

It is true that a smaller quantity will suffice for an immediate effect, which may suit a temporary tenant, but let the land-owner bear in mind that the *whole ultimate benefit* is in proportion to the *weight of bones* applied. It is true the action of the acid upon the carbonate of lime produces a portion of gypsum, but so far as that article is concerned, we can purchase it at less than one-fifth the cost of making it.

When bones or phosphatic guanoes are dissolved in acid it is usual to add absorbent materials, so that it may be made sufficiently dry to admit of being spread. Neither lime nor ashes should be used for this purpose, because it would precipitate the phosphate and neutralize the effect of the sulphuric acid.

Great care should be taken when the acid is poured into the water, which must be done before the bones are added. It must be done very gradually, because it generates heat above the boiling point, and is apt to be thrown in the faces and on the clothes of the workmen.

Sir J. Murray thinks there is much loss by the soluble phosphates being carried off by water; but there is good reason to believe that the cause of their effects being so slight after one or two crops, is more owing to certain known chemical reactions in the soil. Soluble salts of alumina and iron, especially the latter, are never absent from soils, and when a soluble phosphate of lime comes in contact with either of these, the phosphoric acid is precipitated as phosphate of iron or alumina. Both of these, according to Bischoff, are among the most insoluble substances known in water and carbonic acid. But some experiments of Dr. Piggot prove that they are soluble in alkaline silicates.

Whilst it does not seem proper to apply sulphuric acid to bones, yet I think it probable that we may advantageously use either that or muriatic acid in *small* proportion to some of the phosphatic guanos, especially to those containing phosphates of iron and alumina.

It remains now to notice the third mode of preparing bones, which consists in causing putrefaction and decay.

This mode has been evidently coming more into use within a few years past, and we often find directions in the agricultural journals for effecting it, most generally by making them into composts with stable manure or other matter. I have, however, met with nothing in that way that appears likely to answer a better purpose than that practiced by me 19 years ago, after experimenting to some extent. And as inquiries have been made in answer to which I had found it necessary frequently to describe the process, it will now be repeated in full.

Having smoothed over the surface of the ground, (under