

their growth, and of course rendered less capable of supplying those substances to the wheat and the other succeeding crops of the rotation ; as twenty bushels of bones, which in many parts of England are considered sufficient for an imperial acre, would not convey to the soil more than 34 lbs. of soda, and a trifling amount of potash and magnesia, while the best Peruvian guano is seldom found to contain, in a hundred pounds, more than four pounds of potash.

Now, as the only judicious method of maintaining the productiveness of the soils of a country is by keeping up the stock of fertilizing materials which they contain, it is of consequence to investigate, by experiment, whether, by the addition of the different ingredients to bones and guano, we might not only increase the produce of turnips, but materially improve the succeeding crops of the series. By mixing the alkalis potash and soda with either bone-dust or guano, we will not only supply the matters in which they are chiefly deficient, but also give to the soil other valuable ingredients.

Some experiments should be undertaken for the purpose of testing the value of guano and bones, and mixtures of these manures with alkali as applicable to the turnip crop. As to the mode of conducting the experiments, we would propose, 1st, That a field should be selected, and patches each containing half-a-rood measured off from it ; and that the appearance of the soil and sub-soil, with the history of its treatment and cropping, should for some years previous accurately be noted by the experimenter ; and samples both of the surface and undersoil of each patch, preserved for analysis. 2nd, The same quantity of the same parcel of seed should be sown on each patch, and, if possible, on the same day. 3rd, The quantity of the manures applied, as well as of the seed, should be determined by weight, and be from the same samples in every case. Samples of the manures should also be preserved. 4th, A report of the appearance of the crop should be presented by the experimenter every month, and the amount of the final produce in each patch should be carefully ascertained by weight, the produce in tops and bulbs being separately determined. Samples of the produce of each patch should also be examined in the laboratory, as some interesting experiments made in Scotland, and recorded in the Transactions of the Highland and Agricultural Society tend to show, that the kind of manure employed exercises a considerable influence over the composition and fattening qualities of the turnip crop. The same statement is made by some continental authorities respecting other crops, and there is reason to believe, correctly ; but on this and other subjects connected with agriculture, numerous experiments are yet required, before the question can be regarded as settled.

The experimental patches might be arranged in the order which is here laid down, a square being left without manure, so that the natural action of the soil, and the amount of the materials which it is capable of supplying to the crop may enable us to judge of the increase due to the artificial materials employed:—

Mixture of dissolved bones and alkali.	Farm-Yard Manure.	Mixture of Guano and Alkali.
Guano alone	No Manure.	Dissolved Bones alone.