

least one-third both in grain and straw. I have before noticed the propriety of sprinkling plaster upon the floors of stables, and if, in addition, we add a very small proportion of copperas or sulphate of iron we get rid of the unpleasant odors, and promote the health of the animals. The proportion of copperas should not exceed one-fourth or one-fifth of gypsum, with which it may be mixed after being powdered, or it may be dissolved in water and sprinkled over the floors.

The use of peaty muck in the barn yard has been already alluded to, and is earnestly recommended to all who possess facilities for such operations.

CHAPTER XV.

ARTIFICIAL MANURES OR FERTILIZERS.

The increasing demand for manures produced by the progress of agriculture during some years past, has stimulated many enterprising persons to add to the resources of the farmer in this respect. The result has been to bring into the market an infinite variety of what are termed artificial manures or fertilizers from establishments in and near the principal cities of the Atlantic States.

The numerous advertisements of the manufacturers in the agricultural and other journals, as well as their handbills and pamphlets, usually contain certificates of analysis of their samples. Many of these appear to contain phosphates and ammonia or its elements, besides other matters useful in manures.

One class of these, called "Manipulated Guanos," are said to consist of mixtures of Peruvian and Phosphatic Guanos, ground very fine, and intimately mixed together by a second grinding. The manufacturers claim, with reason, that by the perfection of their machinery, they are enabled to reduce the guanos to a finer powder, and to effect a more intimate mixture than can be done on the farm. There is no doubt that a given weight of guano in fine powder will prove more effective and be of greater value to the farmer than when coarsely ground or in lumps.

As I have before stated, there is every reason to believe, from the effects of pure Peruvian Guano, that the proportion of its ammonia is too large for its phosphate of lime. It would appear, therefore, to be advantageous and economical to use a mixture of the two, or a "Manipulated Guano."