

times along with other descriptions of manure. It was put in drills the same as other manures; but if used alone, the drills were not made so deep. I recollect when we sowed but five bushels per acre; but it was ultimately increased to ten and upwards. If other manure was applied in connection, about half and half,—say 15 tons of well-made manure, and six bushels of bones.—the bones were sown by a machine constructed for the purpose, which distributed them very regularly. They were then covered up, and the seed sown in the usual way.

I will now merely glance at the Mineral Manures as briefly as possible: as I have occupied your time too long already, in what you mostly all have had the practical experience of.

And the first I will notice is Gypsum or Plaster. As it is got in a prepared state, when received, I will not dwell on that part. Most of you are aware of its qualities, at least so far as its beneficial effects on grasses from top dressing are concerned; that being the general way in which it is applied; but it would also serve a good purpose to sow it pretty thickly over a manure heap, when undergoing the process of fermentation, as its principal quality is in fixing the ammonia, and not allowing it to escape. In applying it to crops, either as a top dressing, or sowing it along with the seeds, it has been recommended by the author formerly mentioned, to add its own weight of common salt, by which it affords a greater supply of soda to the roots of the plant, and thereby increases its growth. It also attracts and determines the ammonia from the air to the plant, which affords more nourishment than many would credit. In fact I have often heard it stated by parties, when speaking of the use of Plaster, that it would soon wear out the soil. I for one differ with such, as I consider, as I have already remarked, that it determines not only the ammonia in the soil to the plant, but also draws the same from the air. But as you have all had more experience of its use and application, I will leave it to others to further explain.

The next I will take up is Lime. You are all aware how it is prepared.

Its application requires greater care and judgement than any of the foregoing manures; for unless it is properly applied it will impoverish, rather than improve the soil. I beg to make a general remark here, than in speaking of applying it, I will look upon the land as all well drained; otherwise it is worse than useless to use lime.

In applying it, the Farmer has the following object in view; viz., to bring into action the dormant portions of the soil, by stimulating them to yield to the roots of plants that nourishment which it contains, but which, from its adhesive qualities, was kept locked up. It is like all other Mineral Manures, constantly descending, and therefore ought to be applied as near to the surface as practicable, having an entirely opposite tendency to Farm-yard manure, as that requires to be ploughed down as deeply as the soil will permit, for the latter will always work to the top, while the former will work to the bottom. Hence the advantage in applying it, as a top dressing. It should never be put on in too great a quantity; in fact, the judgement of the Farmer is put to the test, having to take into consideration the soil he intends to operate on.

It can profitably be applied by mixing it with the weeds gathered off the fields, or the clearing out of ditches, &c., and formed into a heap by which it burns and destroys obnoxious weeds, and leaves a valuable compost to be formed, which will greatly increase the productiveness of the soil to which it

may be applied. Here I have had no experience in applying it, but have no doubt there are some here who have experimented with it, and who can give their practical experience.

There are other Mineral Manures, such as marl ashes, leached and unleached, but which, not having had much experience with their results I will leave to others, who have had more to explain.

And, Mr President and gentlemen, to conclude; I feel greatly obliged to you, for having had patience to listen to what I have advanced which I feel is but of small importance to a class of men such as the Farmers of the County of Wellington; but should I have opened the subject in such a way as will tend to the further elucidation of it from the parties present, I shall feel amply recompensed.

Some discussion ensued, during which the substance of the foregoing address was fully approved. Several members of the Club spoke in favour of the use of liquid manure, and the formation of suitable tanks in or near the barn yard. Mr McCrea also spoke in favour of the moderate use of lime, and described its beneficial action on land on which there was a superabundance of decaying vegetable matter; as well as on heavy clay soils. A vote of thanks having been given to Mr Davidson, for his able address, the Club adjourned for the season,—time of next meeting to be decided upon at the County Agricultural Show to be held in the Fall.

#### MR. McDOUGALL'S REPORT TO THE BUREAU OF AGRICULTURE.

(Continued from page 105.)

Analyses have been made of the surface and sub-soil of Upper Canada, taken from a few localities, widely separated, but their practical value to the Agriculturist may be doubted, unless something more is done. The thorough and satisfactory manner in which the Geological Survey of the State of New York has been carried on, and the admitted practical advantages that have resulted from it to the intelligent Agriculturists of the State, induce me to recommend for your consideration whether it would not be more advantageous to the Province in every respect to increase the scientific corps under the direction of Mr. Logan, so as to complete the Survey of the settled parts of Canada, within a much shorter period, than will be practicable with his present force.

The subject seems to fall appropriately under your cognizance, as one of the means by which Agriculture may be largely aided.

It seems, moreover, a work, which to be useful, must be thorough, and therefore demands the generous help, and watchful supervision of Government.

**DITCHING MACHINES.**—There is still a great desideratum in the operation of thorough draining, viz: a machine that will rapidly and inexpensively open the trench to a proper depth. Fowler's Draining Plough, as exhibited at the great Exhibition of 1851, is an ingenious attempt to accomplish the object. This plough makes the orifice and deposits the tile at one operation, and without disturbing the soil. It leaves only a narrow slit in the earth as it passes along. A strong iron coulter with a plug large enough to open a space for the tiles, descends from a stout frame work placed on wheels, to the depth at which the tiles are to be laid, and is drawn from one side of the field to the other by a wire rope attached to a capstan. The tiles are threaded on a rope to the back of the plug. When the field is crossed the rope is detached from the plug,