

cent too high, yet figured at these rates, the Bowker fertilizers fall short nearly ten, while even the Bradley fertilizers and the Soluble Pacific Guano fail to come up to this depreciated standard, the Bradley reaching only to \$41.30 and the Pacific \$39.66. If we take twenty-five per cent from these figures, we have the Bradley down to \$31, and the Pacific to \$39.75, which is about their real agricultural value, and all a close-figuring farmer will find himself able to make a reasonable profit on. *Vermont Watchman.*

There is very little difference of opinion among practical men as to the relative values of phosphoric acid in a soluble and insoluble state, provided always that the crystalline form of phosphate of lime (apatite) be excluded altogether: apatite, as I have often shown, is useless unless dissolved. For top-dressing grain-crops, for forcing the young turnips out of the way of the fly, common sense would advise the use of a rapidly available manure—superphosphate: in all other cases, finely ground bones, coprolites, or the other softer forms of mineral phosphates, will answer all purposes.

I am happy to see that Dr Hoskins, in the above article on fertilizers, shares my opinion as to the propriety of treating raw bones with moistened ashes. In this case, it will not be found necessary to grind the bones very fine, as the heat developed will moulder them down into a much more comminuted state than any mechanical means can do; the larger the heap the more powerful the action, and a slight covering of earth, mixed, if you will, with plaster, will aid in retaining any ammonia that may be evolved. In clays, where potash is not often required, common soil may take the place of the ashes. In this Province of Quebec, until the price of artificial manures is lowered considerably, it is vain to look for their general employment. *A. R. J. F.*

Quebec Agricultural College Sale.

Readers of the Journal will see in our advertising columns a list of animals to be disposed of by auction at the Ontario Agricultural College. Sixty cattle, 200 sheep, 20 swine, and 10 Scotch coilies, will be offered to the public without reserve. It would be a waste of space to expatiate on the quality of stock exposed at this now justly celebrated establishment. The Aberdeen Polls and the Southdown sheep are alone worth a journey of a few hundred miles to see. *A. R. J. F.*

Monthly report of The Provincial Model-Farm, Rougemont.

NOXON'S GRAIN-DRILLS.—However skilfully grain may be sown with the hand, it is very certain that broadcast sowing can never equal in regularity of depth &c. the work of a good drill.

Noxon's drill, which can be regulated at will, sows any desired quantity of seed per acre with the utmost nicety. A harrow is attached to it, which covers all the seed with a regular depth of mould. The grain falling between the horse and the harrow is not trodden into the ground, and consequently there is no hindrance to the immediate and equal "brairding" of the seed. The teeth of the harrow are movable but attached to the frame by a strong spring, so that on meeting with a stone or clod, they bend and escape being broken. A dial in the seed-box regulates the quantity of grain sown per acre, and shows, too, how much grain has passed through the drill.

MANURES.—The following is a statement of the value of solid and liquid manures in London, England:

1000 lbs. Cow-dung-fresh.....	\$0.66
" " Horse " "	1.00
" " Sheep " "	1.54
" " Hog " "	1.14

Urine compared with mineral manures, per 1000 lbs.—cow's, 6 9; horse, 9 6; sheep, 11 8; hog, 26.--(1)

MILK.—That cows at grass give much more milk than cows kept in doors, is well known; but the milk of the latter is much richer—even half as much again more valuable. Cows yield in proportion to the food they receive. Cleanliness and good and abundant food are indispensable to their proper treatment; and in milking the greatest care should be taken that the hands are clean, and that no dirt be allowed to fall into the pail; milk is very sensitive, and readily absorbs any bad odour or taste.

BUTTER-MAKING.—(*Notes by Mr Jocelyn.*)—At all places and at every season, there is a difference in the price of butter. While we see butter sold on the market for 25 cts a pound, we see on the same market other qualities fetching the absurdly low price of 10 cts., and in fact unsalable for its proper use, that is, as an article of food. At New York, last spring, butter six months old and upwards brought only 10 cts., and at the same time and place, butter made at the same date was fetching 25 cts. Nothing more is needed to prove the immense advantage to be derived from making no other quality of butter than the very best. If a dairyman can make butter and sell it without a loss at 10 cts a pound—an impossible thing, by the bye—the inferiority of his article would, nevertheless, cause him to suffer a gross loss of 15 cts. It is just as easy to make good butter as to make bad. The work, the carriage, the commission, are the same in both cases. All that is necessary is care and attention. A farmer who brings first-rate goods to market can always sell them to advantage, and will get from 25 cts to 30 cts for his butter; that is to say, a good article always fetches its price, while a bad article has to be given away.

Butter is made either with sweet or with sour cream. There is a great difference of opinion among the best makers as to which is the better plan. It is very certain that butter made with sour cream preserves its grain better, since it is more difficult to injure the grain, and this for two reasons: 1st the acidity developed by the cream in souring hardens the grain; and, 2nd, in the sweet cream there is a certain quantity of volatile aromatic oils, derived from the grasses with which the cows are fed. The acidity destroys these oils, and when they have escaped, the cream thickens and becomes butter more quickly. Nevertheless, good butter is made with sour cream, but if it is treated in the same way as sweet cream, the butter will prove a failure. In Denmark, where dairy-work is carried to perfection, butter for exportation to hot climates is made with sweet cream, and keeps very well.

As we have seen, the destruction of the volatile oils of the cream by acidity causes the more rapid conversion of the cream into butter. Consequently, sweet-cream-butter is more subject to deterioration. Still, the butter is more delicate in flavour, on account of the presence of the aromatic oils.

In the churning of sour cream, gas is set free, and if it does not escape, the butter won't come: there must be air. With sweet cream, on the contrary, the air must be excluded. In certain creameries in the State of New York, butter is still made, in winter, in the old fashioned churn—like a tub, larger below than above—they have only one beater, which strikes the cream from top to bottom and from bottom to top, thus allowing the gas to escape through the hole through which the beater (agitator) passes. The gas escapes, and the butter comes. The fault in these churns is, that the cream is not churned equally. Equal and continuous churning is absolutely necessary to the production of good butter. Churned in this way, the butter is formed in grains so fine

(1) I confess I am quite at sea with these figures. *A. R. J. F.*