already been referred to, but it may be added that an analysis should be demanded if the purchaser has no knowledge of the purity or quality of the limestone from which the material has been prepared.

If there is no guarantee as to fineness, an inspection or a trial with sieves must suffice. The more coarsely the limestone has been ground the slower will be its action in the soil—and the longer will it remain an active agent in ameliorating the soil. Generally speaking, the coarser-ground material is the cheaper, as grinding, and especially to a fine powder, is a rather costly operation. If a quick, prompt action is desired, a material 75 per cent of which passes through a sieve 100 meshes to the linear inch, will be found very fairly satisfactory. Coarser ground limestones, however, can be successfully used—say 50 to 75 per cent passing through a 50-mesh sieve—all passing through a 10-mesh sieve—if immediate and, in a sense, quick, decisive action, is not a desideratum.

The application may be from two to ten tons per acre, according to the character and the acidity of the soil and the degree of fineness of the material. Unlike quick and slaked lime, excess of ground limestone can do little or no harm and the same holds true of marl.

The application of ground limestone and marl offers no special difficulty or unpleasantness, a spreader may be used or the material distributed by shovel from a waggon. They may be applied at any season of the year and are especially suited, as has been stated, for light loams and soils generally that are poor in organic matter. As with lime they should be harrowed in, not ploughed under, or in the case of meadows or pastures, merely spread on the surface.

Special machinery is now manufactured to crush and pulverize limestone. Efficient mills have at least a capacity of two or three tons per hour. It is stated that employing such mills at the quarries ground limestone can be produced at a cost of 50 cents to $1.50 per ton. To this, of course, the cost of freight must be added when the purchaser lives at a distance from the source of supply, the rates for carload lots naturally being less than for shipments of a few tons.

The cost of the mill and of the necessary power—say 10 to 12-horse-power engine and boiler—to run it would probably be from $1,000 to $1,[illegible] and the [illegible] be found too large for many an individual farmer, even though a valuable supply of limestone may be on his property. But in many districts, through agricultural organizations and other forms of co-operation, arrangements might be made whereby the limestone could be quarried, and the ground material supplied in a community at a minimum cost of production.

GYPSUM OR LAND PLASTER.

Gypsum is a naturally-occurring sulphate of lime, and is found in vast beds or deposits in several provinces of the Dominion. Crushed or ground it forms the well known land plaster. Gypsum contains about one-fifth of its weight of water, known as the water of crystallization. When it is strongly heated (burned) this water is driven off and plaster of Paris results. This is not used in agriculture, but is much valued in the arts from its property of making a white hard cement when mixed with the requisite amount of water.

Gypsum may be valuable agriculturally in furnishing lime for plant growth, as it is fairly soluble in water, but since this lime is combined with sulphuric acid and is present in a neutral condition it follows that *gypsum has no value for the treatment of sour or acid soils.* For this purpose it cannot take the place of quicklime, slaked lime, marl or ground limestone, which, as we know, are essentially alkaline in character.

The two chief agricultural functions of land plaster are its property of flocculating clay and its effect or influence on the insoluble potash compounds setting free this element in forms available for plant use. The first of these functions makes it valuable for the dressing of heavy clay loams, which it improves in tilth by rendering them less plastic, more open and friable, in a word, mellower and more easily worked. The