is one divided in the middle with a sheet of leather and rubber to keep the water from the upper half. The leather and rubber naturally work with the pressure from stroke, and eventually give out, and a renewal is necessary, on an average, once a year with us, and it is easily accomplished. Many times our ram has run 18 months without a stop or any attention. I sent a template of the bed of my ram to Messrs. Rumsey & Co., Seneca Falls, N. Y., and they sent me the diaphram air-chamber (No. 3), which cost $3.00 there.

We do not hear the pumping sound complained of, but we hear the water running, it's sweet music—strangers do not say it's annoying, but "Isn't that great!" Pure spring water in the house and barn; it beats town waterworks hollow.

CHAS. R. B. BRYAN.

Picton Co., N. S.

Prizes were offered at the Essex Agricultural Show, in England, for length of service on one farm. The first-prize winner had the remarkable record of working at Hole Farm, Finchingfield, for seventy-one years. He started at ten years of age as a plowboy, and during his long service there have been five masters. The man was married on wages of 8s. a week and a cottage, and has never earned over 14s. at any time. He was certainly an example of faithfulness and frugality.

Soil Fertility: A British Discovery.

(Our English correspondence.)

What was described by Prof. Hall, of the Rothamsted Station, as the most important contribution to the knowledge of soils that had been made since the discovery of the fixation of nitrogen, was the subject of a paper at the British Association meeting at Sheffield, Eng.

The paper was a summary of the results of experiments made by Drs. Russell and Hutchinson, at Rothamsted, to determine the part played by micro-organisms, other than bacteria, in the production of fertility in soils. It appears that when soils are sterilized by heat, or an antiseptic, such as toluene, a large increase of productiveness follows. Soon after treatment, plant food is formed by bacteria at an increased rate, and the bacteria themselves increase more rapidly. This improvement is not owing to greater vigor of the bacteria, because that is lessened by the treatment.

Thus it appears to be a question of environment. Should untreated soil be added, a detrimental effect follows after a time. There is something in untreated soil that is against bacterial growth, and the experiments lead to the belief that such soil contains organisms, probably protozoan in character, capable of checking bacterial growth. At present, only about 50 per cent. of the nitrogen applied to soils in manures of various kinds is recovered—the balance is lost. If, by some process of sterilization, injurious organisms can be destroyed, it may be possible to recover 75 per cent. or 80 per cent., and this would be an enormous gain to farmers. At present the whole matter is in the experimental stage. Fertility in soils was the subject of another interesting paper by Prof. Hall. The paper dealt with the theories that have been advanced as to what constitutes the fertility of the soil. Prof. Hall stated that there was no simple solution of the question; no one cause, but many, of the fertility of the soil. Many factors enter into the matter, any one of which might at a given time become a limiting factor, and determine the growth of the plant. One indispensable requisite was a supply of combined nitrogen.

The science of agriculture was so very young that it was unsafe to be dogmatic. The magnitude of crops was more often limited by want of water than by any other single factor.

Cutting Sugar-cane.

The question of the proper time of cutting sugar cane has recently been raised by a correspondent. On this subject, one of the most enthusiastic growers of this plant states that it should be cut before much frost, regardless of its stage of maturity, as freezing destroys its keeping qualities and dries it out. It is preferable to stand it in large shocks in the field, where it will keep well until needed. It does not make good silage, since it becomes too sour, on account of its high sugar content.

Spicy's Lady and Spicy's Lady 2nd.

First in class for produce of a cow at Toronto and London, 1910. Both sired by Spicy Marquis; dam English Lady 30th. Age four and two years, respectively. Spicy's Lady was grand champion at Toronto, 1909, and at London, 1910. Bred and owned by Sir Wm. Van Horne, East Selkirk, Manitoba.