

is enough potash present to add essentially to the value of the article; again, of two fertilizers equally valuable with respect to the amount of plant-food which they contain, that one will be worth more which is in the form of the finer powder, or in which the lumps are softer and more easily crushed to a powder. Such are the data upon which to base the valuation of a commercial fertilizer.

The variations in these fertilizers with respect to the proportion of phosphoric acid and nitrogen are very wide; while pure bone-meal contains usually about 4 per cent. of nitrogen and 22 per cent. of phosphoric acid, there are superphosphates sold containing less than 9 per cent. of the latter, and other fertilizers not called phosphates, that contain less than 3 per cent., while at the same time there is a corresponding deficiency of nitrogen. And while a good Peruvian guano contains from 10 to 12 per cent. of nitrogen, there are fertilizers sold that contain only 0.1 per cent. Now, at a low estimate you have to pay for all the nitrogen that you buy in these manures at the rate of 25 cents a pound, and for the soluble phosphoric acid, that is for this acid in its more valuable form, 20 cents. Taking these figures into consideration, it evidently is of considerable importance to you as a financial transaction, whether the Peruvian guano that you buy chiefly for its nitrogen, and for which you pay at the rate of sixty dollars a ton, or thereabouts, contains 200 pounds of nitrogen in the ton or only 20 pounds; in the purchase of a ton of superphosphate, bought mainly for its soluble phosphoric acid, it does make a difference to you whether, paying at the rate of at least 20 cents for every pound of this acid, the ton of 2000 pounds that costs you \$50, contains 150 pounds of the acid, or \$30 worth, or none at all. I am quite safe in saying that you might get no soluble phosphoric acid at all for your money, for such superphosphates have been sold in this State, and may be now; such a superphosphate may not be entirely worthless, for in the case referred to, there was considerable insoluble acid, and a little nitrogen; but the insoluble acid, according to all authorities, is worth at the most only a third or a fourth as much as the soluble; it must lie longer in