3.—*Bones.*

These should be carefully distributed either by hand or a suitable machine, upon a surface which has been plowed and harrowed, and then harrowed in so as to be well mixed with the soil. It is necessary that they be covered in the soil to the depth of not exceeding two, or at most three inches, so that they may have sufficient moisture to continue the production of ammonia and the solution of the phosphate of lime. If left on the surface the chemical changes are arrested whenever the bones become dry; and when renewed by moisture, most of the ammonia escapes into the air, except during rains, when it is carried into the soil. If they be *buried* by the plow, their immediate effect is seriously lessened, because the changes go on very slowly, and the products are liable to be carried out of reach of the roots of plants almost as fast as they are developed.

4.—*Guano.*

It was a common practice to plow Peruvian guano deeply into the ground, by which there was an inevitable loss because of the solubility of ammonia and other soluble matters. This loss was not so apparent when 400 to 500 lbs. were applied to the acre, but the case is different when 150 to 200 lbs. are plowed down. Probably the practice of plowing was in order to avoid the loss of ammonia which happens if it be left on the surface. But in avoiding this it is not necessary that we should lose by going to the other extreme. Good results have followed drilling in *small* doses of Peruvian guano with wheat and other small grain. This is a good practice for a costly and evanescent manure, but care should be taken to avoid an excessive dose, which will prevent the germination of the grain or kill the young plant.

Less than three bushels of gypsum, if thoroughly mixed with a ton of Peruvian or other ammoniated guano, will in a great measure prevent the ammonia from being volatilized.

The phosphatic guanoes have nothing to lose by evaporation, and therefore may be left on the surface; but it is better that they be harrowed in also.

Common salt, if not mixed with bones or other manure, may be sown on the surface. Being very soluble, it is soon carried into the soil. The same may be said of all the alcaline salts, or other very soluble manures.

5.—*Stable Manures.*

The objection to burying stable manures are similar to those which forbid plowing in bones. If to be applied just previous to putting in a crop, the stable manure should be spread, after the ground shall have been plowed. It may then be worked into