

drink for a cow after calving. The calf, and not the cow, should have the first milk, which nature has intended to purge its intestines of a glutinous substance which is always found in the new born calf."

#### GYPSUM--MANURES FOR HOPS--SUB-SOIL PLOUGHS.

We have received from Mr. Martin McMartin, of Cornwall, a letter containing the following inquiries, which we have much pleasure in answering:—

"At a late meeting of our Society, many of the members were desirous of information as to what soil, and what quantity of Plaster should be applied? Also what is the best manure for Hops, and the manner of applying it? And as we have imported a sub-soil plough, you might give insertions in your valuable paper, as to the best mode of using it."

GYPSUM.—The soils upon which this salt is found to act most beneficially, are such as are light and dry; all varieties of sands and sandy loams for example, which are deficient in sulphate of lime, the manuring principle contained in gypsum, or as it is usually called, plaster.—It is found to act more powerfully on dry than on wet soils, which is the case with most kinds of manure. On stiff clays it seldom produces much effect, but there are a large number of instances that have been observed in practice on different soils, and in varying climates, in which its action, or frequently non-action, cannot be satisfactorily accounted for. The usual quantity applied per acre, is from one bushel to one bushel and a half; which has often been found to produce quite as much effect, as a much larger quantity. Its effect on broad-leaved plants, such as clover, Indian corn, &c., is frequently astonishing. To the light land farmer it is a valuable auxiliary, and its cost a mere trifle.

MANURES FOR HOPS.—The best general manure for Hops, available in Canada, is unquestionably farm-yard dung. But then this should consist of something more than partially decomposed straw. When cattle have been well housed and fed, and their solid and liquid excrements mixed up with, and absorbed by the litter, and properly protected against rain, &c., in the

dung heap, we have then most valuable manure for hops, and indeed for any of the cultivated crops. The strength of farm-yard dung as a fertilizer, chiefly depends on the quantity of animals kept, and the *kind of food* on which they have been fed, and the subsequent care taken in preventing the liquid portion of the manure from running to waste. The best time for applying dung to hops, is as early in spring as practicable; it should be spread evenly over the ground, and immediately ploughed in, the intervals left between the hills it is best to dig by hand.—This operation may sometimes be advantageously performed before the commencement of winter. Old woollen rags, cut into small pieces, and all waste matter of animal origin, which is often only a nuisance in and about factories, are very valuable and permanent manures for hops. The English growers expend many hundred thousand pounds annually, in the purchase of such things for manure. A dressing of lime every five or six years, when the soil is not naturally rich in that important ingredient, will be found advantageous. Whatever manures may be applied, it is of much importance to incorporate them with the soil as early and as thoroughly as possible. The chief secret of successful hop-growing,—assuming that soil, climate, and other circumstances are favorable,—will be found to consist in liberal manuring, and frequent cultivation of the soil during the period of growth.

SUB-SOIL PLOUGH.—This is truly an indispensable implement in any system of improved husbandry, on *dry* soils; but on land that is wet, the drain ought, in all cases, to *precede* the use of the sub-soil plough. Subsoiling wet, adhesive clays, without draining, has often been found to render them wetter and more unmanageable than they were before. The use of the sub-soil plough is very simple. As deep a furrow as is practicable, is first made by an ordinary plough, say to the depth of eight or ten inches, in which the sub-soil plough follows, drawn by another team, and breaks up the ground to an additional depth of ten or twelve inches, or even more, without raising the sub-soil to the surface. By these means an active soil of great depth, is readily obtained, in which the roots of