

assumed that the purchaser will not pay these unless he on the other hand has satisfied self that he also can clear a profit from the action, and partly also to the carelessness which manures are often purchased and the of careful comparison of the relative pro- derived from different substances. Another which must also be considered, we have referred to, in the state of division of substance, the extent to which its different titutents are available to the plant, the fac- ility which it can be applied to the soil, &c. e considerations are of great importance many different substances are compared, hey are not likely to be of much moment in ase of strictly analogous substances, such, xample, as two different kinds of guano be- ng to the same class, and it must be admit- at in these cases no good ground for the ence in the prices given can be shown, and uld in all probability disappear if more tion were paid to the results obtained in the

The more minutely the subject is in- into the more obvious does it become o system of valuation can be made per- general, but that each individual kind of e requires a plan suited to itself alone. however, involves such difficulties and ications that an attempt has been made to general system which, though not abso- correct, is a sufficient approximation, and, st, a satisfactory guide to the relative of these sulphates. In purchasing a ma- he substances which are of actual value mmonia, insoluble phosphates, soluble ates, sulphate of lime, nitric acid (as of soda), potash, soda, and organic mat- these different substances in their substan- er greatly in value. Ammonia and the ates soluble and insoluble are costly, and the greater part of the value of all the n manufactured manures depends on

Potash also sells at a high price, but it y found in manufactured manures, and in sufficient quantity to influence their and it is not customary to take it into ration except in particular cases. The ost commonly found in artificial manures and when alkaline salts are stated in an , they must be assumed to consist almost of that substance, and be valued accord- Sulphate of lime and organic matter, abundant constituents of most manures, little to their value, and some persons elude them in their estimate, although e common practice is to make a small ce for them. In order to obtain a fair r each of these substances, it is neces- ascertain the commercial prices of each ly. This, however, cannot be done in , and it is necessary sometimes to arrive an indirect process, in the manner which terwards explained. The question we solve is the price actually paid for a ch of these substance in a pure state,

and we shall consider each in succession. In- soluble phosphates are purchased in several dif- ferent forms. Coprolites ground to a fine powder and containing 58 per cent. of phosphates sell at £2 12s. per ton, and a ton of pure phosphates is consequently sold for £4 8s. In this state, however, the price is extremely low, because it is alleged that the phosphates are in so compact a condition that the plant cannot avail itself of them, and they are only used as a raw material for the manufacture of superphosphates. Bone ash, containing 70 per cent. of phosphates, costs £4 10s. per ton, and pure phosphates in this form are therefore sold at £6 8s. These are the principal forms in which phosphates are sold alone, but it is possible to calculate the value they bear in bones by deducting that of the am- monia they yield from their price, and assuming the remainder to refund the price paid for the phosphates; a similar course may be adopted with phosphatic guanos, and we then find that a ton of insoluble phosphates is worth in

Coprolites,	£4 10
Bone ash,	6 8
Bones,	7 5
Phosphated guanos,	10

These then are the actual market price, and they differ to a very great extent; and the farmer who purchases a phosphated guano pays for the phosphates much more than he could obtain them for in other forms. This difference is to be attributed to the higher state of division in which they exist in the guano and their consequent accessibility to the plant. We are bound then to estimate the value of phosphates in such guanos at this price, although as ammoniacal guano, such as Peruvian, they are sold at a lower rate, but for all other manures of which lime and bone ash form the basis £7 per ton may be taken as a fair rate and it is that which has been usually adopted, although £8 and even £10 are sometimes assumed as the general price. Ammonia is found in commerce in the shape of sulphate of ammonia, which at present sells at from £15 to £15 10s. per ton, and making allowance for the ordinary amount of impu- rity (5 or 6 per cent.) the price of ammonia in this form is about £63 per ton. By calculating from the price of other substances it appears that the following are the values of ammonia per ton:—

Sulphate of ammonia,	£63
Bones,	61
Peruvian guano,	57

The general average being £60 per ton, which is the price usually adopted. Sulphate of lime sells for about £1 per ton, and this value is accordingly always adopted. Considerable doubt exists as to the propriety of allowing any value for the organic matters in manures, because it is supplied in farm yard manure in so large quan- tity as to make the few pounds contained in an ordinary dressing of artificial manure unimport- ant. It is customary, however, to sell at from 10s. to £1 per ton, and I shall adopt the lower