

result. The corn appeared to me not so heavily eared as where the Schuylkill lime was applied.

I am happy to be able to communicate to you the success of your predictions, so far as your suggestions have been pursued, although in rather a rough and unskillful manner.

I have great faith when the phosphates are supplied in the requisite quantities, that your prophecies of increased product will be "fulfilled to the end."

You will also again accept my thanks for having pointed out to me the means of "renovating" my "worn out field."

Respectfully yours,

WM. HENRY DECOURCY.

Dr. James Higgins, Baltimore.

I have also found soils from many parts of the State very productive, yet containing a large proportion of magnesia; and in many parts of the state we have soils deficient in magnesia, all things else being present, and yet not so productive as where magnesia exists. But the evidence does not stop here, the ashes of the grain of wheat contain from 12.98 to 16.26 per cent. of magnesia, according to the analyses of Bichon, Thou, Boussingault, Wills, and Fresenius; the inorganic part of the grain of barley contains of magnesia 10.2 per cent. Corn, oats and other crops also contain large quantities. These facts show the necessity of magnesia, as strongly as facts can show any thing.

But why multiply proofs? The above are sufficient to show that it is one of the necessary constituents of plants, and of fertile soils, and if it does not exist in a soil, common sense tells us that it must be supplied, or that the soil cannot reach its maximum of productiveness. The application of too much caustic magnesia to a soil, may prove injurious from its caustic properties, since it does not readily imbibe carbonic acid from the atmosphere, and become *mild*, as lime does. But from this property, that of remaining a longer time in the quick state than lime, it exerts a greater and more permanent influence in disintegrating the soil and rendering soluble its dormant constituents.

On the soils not containing a large quantity of vegetable matter, from twenty to forty bushels of magnesia or lime to the acre, is the best quantity. This quantity should be applied every three or four years, until about two hundred bushels shall have been used. The larger the per centage of magnesia in the lime, the smaller the quantity to be used.

The proper quantity of lime per acre is a question, the solution of which is attended with great interest. To arrive at as correct conclusions as possible, I have examined very many productive