

and soda are the strongest of all alkalis. Lime and magnesia come next. The alkalis are valuable not only in giving directly what the plants require, but in preparing other matter for their use by rendering it soluble. He would advise an application of the liquid on the land before the seed is sown, or in a diluted form upon the growing plants, so that it may come in contact with the roots. He thought the liquid could be used to good purpose upon lands for the purpose of destroying weeds.

As 7,200 gallons of this liquid were run down the stream from his mill at Herkimer as waste material, he would be glad to have farmers experiment with it. They could have all they wanted at no cost. He said some experiments had been made to utilize this material in soap-making, and the stream, while running off the liquid, presented the appearance of a mass of soap suds. The water at these times was excellent for washing clothes. It readily cleaned them of dirt.

The growing of rye was strongly recommended both on account of the value of the straw, and the utility of the crop on a dairy farm.

Mr. S. S. Whitman, of Little Falls, said he had learned by experience that it was necessary to exercise care in the application of fertilizers. He had applied manure from beneath his stables to melons and cucumbers, and it killed the vines, had tried gas lime upon meadows and it killed the grass. The truth was it too much was applied; it was too strong, and should have been diluted.

Another speaker, Mr. Otney, of Southbridge, Massachusetts, urged the importance of bone and bone dust as a fertilizer. He said that at the East, bone manures are coming largely into use. Formerly, there had been great trouble from grain rusting, but he had never heard of rust attacking a piece of grain raised on bone. As a top-dressing, he would advise the use of fine bone, but where it was to be worked in the soil, coarse bone would be more economical. For gardeners, nothing was found to forward vegetables with such rapidity as a good article of phosphate. The great trouble in this class of fertilizers has been the difficulty of getting a reliable article. Farmers at the East say that they can buy phosphates and use them as cheaply for the corn crop as the cost of dropping barnyard manure in the hill. In addition, the phosphate hastens the ripening of the crop at least ten days to two weeks. Bone manure was particularly recommended for wet lands, and an instance was given of a farmer who had a low, wet piece of land, that was not producing anything of value. He boned it at the rate of 400 lbs. to the acre, and it brought in a luxuriant growth of white clover and the finer grasses. This was the universal testimony of farmers who had applied it to this character of lands. Upon dry lands the bone was longer in decomposing than upon moist soils. Mr. Aluey made some further remarks on the importance of preparing composts under cover, and stated that the liquid referred to by Mr. Miller as waste of paper mills, is considered of value in composting. He spoke of an instance, where a farmer had used it in its undiluted state to kill out weeds and worthless vegetable matter. It put the ground in splendid condition, destroying every weed.

The use of bone meal as an adjunct to the feed of stock, especially milch cows was strongly urged by the same speaker, who observed that young and growing animals were very fond of it. Calves would gladly lap it from the hand. There was no danger in feeding it. Cows would eat what they required, and no more. Those that did not need it would not touch it. He thought dairymen would do well to feed this article to cows, since they were called upon to supply a considerable quantity in their milk and in the production of their young. There was a difference between milch cows and oxen in their appetite for bones. Had never seen or heard of an ox picking up and trying to chew a refuse bone, whilst with milch cows it was quite common.

The foregoing discussions are of value on account of the information given, and the practical experience detailed, and we cordially commend the example of the Little Falls Farmers' Club to Canadian agriculturists.

Degeneracy of Wheat.

E. S. Todd, in the *New York Times*, combating the idea that there is, as asserted by some writers, a natural tendency in some varieties of wheat to run out or degenerate, says:—

"On the borders of the River Nile, in Africa, one of the finest regions in the world for the production of excellent wheat, the same varieties are grown from year to year, without the least deterioration, that were cultivated three thousand years ago. And the same thing may be done in this country by exercising the same care in the selection of the seed that is observed by the farmers in that part of the world.

"It is a well-established fact that wheat will hybridize when different varieties are allowed to grow in close proximity. Of course, the product would be a mixture of seed, in which the purity of the variety is gone. Consequently, with a mixture of seed, a farmer would find himself in the same circumstances, with reference to the improvement of his wheat, that he is when he undertakes to improve his domestic animals by breeding from mongrels or from grade stock. It is well understood that such animals—grades and mongrels—when employed as breeders, never transmit the excellent points of desirable form and symmetry to their offspring with reliable certainty, while pure-bred animals never fail in this respect.

"The same facts hold good in the vegetable kingdom, with seed wheat in particular. When different varieties are sown in close proximity, and the product, which will be an impure grain, is again employed for seed, a pure variety of choice wheat may be run out most effectually in a few years, so that intelligent farmers, who were only superficial observers, would be ready to affirm, without any hesitancy, that wheat does degenerate. The cause of degeneracy, and the remedy, may all be expressed in a few words. We have already hinted at the cause, namely: sowing different varieties near each other, so that the grain will hybridize; threshing several kinds together, and continuing to employ such grain for seed from year to year. Herein lies the whole secret of the degeneracy of varieties. If a pure variety be kept by itself with suitable care, and cultivated on good ground, and the grain never threshed with other wheat, the purity of a variety of wheat, with all its excellent characteristics, may be maintained intact as long as wheat may be cultivated. There is no uncertainty about this suggestion. The idea is in perfect keeping with the established laws of vegetable physiology. Cultivating any variety of grain in a slipshod, slack and perfunctory manner, will cause the best variety of wheat the world ever knew to degenerate and run completely out in a few years. On the contrary, if the seed be selected every season with the same care that the originator of the Weeks wheat observed for a decade of years, generations unborn would cultivate the same varieties that our fields now produce, without the least deterioration in either yield or quality of grain."

RECLAMATION OF LAND IN HOLLAND.—A report by Mr. Thurlow, secretary to the British Legation at the Hague, gives a description of the *polders* or drained lakes, of which Haarlem Meer is the most notable example. It appears that after being pumped dry the area is cut up into parallelograms, which are frequently not much larger than an acre each, and are separated by primary canals. These drain the land in wet seasons and irrigate it in time of drought, as well as forming a highway for the small boats which take the place of the English tumbrel or waggon. A certain number of parallelograms are formed into a group, and pump their superfluous drainage into transverse canals, which communicate with the main outlets to the sea. In one case there are no less than four canal systems with different levels, through all of which every drop of water must pass in order to reach the ring dyke which girdles the *polder*. This dyke is constructed in duplicate, with an intervening space of fifteen or twenty meters, and water-works are erected on its banks. These dry lakes do not afterwards leak to any great extent, and the rain-falls seldom excessive, being pumped out by ordinary windmills before the 1st of May. The health of the "colonists," as the population may be called, is satisfactory, and the reclamation answers financially. Haarlem Meer took thirteen years, being completed in 1852, and cost nearly a million sterling, but the outlay has been repaid by the sale of 42,000 acres. The recovery of the Zuyder Zee is seriously looked forward to, and this would throw all former undertakings into the shade. Amsterdam would then have an outlet to the German Ocean by the North Holland canal, now in process of construction, and which is of such dimensions as to allow two men of war to pass each other at any point. During the last two hundred years £300,000,000 have been expended for hydrographical purposes in the narrow tract of country, hardly as big as Wales and Yorkshire put together, lying between the Dollardt and the Scheldt, and Mr. Thurlow compares the Netherlands to a copyhold property with Neptune as lord of the manor, whose fines amount to a million sterling per annum for repairs and superintendence.

PEAR.—The *Goderich Star* says there are immense beds of peat in the townships of Hullet, Turnbury, Wawanosh, McKillop, Hay and Stanley, varying from five feet in depth upwards. In one part of McKillop it is fully fifty feet in depth. The extent of land occupied by these beds is fully 5,000 acres.

Stock Department.

Fall and Winter Care of Young Stock.

To the Editor of THE CANADA FARMER:

SIR,—Having on previous occasions occupied the space of your columns at considerable length on the subject of rearing young stock during the summer months, I now propose to take up the subject again and follow it somewhat further.

Cold winds and the dry and yellow leaves of autumn forcibly remind the farmer of the necessity of early forethought and timely provision for the care of his stock through the coming winter. Upon the economical and successful manner in which this is accomplished, quite as much as upon any other thing, depends his success in stock farming. I observe a great many people, after having paid considerable attention to their calves during the summer months, sadly neglect them in the fall, under the mistaken idea that they are now become old enough to take care of themselves; and that if they have the run of a tolerably good pasture, nothing more is required until winter is fairly set in. But this is a great mistake, for at no time do they require, or will pay better for, a little extra attention than during the fall months. True, they may apparently get enough to eat; but it will be cold frozen stuff, containing very little substance; and if they are left entirely to depend upon such food, their growth will be materially checked. As soon as the cold nights come on they should have the benefit of the shed, and be fed in the morning with a little good hay. The supply of meal should also still be continued if possible.

To bring young animals to early maturity, whether calves, lambs, or pigs, they must be kept growing from the time of their birth till they are deemed fit for the butcher. For it is an important fact, and one that should on no account be forgotten by the farmer, that when a young animal ceases to grow from lack of a proper supply of food it ceases to be profitable, and immediately becomes a burden and expense. It is of great importance to bring all animals to maturity as soon as possible; and to do this we must feed liberally. On this principle short-horns have acquired the habit of attaining the size and weight of common four and five year old steers when they are only two and three years old; and herein lies the profit of the business. For, if well kept until they are two or three years old, they bring more money than ill-fed animals will at four or five. Business men, merchants for instance, tell us they aim to get quick returns even if it cuts down the profits to a certain extent; but, in bringing animals to early maturity the farmer obtains quick returns and large profits. In order to obtain this, however, it is absolutely necessary that calves should be well fed during the first year of their existence; after that they will get along with considerably less attention. Through the winter they should be separated from the older stock, and fed on hay of the best quality, with a daily supply of either roots or meal. It is also of the greatest importance that shelter be provided for all kinds of stock during the winter. The advantages of protecting farm stock from the rain, sleet, and chilling blasts of winter, are not so well understood and appreciated by a great number of our farmers as they should be. Young stock especially are greatly injured by cold winds and storms. And the custom of suffering cattle to run at large during winter without some place of shelter is, to say the least of it, a great want of economy. No sensible person will for a moment dispute the fact that cattle well protected from the cold and storms of winter in this changeable climate of ours can be wintered on much less food than those exposed to the full blast of the wintry winds. It has often been a matter of wonder to me how any man claiming to possess the feelings of common humanity, much less a professed Christian,